# WQR.12

## City of Glendale *Water & Power* Water Quality Report for 2011

### 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 2011.

City of Glendale Water & Power

Your Trusted Community Utility

# From the General Manager's Desk

**Glenn Steiger, General Manager, Glendale *Water & Power***

This past year, our water department saw the completion of the installation of over 33,000 Smart Water Meters, which will move our entire utility into a Smarter Grid. In the midst of this project, the water department already started seeing the benefits of utilizing this technology. System leaks were detected, customers were notified, and problem areas were addressed, resulting in savings of money and water.

Glendale *Water & Power* delivers about 8.8 billion gallons of safe drinking water to the city's more than 200,000 residents. This past year, we successfully operated the system night and day with greater than 99.99% reliability. To ensure reliability, we:

- Completed renovation of the San Luis Rey pump station to improve water flow and pressure in that area.
- Are currently working on upgrading the Diederich Reservoir, which is the largest of the thirty water storage facilities. It serves about 50% of GWP's service area. As a part of this project, we are upgrading the 48-inch transmission main that carries water in and out of this facility.

In 2010, we discovered a well that had been abandoned by previous utility districts long before GWP existed. After testing, we decided that it was feasible to use this "Foothill Well." We built a 3,420-foot pipeline connecting the well to GWP's New York Reservoir and put the well in service in May of 2011. The Foothill Well produces about 200 gallons per minute, and each gallon collected means one less gallon of water purchased. The well will save about $245,000 per year. You will see a new column in our water sources chart that includes data collected from the Foothill Well.

We continuously safeguard our water supply and conduct weekly sampling and testing both internally and by outside laboratories. We continue to exceed all standards and health requirements. GWP remains a leader in new technologies to remove chromium 6 from local groundwater sources.

As we move forward, we will continue to focus on increasing our groundwater supplies and lead the nation with our studies in chromium 6 removal.

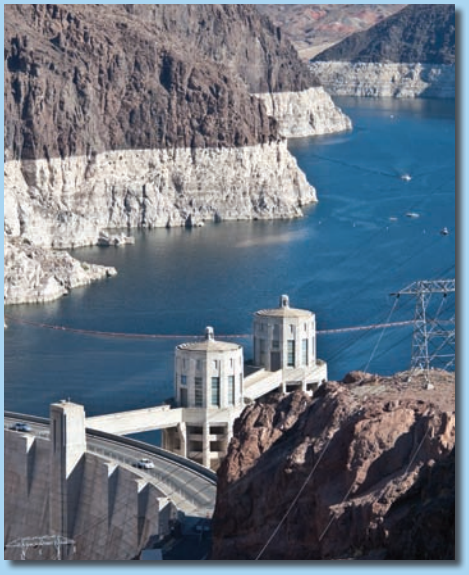
Thank you for your continued support and encouragement.

# Sources of Glendale's Water

In 2011, Glendale delivered 8.8 billion gallons of potable (drinking water quality) water to the City's customers. 65% of that water was purchased from the Metropolitan Water District of Southern California (MWD), after being imported from Northern California and the Colorado River. Before it was delivered to Glendale, it was treated at MWD's treatment plants in Granada Hills and La Verne and monitored by MWD in their water quality laboratory.

Water from local sources made up 35% of our drinking water supplies and was blended with MWD water before being delivered to your home and business. 27% of GWP water was groundwater extracted from the San Fernando Basin and conveyed through the Glendale Water Treatment Plant. Water from the City's Glorietta Wells, Foothill Well, and the Verdugo Park Water Treatment Plant accounted for 8% of our supplies.

The California Department of Public Health conducted a "Sanitary Survey" of GWP's system during 2010 and 2011. As a result of its survey, CDPH concluded that the City's water system is well operated and maintained by qualified and professional staff and that GWP is capable of continuously supplying safe and potable water to its customers. For additional information regarding the sanitary survey, please contact Dan Askenaizer at (818) 551-6906.



# IMPORTANT INFORMATION ON DISINFECTION CHANGES

If you live in the area of Northern Glendale above Oakmont Golf Course in the Verdugo Canyon, including Montrose and La Crescenta, and only if you receive water from Glendale *Water and Power* (GWP), please note that GWP will be switching from chlorine to chloramines to disinfect the water on June 1, 2012. Both chlorine and chloramines are effective at killing bacteria and making the water safe. The majority of Glendale has been receiving water with chloramines since 1985.

