

THE CITY OF SAN DIEGO





2004

Annual

Drinking

Water

Quality

Report







2004 Annual Drinking Water Quality Report

A Message from the Director

Dear Customers,

We at the City of San Diego Water Department are pleased to present you with the Annual Drinking Water Quality Report for 2004, also known as the Consumer Confidence Report. The U.S. EPA and the California Department of Health Services (CDHS) require that all water agencies produce an annual report on the previous year informing customers about the quality of their drinking water.

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Este reporte contiene información importante sobre la calidad del agua en su comunidad. Copias en español de este reporte están disponibles si llama al (619) 527-3121. Tambíen encontrará este reporte por medio del internet en www.sandiego.gov/water. In the following pages you will find important information about the origin of your water, the composition of your water, and the steps we take to protect your health and safety with our water treatment process and water quality monitoring and testing. Here are the highlights for the year:

WATER QUALITY

Last year, the Water Department's Water Quality Laboratory conducted more than 218,000 tests for 425 different kinds of potential drinking water contaminants. We did not detect any chemical or biological contaminants at levels greater than the allowed maximum contaminant levels (MCLs) set by CDHS, except that a single sample tested positive for *E.coli* bacteria (refer to page 10 for detailed explanation). This report contains a detailed summary of our water quality monitoring and testing.

CONTINUOUS IMPROVEMENT

We work hard to provide you with safe, reliable, cost-effective water and outstanding customer service in an environmentally sensitive manner. We are also committed to continually improving our services and operations. To do this, we initiated three management programs last year: A Department-wide Strategic Business Plan (SBP); a Bid To Goal (BTG) program; and an ISO 14001: 2004 program. The latter two programs were both spearheaded by our Operations Division. The SBP is a road map laying out specific goals, strategies and tactics for maximizing our resources and successfully serving our customers. The BTG program is a five-year performance-based plan to control costs, improve services, and become a "Best-in-Class" utility. We are also the first utility in the nation to integrate ISO 14001: 2004 Certification within the BTG initiative. The certification comprises the implementation of an international set of standards designed to manage environmental issues, within the BTG initiative. For this effort, we were honored by the Association of Metropolitan Water Agencies (AMWA) with the 2004 Gold Award for Competitiveness Achievement.

In this report, you will also read about how we continue to improve our water operations and distribution systems through our Capital Improvements Program (CIP). It also addresses our ongoing efforts to protect the environment through watershed and source water protection, water conservation, and storm water pollution prevention.

Our top priority is providing quality water to all of our customers, and this report demonstrates our commitment to this. If you have any questions about this report, or water quality in the City of San Diego, please contact our Public Information Office at (619) 527-3121, or visit us on the web at www.sandiego.gov/water.

Sincerely,

Frank Belock, Jr. Director, City of San Diego Water Department

Our Water Supply

Why is There Anything in My 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. Water can also pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source waters 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, that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- **Pesticides, herbicides and fungicides**, which may come from a variety of sources such as agriculture, urban runoff, and residential uses.

- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.

In order to ensure that tap water is safe to drink, the CDHS prescribes regulations which limit the amount of certain contaminants in the water provided by public water systems. The City of San Diego's Water Department treats water according to the CDHS regulations. The CDHS Food and Drug Branch regulations establish limits for contaminants in bottled water which must provide the same protection for public health as tap water. For information log onto the CDHS website at: www.dhs.ca.gov/fdb.



Our Source Water

Source water is untreated water from streams, rivers, lakes, or underground aquifers which is used to supply public drinking water.



Watersheds and Reservoirs

The City of San Diego has nine drinking water reservoirs: Barrett, El Capitan, Hodges, Miramar, Morena, Murray, Otay, San Vicente, and Sutherland. These reservoirs capture local rainwater and runoff to supply up to 20 percent of the City's water. The reservoirs are important components of the regional water supply system. However, the quality of water stored in these reservoirs can be negatively impacted by residential and commercial development and routine activities in the watershed land areas that drain into them.

A watershed is an area of land that drains water (and everything collected in the water) to an outlet, typically a lake, river, bay or the ocean. Anyone visiting or occupying our local watershed areas should keep in mind that any chemicals, pesticides, animal waste, trash, soaps and detergents that are dumped onto the ground or into streams can affect our drinking water supply. San Diego residents can do their part to protect watershed areas and our drinking water supply by properly disposing of pet waste, chemicals and trash. The City of San Diego is also doing its part to protect watershed areas. We are using more energy efficient and pollutant free engines in the watercraft we use in our local reservoirs and have developed voluntary source water protection guidelines for new construction projects in our region. Additionally, we are taking the lead in the development of the San Dieguito Watershed Management Plan and establishing a watershed boundary signage program. For more information on watersheds and protecting our water supply, log onto the following websites:

- www.thinkbluesd.org
- www.projectcleanwater.org
- www.epa.gov/owow/watershed
- www.dhs.ca.gov
- map.sdsu.edu/group2001/group3/



Watershed Sanitary Survey

In 2001, the City of San Diego updated its Watershed Sanitary Survey. This survey examines the potential sources of contaminants in the watersheds draining to the nine reservoirs maintained by the City. The EPA requires that this survey be completed once every five years. The Executive Summary of the document can be obtained by contacting the Water Department's Public Information Office at (619) 527-3121. The complete Watershed Sanitary Survey is available on CD-ROM (free of charge) and the Executive Summary can be found on our website at www.sandiego.gov/water. We encourage all San Diegans to take an active role in supporting pollution prevention programs in their communities and to learn more about protecting their local sources of water.

