



Helix Water District

**Public Health Goals
Report on Water Quality**

June 2016

HELIX WATER DISTRICT

PUBLIC HEALTH GOALS REPORT ON WATER QUALITY

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SECTION 1: BACKGROUND INFORMATION

History:

California Health and Safety Code Section 116470 (attached) specifies that larger (more than 10,000 service connections) water utilities prepare a special report by July 1, 2016 if their water quality measurements have exceeded any public health goals. Public health goals are non-enforceable goals established by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment. The law also requires that where OEHHA has not adopted public health goals for a constituent, the water suppliers are to use the maximum contaminant level goals adopted by the United States Environmental Protection Agency. Only constituents which have a California primary drinking water standard and for which either a public health goal or maximum contaminant level goal has been set are to be addressed.

The Association of California Water Agencies 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 Helix Water District's report. No guidance was available from state regulatory agencies.

There are a few constituents that are routinely detected in water systems at levels usually well below the drinking water standards for which no public health goal nor maximum contaminant level goal has yet been adopted by OEHHA or USEPA. An example of this is total trihalomethanes. These are addressed in the district's annual water quality report, also known as the consumer confidence report. The law specifies what information is to be provided in this annual report.

If a constituent was detected in the district's water supply between 2013 and 2015 at a level exceeding an applicable public health goal or maximum contaminant level goal, this report provides the information required by the law. Included is the numerical public health risk associated with the maximum contaminant level and the public health goal or maximum contaminant level goal, 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 Public Health Goals:

Public health goals are set by the California Environmental Protection Agency's OEHHA, 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 Water Resources Control Board, Division of Drinking Water in setting drinking water standards maximum contaminant levels are considered in setting the public health goals. These factors include analytical detection capability, available treatment technology, benefits and costs. The public health goals are not enforceable and are not required to be met by any public water system. Maximum contaminant level goals are the federal equivalent to public health goals.

Reporting Requirements:

The purpose of this report is to inform consumers of the district's drinking water public health goals that were exceeded during 2013, 2014 and 2015, pursuant to California Health and Safety Code Section 116470(b). In addition, this report provides information about the cost of achieving a water quality level that does not exceed the public health goals. For general information about the quality of the water delivered by the district, please refer to the district's consumer confidence report, also known as the annual water quality report. An online version of the 2016 annual water quality report can be found at www.hwd.com. Included in this report is information about the maximum contaminant level and the public health goal, the health risk associated with each constituent, the best available treatment technology that may reduce the constituent level, and an estimate of the cost to install such treatment.

Water Quality Data Considered:

All of the water quality data collected by the district's water system between 2013 and 2015 for purposes of determining compliance with drinking water standards was considered. This data was summarized in the district's 2013, 2014 and 2015 annual water quality reports. The report is electronically delivered or mailed to all district customers annually in June.

For each regulated contaminant, the California State Water Resources Control Board, Division of Drinking Water establishes detection limits for the purposes of reporting or DLR. DLRs are the minimum levels at which any analytical result must be reported to DDW. Results indicated below the DLRs cannot be quantified with any certainty. In some cases, public health goals are set below the DLR. Any contaminant reported below the DLR will be considered zero for the purpose of this report. This approach is accepted by the DDW.

Best Available Treatment Technology and Cost Estimates:

Both the United States Environmental Protection Agency and DDW adopt what are known as Best Available Technologies or BAT, which are the best methods of reducing contaminant levels to the maximum contaminant level. Costs can be estimated for such technologies; however, since many public health goals and maximum contaminant level goals are set much lower than the maximum contaminant level, it is not always possible or feasible to determine what treatment is needed to further reduce a constituent downward to or near the public health goal or maximum contaminant level goal, 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.

SECTION 2: CONSTITUENTS DETECTED THAT EXCEED A PUBLIC HEALTH GOAL

Radiological:

Gross Alpha Particle Activity

Radionuclides such as gross alpha in water supplies are from erosion of natural deposits. The term radionuclide refers to naturally occurring elemental radium, radon, uranium and thorium. Each of those elements has an unstable atomic nucleus that spontaneously decays producing ionizing radiation. Gross alpha is defined as the sum total of these radionuclides. Exposure to ionizing radiation in concentrations exceeding the maximum contaminant level may have carcinogenic (cancer causing), mutagenic (causing mutation of cells) or teratogenicity (causing abnormalities in offspring) effects. The United States Environmental Protection Agency's maximum contaminant level goals for gross alpha particle is zero and the California maximum contaminant level is 15 pCi/L. Helix Water District's Lake Jennings had a gross alpha of 3.3 pCi/L. This level is well below maximum contaminant level. Health risk category based on experimental animal testing data evaluated in the USEPA maximum contaminant level goals document and California maximum contaminant level has determined gross alpha particle as a carcinogen. The USEPA's maximum contaminant level goal for gross alpha is zero and a cancer risk of one additional case per million people for the DDW maximum contaminant level of 15 pCi/L. *Note: Cancer Risk =Theoretical 70-year lifetime excess cancer risk at a statistical confidence limit. Actual cancer risk may be lower or zero.*

The EPA Radionuclides Rule lists Best Available Technology or BAT for radionuclides as reverse osmosis, ion exchange, and lime softening. For the sake of this report, one BAT will be explored for achieving compliance with the maximum contaminant level for gross alpha particle activity gross alpha, reverse osmosis. All costs including capital, land, construction, engineering, planning, environmental, contingency, and operating and maintenance costs are included but only general assumptions can be made for these items. Cost estimating guidelines from USEPA, American Water Works Association Research Foundation, American Water Works Association, and the American Society of Civil Engineers were used in determining the cost to implement the BAT. Assuming about 57,000 service connections, the estimated cost to install and operate such a treatment system at the R.M. Levy Water Treatment Plant would result in an increased cost for each customer of approximately \$280 to \$530 per service connection per year. These values were assessed using Association of California Water Agencies' February 2012 'Suggested Guidelines' for reverse osmosis treatment technology and includes annualized capital and operating and maintenance costs, indexed to 2015. The reference study was Malcolm Pirnie's "reverse osmosis estimate for California Urban Water Agencies, large surface water treatment plants treating water from the State Project Water," and does not include other potential costs and risks, including site location and conditions issues, brine disposal, increased corrosion risks, and increased water waste due to brine creation.

SECTION 3: RECOMMENDATIONS FOR FURTHER ACTION

The district's drinking water quality meets all California State Water Resources Control Board, Division of Drinking Water and United States Environmental Protection Agency 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 maximum contaminant levels 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.

REFERENCES

Health and Safety Code Section 116470

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.

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.
7. 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.

8. The department shall not require a public water system to take any action to reduce or eliminate any exceedance of a public health goal.
9. Enforcement of this section does not require the department to amend a public water system's operating permit.
10. 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.
 - 10.1. 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).