Chloramines, like chlorine, must be removed from the water used in kidney dialysis. GWP contacted several operators of kidney dialysis machines in Glendale and were informed that they have the proper equipment in place to remove chloramines. If you receive kidney dialysis treatment please contact your hospital, clinic or home care provider to make sure that you have the proper equipment in place to remove chloramines or if you have additional questions.

Customers who maintain fish ponds, tanks or aquaria should make necessary adjustments in water treatment, as both chlorine and chloramines are toxic to fish. Pet shops can provide additional advice on conditioners that will remove or neutralize chloramines in the water.

You can find answers to common questions about chloramines at the following web address: http://www.glendalewaterandpower.com/reports/water_quality_reports.aspx

If you have additional questions, please contact Glendale *Water and Power's* Water Quality Office at (818) 551-6906.

## Regulatory Updates

### Stage 2 Disinfection Byproducts Rule

State and Federal regulations require that water utilities, including GWP, maintain a disinfectant residual throughout the distribution system. Some of these disinfectants, when mixed with naturally occurring organic material in the water, can form byproducts that have been deemed a potential health concern at elevated levels. The purpose of the Disinfection Byproducts Rule (DBPR) is to ensure that these byproducts are minimized through frequent monitoring and carefully coordinated disinfection plans. GWP has maintained compliance with Stage 1 of the DBPR since it was first put into place in 1998. In May of 2012, Stage 2 of the DBPR will go into effect; GWP has taken all of the necessary steps to achieve compliance with the new requirements of the Rule. Under the Stage 2 DBPR, GWP monitoring will focus on areas of the system that have a higher likelihood of byproduct formation. By changing the way in which average byproduct levels are calculated and reported, Stage 2 of the DBPR will allow GWP to gain a better understanding of disinfection byproducts in its system. The current levels of disinfection byproducts in the GWP system can be found in the "Citywide Sampling" table of this publication. Look for "Total Trihalomethanes" and "Haloacetic Acids."

### Lead and Copper Rule

In 1992, the United States Environmental Protection Agency enacted a regulation requiring water agencies throughout the country to conduct testing of drinking water from customers' taps for the presence of lead and copper. The objective of the Lead and Copper Rule is to determine if there is any lead and copper leaching from internal plumbing. GWP conducted its most recent lead and copper sampling event in July and August of 2011. One hundred eighty-four customers were contacted from the original pool of qualified residences and fifty-four customers agreed to participate in the sampling. The results of this sampling event indicate that GWP continues to be in full compliance with the requirements and limits of the Lead and Copper Rule. You can find the results in the "Lead and Copper Rule" table of this report.

## Water Quality Terms You Will Find 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

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and in some cases radioactive material, and can 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

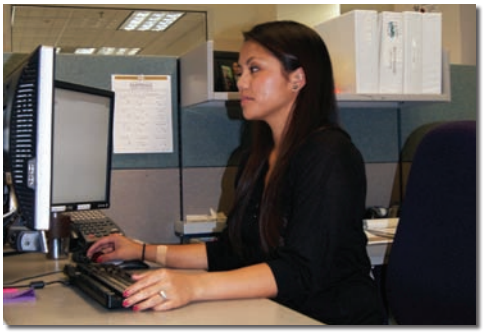
**Pesticides and Herbicides,** that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

**Organic Chemical Contaminants,** including synthetic and volatile organic chemicals, that are byproducts 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.

# Frequently Asked Questions

Glendale residents know that when they have questions or concerns about their water, GWP's staff is always prepared to provide answers and assistance. The following are some of the common areas of interest as expressed by our residents:



## Is GWP's water supply safe from contamination?

In general, there are several sources that may contribute to the contamination of a utility's local water supply. It is possible, under some circumstances, for fertilizers, improperly disposed residential and industrial wastes, and leaks from underground fuel and septic tanks to make their way to underground aquifers used by water suppliers. As one of many programs to prevent source water contamination, State and Federal regulations require that all water utilities undergo a "sanitary survey" every five years. This survey includes an inspection of the utility's physical assets (i.e. wells, pumps, piping), a review of operational procedures, and an assessment of source water sampling and testing program. As a result of its most recent sanitary survey in 2010, GWP was granted a clean bill of health by the California Department of Public Health. GWP continues to monitor its system to ensure that the water supply remains free of outside contamination.

