City of Palo Alto (ID # 7145)

City Council Staff Report

Report Type: Action Items **Meeting Date: 11/21/2016**

Summary Title: 2016 Water Utility Public Health Goals Report

Title: PUBLIC HEARING: 2016 Water Utility Public Health Goals Report

From: City Manager

Lead Department: Utilities

Recommendation

Staff recommends that Council accept the City of Palo Alto (City) 2016 Water Utility Public Health Goals Report

Executive Summary

Every three years the City of Palo Alto ("City") is required to report whether it has detected any contaminants in its drinking water in excess of Public Health Goals ("PHGs") set by the California Office of Environmental Health Hazard Assessment ("OEHHA"). In the last three years (2013-2015) the City has detected:

1) Lead slightly in excess of the PHG of 0.2 parts per billion (ppb) at some customers' taps, though well below the Action Level of 15 ppb set by the State Water Resources Board, the level at which the utility must take action to reduce lead levels, and
2) Coliform bacteria.

Lead can have health implications, particularly for children. Lead levels in Palo Alto are some of the lowest on the Peninsula, if not the lowest, and are below the PHG in most homes sampled. The City has removed all known lead pipe from its system, though some lead may still be present in older brass fittings, in meters, and in joints for some older piping. The presence of lead in water quality tests in Palo Alto is more likely due to lead solder or piping in customer plumbing and the fact that lead testing is done at the customer tap. Water in the service lines and in homes can sit for extended periods creating a condition where a small amount of lead can leach into the water.

Coliform has no known health implications, but any level of detection is still required to be reported, as discussed below.

Background

Every three years water agencies serving more than 10,000 service connections must prepare a

brief written report if they have detected one or more contaminants in drinking water that exceed a PHG, and must hold a public hearing to accept and respond to public comments on the report, in compliance with Health and Safety Code Section 116470(b) and (c). PHGs are water quality goals established by the California OEHHA. These goals represent the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, including allowing an adequate margin of safety. PHGs are non-enforceable and are not required to be met by public water systems under the California Health and Safety Code. However, these PHGs are used by the State Water Resources Control Board ("SWRCB") Division of Drinking Water in setting Maximum Contaminant Limits ("MCLs") for contaminants in drinking water. MCLs are set as close to the PHGs as is economically and technically feasible. According to the OEHHA literature[1] PHGs do not represent a boundary line between "safe" and "dangerous" contaminant levels, and drinking water is considered acceptable for public consumption even if it contains contaminants at levels exceeding the PHG, provided the MCLs are met. The City and its supplier, the San Francisco Public Utilities Commission ("SFPUC"), manage their water systems with the goal of keeping contaminants well below the MCL limit.

Some contaminants (such as lead and copper) may be subject to an Action Level instead of an MCL, which is the level at which a water system is required to implement a specified Treatment Technique (e.g. corrosion control in the case of lead and copper). In addition, the United State Environmental Protection Agency ("USEPA") may set MCL goals for some contaminants for which the OEHHA has not set a PHG, such as coliform. These are referred to as MCLGs and are the Federal equivalent of PHGs.

Discussion

The City regularly runs a variety of routine tests of the physical characteristics of the water it delivers, and tests for biological and non-biological contaminants, as shown in Table 1. Some testing is done to comply with regulatory requirements ("Compliance Monitoring"). Other tests, while not required, are performed as a best practice to ensure delivery of high quality water and ensure customer satisfaction. The results of these tests can be found in the City's Annual Water Quality ("Consumer Confidence") Report.[2]

Table 1: Water Quality Testing Summary

Test	Frequency
Compliance Monitoring	
Biological (Coliform / Giardia)	**Weekly**
Disinfectant levels	**Weekly**
Fluoride	**Weekly**
Disinfection byproducts	**Quarterly**
Asbestos	**Every three years**

[1] "Guide to Public Health Goal (PHGs) for Chemicals in Drinking Water," OEHHA, 2015.
[2] http://www.cityofpaloalto.org/gov/depts/utl/residents/resources/water_resources/

Lead and Copper	**Every three years**
Operational Monitoring	
Fluoride	**Continuously**
Physical Characteristics (Color, Odor, Turbidity)	**Monthly**