Drinking Water Source Assessment Program

Out of the nine reservoirs, there are five primary reservoirs and one groundwater well that directly supply water to our three water treatment plants. Federal and state regulations require the preparation of source water assessments for each of these sources. The California Department of Health Services (CDHS) is mandated to do this work; however, the Water Department volunteered to assist CDHS by completing the assessments.

The Drinking Water Source Assessments for El Capitan, Miramar, Murray, Otay, and San Vicente Reservoirs were completed in June 2002. The assessment for El Cajon Well was completed in February 2003. To receive copies of the assessments, call the Public Information Office at (619) 527-3121 or send an email to water@sandiego.gov.

For a more comprehensive description of the source waters supplying our treatment plants, including Watershed Sanitary Surveys and Source Water Protection Guidelines, log on to www.sandiego.gov/water.



El Capitan watershed and reservoir.

Storm Water Protection

Storm water pollution is a problem that affects all of us. Keeping our waters clean from pollutants has become increasingly difficult. When it rains, water flows over our streets and yards and carries the pollutants it picks up into our storm drains, polluting our watersheds and beaches.

WHAT ARE STORM DRAINS?

Storm drains are not connected to the sewer system so water that runs into storm drains flows into our beaches and bays untreated. The City of San Diego's Storm Water Pollution Prevention Program is leading the way to cleaner recreational waters. The City of San Diego Water Department is doing our part, and we've begun changing our procedures and utilizing new equipment to protect storm drains and water ways during planned and unplanned water discharges. This equipment includes sweepers used to clean the streets at Water Department facilities and on public streets after water main breaks.

HOW CAN YOU HELP?

You can be a part of the solution and stop pollutants from entering our storm drain system by following these five simple Best Management Practices (BMPs):

- Sweep-up or wet-mop. Do not use a water hose to clean your driveways, sidewalks, curbs and gutters.
- Litter is not harmless. Sweep-up trash and debris near your home before it gets washed into the storm drain. Be a part of the solution.
- Pick-up after your pets. Animal waste contributes to beach closures.
- Have the sewer lateral at your home inspected for cracks or blockages. Sewage spills enter the storm drain conveyance system and close beaches.
- Don't feed the birds at local parks, beaches and lakes. Nature provides what they need in abundance.

Remember, what you leave behind can potentially be discharged into the storm drain.

For more information about the Storm Water Pollution Prevention Program or to report illegal discharges into the storm drain system, please call (619) 235-1000 or log onto www.thinkbluesd.org. For information on water conservation, log onto www.sandiego.gov/water/conservation.



Our Water Treatment Process

As the first few pages of the report explain where water comes from and the contaminants within, these next four pages describe our treatment process and lab results for removing contaminants from your drinking water.

San Diego uses a water treatment process similar to other large water utilities around the nation. The process produces safe drinking water by removing potentially harmful organisms and substances both in the water and attached to particles in the water.

Raw water, whether from our reservoirs or outside sources, is disinfected with chlorine to kill disease-causing organisms and to remove disagreeable tastes and odors.

Particles in the water have negative electrical charges and repel each other. To remove them, positively charged chemicals, ferric chloride and organic polymer, are mixed with the water to neutralize the negative charges and allow clumps of particles to form. The clumps then settle out or are filtered out of the water.

Ammonia is added to the water after filtration to react with chlorine to produce chloramines. Chloramines are used to continue disinfecting the water throughout the distribution pipelines so that it remains safe to drink when it reaches the consumer's tap. Sodium hydroxide is added to the water to protect pipes, plumbing fixtures and appliances from corrosion (rust).



Our 2004 Water Quality Data

How do I Read the Tables?

The tables on the following pages list contaminants which: 1) have associated Primary Maximum Contaminant Levels (MCLs) that are regulated and 2) were detected by the City of San Diego's Water Quality Laboratory. Contaminants were detected at or above the CDHS Detection Limits for Purposes of Reporting (DLRs) during the calendar year 2004. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants in the drinking water does not necessarily indicate that the 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 or by visiting the EPA's website at www.epa.gov/safewater/hfacts.html. California action levels are available on the CDHS website www.dhs.ca.gov/ps/ddwem/index.htm. Unless otherwise noted, the data presented in these tables are from testing done January 1 through December 31, 2004.

NOTE: The State CDHS 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, though representative of the water quality, are more than one year old.

- **TABLE I** lists all the regulated contaminants with Primary MCLs that the City
of San Diego's Water Quality Laboratory detected in the drinking
water at or above the California Department of Health Services
(CDHS) Detection Limits for Purposes of Reporting (DLRs).
- **TABLE 2** is a listing of regulated contaminants with Secondary MCLs

 that were detected at or above the CDHS DLR for each analyte.
- **TABLE 3** is a listing of detected unregulated contaminants thatwere detected at or above the CDHS DLR for each analyte.Unregulated contaminant monitoring helps the EPA and theCDHS to determine where certain contaminants occur andwhether the contaminants need to be regulated.
- **TABLE 4** is a listing of disinfection residuals and disinfection by-products that were detected.

Glossary of Terms

Important Health Effects Language

The following information is provided on the contaminants that are listed in Tables 1 through 4 that were detected at or above the California CDHS Detection Limit for Reporting (DLR). This information describes the potential health affects of drinking water that contains the contaminant at levels above the federal MCL.