## Why is my water...

***Red, Brown, Orange, Yellow?***

The simple answer to this question is "Rust." The different colors of rusty water are due to the varying chemical oxidation states of iron in the water. There are two major sources of rust in a public water supply: water mains and the plumbing within the customer's property. In both cases, rust that accumulates on the piping may, under certain circumstances such as a pressure change or increased flow, become dislodged and appear in the customer's water. If GWP staff determine that the rust is coming from the utility's water mains, the area will be flushed until the water is clear; if the rust is in the customer's piping, then our staff will advise the customer to flush the piping (usually through the garden hose) until the water is clear and to contact a licensed plumber to assess the problem and recommend an appropriate solution. Water discolored by rust is not considered a health hazard.

***Black?***

While a rare occurrence, black water can be caused by poorly maintained water heaters and old rubber tubing. It is important for residents to ensure that their water heaters are periodically drained per the manufacturers' instructions and that old rubber tubing is replaced.

## Why does my water taste/ smell like...

Before delving into this area of concern, it should be noted that it is frequently difficult to differentiate between taste and odor as these two senses are very closely related.

***Rotten egg/Sewage?***

The most common cause of the rotten egg or sewage smell that concerns some customers is the gases released by bacterial growth in drain pipes. When customers run their faucets, water enters the drain pipe and forces these gases out, resulting in the offending smell. Unfortunately, as the smell is only present when water is flowing into the pipe, it is mistakenly attributed to the water rather than the drain. Customers who contact GWP with this problem are asked to determine if the smell is coming from only one sink in the house and if necessary to contact a licensed plumber to inspect the problem.

## 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).

*Chlorine?*
State and Federal regulations require that water utilities, including GWP, maintain a disinfectant residual throughout the distribution system. The purpose of these regulations is to prevent water-born illnesses by suppressing the growth of bacteria and other potential contaminants. GWP, like many other utilities, uses chlorine and chloramines to comply with these requirements. Customers may, at times, experience a chlorine taste or odor; in these situations, customers are generally encouraged to, first, determine if the condition is present in multiple taps in the home, and second, to flush their pipes and see if the problem persists. If the problem occurs at multiple taps and flushing does not clear it from the system, GWP staff will flush the mains in the area to remove the chlorine taste/odor.

## What water treatment device should I purchase for my home?

First, GWP staff wants to assure our customers that your water meets all federal and state drinking water standards and you do not need to purchase a home water treatment device. However, we understand that some residents may wish to make such a purchase. GWP, as a general policy, does not give advice to customers as to which brands or types of water treatment devices they should purchase. Upon receiving such an inquiry, GWP staff will help customers understand what the different types of residential water treatment devices are designed to do and guide them to reviews and information that can be consulted before making a purchase. The most common devices of interest to GWP customers are water softeners and filters. Reviews for these devices and other treatment solutions can be found in consumer review magazines and through a simple search on the internet. Customers can also visit http://www.cdph.ca.gov/certlic/device/Pages/watertreatmentdevices.aspx to obtain information about devices certified for home use by the California Department of Public Health. Another good source of information is the Water Quality Association — a trade association representing the manufacturers and distributors of home water treatment devices. Their website can be accessed at the following address: www.wqa.org. Whatever type of device is chosen, it is critical for customers to provide regular maintenance per the manufacturers' recommendations (for example, replacement of filters).

## Water Quality Maintenance

GWP uses both chlorine and chloramines for disinfection. Some locations may alternate from chloramines to chlorine depending on operating conditions. Customers with special water quality needs such as kidney dialysis or aquariums should prepare for removal of chloramines as well as chlorine.

## 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.

State and Federal agencies thoroughly regulate the water we deliver to our customers by requiring significant water quality sampling. They require over 8,000 tests each year. The laboratory testing costs alone are over $100,000 annually, plus staff time involved in collecting the water samples. Additionally, the State inspects our water system and reviews the test results to ensure that required sampling is occurring and that we meet all regulatory requirements.

