**Initial Statement of Reasons**

**Perchlorate Detection Limit for Purposes of Reporting (DLR)**

**Title 22, California Code of Regulations**

1. **BACKGROUND/AUTHORITY (PROBLEM STATEMENT)**

Health and Safety Code (HSC) section 116270 states California’s legislative intent to establish primary drinking water standards at least as stringent as those under the federal Safe Drinking Water Act and to establish a program that is more protective of public health than the minimum federal requirements. HSC subsections 116365(a) and (b) require the State Water Resources Control Board (State Water Board) to adopt primary drinking water standards for contaminants. Each standard must be set at a level as close as feasible to the corresponding public health goal (PHG), placing primary emphasis on the protection of public health, and meeting, to the extent technologically and economically feasible, HSC 116365(a) conditions. HSC 116365(g) requires review of each primary drinking water standard at least once every five years. If changes in technology or treatment techniques permit materially greater protection of public health or attainment of the PHG, then the State Water Board must amend the standard.

The perchlorate primary drinking water standard is expressed in the form of a maximum contaminant level (MCL) and associated monitoring and reporting requirements as described in HSC 116275, including a Detection Limit for Purposes of Reporting (DLR) as defined in 22 California Code of Regulations (CCR), section 64400.34. The current perchlorate MCL and DLR are 0.006 mg/L and 0.004 mg/L, respectively.

Pursuant to HSC 116365(c), the Office of Environmental Health Hazard Assessment (OEHHA) prepares and publishes an assessment of public health risks posed by each contaminant for which the State Water Board proposes a primary drinking water standard. This risk assessment includes an estimate, the PHG, of the drinking water contaminant level that is not anticipated to cause or contribute to adverse health effects, or that does not pose any significant health risk.

In 2015, OEHHA revised the perchlorate PHG from 0.006 mg/L to 0.001 mg/L. Consistent with HSC 116365(g), this revision was considered in the State Water Board’s 2016 review of the perchlorate MCL. While analytical methods are available to report data at concentrations lower than the current DLR of 0.004 mg/L, many water systems and laboratories quantify reported concentrations only as low as the DLR. The lack of perchlorate occurrence data at concentrations below the current DLR hinders the State Water Board’s ability to evaluate whether technology can achieve a materially greater protection of public health or attainment of the public health goal than the current DLR of 0.004 mg/L, and determine the economic feasibility of lowering the MCL.

The State Water Board proposes to lower the perchlorate DLR from 0.004 mg/L to 0.002 mg/L, which is consistent with current laboratory analytical capabilities. The proposed DLR would not have a significant adverse impact on businesses, water systems, or individuals served by the water systems.

In addition to the changes to the DLR for perchlorate, the State Water Board has identified that the repeal of CCR, Title 22, Division 4, Chapter 12, Article 1 resulted in the deletion of definitions referenced in remaining regulations, leaving references to sections that no longer exist. The State Water Board proposes to include the definitions in the appropriate chapters and revise the subsequent instances that reference the definitions.

1. **BENEFITS**

Perchlorate DLR

The proposed regulations are consistent with the requirements of HSC sections 116270 and 116365, which require the State Water Board to establish a drinking water program that is more protective of public health than the minimum federal requirements, to set primary drinking water standards for contaminants at levels as close as feasible to the corresponding PHGs, to periodically review established standards, and, in establishing and reviewing standards, to place primary emphasis on the protection of public health, while considering the extent of economic and technological feasibility of the proposed standards.

The benefits expected to result from the proposed regulatory action include the following:

* Improved reporting of perchlorate occurrence in drinking water sources at concentrations less than the current DLR;
* Improved ability to evaluate performance of existing treatment to remove perchlorate to concentrations less than the current DLR;
* Improved ability to evaluate economic feasibility of treating perchlorate to concentrations less than the current DLR;
* Improved determination of whether current treatment can achieve greater public health protection than realized; and
* Improved ability to reliably determine whether, pursuant to HSC 116365(g), it is possible to reduce the MCL for perchlorate to a concentration closer to the PHG, consistent with HSC 116365 and other statutory and regulatory requirements.

In addition, State Water Board staff anticipate an incidental benefit from the regulations will be refinement of analytical methods for testing perchlorate, which will allow quantified reporting of perchlorate at concentrations even below the proposed DLR.

Reinstatement of Definitions from Chapter 12 that were Repealed

The repeal of 22 CCR Chapter 12 resulted in the deletion of essential definitions that are referenced in other regulatory sections that were not repealed. Replacing the repealed definitions will clarify the current regulations, which will eliminate confusion by regulated entities.