There are additional tests on source water performed by the San Francisco Public Utilities Commission, the City's water supplier, that are not included in this report. The SFPUC tests water quality at both local treated water sources (which are used occasionally) as well as the unfiltered Hetch Hetchy water system (which is the primary source of water for the SFPUC's wholesale and retail customers). Information on whether any PHGs were exceeded can be found in the SFPUC's triennial Public Health Goals report. The 2016 SFPUC PHG report can be found on the Water Quality Reports page at sfwater.org.[3] The SFPUC detected gross alpha particle activity in one treated local water source (Sunol Valley Water Treatment Plant / Calaveras Reservoir) and Hexavalent Chromium in all water sources (Hetch Hetchy water sources and local treated water sources). In both cases the levels detected were below the MCLs. Note that the SFPUC report contains results for both the San Francisco distribution system and the regional water system, so the report should be interpreted with care.

In its own distribution system testing, the City detected two contaminants in excess of PHGs or MCLGs: lead and coliform. These are discussed in more detail below in the City's 2016 Public Health Goals report (Attachment A).

Coliform Bacteria

Coliform bacteria are an indicator organism that is common in nature and not generally considered harmful. They are used as an indicator or proxy measure of bacterial contamination because of the ease of monitoring and analysis. The reason for the coliform drinking water standard is to minimize the possibility that the water contains pathogens, which are organisms that cause waterborne disease. If a positive sample is found, it may indicate a potential problem, and investigation and follow up sampling is required. It is difficult, if not impossible, to ensure that a system will never get a positive sample. Additionally, due to the sensitive nature of the laboratory analysis method used throughout the time period, some positive results may be caused by sample contamination. Because coliform is only an indicator of the potential presence of pathogens, it is not possible to state a specific numerical health risk or public health risk category.

Between 2013 and 2015, the City collected between 84 and 105 samples each month for coliform analysis. Coliform bacteria exceeded the MCLG of zero in 10 of the 36 months, and exceeded the MCL of 5% in two of those months, resulting in the City sending two public notifications to affected customers. After receiving any positive test, follow up actions ae taken, including disassembly and disinfection of the sampling station and thorough flushing of the water mains. Repeat samples and follow-up actions were taken until evidence of coliform no

[3] http://sfwater.org/Modules/ShowDocument.aspx?documentID=9767

longer appeared. The City also tests for E. Coli when it tests for other coliform bacteria. E. Coli presents a health risk when present in water, but the City did not detect any E. Coli in its water from 2013 through 2015.

As part of routine operations, the City already takes steps described by SWRCB as "best available technology" for coliform bacteria including maintenance of a disinfectant residual throughout the distribution system and proper maintenance of the distribution system. Some steps are implemented by the City's wholesale water supplier, the SFPUC, including filtration and/or disinfection of surface water supplies and regular cleaning of screens at City turnouts to reduce buildups of debris and organic material. Other equally important measures that have been implemented to protect drinking water include an effective cross-connection control program, flushing of mains and hydrants, and maintaining positive pressures in the distribution system.

There is one method that could potentially further reduce the presence of total coliform, which is to increase the amount of disinfectant residual in the distribution system. The tradeoffs include increased chemical usage and storage, a change in the taste and odor of the drinking water, and increased potential for the presence of cancer-causing disinfection byproducts. Additionally, there are limits for the maximum amount of disinfectant residual allowed in the distribution system as set by SWRCB and USEPA. The City maintains residual levels to achieve a balance between reducing coliform and avoiding disinfection byproducts, and does not recommend changing at this time.

Lead

There is no MCL for Lead. Instead, the 90th percentile value of all samples from household taps in the distribution system cannot exceed an Action Level of 15 ppb for Lead. If samples exceed the Action Level, the water system must implement corrosion control measures.