Detected Contaminants

BARIUM: Some people who drink water containing barium in excess of the MCL over many years may experience an increase in blood pressure. (see Table 1)

BORON: Some men who drink water containing boron in excess of the action level over many years may experience reproductive effects. This information is based on animal studies. (see Table 3)

CHLORAMINES: Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort. (see Table 4)

COPPER: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years may suffer liver or kidney damage. People with Wilson's Disease should consult with their personal doctor. (see Table 1)

TOTAL COLIFORM BACTERIA: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present. (see Table 1)

FECAL COLIFORM AND *E. COLI*: Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems. (see Table 1)

FLUORIDE: Some people who drink water containing fluoride in excess of the federal MCL of 4 mg/L over many years may get bone disease, including pain and tenderness of the bones. Children who drink water containing fluoride in excess of the state MCL of 2 mg/L may get mottled teeth. Currently, all of the fluoride in our drinking water is naturally occurring. The City of San Diego does not add fluoride to its drinking water. (see Table 1)

GROSS ALPHA PARTICLE ACTIVITY: Certain materials are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer. The City of San Diego is required to analyze for radioactive contaminants every four years. (see Table 1)

GROSS BETA PARTICLE ACTIVITY: Certain materials are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer. The City of San Diego is required to analyze for radioactive contaminants every four years. (see Table 1)

HALOACETIC ACIDS: Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. (see Table 4)

LEAD: Infants and children who drink water containing lead in excess of the action level may experience delays in their physical or mental development. Children may show slight deficits in attention span and learning abilities. Adults who drink this water over many years may develop kidney problems or high blood pressure. The City of San Diego's service lines do not contain lead and our testing reflects that. If you reside in an older home, lead solder may have been used in the pipes which could affect the lead content in your drinking water. Visit the

American Water Works Association website at www.awwa.org for information on research studies. (see Table 1)

RADIUM 228: Some people who drink water containing radium 228 in excess of the MCL over many years may have an increased risk of getting cancer. (see Table 1)

TOTAL ORGANIC CARBON (TOC): TOC has no health effects. However, TOC provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAA5). Drinking water containing these by-products in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer. (see Table 4)

TOTAL TRIHALOMETHANES (TTHMS): Compliance with the MCL regulation for TTHMs are based on the running average of samples collected over the entire year. An individual sample greater than $80 \ \mu g/L$ does not constitute a violation of the MCL. Some people who use water containing TTHMs in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer. (see Table 4)

TURBIDITY: Turbidity is the cloudiness of the water. Turbidity has no health effects. However, high levels of turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches. (see Table 1)

URANIUM: Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity. The City of San Diego is required to analyze for radioactive contaminants every four years. (see Table 1)

Measurement Terms

CORROSIVITY: The corrosivity of a sample is measured by the Langlier Stability Index. A positive index, indicating non-corrosivity, was maintained at all plant effluents.

CSD WQL MDL: City of San Diego Water Quality Laboratory Method Detection Limit. Lowest quantifiable concentration of a measured analyte detectable by the Laboratory.

INFORMATION COLLECTION RULE (ICR): A special data-gathering program administered by the EPA to guide future regulatory and public health decisions on pathogens, disinfectants, and disinfection by-products in drinking water.

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 or technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

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 EPA.

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. MRDLs are set by the United States EPA.

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 EPA.

REGULATORY ACTION LEVEL (AL): The concentration of a contaminant which, when exceeded, triggers treatment or other requirements that a water system must follow.

TREATMENT TECHNIQUE (TT): A required process intended to reduce the level of a contaminant in drinking water.

TABLE 1 – DETECTED REGULATED CONTAMINANTS WITH MCLs

Primary Standards (Mandatory Health Related Standards) – CHEMICAL CONTAMINANTS

						TREATMEN	IT PLANT EFF					
			PHG	CDHS	ALVA	RADO	MIRA	MAR	ОТ	AY	YEAR	TYPICAL SOURCE OF
CONTAMINANT	UNITS	MCL	(MCLG)	DLR	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	SAMPLED	CONTAMINANTS
Fluoride	ppm	2	1	0.1	0.245	0.208 - 0.321	0.264	0.205 - 0.369	0.295	0.231 - 0.369	2004	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Barium	ppb	1000	N/A	100	ND	ND - 102	ND	ND	ND	ND	2004	Discharge of oil drilling wastes and from metal refineries; erosion of natural deposits
Iron	ppb	300	N/A	100	ND	ND	ND	ND - 131	ND	ND - 170	2004	Leaching from natural deposits; industrial waste

Primary Standards – MICROBIOLOGICAL IN THE DISTRIBUTION SYSTEM

			PHG	CSD	DISTRIBUTION SYSTEM AVERAGE RANGE		YEAR	TYPICAL SOURCE OF Contaminants	
CONTAMINANT	UNITS	MCL	(MCLG)	MDL			SAMPLED		
Total Coliform Bacteria	/100	< 5% P	(0)	A	0.36%	ND – 1.5%	2004	Human and animal waste	
Total <i>E-coli</i> Positive Violation Information: <i>E-coli</i> was detected at one downstream resampling site following a Total Coliform Positive routine sample. Resamples after removing a hose sampling tee did not contain <i>E-coli</i> .									
<i>E-coli</i> Bacteria	/100	*		А	Number of <i>E. coli</i> positive samples in 2004 = 1 2004 Human and animal wa				

* See "Facts About Total Coliform Bacteria and E. coli Bacteria," page 11.