1. **SUMMARY OF PROPOSAL AND PURPOSE**

Perchlorate DLR proposal:

* In Table 64432-A, replace the current perchlorate DLR of 0.004 mg/L with a revised perchlorate DLR of 0.002 mg/L.

The primary purpose of the proposed regulations is to adopt a revised DLR of 0.002 mg/L for perchlorate to allow determination of perchlorate occurrence in drinking water sources at concentrations below the current DLR of 0.004 mg/L. This will allow determination of whether it is possible to amend the MCL for perchlorate, as required by HSC 116365.

Referenced definitions from Chapter 12 (repealed) proposal:

* Add 22 CCR 64400.95. Possible Contaminating Activity (PCA). “Possible contaminating activity (PCA)” means a human activity that is an actual or potential origin of contamination for a drinking water source and includes sources of both microbiological and chemical contaminants that could have adverse effects upon human health.
* Add 22 CCR 64401.57. Source Water Assessment. “Source Water Assessment” means an evaluation of a drinking water source that includes delineation of the boundaries of the source area, identification of PCAs within the delineated area, a determination of the PCAs to which the source is most vulnerable, and a summary of the vulnerability of the source to contamination.
* Replace all citations of §63000.84 with §64401.57.

The primary purpose for including definitions from 22 CCR Chapter 12 (repealed) in the proposed regulatory text is because there are still sections in Title 22 that currently refer to those definitions and section numbers that were repealed. The proposed text re-includes definitions for the terms “Possible Contaminating Activity” and “Source Water Assessment,” which were previously repealed, but are still needed for the regulations governing drinking water in Title 22.

1. **NECESSITY OF PROPOSED REGULATIONS**

Perchlorate DLR

HSC subsections 116365(a) and (b) require the State Water Board to adopt primary drinking water standards for contaminants at levels as close as feasible to the corresponding PHGs, placing primary emphasis on the protection of public health, and to the extent that is technologically and economically feasible. HSC 116365(g) requires review of each primary drinking water standard at least once every five years. If changes in technology or treatment techniques permit materially greater protection of public health or attainment of the PHG, then the State Water Board must amend the standard. HSC section 116375 mandates that the State Water Board adopt regulations for the monitoring of contaminants, including the type of contaminant, frequency and method of sampling and testing, and the reporting of results.

When the current perchlorate MCL of 0.006 mg/L was adopted in 2007, it met the HSC 116365(a) requirement to be as close as possible to the PHG of 0.006 mg/L. As part of the periodic review of existing MCLs required by HSC 116365(g), OEHHA’s 2015 amendment of the PHG from 0.006 mg/L to 0.001 mg/L necessitated the State Water Board’s consideration of whether to lower the MCL for perchlorate.

DLRs are the designated minimum levels at or above which any analytical finding of a contaminant in drinking water resulting from monitoring must be reported to the State Water Board. DLRs for inorganic contaminants, such as perchlorate, are found in 22 CCR Table 64432‑A. The DLR is considered as part of the technological feasibility analysis when establishing an MCL. While analytical methods are available to report data at concentrations lower than the current 0.004 mg/L DLR, many water systems and laboratories quantify reported concentrations only as low as the DLR. The lack of data on perchlorate occurrence at concentrations below the current DLR hinders the State Water Board’s ability to evaluate whether technology achieves a materially greater protection of public health or attainment of the PHG and to determine the economic feasibility of lowering the MCL in conducting the HSC 116365(g) review. To adequately conduct this review and evaluation, and to adequately evaluate health risk, technological feasibility, and economic feasibility in consideration of a revised MCL, it is necessary to acquire water quality data characterizing drinking water source concentrations of perchlorate to concentrations lower than the current DLR, and ideally, at least as low as the current PHG.

These data are further necessary to carry out the State Water Board’s responsibilities under HSC 116350(b) to “conduct research, studies, and demonstration projects relating to the provision of a dependable, safe supply of drinking water, including, but not limited to…improved methods to identify and measure the existence of contaminants in drinking water and to identify the source of the contaminants,” and “improved methods to identify, measure, and assess the potential adverse health effects of contaminants in drinking water.”

To remedy this data deficiency, the State Water Board is proposing to lower the perchlorate DLR from 0.004 mg/L to the technologically and economically feasible concentration of 0.002 mg/L.