The PHG for lead, 0.2 ppb, is far lower than the Action Level, 15 ppb. The OEHHA developed the PHG based on the levels of lead in children's blood that could be shown to result in any level of intelligence deficit. Lead in blood can result from several sources, including dust, air, paint, water, and other sources. The OEHHA estimated the share of a child's lead intake from water based on conservative assumptions about lead intake from other sources, applied a safety factor, and calculated a safe level based on those assumptions.[4] The resulting calculation yielded a PHG of 0.2 ppb.[5] In areas with lower levels of lead intake from dust, air, paint, and

[4] Based on studies, the OEHHA estimated the amount of lead from all sources that could result in a decrease of one IQ point in children, which they term the "level of concern" for lead in blood. They then estimated the share of lead that came from drinking water. OEHHA stated that estimates of drinking water's contribution to lead blood levels range from 5% to 50% of total lead intake, and the OEHHA chose to assume a 20% contribution for the PHG calculation. This assumption was based on areas where children are exposed to high environmental concentrations of lead from other sources, a conservative estimate. An uncertainty factor of three was also applied, adding an additional safety margin.

[5] For more details on the PHG, see the OEHHA paper on calculation of the PHG at http://oehha.ca.gov/media/downloads/water/chemicals/phg/leadfinalphg042409_0.pdf

other sources, it could be assumed that even in households that exceed the PHG for drinking water, children's lead blood levels could still be below the level of concern used by the OEHHA.

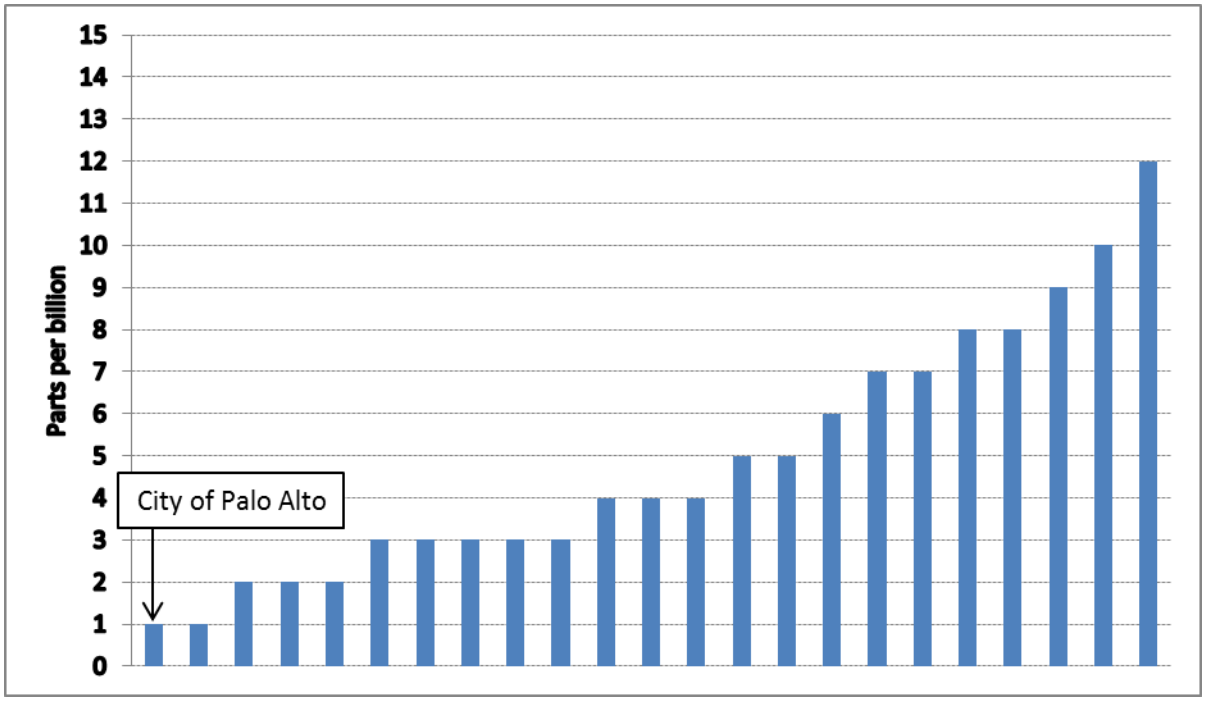
Lead enters drinking water primarily through corrosion of lead-containing materials in older household plumbing systems, such as those containing lead-based solder. Although the City's water source, the SFPUC, tests free of lead, and all known lead piping has been removed from the City's system, several of the homes that participated in the City's 2014 Lead and Copper Sampling had lead levels that exceeded the PHG of 0.2 ppb. The highest of these was 2 ppb, well below the Action Level of 15 ppb. These samples were taken from homes that the City considered to be the highest risk locations and from some volunteers within the City's service territory. Lead levels at these locations may be higher than others because of the plumbing material used when these homes were built. Most of the samples collected during the lead and copper sampling tested below the PHG for lead. The difference in lead concentration at the individual residences can likely be attributed to the plumbing components at these residences, though there may also be some contribution from brass meters or fittings in the City's system containing lead. The SFPUC controls the pH of the water it supplies to Palo Alto and its other customers, maintaining it at a level intended to reduce corrosion of lead containing materials in their distributions systems.