Primary Standards (Mandatory Health Related Standards) – RADIOACTIVE CONTAMINANTS

						TREATMEN	IT PLANT EFF					
			PHG	CDHS	ALVA	RAD0	MIR	AMAR	01	AY	YEAR	TYPICAL SOURCE OF
CONTAMINANT	UNITS	MCL	(MCLG)	DLR	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	SAMPLED	CONTAMINANTS
Gross Beta Particle Activity	pCi/L	50	N/A	4	ND	ND – 6.25	ND	ND – 6.55	ND	ND – 4.45	2002	Decay of natural and manmade deposits
Gross Alpha Particle Activity	pCi/L	15	N/A	3	3.32	2.86 - 3.82	4.01	3.08 – 5.19	3.40	2.84 – 3.99	2002	Erosion of natural deposits
Radium 228	pCi/L	2	N/A	0.5	0.73	ND – 1.44	0.93	ND – 1.72	1.14	0.57 – 1.90	2002	Erosion of natural deposits
Uranium	pCi/L	20	0.5	2	3.40	2.55 – 4.51	3.42	3.31 – 3.71	3.58	2.49 - 4.89	2002	Erosion of natural deposits

SODIUM, HARDNESS, TURBIDITY

							TREATMEN	T PLANT EFF					
			PHG	LEVEL	CSD	ALVARADO		MIRAMAR		OTAY		YEAR	TYPICAL SOURCE OF
CONTAMINANT	UNITS	MCL		FOUND		AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	SAMPLED	CONTAMINANTS
Sodium	ppm	N/A	N/A	N/A	5	78.3	65.7 - 89.9	76.6	67.2 - 88.2	80.9	62.1 - 93.2	2004	Naturally present in the environment
Total Hardness	ppm	N/A	N/A	N/A	2	232	217 - 271	231	220 - 257	226	211 - 271	2004	Naturally present in the environment
Total Hardness	gr/Gal	N/A	N/A	N/A	0.117	13.5	12.6 - 15.8	13.4	12.8 - 14.9	13.1	12.3 - 15.8	2004	Naturally present in the environment
Turbidity	NTU	TT=1NTU	N/A	1 NTU	0.07	0.08	0.07 - 0.09	0.1	0.09 - 0.11	0.11	0.08 - 0.15	2004	Soil runoff
	TT		, of samp	les <0.3	NTU								

Primary Standards (Mandatory Health Related Standards) – AT THE TAP CONTAMINANTS – LEAD AND COPPER RULE

					DISTRIB	UTION SYSTEM CONCENT			
			PHG	CDHS	90th PERCENTILE	NUM	IBER	YEAR	TYPICAL SOURCE OF
CONTAMINANT	UNITS	MCL	(MCLG)	DLR	CONCENTRATION			SAMPLED	CONTAMINANTS
Copper	ppm	AL = 1.3	0.17	0.050	0.346	52	0	2002	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	ppb	AL = 15	2	5	ND	52	0	2002	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

TABLE 2 – DETECTED REGULATED CONTAMINANTS WITH SECONDARY MCLs (SMCL)

Secondary Standards – CHEMICAL CONTAMINANTS

TREATMENT PLANT EFFLUENT CONCENTRATION **ALVARADO** MIRAMAR OTAY CA PHG CSD YEAR **TYPICAL SOURCE OF** CONTAMINANT UNITS SMCL MCL (MCLG) MDL AVERAGE RANGE AVERAGE RANGE AVERAGE RANGE SAMPLED **CONTAMINANTS** CU Color 15 N/A N/A 4 17 3.08 ND – 5 ND – 7 2004 Naturally occurring organic 1 1 - 73.75 materials Corrosivity N/A N/A 0.74 0.26 - 1.040.519 0.31 - 0.830.739 0.42 - 1.102004 Natural or industrially-_ _ corrosive influenced balance of hydrogen, carbon and oxygen in water. A positive index hon indicates that the water is non-corrosive. Foaming Agents ppm 0.5 0.5 N/A 0.05 ND N/A 0 14 N/A ND N/A 2004 Municipal and industrial waste (Detergents) discharges ND Odor - Threshold 00 N/A N/A ND – 1 ND ND 2004 Naturally occurring organic 3 1 1 1 materials Turbidity NTU 5 5 N/A 0.07 0.08 0.07 - 0.090.10 0.09 - 0.110.11 0.08 - 0.152004 Soil runoff Total Dissolved N/A N/A 460 - 577 467 - 666 1.000 10 523 481 - 596 514 519 2004 Runoff/leaching from natural ppm Solids deposits Specific N/A 846 - 1,010 822 - 993 790-1,010 2004 Substances that form ions µmhos/ 1,600 N/A N/A 930 906 920 Conductance when in water: seawater cm influence Chloride 500 N/A N/A 0.5 89.5 81.9 - 98.7 87 2 785-944 937 82.2 - 106 2004 Runoff/leaching from natural ppm deposits; seawater influence Sulfate N/A N/A 0.5 170 152 - 235 172 151 - 217 157 129 - 235 2004 Runoff/leaching from natural ppm 500 deposits; seawater influence

TABLE 3 – DETECTED UNREGULATED CONTAMINANTS UNREGULATED CONTAMINANTS REQUIRING MONITORING

				TREATMENT PLANT EFFLUENT CONCENTRATION							
		ACTION	CDHS	ALVA	RADO	MIRA	MAR	01	TAY	YEAR	
CONTAMINANT	UNITS	LEVEL	DLR	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	SAMPLED	
Boron	ppb	1000	100	118	117 – 118	ND	ND – 130	119	116 – 122	2004	

TABLE 4 – DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS AND DISINFECTION BY-PRODUCTS PRECURSORS Primary Standards (Mandatory Health Related Standards) – CHEMICAL CONTAMINANTS

						TREATMEN	T PLANT EFF					
		MCL MO	MCLG	CSD WQL	ALVA	ALVARADO		MIRAMAR		AY	YEAR	TYPICAL SOURCE OF
CONTAMINANT	UNITS	MRDL	MRDLG	MDL	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	SAMPLED	CONTAMINANTS
Disinfectant Residual [Chloramines]	ppm	4	4	0.1	2.5	1.39 – 3.0	2.5	1.32 – 2.94	2.5	1.72 – 3.4	2004	Drinking water disinfectant added for treatment
Total Organic Carbon [TOC]	ppm	N/A	N/A	0.25	3.03	2.09 - 6.86	2.50	2.23 – 3.94	3.75	2.01 – 6.49	2004	Various natural and manmade sources
Total Trihalomethanes [TTHMs]	ppb	80	N/A	0.2	HIGHEST DISTRIBUTION SYSTEM RUNNING AVERAGE RANGE = 28.4 - 108.0 = 61.5						2004	By-product of drinking water chlorination
Haloacetic Acids [HAA5]	ppb	60	N/A	0.5	HIGHEST DISTRIBUTION SYSTEM RUNNING AVERAGE RANGE = 12.7 - 55.7 = 25.375						2004	By-product of drinking water disinfection

NOTE : Total Trihalomethane and HAA5 compliance is based on a flow weighted system wide average. Reported values reflect City-wide results.

