



WQR.13

City of Glendale Water & Power Water Quality Report for 2012

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER
The water delivered to you by Glendale Water & Power continuously passes tough State and Federal quality standards. This booklet is a detailed report on the water we delivered to you in 2012.



State and Federal Regulation

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

Customer Participation and Assistance

Comments from the public are welcome and may be presented at the Glendale Water & Power Commission meetings held the first Monday of each month, at 4:00PM, in the Glendale City Council Chambers, 613 E. Broadway. For questions or more information regarding the quality of your drinking water, please write to: Ray Notario, Principal Water Quality Specialist, Water Quality Section, Glendale Water & Power 141 N. Glendale Ave., Level 4, Glendale, CA 91206 or call (818) 548-3962. Starting next year this Water Quality Report will only be available on our website and will not be mailed to customers unless they request it. Each year a direct link to the report will be provided to customers so that they can download this report.

Dear Valued Customer,

The Glendale Water & Power Department (GWP) would like to take this opportunity to remind everyone that we provide our customers with high quality water and that we continue to strive to deliver water to your faucets reliably. The following report highlights GWP's significant water-related accomplishments and goals. Glendale Water & Power is focused on where to make investments to best manage the risks for our customers, what changes are necessary to improve the quality of water, and how improvements will be implemented to deliver water reliably. Some of our most recent accomplishments are listed below:

- During a recent regional outage of water delivery from The Metropolitan Water District (MWD), we avoided a mandatory water conservation due to the planning and efforts of our staff including the installation of a bypass connection from MWD for continuous water supply to our customers.

- We completed the issuance of a \$35 million water bond. These funds will be used on capital projects to make improvements to our water infrastructure, including main conveyance line replacement, relining of pipes and upgrades to our reservoirs.

- The reliability and availability of water has assisted our Fire Department in retaining its Class I rating. Our customers benefit from this as it results in lower property insurance rates in the City.

- The new GWP management team is also looking to reduce our dependency on purchased water by increasing the production of the City's groundwater reserves. We have identified two existing wells that will be rehabilitated in the next fiscal year as well as development of a new well all aimed at improving overall groundwater production. The new well is expected to be in full production within the next two years.

Water Quality Terms in This Report

Maximum Contaminant Level (MCL):

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

Maximum Contaminant Level Goal (MCLG):

The level of Contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (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 Environmental Protection Agency.

Primary Drinking Water Standard (PDWS):

MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Maximum Residual Disinfectant Level (MRDL):

The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG):

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Regulatory Action Level:

The concentration of a contaminant which, if 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. Common Contaminants in Drinking Water

Common Contaminants in 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. It can also pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic Contaminants, such as salts and metals that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and Herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.

Radioactive Contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

Explanation Regarding Contaminants

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)

DETECTED CONTAMINANTS AT GLENDALE'S WATER SOURCES

	Units	Noti- fication Level	State DLR [PHG]		MWD Weymouth Plant (n)	MWD Jensen Plant (n)	Glendale Treatment Plant (e)	Verdugo Park Treatment Plant	Glorietta Wells (e)	Foothill Well (r)	Major Sources of Contaminants in Drinking Water
CONTAMINANTS WITH NO MCLs											
Boron	ppb	1,000	100	Range	130	170	150 - 210	NA	NA	NA	Runoff/leaching from natural deposits; industrial wastes
				Average	130	170	180				
Chlorate (m)	ppb	800	20	Range	ND - 80		92 - 300	160 160	160 160	170 170	By-product of drinking water chlorination; industrial processes
				Average	66	ND	166				
Chromium 6	ppb	NS	1 [0.02]	Range	ND	ND	2.5 - 10.0	0.26 0.26	0.30 - 0.34 0.32	1.2 1.2	Industrial waste discharge ; could be naturally present as well
				Average			7.59 (i)				
N-Nitrosodimethylamine (NDMA)	ppb	0.01	0.002	Range	ND - 0.003	ND - 0.005	ND - 0.0031	NA	NA	NA	By-product of drinking water chloramination; industrial processes
				Average	ND	0.003	0.0027				
Vanadium	ppb	50	3	Range	ND	ND	4.0 - 13.0	NA	NA	NA	Naturally-occurring; industrial waste discharge
				Average			5.56				