Listed below are some steps consumers can take to reduce exposure to lead:

- Have household water tested for lead.
- Find out whether household pipes contain lead or lead solder.
- Run household water for 15-30 seconds or until it becomes cold before using it for drinking or cooking; this flushes any standing water that may have been in contact with lead from the pipes.
- Avoid cooking with or drinking water from the hot water tap; lead dissolves more easily into hot water.
- Avoid boiling water to remove lead; excessive boiling of water makes the lead more concentrated – the lead remains when the water evaporates.

As mentioned above, staff has proactively removed known lead pipe from the water system. Lead levels in the City of Palo Alto's water system are some of the lowest in the region, and possibly the lowest. Chart 1, below, shows the City of Palo Alto relative to other water systems serving more than 1,000 customers in Santa Clara and San Mateo counties.

Chart 1: 90th Percentile Lead Sample in San Mateo and Santa Clara Water Agencies[6]



Although lead levels in Palo Alto are low, they are still above the PHG in some homes. It is not clear what the source of that lead is in those homes. On the City's side of the meter, it is possible that lead could come from brass in older meters, valves, or fittings. Many older brass fittings are not typically in contact with water, and City maintenance crews remove them when found. No correlation was found between lead levels in the customer homes sampled and the age of that customer's water service, which would imply little correlation between lead levels and the presence of older brass fittings. It is also unclear whether older meters are having much impact on lead levels. Of the 37 customers sampled, 60% had older brass meters, yet these customers had roughly the same incidence of PHG exceedance as customers with new meters. That leaves customer plumbing and fixtures as the most likely contributor to lead levels.

As a result, staff recommends against any additional work on the City's system, since a comprehensive program to replace fittings or meters would be costly and would have an uncertain impact on lead levels in customer homes. In addition, PHGs are voluntary, and the City is well below the mandatory Action Level set by the EPA. However, if the Council is seeking to make additional efforts toward even greater lead reduction, one alternative that could be

[6] Six agencies representing twelve service territories were excluded from this chart because it was unclear what their reports represented. These agencies reported no lead in their water. However, several of these agencies reported this based on the fact that their 90th percentile sample was less than 5 ppb, which is the Detection Limit for the Purposes of Reporting (DLR) set by the State. The DLR is the minimum measurement sensitivity a lab must achieve to be able to test water for reporting, but many labs are able to test to much lower levels of sensitivity. Therefore, we know these agencies had lead levels below 5 ppb, but it is not clear where their lead levels were relative to the PHG or relative to Palo Alto's 90th percentile lead level of 1 ppb.

investigated is to establish a voluntary program to test lead levels in customers' homes upon request, removing older brass meters when lead levels above the PHG are found, and testing the water from the City's service connection to confirm it is below the PHG. That would help the customer diagnose the reason for lead levels above the PHG and would provide some assurance that the problem is with the customers' system, not the City' system, before the customer undergoes potentially costly plumbing modifications.

Timeline
Upon acceptance of this report, the City's next Public Health Goals report will be provided in 2019.

Resource Impact
No additional actions are recommended based on this report, so no resource impact is anticipated.

Policy Implications
Acceptance of this report will fulfill the City's obligations under California Health and Safety Code Section 116470(b) and (c).

Environmental Review
The Council's review and acceptance of this report does not require California Environmental Quality Act (CEQA) review because it does not meet the definition of a project under Public Resources Code Section 21065, and pursuant to CEQA Guidelines Section 15378(b)(5) it is an administrative governmental activity which will not cause a direct or indirect physical change in the environment.