Abbreviations

A: Absent AL: Action Level CDHS: California Department of Health Services CSD WQL MDL: City of San Diego Water Quality Laboratory Method Detection Limit CU: Color Units DLR: Detection Limit for Reporting gr/Gal: Grains per Gallon MCL: Maximum Contaminant Level MCLG: Maximum Contaminant Level Goal MDL: Method Detection Limit

- N/A: Not applicable
 ND: Not detected
 NTU: Nephelonmetric Turbidity Units
 OU: Odor Units
 P: Present
 pCi/L: picocuries per liter (a measure of radiation)
 PDWS: Primary Drinking Water Standard
 PHG: Public Health Goal
 ppb: parts per billion or micrograms per liter (µg/L) [1 ppb = 1,000 ppt]
 ppm: parts per million or milligrams per liter (mg/L) [1 ppm = 1,000 ppb]
- ppt: parts per trillion or nanograms per liter (ng/L) – [1 ppt = 0.001 ppb]
 Sample Year: This column is to record the last time a contaminant was analyzed.
 TOX: Total Organic Halides
 TT: A required treatment technique process intended to reduce the level of a contaminant in drinking water.
 µg/I: micrograms per liter (ppb)
 µmhos/cm: measurement of conductivity
 < Less than
- > Greater than

Your Water, Your Health, Our Priority

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised people, such as people with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and Giardia and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (800) 426-4791. During calendar year 2004, the City of San Diego analyzed all of our source waters for Cryptosporidium and Giardia. We detected <u>no</u> Giardia cysts or Cryptosporidium oocysts in any of our source water monthly samples.



Water Quality In The News

The City of San Diego Water Department routinely collects and tests water samples to ensure the safety of our drinking water. Samples are tested for Primary (health-related) Maximum Contaminant Levels (MCLs). In November 2004, the City exceeded the Total Coliform Rule MCL. In January 2005, the California Department of Health Services (CDHS) issued a citation to the Water Department for the MCL violation and for failing to notify CDHS within the required 24-hour period.

Although this incident occurred in the Fall of 2004, we want you to know what happened and what we've done to correct this situation. And, we want you to know that our goal is to continually improve our methods and procedures for monitoring water quality in our system.

The incident began on November 8, 2004, when a routine water sample collected on Desert View Drive in La Jolla tested positive for total coliform bacteria* (see page 11). A single positive sample is not an MCL violation, nor is it necessarily an indication of problems in the water system. The Federal and State laws allow for up to 5% of all samples to test positive for total coliform occurrences. However, whenever total coliforms are detected, the law requires that repeat samples be taken at nearby locations. Consistent with this requirement, repeat samples were taken on November 10 and November 12.

The November 12, 2004, repeat sample collected on Desert View Drive, was found to contain *E. coli** (see page 11), a form of

coliform bacteria. This sampling result triggered the primary MCL violation. Because repeat samples taken along Desert View Drive on November 13, 2004, and 467 other samples taken from throughout the water distribution system in November did not contain *E. coli*, and because all samples had good disinfectant levels, the Water Department suspected a sampling error had occurred and failed to report the positive *E. coli* test to CDHS within the required timeframe. Based on this premise, the Water Department reported the positive test to CDHS as part of a monthly report, instead of reporting it within 24-hours as required by state law.

On January 4, 2005, the CDHS cited the Water Department for the MCL violation and for failing to notify CDHS within the required 24-hour period. The citation directed the Water Department to publish a public notification in *The San Diego Union-Tribune* and to mail a notice to all residents within the City. The Water Department has taken all the necessary steps to comply with the citation. And further, repeated samples and more comprehensive sampling did not detect any *E. coli* after this one instance, which concurs with the fact that we did not receive any reports of adverse health affects directly associated with this event.

We regret that this incident occurred and for the resulting citation. We want to assure you that all necessary precautions have been taken to meet our goal of maintaining a healthy and safe water supply. If you have questions, or would like additional information on this incident, please contact our Public Information Office at (619) 527-3121.

Backflow Program Update

In 2004, the California Department of Health Services (CDHS) issued the City of San Diego Water Department a Citation for Non-Compliance regarding the City's failure to properly implement an adequate cross connection prevention program. A program that meets all existing State requirements regarding the installation and maintenance of backflows helps ensure that the City's drinking water system is not subject to backflow contamination (backflow often occurs under atypical conditions).

Foremost, the City failed to ensure that all backflow prevention devices were tested annually as required by Title 17 of the Code of Regulations. Backflow contamination may occur when non-potable substances enter the public drinking water distribution system as a result of a reversal of flow through a service connection. Backflow prevention devices are mechanical devices designed to prevent such a reversal of flow. While no evidence exists that an actual backflow contaminiation event occurred, either in system test results or reports from customers, the City Water Department recognizes that a strong cross connection program is critical in preventing contamination of the drinking water system as a result of backflow. In cooperation with the California Department of Health Services, the City has taken aggressive steps to correct the procedural, operational and systemic deficiencies that led to the citation. The Water Department acknowledges this error and is committed to maintaining a fully compliant program in the future.