## 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)

### 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

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.

Additional information about Lead can be found in the "Regulatory Updates" section of this document.

## DETECTED CONTAMINANTS AT GLENDALE'S WATER SOURCES

| | Units | Notification Level | | 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 | Range | 130 | 190 | 100 - 210 | NA | NA | ND | Runoff/leaching from natural deposits; industrial wastes |
| | | | Average | 130 | 190 | 180 | | | | |
| Chromium 6 | ppb | NS | Range | 0.09 | 0.20 | 3.2 - 9.5 | 0.23 - 0.35 | 0.29 - 0.36 | 0.72 - 1.20 | Industrial waste discharge |
| | | | Average | 0.09 | 0.20 | 7.1 (i) | 0.27 | 0.32 | 0.92 | |
| Vanadium | ppb | 50 | Range | ND | 3.4 | 4.4 - 5.5 | NA | 4.2 | 3.9 | Naturally-occurring; industrial waste discharge |
| | | | Average | | 3.4 | 4.9 | | 4.2 | 3.9 | |
| N-Nitrosodimethylamine (NDMA) | ppb | 0.01 | Range | ND - 0.003 | ND - 0.005 | ND - 0.0045 | NA | NA | NA | Byproduct of drinking water chloramination; industrial processes |
| | | | Average | ND | 0.003 | 0.0025 | | | | |
| N-Nitroso-di-ethylamine (NDEA) | ppb | 0.01 | Range | ND | ND | ND - 0.0027 | NA | NA | NA | Byproduct of drinking water chloramination; industrial processes |
| | | | Average | | | 0.0025 | | | | |

## 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 | 0.5 | 0 - 2.5 | Naturally present in the environment |
| Fecal Coliform and *E. Coli* | | (f) | 0 | 0.002 | 0 - 3 (t) | Human and animal fecal waste |
| Total Trihalomethanes (TTHM) (j) | ppb | 80 | NS | 38.4 | 8.8 - 80.0 | Byproduct of drinking water disinfection |
| Haloacetic Acids (HAA5) (j) | ppb | 60 | NS | 11 | ND - 60 | Byproduct of drinking water disinfection |
| Total Chlorine Residual | ppm | [4] | [4] | 1.11 | 0.02 - 3.1 | Drinking water disinfectant added for treatment |

## 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 | 43 - 110 | 76 - 93 | NA | 180 - 220 | 160 - 200 | 160 - 170 |
| | | Average | 82 | 85 | | 205 | 180 | 163 |
| Bromate | ppb | Range | NA | ND - 8.8 | NA | NA | NA | NA |
| | | Average | | 5.9 (q) | | | | |
| Calcium | ppm | Range | 41 - 54 | 26 - 28 | 91 | 99 - 120 | 88 - 100 | 71 - 75 |
| | | Average | 48 | 27 | 91 | 112 | 94 | 73 |
| Chlorate (m) | ppb | Range | ND - 58 | ND - 58 | 84 - 340 | 130 - 150 | 140 - 160 | 160 |
| | | Average | 42 | 26 | 173 | 140 | 150 | 160 |
| Hardness (k) | ppm | Range | 60 - 250 | 100 - 120 | NA | 450 - 480 | 360 - 420 | 300 |
| | | Average | 170 | 110 | | 470 | 384 | 300 |
| Magnesium | ppm | Range | 16 - 21 | 12 | 26 | 41 - 44 | 33 - 39 | 27 - 27 |
| | | Average | 18 | 12 | 26 | 43 | 35 | 27 |
| pH | pH Units | Range | 7.8 - 8.8 | 8.1 - 8.4 | 8.0 - 8.4 | 6.6 - 8.1 | 6.5 - 7.3 | 6.7 - 7.3 |
| | | Average | 8.1 | 8.2 | 8.2 | 7.2 | 6.9 | 7.0 |
| Potassium | ppm | Range | 3.4 - 4.1 | 3.6 - 4.0 | 4.1 | 3.6 - 3.6 | 3.1 - 3.6 | 4.3 - 4.3 |
| | | Average | 3.8 | 3.8 | 4.1 | 3.6 | 3.3 | 4.3 |
| Sodium | ppm | Range | 62 - 76 | 52 - 57 | 52 | 49 - 54 | 42 - 50 | 30 - 31 |
| | | Average | 69 | 54 | 52 | 51 | 46 | 31 |
| Total Organic Carbon (TOC) | ppm | Range | 1.7 - 2.9 | 1.6 - 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) in the water served ranged between ND and 0.52 ppb, with an average of 0.04 ppb and ND for trichloroethylene (TCE).
b) Aluminum has a secondary MCL of 200 ppb.
c) As the result of blending, actual level of nitrate in water served ranged between 1.5 and 18.0 ppm, with an average of 9.82 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. The occurrence of two consecutive total coliform-positive samples, one of which contains E. Coli, constitutes an acute MCL violation.
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.
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.
k) Hardness in grains/gallon can be found by dividing ppm by 17.1. For example, 170 ppm = 9.94 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 2011 - range 0.44 ppm - 0.87 ppm with an average of 0.69 ppm.
m) Chlorate has a DPH Notification level of 800 ppb. Chlorate is a byproduct of liquid chlorine. MWD range results were given system wide.
n) During 2011, Glendale received MWD water from both the Weymouth Treatment Plant and Jensen 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 7.2 and 21.0 ppb, with an average of 16.1 ppb.
t) These three samples were collected on the same day and may have been contaminated as a result of poor sampling conditions. GWP took all necessary precautions and additional sampling did not indicate contamination in the distribution system. The MCL was not violated.

