

CITY OF HUNTINGTON BEACH UTILITIES DIVISION

2019 REPORT ON THE CITY'S WATER QUALITY RELATIVE TO PUBLIC HEALTH GOALS

Background

Provisions of the California Health and Safety Code Section 116470 (b) specify that public water systems with more than 10,000 service connections must prepare a special report once every three years, by July 1, if their water quality measurements have exceeded any Public Health Goals (PHGs). PHGs are goals established by the Cal-EPA's Office of Environmental Health Hazard Assessment (OEHHA). The law also requires that where OEHHA has not adopted a PHG for a constituent, the water suppliers are to use the Maximum Contaminant Level Goals (MCLGs) adopted by the U.S. Environmental Protection Agency (USEPA). Both PHGs and MCLGs are non-enforceable goals, and are set at very low levels below the enforceable Maximum Contaminant Level (MCL). A regulatory MCL is the highest level of a contaminant allowed in drinking water, and is set as economically and technologically feasible to PHG (or MCLG). Only constituents which have a California primary drinking water standard and for which either a PHG or MCLG has been set are to be addressed in this report.

If a constituent was detected in the City's water supply between 2016 and 2018 at a level exceeding an applicable PHG or MCLG, this report provides the information required by the law. Included is the numerical public health risk associated with the PHG or MCLG, the MCL, the category or type of risk to health that could be associated with each constituent, the best treatment technology available that could be used to reduce the constituent level, and an estimate of the cost to install that treatment if it is appropriate and feasible.

What are PHGs?

PHGs are set by the OEHHA, which is part of Cal-EPA, and are based solely on public health risk considerations. None of the practical risk-management factors that are considered by the USEPA or the California State Division of Drinking Water (DDW) in setting drinking water standards (MCLs) are considered in setting the PHGs. These factors include analytical detection capability, available treatment technologies, benefits and costs. The PHGs are not enforceable and are not required to be met by any public water system. MCLGs are the federal equivalent to PHGs.

Water Quality Data Considered

All of the water quality data collected throughout our water system between 2016 and 2018 for purposes of determining compliance with drinking water standards was considered. This data was summarized in our 2016, 2017, and 2018 annual Consumer Confidence Reports, which are mailed to all of our customers by July 1 annually.

Guidelines Followed

The Association of California Water Agencies (ACWA) formed a workgroup that prepared guidelines for water utilities to use in preparing these required reports. The ACWA guidelines were used in the preparation for our report. No guidance was provided by state regulatory agencies.

Best Available Treatment Technology and Cost Estimates

Both the USEPA and DDW adopt Best Available Technologies (BATs), which are the best-known methods of reducing contaminant levels to the MCL. Costs can be estimated for such technologies. However, since many PHGs and all MCLGs are set much lower than the MCL, it is not always possible, nor feasible to determine what treatment is needed to further reduce a constituent downward to or near the PHG or MCLG, many of which are set at zero. Estimating the costs to reduce a constituent to zero is difficult, if not impossible, because it is not possible to verify by analytical means that the level has been lowered to zero. In some cases, installing treatment to try and further reduce very low levels of one constituent may have adverse effects on other aspects of water quality.

Constituents Detected That Exceed a PHG or a MCLG

The following is a discussion of constituents that were detected in one or more of our drinking water sources at levels above the PHG, or if there is no PHG, above the MCLG.

Arsenic

Arsenic is an element that occurs in the earth's crust. Accordingly, there are natural sources of exposure. Exposure to arsenic at high levels can pose serious health effects, as it is known to cause skin cancer and other cancers of the internal organs. In addition, it has been reported to affect the vascular system and has been associated with the development of diabetes.

The category of health risk associated with arsenic, and the reason that a drinking water standard was adopted for it, is that people who drink water containing arsenic above the MCL throughout their lifetime could experience an increased risk of 2.5 per 1,000 of getting cancer. The cancer risk for people who drink water containing arsenic above the PHG level throughout their lifetime could experience an increased risk of 1 per 1,000,000 of getting cancer.

The PHG set by OEHHHA for Arsenic is 0.004 parts per billion (ppb), and the DDW has set an MCL for Arsenic at 10 ppb. We have detected arsenic in two of our wells at levels of 2.0 and 2.4 ppb. The levels detected were below the MCL at all times.

The BAT treatment to lower the level of arsenic below the MCL is Reverse Osmosis. Since the level of arsenic in the two City wells in question is already below the MCL, the Reverse Osmosis treatment method would likely be used to attempt to lower the arsenic level below the 0.004 ppb PHG. ACWA has estimated that a treatment plant of this type would cost approximately \$6M per year, which includes initial construction costs and

yearly operations and maintenance costs. This would result in an assumed increased cost to each customer's water service connection of about \$107 per year.

Lead

Lead generally does not occur in significant amounts in source waters, but rather occurs as the result of corrosion of lead plumbing materials in contact with the water. Since most lead bearing materials are located in household plumbing, State and Federal Regulations require public water systems to periodically collect a representative number of water samples at taps inside homes of residential customers.

There is currently no MCL for Lead. Instead, DDW has set a health-based advisory level called an Action Level. The 90th percentile value of all samples from household taps in the distribution system cannot exceed an Action Level of 0.015 mg/L for lead. If 10 percent of the tap water samples collected are over the Action Level, then treatment may be required to inhibit corrosion, or to adjust the mineral content of the water.

The PHG for lead is 0.0002 mg/L. The category of health risk for lead is developmental effects in children, and causes high blood pressure and cancer in humans. People who drink water containing lead above the AL throughout their lifetime could experience an increased risk of 2 per 1,000,000 of getting cancer. The cancer risk for people who drink water containing lead above the PHG level throughout their lifetime could experience an increased risk of 1 per 1,000,000 of getting cancer.

All of our source water samples taken from wells in 2016, 2017, and 2018 did not detect lead. Based on extensive sampling of our distribution system via household testing in 2018, our 90th percentile value for lead was 0.007 mg/L, well below the Action Level.

Our water system is in compliance with the Federal and State Lead and Copper Rule. Based on our extensive sampling, it was determined according to State regulatory requirements that we meet the Action Level for Lead. We will be conducting additional monitoring in the summer of 2021 to further demonstrate that our water system has "optimized corrosion control", as DDW has continuously deemed our system in the past.

In general, optimizing corrosion control is considered to be the best available technology to deal with corrosion issues and with any lead findings. We continue to monitor our water quality parameters that relate to corrosivity (such as the pH, hardness, alkalinity, and total dissolved solids), and will take action if necessary to maintain our system in an "optimized corrosion control" condition.

When a water system is meeting the "optimized corrosion control" requirements, it is not prudent to initiate additional corrosion control treatment as it involves the addition of other chemicals and there could be additional water quality issues raised. Therefore, no estimate of cost has been included in this report.

Summary

Constituent	PHG or (MCLG)	MCL or (AL)	Actual
Arsenic	0.004 ppb	10 ppb	2.40 ppb
Lead	0.0002 mg/L	0.015 mg/L	0.007 mg/L

RECOMMENDATIONS FOR FURTHER ACTION:

The City's drinking water quality meets all DDW and USEPA drinking water standards set to protect public health. To further reduce the levels of the constituents identified in this report that are already significantly below the health-based MCLs established to provide "safe drinking water", additional costly treatment processes would be required. The effectiveness of the treatment processes to provide any significant reductions in constituent levels at these already low values is uncertain. The health protection benefits of these further hypothetical reductions are not at all clear and may not be quantifiable. Therefore, no action is proposed.