*Facts about Total Coliform Bacteria and E. coli Bacteria

Water agencies test for the presence of coliform bacteria, including *E. coli*, as an indicator of drinking water quality. Coliform bacteria are common in the environment and are generally not harmful. Coliform bacteria may occur in soil, vegetation, animal waste or feces, sewage, and surface waters.

Fecal coliform bacteria, including *E. coli* (short for *Escheriachia coli*) are a sub-group of coliforms whose presence indicates that the water may be contaminated with human or animal wastes. These microbes can cause gastrointestinal illness leading to diarrhea, cramps, nausea, headaches, or other symptoms. People with severely compromised immune systems, infants, and some elderly also may be at greater risk.

Water agencies routinely test for the presence of any coliform bacteria (called the total coliform test) as an indicator of the sanitary quality of drinking water. The test for *E. coli* is used as an indicator of potential contamination from animal wastes or sewage that may have made its way into the water system. A positive coliform or *E. coli* test result does not necessarily mean a maximum contaminant level (MCL) has been exceeded, or that there is a problem in the water system. More information and general guidelines on ways to lessen the risk of infection by microbes are available from the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791 or at www.epa.gov/safewater/dwh/health.html.

WHY MIGHT MY WATER TASTE OR SMELL FUNNY?

Occasionally, water suppliers experience episodes of unpleasant tastes and odors in their water, often characterized as "musty" or "earthy." These taste and odor variations are caused by naturally occurring algae growth in the raw source waters. In San Diego, algae are occasionally found in the source water reservoirs and aqueducts that supply water to the City. These algae may seasonally produce trace amounts of taste and odor chemical compounds. The taste and odor compounds do not pose any health risks to the people using the water. The City of San Diego Water Department closely monitors our source waters for algae growth and, when possible, will switch to a different water source to avoid problems from unpleasant tastes and odors.

What are Chloramines?

Chloramines are a type of disinfectant that the Water Department uses to prevent re-growth of potentially harmful bacteria in the water distribution system. Chloramines are a combined form of chlorine and ammonia. They are approved by the Environmental Protection Agency (EPA) as a disinfectant for drinking water, and have been used safely for years. Chloraminated water is safe to drink because the digestive process neutralizes the chloramines before they enter the bloodstream. Chloraminated water is also safe for all other daily uses, such as bathing and cooking. In addition, the treatment process that uses chloramines produces fewer disinfection by-products, such as trihalomethanes.

Special Exceptions (Kidney Dialysis/Aquariums)

Customers who have unique water quality needs and who use specialized home treatments, such as kidney dialysis machines, should make the necessary adjustments to remove chloramines. Like chlorine, chloramines are toxic in dialysis water. Customers who have fish tanks in their homes should also take precautions to remove chloramines prior to adding water to tanks. Effective treatments include using granularactivated carbon filters or using chemicals specifically designed to remove chloramines. Allowing drinking water to stand, boiling water, and chemicals that remove only chlorine, will not remove chloramines.

Our Work Creating a Safe and Reliable Water Supply

Our Vision

To be a "Best-in-Class" water utility for our customers.

Our Mission

To provide San Diego with Safe, Reliable, Cost-Effective Water and Outstanding Customer Service in an Environmentally Sensitive Manner.

The Capital Improvements Program (CIP)

The adoption of the Strategic Plan for Water Supply in 1997 kicked off the Water Department's Capital Improvements Program (CIP). Its mission called for the development of the criteria for what the City must repair, replace, upgrade and expand to keep the water system running. This criterion evolved into a comprehensive priority list that is the backbone for the successful completion of more than 40 projects, the on-going construction of 15, an additional 18 projects in design, and 21 already identified for future construction activities. More than \$871,400,337 has gone towards the successful completion of CIP projects.



One critical component of CIP includes the replacement of cast iron pipelines throughout the City. Out of 160 miles of cast iron water pipes, the Water Department has replaced 87 miles, some of which had been in service for over 100 years. For more information on a specific water pipeline replacement program in your neighborhood, contact the Group Job Hotline at (858) 573-5081.

Following is a list of completed pipeline projects:

- Black Mountain Ranch Gap Reclaimed Water Pipeline
- Black Mountain Road Pipelines
- Bonita Pipeline Phase II
- Copley Drive Reclaimed Water Pipeline
- Encanto Park Pipeline
- Miramar Road Water Transmission Pipeline
- Reclaimed Waterline Extension Group 2
- Redwood Village Standpipe Phase I & II
- Science Center Drive Reclaimed Water Pipeline
- South San Diego Pipeline No. 2
- Town View Lane Pipeline

Pump stations located throughout the City help transport water from water treatment plants to storage reservoirs and ultimately to customers. CIP has completed work on the following pump station projects:

- 65th & Herrick Water Pump Station
- Bayview Water Pump Station Replacement
- Canyonside Reclaimed Water Pump Station
- Catalina Water Pump Station
- Deerfield Water Pump Station
- Del Cerro Highlands Water Pump Station
- Ocean View Hills Parkway Water Pump Station
- Waring Road Water Pump Station

Improving the reliability of any water system almost always includes improvements to existing reservoirs and the construction of new storage tanks. Since its inception, CIP has completed work on the following reservoirs:

- Bayview Reservoir Replacement
- Del Cerro Reservoir Rehabilitation
- Earl Thomas Reservoir
- La Jolla Country Club Reservoir Emergency Project
- Peñasquitos Reservoir Upgrade
- Point Loma Reservoir Rehabilitation
- San Carlos Reservoir Rehabilitation
- Scripps Ranch Reservoir
- Soledad Reservoir Rehabilitation

Perhaps the greatest achievement of the Water Department's CIP to date has been its commitment to expand and upgrade the City's three water treatment plants in order for San Diego to keep up with the demand from the City's growing population. From the start of construction, CIP has successfully maintained the Alvarado, Miramar, and Otay Water Treatment Plants as fully operational, delivering clean, safe water to all of San Diego's 1.3 million residents. Once all upgrades are complete the treatment plants will have the capacity to treat up to 455 million gallons a day (mgd), that's an increase of 155 mgd. Work on the treatment plants continues to move forward with several years left on each construction contract.