Attachments:

- Attatchment A: City of Palo Alto Water Utility 2016 Public Health Goals Report (PDF)

ATTACHMENT A

City of Palo Alto 2016 Public Health Goals Report

November 21, 2016

Table of Contents

1. Background and Key Terms

a. How is Water Quality Regulated and What are Public Health Goals?

Water quality regulations are developed by the United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board (SWRCB) Division of Drinking Water. These agencies set Maximum Contaminant Limits (MCLs) for various contaminants in drinking water. In setting MCLs the USEPA and SWRCB take into consideration the best available technology for treatment of the contaminant and the technical and economic feasibility of measuring a contaminant. The City of Palo Alto (City) and its supplier, the San Francisco Public Utilities Commission (SFPUC), manage their water systems with the goal of keeping contaminants well below the MCL limit. Success in meeting that goal is summarized in the City's Annual Consumer Confidence (Water Quality) Report.

Public Health Goals (PHGs) are water quality goals established by the California Office of Environmental Health Hazard Assessment (OEHHA). They are maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, allowing an adequate margin of safety. They are typically lower than MCLs. In setting the PHGs, OEHHA does not take into account any of the practical factors which are considered by the USEPA and SWRCB when setting MCLs. PHGs are non-enforceable and are not required to be met by public water systems under the California Health and Safety Code. Maximum Contaminant Level Goals (MCLGs), established by

USEPA, are the federal equivalent to PHGs. The SWRCB and USEPA set MCLs as close as is feasible to PHGs and MCLGs.

b. Reporting Requirements

As described in the Appendix, every three years water agencies serving more than 10,000 service connections must prepare a brief written report if they have detected one or more contaminants in drinking water that exceed a PHG. In the report the agency must identify each contaminant detected in drinking water that exceeds the applicable PHG, disclose the public health risk for the contaminant, and the category or type of risk to health that could be associated with each contaminant. The agency must also describe the best available technology, if any is available on a commercial basis, to remove the contaminant or reduce the concentration of the contaminant, and estimate the cost of implementing that technology. The agency is required to describe any planned actions to be taken to reduce the level of the contaminant and the justification for that decision.

c. Best Available Treatment Technology and Cost Estimates

Both the USEPA and SWRCB adopt what are known as BATs, or Best Available Technologies, 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 or 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.

d. Guidelines Followed in Preparation of this Report

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

2. City of Palo Alto Water Quality Data

a. Water supply sources

All drinking water delivered by the City during the reporting period was purchased from the City's water supplier, the SFPUC. The City maintains one active standby well and seven non-active emergency standby wells, but no water was delivered to customers from these sources, so water quality data on these sources is not included in this report.

b. Reporting Period and Data Collected

This report covers calendar years 2013, 2014, and 2015. During that time weekly tests of physical characteristics, disinfectant residual and coliform bacteria were performed. Quarterly testing of disinfection byproducts was also performed. Lead and copper were tested in 2014 according to the City's triannual schedule. The City also voluntarily monitors fluoride levels. These tests are summarized in the 2013, 2014, and 2015 Annual Consumer Confidence (Water Quality) Reports, which can be found on the City's website at:

http://www.cityofpaloalto.org/gov/depts/utl/residents/resources/water_resources/default.asp

Source monitoring for the Hetch Hetchy water system is performed by the SFPUC. The tests done as part of the SFPUC's source monitoring program include tests for contaminants not tested for by the City, and are therefore not included in this report. Results of the SFPUC's source monitoring tests are available in that agency's Annual Water Quality Reports and Public Health Goals report. The latter report was in draft form at the time of publication of this report. The reports can be found on the SFPUC's website at:

Water Quality: http://sfwater.org/index.aspx?page=634

Public Health Goals: http://sfwater.org/cfapps/wholesale/listPage.cfm?nav_id=1026

Note that these reports must be interpreted with care since they include test results for the San Francisco distribution system as well as the Hetch Hetchy system source water.

c. Contaminants Detected in Excess of PHGs and MCLGs

In 2013, 2014 and 2015 the only contaminants detected in excess of PHGs or MCLGs were coliform bacteria, which is discussed in more depth below, and lead which was detected at some customer taps at 1.1 parts per billion (ppb), which exceeds the PHG of 0.2 ppb but is well below the Action Level (the equivalent of an MCL for Lead) of 15 ppb. The most likely source of lead in these samples is lead in customer plumbing. The City has eliminated all known lead pipe from its system, and does not detect any lead in the water the SFPUC delivers to Palo Alto. However, lead solder in older water mains and services may contribute to the lead found in these samples, as may older brass water meters.