LEAD AND COPPER RULE (g)

	Units	Action Level	PHG	No. of Samples	90th Percentile	No. of sites exceeding action level	Major Sources of Contaminants in Drinking Water
SAMPLES FROM CUSTOMERS' TAPS (COLLECTED EVERY 3 YEARS)							
Copper (h)	ppb	1300	170	54	430	0	Internal corrosion of household plumbing system; erosion of natural deposits; wood preservative leaching
Lead	ppb	15	0.20	54	ND	2	Internal corrosion of household plumbing system; discharges from industrial manufacturer; erosion of natural deposits

CITYWIDE SAMPLING

	Units	State MCL [MRDL]	MCLG [MRDLG]	Citywide Average	Range	Major Sources of Contaminants in Drinking Water
SAMPLES FROM DISTRIBUTION SYSTEM						
Total Coliform Bacteria	%	5.0 (f)	0	0.10	0 - 0.66	Naturally present in the environment
Fecal Coliform and E. Coli		(f)	0	0	0	Human and animal fecal waste
Total Trihalomethanes (TTHM) (j)	ppb	80	NS	16.6	5.6 - 76	By-product of drinking water disinfection
Halooacetic Acids (HAA5) (j)	ppb	60	NS	4.0	ND - 11	By-product of drinking water disinfection
Total Chlorine Residual	ppm	[4]	[4]	1.13	0.02 - 3.50	Drinking water disinfectant added for treatment
Bromate (u)	ppb	10	(0.1)	5.2 (q)	3.7 - 6.9	By-product of drinking water ozonation

WATER CONSTITUENTS OF INTEREST TO THE PUBLIC

	Units		MWD Weymouth Plant (n)	MWD Jensen Plant (n)	Glendale Treatment Plant (e)	Verdugo Park Treatment Plant	Glorietta Wells (e)	Foothill Well (r)
Alkalinity	ppm	Range	61 - 120	72 - 93	NA	200 200	160 - 190 173	150 150
		Average	95	79				
Calcium	ppm	Range	45 - 48	23 - 24	NA	130 130	92 - 99 96.5	73 - 74 73.5
		Average	46	24				
Corrosivity (t) Aggressive Index	Al	Range	12.1	11.9 - 12.0	NA	12 12	12 12	12 12
		Average	12.1	12.0				
Hardness (k)	ppm	Range	80 - 270	98 - 110	NA	520 520	370 - 400 388	290 - 300 295
		Average	200	100				
Magnesium	ppm	Range	19 - 20	11	NA	47 47	34 - 38 36	27 27
		Average	20	11				
pH	pH Units	Range	7.9 - 8.6	7.9 - 8.4	8.2 - 8.6	6.6 - 8.0	6.5 - 7.2	6.5 - 7.2
		Average	8.1	8.3	8.3	7.1	6.9	6.9
Potassium	ppm	Range	3.7 - 4.1	2.3 - 2.5	NA	3.5 3.5	3.2 - 3.6 3.4	4.3 - 4.4 4.35
		Average	3.9	2.4				
Sodium	ppm	Range	74 - 82	43 - 53	NA	57 57	44 - 50 47	31 31
		Average	78	48				
Total Organic Carbon (TOC)	ppm	Range	1.8 - 2.6	1.7 - 2.1	NA	NA	NA	NA
		Average	2.3 (q)	1.9 (q)				

Abbreviations

- cu = color units
- DLR = Detection Limits for purposes of reporting
- DPH = Department of Public Health
- MCL = Maximum Contaminant Level
- MCLG = Maximum Contaminant Level Goal
- MRDL = Maximum Residual Disinfectant Level
- MRDLG = Maximum Residual Disinfectant Level Goal
- MWD = Metropolitan Water District of Southern CA
- NA = Not Analyzed
- ND = None Detected
- NL = Notification Level
- NS = No Standard
- NTU = Nephelometric Turbidity Units
- pCi/L = picoCurries per liter
- PHG = Public Health Goal
- ppb = parts per billion
- ppm = parts per million
- TON = Threshold Odor Number
- TT = Treatment Technique