As of mid-December 2004, the Water Department has ceased awarding new contracts for the CIP program so that the City does not obligate itself to contracts it may not be able to fully fund without additional financing. The Water Department will continue work on the vital water treatment plants and major pipelines in Fiscal Years 2005 and 2006 that are pursuant to existing phase funded contracts. Due to the lack of current published financial statements and the completion of related audits and investigations, the Water Department is unable to secure bonds for new projects. For more information on CIP projects, call (619) 533-4679.

PUBLIC HEALTH GOALS REPORT

The California Health and Safety Code mandates that a Public Health Goal Report be prepared every three years for water utilities with more than 10,000 service connections. Established by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment, public health goals are non-enforceable goals that are based solely on public health risk consideration. The report is intended to provide information to the public on the water utility's compliance with health-based drinking water standards and maximum contaminant levels (MCLs) set by the California Department of Health Services and the United States Environmental Protection Agency.

All of the water quality data collected by our water system from 2001 to 2003 for determining compliance with drinking water standards were considered for this report. Copies of the latest report and additional information concerning water quality and our Water Department may be viewed at www.sandiego.gov/water.

Recycled Water

Every gallon of recycled water used to irrigate crops or landscaping means a gallon of water will be saved for potable uses. Recycled water gives San Diego a year-round, locally controlled additional water resource.

To meet future water demands, the City of San Diego has built the North City Water Reclamation Plant and the South Bay Water Reclamation Plant. The North City Plant has the capability to treat 30 million gallons a day and the South Bay Plant can treat 15 million gallons a day. These plants treat wastewater to a level that is approved for irrigation, manufacturing and other non-drinking, or non-potable purposes.

More than 7.5 billion gallons of recycled water have been beneficially used since 1997. Recycled water is delivered to and through a completely separate distribution system that includes more than 70 miles of pipeline, 2 storage tanks and 3 pump stations. Currently, the system provides recycled water to approximately 350 customers. All pipes and fixtures using recycled water are easily identifiable by their purple color.

For more Recycled Water Program information, visit www.sandiego/gov/water or call (619) 533-7556.

WATER SECURITY

Keeping our water supply safe and secure is a top priority for the City of San Diego. Since the September 11 tragedy, the Water Department has been operating with heightened awareness and security to safeguard our water sources, water treatment plants, and water distribution system.

Throughout the past few years, several security measures have been implemented to protect our drinking water, including new fencing and guard posts at our major facilities. The majority of our new precautions, however, cannot be disclosed to the general public because we want to prevent



Did You Know...

More than half of the water used by San Diegans goes toward landscape irrigation? Help to conserve by using the *Landscape Watering Calculator*. The calculator is a free, easy-to-use, web-based tool that helps you estimate the amount of water your landscape or garden needs. The calculator uses averages that adjust for weather, plants and soils in San Diego. For more information and to access the calculator, please visit www.sandiego.gov/water.



DRINKING WATER FLUORIDATION

The State of California requires that water agencies serving more than 10,000 customers fluoridate their drinking water supplies if outside funding is provided. Presently, the City of San Diego has not received outside funding, therefore does not add fluoride to the water supply. The Metropolitan Water District of Southern California (the largest wholesaler of San Diego's imported water) has elected to begin fluoridating their drinking water supplies by December 2006. We will provide more information on the fluoridation of San Diego's water in the future.

those who might try to compromise the City's water treatment and distribution systems from having access to information about how we protect our water supply.

The Water Department also relies on you, the community, to be our eyes and ears, by staying alert and reporting any suspicious activity around Water Department facilities. Your safety is our priority, so please do not approach or confront strangers. Please report any suspicious activities to your local law enforcement agency and the Water Department immediately. Thank you for being part of our security team.

Our Commitment

We are Committed to Quality Customer Service

WHEN TRERE'S

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New Customer Service Web Pages

In an effort to improve service to our customers, we've created some interactive and helpful web pages. The new pages can be found at www.sandiego.gov/water/operations.

A few of the added features include:

What You Need to Know When There's a Loss of H20: A Guide to Water Emergencies

A brochure and video that provides information on the steps to respond to a water emergency, how to investigate smaller leaks, and important contact information.

Customer Satisfaction Survey

A blue or yellow rectangle door hanger is now provided after a crew has performed a requested service. The purpose of this door hanger is to obtain feedback from the customer on the quality of service they experienced. An electronic version is now available online.



New Water Operations Web Pages

Included is information about water leaks, emergencies, service door hangers, and how the Department strives to be environmentally friendly.

ISO 14001: 2004 Certification

The Water Operations Division has been certified by the International Organization for Standardization (ISO) 14001, for its world-class quality and environmental management standards.

The certification is the end result of the Water Department's efforts to provide quality customer service while being environmentally sensitive.

"This is a significant milestone," said Water Department Director Frank Belock, "It recognizes our commitment to continually improve our performance in respect to quality service and environmental responsibility."



The San Diego Water Department is the second water utility in the nation to achieve this certification.

Customer Advocate

The Water and Metropolitan Wastewater Departments will soon be adding a Customer Advocate. This person will help resolve billing issues, work with the public on ways the two Departments can improve their programs and services, and help with educational outreach. The new Customer Advocate will be available beginning August 1, 2005.