Referenced definitions from Chapter 12 (repealed)

The repeal of 22 CCR Chapter 12 resulted in the deletion of essential definitions that are referenced in other regulatory sections. Reinstating the definitions for “Possible Contaminating Activity” and “Source Water Assessment” is necessary to prevent confusion and incorrect interpretation of the regulations.

1. **ECONOMIC IMPACT ASSESSMENT / ANALYSIS**

Government Code section 11346.3(b) requires that state agencies proposing a regulation that is not a major regulation shall prepare an economic impact assessment of whether and to what extent it would affect the creation or elimination of jobs; the creation of new businesses or the elimination of existing businesses; the expansion of businesses; and the benefits of the regulation to the health and welfare of California residents, worker safety, and the state’s environment.

Referenced definitions from Chapter 12 (repealed)

The re-addition of the definitions for “Possible Contaminating Activity” and “Source Water Assessment” to the existing regulations, which currently refer to these terms, is not expected to create any significant economic impact.

Perchlorate DLR

The proposed regulation would affect the monitoring of perchlorate by California’s public water systems (PWS). Existing regulations currently require PWS to monitor quarterly any source in which certain chemicals, including perchlorate, have been detected at or above the corresponding DLR. The frequency of drinking water sampling and analysis for perchlorate is expected to increase because more PWS are expected to have detections when the DLR is lowered. Increased sampling would create additional costs for the PWS. PWS, however, are excluded from the definition of a “small business,” and, therefore, the proposed regulations would not have a direct effect on any businesses or individuals (Gov. Code §11342.610(b)(8)). However, of the 7,194 drinking water sources estimated to be impacted as a result of this regulation, the State Water Board estimates that ownership of 3,257 sources belongs to private systems, some of which may also be businesses, such as a mobile home park, restaurant or a processing plant.[[1]](#footnote-1)

Regardless of whether the PWS are considered businesses or not, it is anticipated that there would be indirect effects on businesses and individuals served by PWS from the regulations. Businesses providing laboratory analytical services for required monitoring could experience increased demand. Increased costs experienced by the PWS for increased sampling needs would be passed on to the individuals and businesses that the PWS serves. The types of businesses expected to be indirectly impacted consist of every type of business that requires potable drinking water for their customers, employees, or processes/operations. Based on the cost estimating methodology (CEM) described below, the State Water Board anticipates that the proposed regulation will incur an additional $1,611,456 sampling costs for the PWS, resulting in an approximate additional $224 per year for each affected water system, and $9 per year for individuals/businesses served by the affected water systems.

Therefore, the proposed regulation is expected to have a modest, unquantifiable potential for business expansion. Such impacts:

* Are not expected to create or eliminate jobs within the state. It is expected that current laboratory staffing would absorb the increased workload.
[Gov. Code 116346.3(b)(1)(A)]
* Are not expected to create new businesses or eliminate existing businesses within the state. As noted above, it is expected that current laboratory staff would be able to absorb the increased workload. Some new businesses could be created through the development of new analytical methods and treatment technologies to detect and address perchlorate.
[Gov. Code 116346.3(b)(1)(B)]
* Would result in a minimum expansion of the laboratory business within the state. As noted above, the regulation is anticipated to result in about an additional $1.6 million in analysis costs for PWS, which would be expected to be performed by existing laboratories within the state.
[Gov. Code 116346.3(b)(1)(C)]

The proposed regulations are expected to benefit the health and welfare of California residents. Reducing the level at which laboratories report perchlorate in sampling is the first step in determining whether it is economically and technologically feasible to reduce the MCL for perchlorate in drinking water to a concentration closer to the public health goal. [Gov. Code 116346.3(b)(1)(D)]

The CEM did not identify a significant adverse economic impact on businesses. A public water system that is subject to increased monitoring of perchlorate would pass the costs on to its customers, which may include businesses, but it is anticipated that those increases would be a small percentage of a business’ total costs. Regardless of the water usage of businesses, monitoring requirement costs are expected to be distributed equally among all consumers with impacted water sources. The estimate of annual cost per consumer is based on the number of affected sources per system.

**Cost Estimating Methodology (CEM)**

Existing California regulation requires community water systems (CWS) and nontransient-noncommunity water systems (NTNC) to sample their drinking water sources and have the samples analyzed for inorganic contaminants, such as perchlorate, to determine compliance with drinking water standards, including MCLs and DLRs.