Footnotes (For all charts)

- a) As the result of blending, actual level of tetrachloroethylene (PCE) and trichloroethylene (TCE) in the water served was not detected (ND).
- b) Aluminum has a secondary MCL of 200 ppb.
- c) As the result of blending, actual level of nitrate in water served ranged between 1.4 and 16.0 ppm, with an average of 8.48 ppm.
- d) Standard is for Radium-226 and -228 combined (calculated).
- e) These results were before blending unless otherwise noted.
- f) Total coliform MCL: No more than 5% of the monthly samples may be total coliform-positive.
- g) Lead and Copper Rule compliance based on 90th percentile of all samples being below the Action Level. Samples were taken from 54 customer taps. Testing is required every three years. This data was collected in 2011.

Nitrate

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

Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home’s plumbing. If you are concerned about elevated lead levels in your home’s

Chromium 6 Summary

For the past ten years, GWP has been managing a major research effort to develop technologies for the removal of hexavalent chromium (chromium 6) from drinking water supplies. In 2010, Glendale built two large scale demonstration treatment facilities to remove chromium 6. Both treatment technologies have proven to successfully remove chromium 6 from water supplies. The operations of these test facilities has provided researchers on the State and Federal level with technical and cost data.

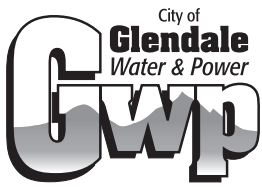
In February 2013, Glendale delivered the Final Project Report regarding the operation data of the chromium 6 treatment facilities to the California Department of Public Health which will be utilizing the Report in its process of setting the Maximum Contaminant Level of chromium 6 in the State’s drinking water. The full report is available at www.GlendaleWaterAndPower.com

- h) Copper has a secondary MCL of 1000 ppb.
- i) Analysis was on water before blending with MWD supply.
- j) Compliance is based on system-wide annual average, first quarter of 2012. Started quarterly sampling for the stage 2 DBPR Monitoring Plan on May 14, 2012. MCL was not exceeded in the first three quarters of sampling, no violation.
- k) Hardness in grains/gallon can be found by dividing ppm by 17.1. For example, 200 ppm = 11.7 grains/gallon.
- l) For GWP sources, data represents the amount of naturally occurring fluoride. For MWD sources, data is after fluoride added at MWD treatment plant. Glendale’s distribution system fluoride levels were monitored in 2012 - range 0.50 ppm - 0.88 ppm with an average of 0.65 ppm.
- m) Chlorate has a DPH Notification level of 800 ppb. Chlorate is a by-product of liquid chlorine. MWD range results were given distribution system wide.
- n) During 2012, Glendale received MWD water mostly from Weymouth Treatment Plant.
- o) Turbidity is a measure of the cloudiness of the water. Turbidity is monitored because it is a good indicator of the effectiveness of filtration systems. Treatment Technique for turbidity applies to MWD’s Weymouth and Jensen plants and the Verdugo Park Treatment Plant. It does not apply to the Glendale Water Treatment Plant or Glorietta Wells .
- p) MWD received an exemption from CDPH to report Nitrate (as N) instead of Nitrate (as NO3) in their CCR.
- q) MWD constituents were expressed as Highest RAAs. RAA = Running Annual Average; highest RAA is the highest of all Running Annual Averages calculated as average of all the samples collected within a twelve-month period.
- r) Foothill Well started delivering water in May 2011.
- s) Water from the Foothill Well is blended with system water, actual level of nitrate in water served ranged between 10 and 20 ppb, with an average of 14.9 ppb.
- t) Al < 10.0 = Highly aggressive and very corrosive water
Al >/= 12 = Non-aggressive water
Al (10.0 - 11.9) - Moderately aggressive water
- u) Compliance was based on RAA. Bromate was tested at effluent of Jensen Treatment Plant where ozone is used.