3. Discussion of Detected Contaminants

a. Coliform Bacteria

The MCL for coliform is 5% positive samples per month and the MCLG is zero.[1]

Coliform bacteria are an indicator organism that are common in nature and are not generally considered harmful. They are used as an indicator because of the ease of monitoring and analysis. The reason for the coliform drinking water standard is to minimize the possibility that the water contains pathogens, which are organisms that cause waterborne disease. If a positive sample is found, it indicates a potential problem that needs to be investigated and follow up sampling is required. It is not unusual for a system to have an occasional positive sample. It is difficult, if not impossible; to ensure that a system will never get a positive sample. Additionally, due to the sensitive nature of the laboratory analysis method used throughout the time period, some positive results may be caused by sample contamination. Because coliform is only an indicator of the potential presence of pathogens, it is not possible to state a specific numerical health risk or public health risk category.

Between 2013 and 2015, the City collected between 84 and 105 samples each month for coliform analysis. Coliform bacteria exceeded the MCLG of zero in 10 of the 36 months, and exceeded the MCL of 5% in two of those months, resulting in public notifications. After receiving any positive test, follow up

[1] As noted above, the MCLG is the Federal equivalent of the PHG. There is no PHG for coliform.

actions were taken including disassembly and disinfection of the sampling station and thorough flushing of the water mains. Repeat samples and follow-up actions were taken until evidence of coliform no longer appeared.

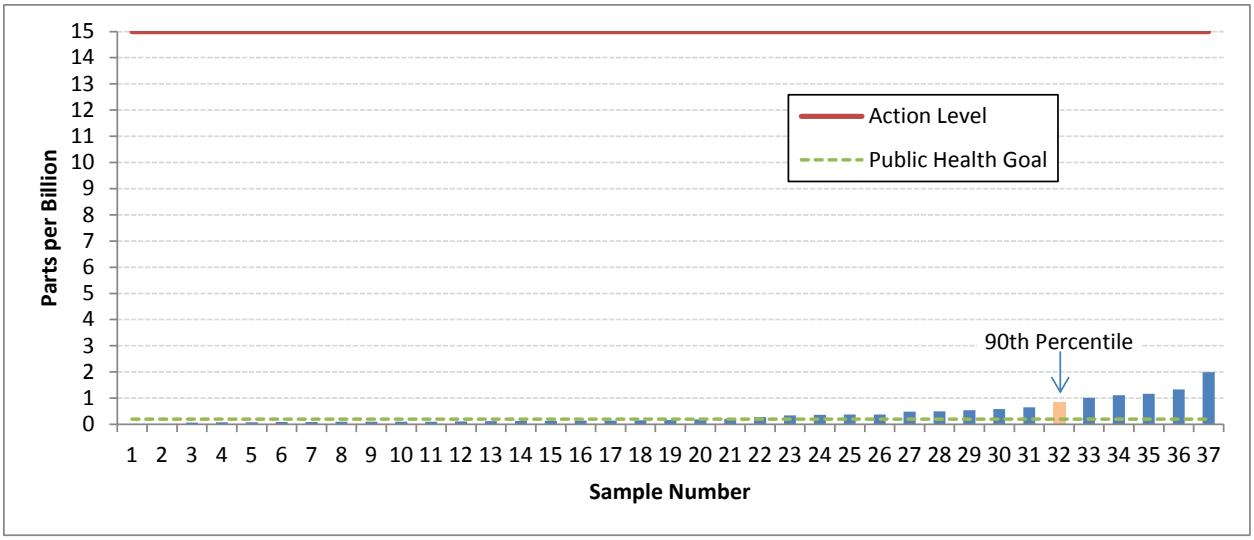
As part of routine operations, the City already takes steps described by SWRCB as "best available technology" for coliform bacteria in Title 22, CCR Section 64447, including maintenance of a disinfectant residual throughout the distribution system and proper maintenance of the distribution system. Some steps are implemented by the City's wholesale water supplier, the SFPUC, including filtration and/or disinfection of surface water supplies and regular cleaning of screens at City turnouts to reduce buildups of debris and organic material. Other equally important measures that have been implemented to protect drinking water include an effective cross-connection control program, flushing of mains and hydrants, and maintaining positive pressures in the distribution system.