## DETECTED CONTAMINANTS AT

| | Units | State MCL | PHG or [MCLG] | | MWD Weymouth Plant (n) | MWD Jensen Plant (n) |
|---|---|---|---|---|---|---|
| **ORGANIC CHEMICALS** | | | | | | |
| Methyl-tert-butyl-ether (MTBE) | ppb | 13 | 13 | Range | ND | ND |
| | | | | Average | | |
| Tetrachloroethylene (PCE) (a) | ppb | 5 | 0.06 | Range | ND | ND |
| | | | | Average | | |
| Trichloroethylene (TCE) (a) | ppb | 5 | 1.7 | Range | ND | ND |
| | | | | Average | | |
| **INORGANIC CHEMICALS** | | | | | | |
| Aluminum (b) | ppb | 1000 | 600 | Range | ND - 220 | 61 - 99 |
| | | | | Average | 110 (q) | 86 (q) |
| Arsenic | ppb | 10 | 0.004 | Range | ND | 2.3 |
| | | | | Average | | 2.3 |
| Barium | ppb | 1000 | 2000 | Range | ND | ND |
| | | | | Average | | |
| Chromium, Total | ppb | 50 | [100] | Range | ND | ND |
| | | | | Average | | |
| Cyanide | ppb | 150 | 150 | Range | ND | ND |
| | | | | Average | | |
| Fluoride (l) | ppm | 2 | 1 | Range | 0.7 - 1.3 | 0.7 - 0.9 |
| | | | | Average | 0.8 | 0.8 |
| Nitrate (p) | ppm | 45 | 45 | Range | ND - 0.4 | 0.4 - 0.5 |
| | | | | Average | ND (p) | 0.4 (p) |
| **RADIOLOGICALS** | | | | | | |
| Gross Alpha Particle Activity | pCi/L | 15 | [0] | Range | ND - 3 | ND |
| | | | | Average | ND | ND |
| Gross Beta Particle Activity | pCi/L | 50 | [0] | Range | ND - 6 | ND - 4 |
| | | | | Average | 4 | ND |
| Combined Radium (d) | pCi/L | 5 | [0] | Range | ND | ND |
| | | | | Average | | |
| Strontium | pCi/L | 8 | 0.35 | Range | ND | ND |
| | | | | Average | | |
| Tritium | pCi/L | 20000 | 400 | Range | ND | ND |
| | | | | Average | | |
| Uranium | pCi/L | 20 | 0.43 | Range | 1 - 2 | ND - 2 |
| | | | | Average | 2 | 1 |
| **REGULATED CONTAMINANTS WITH SECONDARY MCLS** | | | | | | |
| Chloride | ppm | 500 | NS | Range | 63 - 76 | 59 - 69 |
| | | | | Average | 70 | 64 |
| Color | cu | 15 | NA | Range | 1 - 2 | 1 |
| | | | | Average | 2 | 1 |
| Iron | ppb | 300 | NA | Range | ND | ND |
| | | | | Average | | |
| Manganese | ppb | 50 | NL = 500 | Range | ND | ND |
| | | | | Average | | |
| Odor | TON | 3 | NS | Range | 2 | 2 |
| | | | | Average | 2 | 2 |
| Sulfate | ppm | 500 | NS | Range | 120 - 170 | 54 - 58 |
| | | | | Average | 150 | 56 |
| Total Dissolved Solids (TDS) | ppm | 1000 | NS | Range | 390 - 480 | 280 - 290 |
| | | | | Average | 440 | 280 |
| Turbidity (o) | NTU | TT | NS | Range | 0.02 - 0.07 | 0.03 - 0.09 |
| | | | | Average | 0.05 | 0.03 |
| Zinc | ppb | 5000 | NS | Range | ND | ND |
| | | | | Average | | |