Striving for Excellence

Association of Metropolitan Water Agencies 2004 Gold Award for Competitiveness Achievement

Recognized for Bid To Goal, a five-year performance-based management plan to improve services and become a "Best-in-Class" utility.

California Municipal Utilities Association 2004 Community Service/Resource Efficiency Award

For developing and implementing innovative and comprehensive approaches to water conservation public outreach and education.

American Society of Civil Engineers Award of Merit Canyonside Recycled Water Pump Station

Canyonside Recycled Water Pump Station delivers recycled water to golf courses and other recycled water customers in the City.

American Society of Civil Engineers Award of Merit Earl Thomas Reservoir at Alvarado Treatment Plant

Largest pre-stressed concrete reservoir in the world holds 35 million gallons of drinking water.

2004 Governor's Environmental and Economic Leadership Certificate of Recognition

In partnership with the San Diego Natural History Museum, the City was recognized for the Ms. Frizzle "World of Water" program.

American Society of Civil Engineers Award of Excellence Catalina Water Pump Station

The Catalina Water Pump Station replaced outdated facilities to increase reliability and efficiency in our water distribution system.

Household Lead and Copper Testing Program - A Call for Volunteers

If your house was built between the 1983-1987 and has copper plumbing, you may be eligible to participate in the Lead and Copper Testing Program. Every three years, lead and copper is tested at a limited number of households located within the City boundaries. We are accepting a limited number of additional households for testing. If you are interested in participating in this program for Summer 2005 and meet the stated requirements, please call the Water Quality Lab at (619) 668-3232.

Speakers Bureau Program

The Water Department offers a Speakers Bureau program that provides water-related information to the community. You can request a speaker for your business, civic or social group to discuss water conservation, water reuse, quality and treatment, reclamation or our Capital Improvements Program by contacting the Speakers Bureau Coordinator at (619) 533-6638 or via email at waterspeakers@sandiego.gov.

Water Reuse Study 2005

City of San Diego Water Department is researching opportunities to expand the use of recycled water in the City.

Did you know?

- Currently, more than 90 percent of the City's water supply is imported from hundreds of miles away.
- Even with continued conservation measures, by 2030, San Diego could need 25 percent more water than is used now.
- Water recycling diversifies the City's water supply by creating an additional source of water.

City recycled water customer site.



Find more information at www.sandiego.gov/waterreusestudy.

HOW CAN I GET MORE INFORMATION ABOUT MY WATER?

The Public Utilities Advisory Commission (PUAC) holds monthly meetings (the 3rd Monday of each month) to discuss water issues facing the City of San Diego Water Department. The public is welcome to attend and give input. Simply call the PUAC's support line at (619) 236-6750 for information about meeting location, dates and times.

Printed on recycled paper. This information is available in alternative formats upon request. (Printed June 2005)



Important Phone Numbers

General Information	(619) 515-3500
Emergency Hotline	(619) 515-3525
Water Quality Lab	(619) 668-3232
Capital Improvements Program	(619) 533-4679
Group Job Hotline	(858) 573-5081
Water Conservation	(619) 515-3500
City Lakes Fishing Line	(619) 465-3474
Speakers Bureau	(619) 533-6638
EPA's Drinking Water Hotline	(800) 426-4791
Storm Water Pollution Prevention	(619) 235-1000
Public Information Office	(619) 527-3121
	(019) 521-5121

Important Web Links

City of San Diego	www.sandiego.gov
California Department of Health Services (CDHS) www.dhs.ca.gov
California EPA	www.calepa.ca.gov
EPA (Groundwater and Drinking Water)	www.epa.gov/safewater
Think Blue	www.thinkbluesd.org
County of San Diego	www.co.san-diego.ca.us
Project Clean Water	www.projectcleanwater.org
San Diego County Water Authority	www.sdcwa.org
Metropolitan Water District of Southern Californ	ia www.mwd.dst.ca.us
Annual Drinking Water Quality Report 2004 • Proj	ject Manager • Tedi Jackson

To reach the Water Department via email: water@sandiego.gov

This report meets mandatory federal and state requirements for annual customer notification regarding water quality. It was produced and mailed to residences and businesses in the City of San Diego Water Department's service area at a cost of 35 cents per copy. The direct mailing of this report allows us to provide virtually all of our customers with information they should have about drinking water standards and quality in a cost efficient manner.



Water Department Operations Division Public Information Office 2797 Caminito Chollas, MS 43 San Diego, CA 92105-5097 PRSRT STD U.S. POSTAGE PAID PERMIT NO. 134 SAN DIEGO, CA



2004 Annual Drinking Water Quality Report

This report contains important information about your drinking water. If the report is not available in your native language, speak with someone who understands it and can translate for you.

Este reporte contiene información importante sobre la calidad del agua en su comunidad. Copias en español de este reporte están disponibles si llama al (619) 527-3121. Tambíen encontrará este reporte por medio del internet en www.sandiego.gov/water. Ribootkani wuxuu xanbaar sanyahay warbixino muhiim ah oo ku saabsam biyaha aad cabtaan. Hadii aadan fahmeynin, Fadlan ribootka hala turjumo ama kala hadal ruux ku fahansiiya.

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

Chi tiết này thật quan trơng. Xin nhờ người dịch cho qúy vị. 比份有關你的食水報告,內有重要資料和訊息,請找 他人為你翻譯及解釋清楚。

이 안내는 매우 중요합니다. 본인을 위해 번역인을 사용하십시요.

«هذا أتقرير يحلوي على مطوماً ت مهامة تتعلق بعياه أشفة (أو أشريب). ترجع ألقرير , أو تكلم مع شفص وستطيع أن يفهم أنقرير."