water, you may wish to have your water tested and/or flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the USEPA Safe Drinking Water Hotline (1-800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. GWP is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

DETECTED CONTAMINANTS AT GLENDALE’S WATER SOURCES											
	Units	State MCL	PHG or [MCLG]		MWD Weymouth Plant (n)	MWD Jensen Plant (n)	Glendale Treatment Plant (e)	Verdugo Park Water Treatment Plant	Glorietta Wells (e)	Foothill Well (r)	Major Sources of Contaminants in Drinking Water
ORGANIC CHEMICALS											
Methyl-tert-butyl-ether (MTBE)	ppb	13	13	Range Average	ND	ND	ND	ND	ND - 0.52 0.04	ND	Leaking underground storage tanks; discharge from petroleum and chemical factories; previously used as gasoline additives
Tetrachloroethylene (PCE) (a)	ppb	5	0.06	Range Average	ND	ND	ND	0.60 0.60	ND - 3.1 1.18	ND - 1.10 0.18	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
Trichloroethylene (TCE) (a)	ppb	5	1.7	Range Average	ND	ND	ND	ND	ND	ND - 0.59 0.27	Discharge from metal degreasing sites and other factories
Simazine	ppb	4	4	Range Average	ND	ND	ND	ND	0 - 0.059 0.019	ND	Herbicide runoff
INORGANIC CHEMICALS											
Aluminum (b)	ppb	1000	600	Range Average	ND - 210 120 (q)	60 - 110 83 (q)	ND	ND - 24 5	ND	ND	Residue from some water treatment process; natural deposits erosion
Arsenic	ppb	10	0.004	Range Average	ND	ND	ND - 1.8 1.3	NA	ND - 1.8 0.8	ND - 1.6 0.1	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium	ppb	1000	2000	Range Average	ND	ND	65 - 91 75	79 79	89 - 110 105	80 - 87 84	Discharges of oil drilling waste and from metal refineries; erosion of natural deposits
Chromium, Total	ppb	50	[100]	Range Average	ND	ND	2.7 - 11 7.4	1.2 1.2	1.2 - 2.1 1.5	1.8 - 2.3 2.1	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (l)	ppm	2	1	Range Average	0.6 - 1.1 0.8	0.7 - 0.8 0.8	NA	0.26 0.26	0.20 - 0.24 0.22	0.9 - 0.20 0.195	Erosion of natural deposits; water additives that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate	ppm	45	45	Range Average	ND (p)	ND (p)	22 - 31 25	20 - 22 21	23 - 51 33 (c)	38 - 51 47 (s)	Runoff and leaching from fertilizer use septic tank and sewage; natural erosion
Nickel	ppb	100	12	Range Average	ND	ND	ND - 13 5.2	ND	0 - 5.3 0.9	ND	Erosion of natural deposits; discharge from metal factories
Selenium	ppb	50	30	Range Average	ND	ND	ND - 5.0 3.2	ND	ND	ND	Refineries, mines, and chemical waste discharge; runoff from livestock lots
RADIOLOGICALS											
Gross Alpha Particle Activity	pCi/L	15	[0]	Range Average	ND - 3.0 ND	ND	ND - 11 4	4.4 4.4	5.29 - 7.91 6.56	ND - 7.8 2.6	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50	[0]	Range Average	ND - 6 4	ND - 4 ND	ND - 7.7 3.1	3.9 3.9	NA	5.5 5.5	Decay of natural and man-made deposits
Combined Radium (d)	pCi/L	5	[0]	Range Average	ND	ND	ND - 2.4 0.7	ND - 1.0 0.3	ND	ND	Erosion of natural deposits
Strontium	pCi/L	8	0.35	Range Average	ND	ND	0.64 - 0.66 0.65	ND	NA	NA	Decay of natural and man-made deposits
Tritium	pCi/L	20000	400	Range Average	ND	ND	NA	232 232	NA	NA	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	Range Average	1 - 2 2	ND - 2 1	4.42 - 5.04 4.77	8.5 8.5	6.7 - 8.9 7.5	3.6 - 3.7 3.65	Erosion of natural deposits
REGULATED CONTAMINANTS WITH SECONDARY MCLS											
Chloride	ppm	500	NS	Range Average	85 - 95 90	50 - 63 56	58 - 66 62	130 130	95 - 110 104	60 - 64 62	Runoff/leaching from natural deposits; seawater influence
Color	cu	15	NA	Range Average	1 1	1 - 2 2	NA	ND - 3.0 0.07	ND - 5.0 0.8	ND	Naturally occurring organic materials
Iron	ppb	300	NA	Range Average	ND	ND	ND	ND	0 - 86 14	ND	Leaching from natural deposits; industrial waste
Manganese	ppb	50	NL = 500	Range Average	ND	ND	ND - 4.1 3.0	14 14	ND	ND	Leaching from natural deposits; industrial wastes
Odor	TON	3	NS	Range Average	2 2	2 2	NA	ND - 2.0 0.6	ND - 2.0 1.2	1 1	Naturally occurring organic materials
Specific Conductance	uS/cm	50	NA	Range Average	350 - 930 740	400 - 500 440	NA	NA	NA	NA	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NS	Range Average	130 - 160 140	46 - 50 48	130 - 140 135	230 230	130 - 140 137	80 - 87 83.5	Runoff/leaching from natural deposits; industrial waste
Total Dissolved Solids (TDS)	ppm	1000	NS	Range Average	450 - 490 470	240 - 280 260	510 - 600 560	780 780	580 - 660 612	450 - 490 470	Runoff/leaching from natural deposits; seawater influence
Turbidity (o)	NTU	TT	NS	Range Average	ND	ND - 0.1 ND	ND - 0.12 0.09	0.054 - 0.590 0.137	ND - 1.7 0.3	0.061 - 0.07 0.066	Soil runoff
Zinc	ppb	5000	NS	Range Average	ND	ND	ND	ND	ND - 22 4	ND	Runoff/leaching from natural deposits; industrial waste