| GLENDALE'S WATER SOURCES | | | | |
|---|---|---|---|---|
| **Glendale Treatment Plant (e)** | **Verdugo Park Water Treatment Plant** | **Glorietta Wells (e)** | **Foothill Well (r)** | **Major Sources of Contaminants in Drinking Water** |
| | | | | |
| ND | ND | ND - 0.53<br>0.08 | ND | Leaking underground storage tanks; discharge from petroleum and chemical factories; previously used as gasoline additives |
| ND | ND | 0.64 - 3.30<br>1.50 | ND | Discharge from factories, dry cleaners, and auto shops (metal degreaser) |
| ND | ND | ND | 0.58 - 1.70<br>0.90 | Discharge from metal degreasing sites and other factories |
| | | | | |
| ND | ND - 36<br>6 | ND - 29<br>4 | ND | Residue from some water treatment process; natural deposits erosion |
| ND - 2.7<br>1.8 | ND - 1.6<br>0.5 | ND | 1.0 - 3.2<br>2.1 | Erosion of natural deposits; runoff from orchards; glass and electronics production wastes |
| 68 - 81<br>74 | 86 - 92<br>90 | 100 - 120<br>109 | 84 - 89<br>87 | Discharges of oil drilling waste and from metal refineries; erosion of natural deposits |
| 3.8 - 10.0<br>7.3 | 1.4 - 1.7<br>1.6 | ND - 2.0<br>1.4 | 2.2 - 2.7<br>2.5 | Discharge from steel and pulp mills and chrome plating; erosion of natural deposits |
| NA | 5.3 - 5.8<br>5.6 | ND - 6.9<br>1.0 | ND | Discharge from steel/metal, plastic, and fertilizer factories |
| NA | 0.25 - 0.28<br>0.26 | 0.18 - 0.23<br>0.20 | 0.18 - 0.19<br>0.19 | Erosion of natural deposits; water additives that promotes strong teeth; discharge from fertilizer and aluminum factories |
| 14 - 26<br>23 | 14 - 20<br>17.7 | 24 - 41<br>33.6 (c) | 45 - 49<br>48 (s) | Runoff and leaching from fertilizer use septic tank and sewage; natural deposit erosion |
| | | | | |
| ND - 11<br>4 | 4.4 - 4.4<br>4.4 | 6.8 - 9.6<br>7.8 | 3.9 - 7.6<br>5.4 | Erosion of natural deposits |
| ND - 7.7<br>3.1 | 2.0 - 6.0<br>2.7 | NA | 5.5<br>5.5 | Decay of natural and man-made deposits |
| ND - 2.4<br>0.7 | ND - 1.0<br>0.3 | ND - 1.1<br>0.4 | ND - 1.1<br>0.3 | Erosion of natural deposits |
| 0.64 - 0.66<br>0.65 | ND | NA | NA | Decay of natural and man-made deposits |
| NA | 223 - 239<br>231 | NA | NA | Decay of natural and man-made deposits |
| 5.0 - 13.4<br>8.4 | NA | 7.0 - 8.0<br>7.4 | 2.6 - 4.2<br>3.4 | Erosion of natural deposits |
| | | | | |
| 54 - 66<br>59 | 110 - 130<br>118 | 90 - 100<br>96 | 53 - 59<br>56 | Runoff/leaching from natural deposits; seawater influence |
| NA | ND - 3.0<br>0.03 | ND | ND | Naturally occurring organic materials |
| ND | ND | ND - 31<br>4 | 42 - 67<br>55 | Leaching from natural deposits; industrial waste |
| ND - 3.6<br>2.8 | ND | ND | ND | Leaching from natural deposits; industrial wastes |
| NA | ND - 3.0<br>0.8 | ND - 1.0<br>0.6 | ND | Naturally occurring organic materials |
| 130 - 140<br>131 | 160 - 210<br>185 | 130 - 150<br>136 | 75 - 78<br>77 | Runoff/leaching from natural deposits; industrial waste |
| 510 - 600<br>545 | 680 - 780<br>735 | 550 - 660<br>598 | 440 - 460<br>453 | Runoff/leaching from natural deposits; seawater influence |
| ND - 0.13<br>0.09 | ND - 0.42<br>0.11 | 0.05 - 0.50<br>0.19 | 0.36 - 1.50<br>0.93 | Soil runoff |
| ND | ND - 23<br>8 | ND | ND | Runoff/leaching from natural deposits; industrial waste |