There is one method that could potentially further reduce the presence of total coliform, which is to increase the amount of disinfectant residual in the distribution system. The tradeoffs include increased chemical usage and storage, a change in the taste and odor of the drinking water, and increased potential for the presence of cancer-causing disinfection byproducts. Additionally, there are limits for the maximum amount of disinfectant residual allowed in the distribution system as set by SWRCB and USEPA.

b. Lead

There is no MCL for Lead. Instead, the 90th percentile value of all samples from household taps in the distribution system cannot exceed an Action Level of 15 parts per billion (ppb) for Lead. The PHG for lead is 0.2 ppb. Lead enters drinking water primarily through corrosion of lead-containing materials in older household plumbing systems, such as those containing lead-based solder. Several of the homes that participated in the City's 2014 Lead and Copper Sampling had lead levels that exceeded the PHG of 0.2 ppb, though they were well below the Action Level of 15 ppb. Results from the lead and copper sampling represent the worst case conditions for lead levels in the distribution system. These samples are collected under a first-draw condition; which means that water must sit in the customer's piping for 6 hours before it is collected. These samples were taken from homes that the City considered to be the highest risk locations and from some volunteers within the City's service territory. Lead levels at these locations may be higher than others because of the plumbing material used when these homes were built. Most of the samples collected during the lead and copper sampling tested below the PHG for lead. The probable reason for the difference in lead concentration at the individual residences can be attributed to the plumbing components at these residencies. The City has eliminated all known lead pipe from its system, and does not detect any lead in the water the SFPUC delivers to Palo Alto. However, lead solder in older water mains and services may also contribute to the lead found in these samples, as may older brass water meters.

As shown in the chart below, 20 of 37 samples collected in 2014 tested below the PHG for lead. 100% of the samples were below the Action Level. The City compares the 90th percentile value against the Action Level, and if the City does not exceed the Action Level, the City is deemed by the SWRCB to have "optimized corrosion control" for its system.



Since lead contamination generally occurs from corrosion of household lead pipes, it cannot be directly detected or removed by the City. Instead, USEPA requires water systems to control the corrosiveness of their water if the level of lead at more than 10% of home taps sampled exceeds the Action Level. The Action Level for lead has been set at 15 ppb because EPA believes, given present technology and resources, that this is the lowest level to which water systems can reasonably be required to control the contaminant should it occur in drinking water at their customers' home taps. The category of health risk for Lead includes multiple toxic effects on human body. The OEHHA revised the PHG for lead in drinking water based on new studies relating to the most sensitive health risks. These are non-carcinogenic, chronic health effects including neurobehavioral effects (decreased intelligence) in children and hypertension in adults. Lead also has the potential to cause kidney disease and cancer; however, the carcinogenic risks are considered smaller than the risks for chronic toxicity. The public health goal of 0.2 ppb was determined from a maximum daily lead intake through water ingestion of 2.86 µg/day, which corresponds to a level of concern for neurobehavioral effects (in children) designated as a decrease of one Intelligence Quotient point.

The SWRCB considers optimizing corrosion controls as the Best Available Technology (BAT) to deal with lead in drinking water. In an evaluation report dated August 4, 2006, the SFPUC concluded that pH adjustment in its system is the optimal corrosion control treatment for its water supply. The report, which was then approved by the California Department of Public Health (the responsible agency for water quality at the time), recommends a minimum pH of 8.2 be maintained throughout the transmission and distribution system. Because the City continues to meet the Action Level for lead and operate the water system with pH greater than 8.2, the SWRCB considers that the City has achieved optimized corrosion control. Therefore, additional corrosion control treatment is not needed.

Listed below are some steps consumers can take to reduce exposure to lead:

- Have household water tested for lead.
- Find out whether household pipes contain lead or lead solder.