The two primary variables affecting costs incurred by water systems under the proposed regulation are cost per analysis and the frequency of analyses. Based on the laboratory survey described later in this section, the proposed regulation is not expected to increase the cost per analysis. Therefore, any anticipated increased costs would result from increased monitoring frequencies.

Frequency of Required Monitoring

The frequency of source monitoring for perchlorate is prescribed by existing perchlorate regulations in 22 CCR 64432.3. The source monitoring frequencies that are affected by the proposed regulation are as follows:

* *Routine monitoring* for sources with levels of perchlorate below the DLR (*i.e*., undetected) – 22 CCR 64432.3(c). This monitoring consists of:
	+ For a system using groundwater, once every three years.
	+ For a system using approved surface water, annually.
	+ If monitoring at distribution entry points that have combined surface and groundwater sources, annually.
	+ *Increased monitoring* for sources which have had one or more detection above the DLR – 22 CCR 64432.3(e). Monitoring is required once per quarter (*i.e*., four samples each year) of any source in which perchlorate has been detected above the DLR. This monitoring continues as long as perchlorate levels persist above the DLR.

The proposed regulation is expected to increase the number of sources required to conduct quarterly monitoring because more sources would be likely to have detections of perchlorate above the DLR. Specifically, the frequency of monitoring and the costs would increase for sources with detections of perchlorate at levels between the proposed DLR of 0.002 mg/L and the current DLR of 0.004 mg/L.

The cost estimate was developed using the available source water quality monitoring data to estimate how many additional sources may require increased monitoring. The State Water Board used the source water quality monitoring data from the Water Quality Information replacement (WQIr) database for the time period of January 1, 2012, through April 27, 2018. The methodology included the following steps:

1. Identified all active drinking water sources with perchlorate levels above the current DLR of 0.004 mg/L. There were 487 sources identified. These sources are listed in the Appendix.
2. Perchlorate below the current DLR would likely be limited to those areas where perchlorate was detected from January 1, 2012 to April 27, 2018. The State Water Board identified the counties in which these sources are located and assumes that perchlorate contamination of water sources will not increase in the future. This limits the estimation to the 27 counties that have had one or more sources with perchlorate levels detected above the current DLR of 0.004 mg/L. These counties are listed in Table 1.

Table 1 – All Counties with Perchlorate Detections from January 1, 2012, through
April 27, 2018

|  |  |
| --- | --- |
| Contra Costa | San Bernardino |
| Fresno | San Diego |
| Kern | San Luis Obispo |
| Kings | San Mateo |
| Lassen | Santa Barbara |
| Los Angeles | Santa Clara |
| Madera | Shasta |
| Monterey | Siskiyou |
| Napa | Solano |
| Orange | Stanislaus |
| Placer | Sutter |
| Riverside | Tulare |
| Sacramento | Ventura |
| San Benito |  |

1. Identified all sources in each of the 27 counties not already subject to increased monitoring. These sources are currently on a routine sampling schedule but are assumed to be subject to quarterly monitoring under the proposed DLR.
2. The State Water Board conservatively estimated the number of additional sources that may require increased monitoring for perchlorate. The estimate is based on the geographic location of drinking water sources. The estimate makes conservative assumptions of future source detections of perchlorate with the proposed DLR of 0.002 mg/L. This approach is conservative in that it posits a representative, worst-case scenario in which all drinking water sources within the impacted counties would have detections under the proposed regulation.

The data set cannot be assumed to be a complete identification of sources with perchlorate contamination above the proposed DLR of 0.002 mg/L for the following reasons:

* + It is an overestimation to assume all water sources within an impacted county would be subject to increased monitoring;
	+ It is an underestimation to assume all water sources outside of the impacted county would not be subject to increased monitoring.

The population served by each system was estimated using information obtained from the State Water Board’s Safe Drinking Water Information System (SDWIS) database. In addition, all current sampling schedules for all water sources were obtained from SDWIS.

Table 2 shows that based on the counties that currently have perchlorate detections, there are 7,194 active and stand-by drinking water sources in use by 2,346 CWS and NTNC water systems that may have to conduct additional testing. Table 2 does not include sources with known perchlorate detections because they are already subject to increased monitoring frequencies and are expected to be unaffected by the proposed regulation. When the lower DLR is adopted, sources with any detectable concentration of perchlorate would require increased monitoring. The estimated numbers of affected sources and systems, by county, are shown in Table 2.