# Capital Improvements

## Foothill Well Nitrate Removal Study

Glendale purchases about 65% of its water supply from the Metropolitan Water District of Southern California (MWD) and produces the remaining amount locally from wells. To maximize local groundwater production, which is less expensive than purchasing from MWD, GWP is developing new wells in the Verdugo Basin. One challenge to using this local water source is the presence of nitrates. To be within all health guidelines, GWP blends groundwater with low-nitrate imported water before it is served to customers.

Looking to the future, staff is evaluating the use of treatment technology that can remove nitrates from water. One approach is to use naturally-occurring bacteria for the removal of nitrates. GWP set up a small-scale study to evaluate this method and the results were very positive. The bacteria were given a small amount of food and nutrients and allowed to grow on a media. In this process, the bacteria consumed the nitrates in the water. Mother Nature can be pretty impressive. Going forward, GWP staff will continue to evaluate this and other options for its customers.

## Glorietta Wells Chloramine Conversion Project

Due to elevated levels of nitrates in three of GWP's wells located near Glorietta Park, the water from these wells must be blended with low nitrate water purchased from the MWD before being served to customers. The wells and the MWD water have a similar, but different, disinfectant residual. When the two waters are blended together the level of the resulting disinfectant is lower than optimal. State and Federal regulations require that water utilities, including GWP, maintain a disinfectant residual throughout the distribution system.

After two years of planning and design, GWP is building a new treatment facility for the wells. Once completed, the resulting disinfectant in the well water will match the disinfectant in the MWD water. This will improve the disinfectant residual after blending. This project will help ensure GWP complies with future State and Federal drinking water regulations, including the Stage 2 Disinfectants/Disinfection Byproducts Rule described elsewhere in this report.

## On-Going Chromium 6 (Cr6) Removal Study

Starting in the 1920's through the 1960's, due to improper management and disposal of waste products by various manufacturers, the City of Glendale's groundwater supply in the San Fernando Valley was contaminated with a wide variety of chemicals, including Cr6 and volatile organic compounds (VOCs). In 2000, the Glendale Water Treatment Plant began operating to remove VOCs from the water. For almost as long, Glendale has been leading a research program to develop technologies to remove Cr6 from drinking water.

After much research and testing, GWP currently operates two large-scale demonstration facilities that remove Cr6. The majority of funding for the research, development and implementation of these new technologies has come from State and Federal agencies. Moving forward, Glendale will begin testing additional treatment technologies, including the use of membranes, for the removal of Cr6. These new technologies may lead to a more efficient and inexpensive way to remove the contaminant.

City of Glendale Water & Power
Your Trusted Community Utility

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



# WQR.12

## City of Glendale *Water & Power* 2011 Water Quality Report to Our Customers

**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 tradusca.

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 कसी 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.

Ang impormasyon na ito ay mahalagang-mahalaga.
Mangyaring maghanap ng makakapagsalin nito para sa inyo.

## 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.

If you have any questions regarding the quality of your drinking water or would like more information about Glendale 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. You may also visit our website at www.GlendaleWaterAndPower.com

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