- Run household water for 15-30 seconds or until it becomes cold before using it for drinking or cooking; this flushes any standing water that may have been in contact with lead from the pipes.
- Avoid cooking with or drinking water from the hot water tap; lead dissolves more easily into hot water.
- Avoid boiling water to remove lead; excessive boiling of water makes the lead more concentrated – the lead remains when the water evaporates.

4. Recommendations for Future Action

The City's drinking water quality meets all SWRCB and USEPA drinking water standards set to protect public health and no additional actions are proposed. 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 or replacement of customer plumbing would be required, and in some cases may have negative side effects (such as in the case of increasing disinfectant residual to reduce coliform). 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.

5. Appendix

California Health and Safety Code Section 116470

116470. (a) As a condition of its operating permit, every public water system shall annually prepare a consumer confidence report and mail or deliver a copy of that report to each customer, other than an occupant, as defined in Section 799.28 of the Civil Code, of a recreational vehicle park. A public water system in a recreational vehicle park with occupants as defined in Section 799.28 of the Civil Code shall prominently display on a bulletin board at the entrance to or in the office of the park, and make available upon request, a copy of the report. The report shall include all of the following information:

(1) The source of the water purveyed by the public water system.

(2) A brief and plainly worded definition of the terms "maximum contaminant level," "primary drinking water standard," and "public health goal."

(3) If any regulated contaminant is detected in public drinking water supplied by the system during the past year, the report shall include all of the following information:

(A) The level of the contaminant found in the drinking water, and the corresponding public health goal and primary drinking water standard for that contaminant.

(B) Any violations of the primary drinking water standard that have occurred as a result of the presence of the contaminant in the drinking water and a brief and plainly worded statement of health concerns that resulted in the regulation of that contaminant.

(C) The public water system's address and phone number to enable customers to obtain further information concerning contaminants and potential health effects.

(4) Information on the levels of unregulated contaminants, if any, for which monitoring is required pursuant to state or federal law or regulation.

(5) Disclosure of any variances or exemptions from primary drinking water standards granted to the system and the basis therefor.

(b) On or before July 1, 1998, and every three years thereafter, public water systems serving more than 10,000 service connections that detect one or more contaminants in drinking water that exceed the applicable public health goal, shall prepare a brief written report in plain language that does all of the following:

(1) Identifies each contaminant detected in drinking water that exceeds the applicable public health goal.

(2) Discloses the numerical public health risk, determined by the office, associated with the maximum contaminant level for each contaminant identified in paragraph (1) and the numerical public health risk determined by the office associated with the public health goal for that contaminant.

(3) Identifies the category of risk to public health, including, but not limited to, carcinogenic, mutagenic, teratogenic, and acute toxicity, associated with exposure to the contaminant in drinking water, and includes a brief plainly worded description of these terms.

(4) Describes the best available technology, if any is then

available on a commercial basis, to remove the contaminant or reduce the concentration of the contaminant. The public water system may, solely at its own discretion, briefly describe actions that have been taken on its own, or by other entities, to prevent the introduction of the contaminant into drinking water supplies.

(5) Estimates the aggregate cost and the cost per customer of utilizing the technology described in paragraph (4), if any, to reduce the concentration of that contaminant in drinking water to a level at or below the public health goal.

(6) Briefly describes what action, if any, the local water purveyor intends to take to reduce the concentration of the contaminant in public drinking water supplies and the basis for that decision.

(c) Public water systems required to prepare a report pursuant to subdivision (b) shall hold a public hearing for the purpose of accepting and responding to public comment on the report. Public water systems may hold the public hearing as part of any regularly scheduled meeting.

(d) The department shall not require a public water system to take any action to reduce or eliminate any exceedance of a public health goal.

(e) Enforcement of this section does not require the department to amend a public water system's operating permit.

(f) Pending adoption of a public health goal by the Office of Environmental Health Hazard Assessment pursuant to subdivision (c) of Section 116365, and in lieu thereof, public water systems shall use the national maximum contaminant level goal adopted by the United States Environmental Protection Agency for the corresponding contaminant for purposes of complying with the notice and hearing requirements of this section.

(g) This section is intended to provide an alternative form for the federally required consumer confidence report as authorized by 42 U.S.C. Section 300g-3(c).