Table 2 - Estimated Affected Sources and Systems per County[[2]](#footnote-2)

| County | Estimated Number of Affected Sources | Estimated Number of Affected Systems |
| --- | --- | --- |
| Contra Costa | 17 | 6 |
| Fresno | 615 | 195 |
| Kern | 637 | 242 |
| Kings | 68 | 26 |
| Lassen | 42 | 24 |
| Los Angeles | 839 | 186 |
| Madera | 246 | 109 |
| Monterey | 493 | 252 |
| Napa | 143 | 90 |
| Orange | 214 | 35 |
| Placer | 92 | 44 |
| Riverside | 586 | 114 |
| Sacramento | 386 | 80 |
| San Benito | 65 | 45 |
| San Bernardino | 779 | 171 |
| San Diego | 168 | 51 |
| San Luis Obispo | 246 | 95 |
| San Mateo | 72 | 25 |
| Santa Barbara | 166 | 53 |
| Santa Clara | 289 | 77 |
| Shasta | 156 | 95 |
| Siskiyou | 58 | 40 |
| Solano | 32 | 24 |
| Stanislaus | 174 | 26 |
| Sutter | 30 | 25 |
| Tulare | 419 | 158 |
| Ventura | 162 | 58 |
| Totals: | 7,194 | 2,346 |

Laboratory Survey—Perchlorate Analytical Methods, Capabilities, and Costs

Several analytical methods exist for analyzing perchlorate in drinking water. EPA Methods 314.0, 314.1, 331.0, and 332.0 are validated methods for which the California’s Environmental Laboratory Accreditation Program (ELAP) currently provides accreditation.

To obtain sample analysis costs associated with the various methods and detection limits, in September 2017, the State Water Board, in collaboration with the Environmental Laboratory Technical Advisory Committee (ELTAC), prepared and performed a technical survey to drinking water laboratories accredited to perform perchlorate analyses on drinking water samples. The survey was designed to assess laboratory analytical capability and costs of analysis. The State Water Board’s Division of Drinking Water (DDW) incorporated the survey findings into this CEM to support its initial determination that the proposed regulations would not have a significant adverse economic impact on businesses.

At the time of the survey, fifty laboratories were accredited to perform EPA Method 314.0, eleven laboratories were accredited to perform EPA Methods 331.0 and/or 332.0, and two laboratories were accredited to perform EPA Method 314.1. For the proposed regulation, drinking water laboratories would need to be able to provide to their public water system clients analytical results meeting the regulatory detection limit or DLR. Laboratory findings below the DLR can also be accepted from accredited laboratories, although most laboratories do not report findings that are below the DLR.

The results of the survey indicated:

* + 84% of accredited laboratories that report perchlorate findings to the DDW water quality database use EPA Method 314.0 to perform the analysis.
	+ ELAP accredited laboratories that use EPA Method 314.0 are capable of confidently quantifying perchlorate detections in drinking water to 0.002 mg/L.
	+ Only accredited laboratories that use EPA Method 331.0 or EPA Method 332.0 are capable of confidently quantifying perchlorate detections in drinking water below the public health goal of 0.001 mg/L.

Conclusions drawn from the survey:

* + Sufficient laboratory capacity exists for EPA Method 314.0, which is capable of quantifying perchlorate levels to 0.002 mg/L.
	+ Quantifying perchlorate detections in drinking water to 0.002 mg/L will allow for the continued use of EPA Method 314.0. As this method is already widely used and requires no additional modifications to achieve the proposed DLR, the cost per analysis is not expected to be impacted by the proposed regulation.
	+ When the proposed regulation is promulgated, the number of accredited laboratories that use EPA Method 331.0 or EPA Method 332.0 and are capable of achieving a DLR at or below 0.001 mg/L would be insufficient to cope with all quarterly monitoring currently required, let alone the additional sampling and analysis expected for newly identified sources. To develop adequate capacity, there would likely be substantial costs related to new equipment procurement, but the main barrier would be the amount of time required to implement laboratory staff training and laboratory accreditation for these methods. Time required for method implementation is crucial especially when monitoring would begin immediately upon promulgation of the proposed regulation. Therefore, quantifying perchlorate detections in drinking water below 0.001 mg/L is not immediately feasible for all PWS.

Laboratories provided sample analysis cost information for EPA Method 314.0. The average cost per sample was $56.00, with the cost ranging from $40 to $72 per sample. The average value of $56.00 per sample was used to estimate increased monitoring costs.