Your Trusted Community Utility

Glendale Water & Power
141 North Glendale Ave., Level 4
Glendale, CA 91206

WQR.13

City of Glendale Water & Power 2012 Water Quality Report to Our Customers

Follow us on:

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This information is very important. Please have someone translate it for you.

Esta informacion es muy importante. Por favor pidale a alguien que se lo traduzca.

Այս տեղեկությունը շատ կարևոր է: Խնդրում ենք, որ մեկին թարգմանել տաք այն:

此資訊十分重要。請您找人幫您翻譯。

यह सूचना अत्यंत ही महत्त्वपूर्ण है। कृपया किसी से इसका अनुवाद करा लीजिए।

これは非常に重要な情報です。どなたかに翻訳をお願いしてください。

이 정보는 매우 중요합니다. 누군가에게 번역해달라고 하십시오.

Napakahalaga ang impormasyon na ito. Mangyaring ipasalin ninyo para sa inyong pang unawa.

Important Information for People with Compromised Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Sources of Glendale's Water

In 2012, Glendale delivered 8.9 billion gallons of potable water to our customers. 64% was purchased from MWD, after being imported from Northern California and Colorado River. Before delivery, it was treated at MWD's treatment plants in Granada Hills and La Verne.

The remaining 36% comes from local sources and blended with MWD water. 29% was groundwater extracted from the San Fernando Basin and conveyed through the Glendale Water Treatment Plant. The City's Glorietta Wells, Foothill Well, and Verdugo Park Water Treatment Plant accounted for 7% of our supplies.

The CDPH conducted a "Sanitary Survey" of GWP's system during 2010 and 2011. It was concluded that our water system is well operated and maintained by qualified and professional staff and that we are capable of continuously supplying safe and potable water to our customers. For additional information regarding the survey, please contact Ray Notario at (818) 548-3962.