Estimated Costs of Regulations

Assuming all of the affected water systems identified in Table 2 would have to conduct increased quarterly monitoring for each of their sources identified in Table 2, the total statewide increased cost for monitoring all affected water sources is approximately $1.6 million/year, as shown in Table 3 ($56/sample x 4 samples/year x number of affected sources).

Table 3 - Statewide Annual Costs for Perchlorate Monitoring Based on System Ownership

| System Ownership | Number of Affected Sources | % of All Affected Sources | Estimated Annual Cost |
| --- | --- | --- | --- |
| Federal  | 96 | 1.3% | $21,504 |
| State | 92 | 1.3% | $20,608 |
| Local  | 3,735 | 52% | $836,640 |
| Private | 3,257 | 45% | $729,568 |
| Mixed(Private/Public) | 5 | 0.1% | $1,120 |
| Blank (Not Designated) | 9 | 0.1% | $2,016 |
| Totals: | 7,194 | 100% | $1,611,456 |

Breakdown of Costs

Routine monitoring costs would continue unless there is a detection above the proposed DLR of 0.002 mg/L. If a detection exceeds the DLR, the source would require increased monitoring at four times per year (quarterly) at $56.00/sample.

1. *Estimated Annual Cost per Water System and per Person*

The State Water Board assumed that an increased monitoring frequency would include a minimum of four samples per source per year, resulting in increased costs of approximately $224.00/year per source.

To assess the cost of the proposed regulation, the State Water Board reviewed the estimated statewide annual cost per water system and per person for the systems that are assumed to face increased monitoring frequency. The annual cost per water system ranged from $224.00 to $46,144.00 (annual costs for quarterly testing ($224) x number of sources). The cost per person was then calculated by dividing the annual water system’s costs for the monitoring by the number of individuals served by a system; those costs ranged from $0.001-$44.80. The variability seen in the range is due to the number of sources of the system requiring quarterly monitoring and the population served by that system. As an example, the largest system identified had 206 sources that could require quarterly monitoring at $224 each. Assuming that all 206 sources could require quarterly monitoring, this would yield an annual system cost of $46,144.00. To determine how that would affect the customers, that annual costs was divided by the estimated population of 537,659 individuals that are served by the PWS, which results in the annual cost per person estimated at $0.09. In order to determine the impact, the State Water Board considered the mean, median, and mode for the cost per person and per water system. Table 4 summarizes these cost estimates.

Table 4 - Statewide Annual Average Costs per Person and Water System for Impacted Water Systems

|  | Mean[[3]](#footnote-3)  | Median | Mode |
| --- | --- | --- | --- |
| Estimated Cost per Person | $2.80 | $1.49 | $8.96 |
| Estimated Cost per Water System | $682.89 | $224.00 | $224.00 |

1. *Estimated Annual Cost per Water System*

Because more than 50% of the water systems have only a single source, the State Water Board conservatively assumed that the mode was the most representative estimated cost per system. The estimated annual cost is approximately $224.00/year for systems with one drinking water source.

1. *Estimated Annual Cost per Person*

For the proposed DLR of 0.002 mg/L, the State Water Board made the conservative assumption that using the mode per water system cost and distributing this cost over the smallest population typically served by a public water system (25 people) was a conservative representative estimated cost per individual. This is approximately
$9.00/ year.

1. **REASONABLE ALTERNATIVES CONSIDERED AND REJECTED**

Government Code section 11346.2(b)(4) requires that the State Water Board consider reasonable alternatives to the regulation and the agency’s reasons for rejecting those alternatives. Because the proposed regulation could be met through use of the current methods used by laboratories and would not result in significant costs to businesses, public water systems, or the individuals served by the public water systems, the State Water Board did not evaluate any less stringent DLR than the proposed value of
0.002 mg/L, as any less stringent DLR would detract from the intended purpose.

The State Water Board did evaluate one more stringent alternative. This alternative examined a DLR at or below the public health goal of 0.001 mg/L. The State Water Board rejected the alternative because adequate laboratory capacity does not currently exist. The State Water Board has found that there are only 11 ELAP-accredited laboratories capable of performing perchlorate analyses for all of the community and non-transient, non-community water systems that would need testing performed with a method that could reach a DLR lower than 0.001 mg/L. Therefore, the expected demand from increased monitoring requirements cannot be met by the few laboratories currently accredited for more sensitive analytical methods. In addition, requiring the use of a method that could reach a DLR of 0.001 mg/L would result in costs of approximately four times the cost of the proposed regulation.

No less burdensome and equally effective alternative has been proposed to the State Water Board for consideration.

1. **PERFORMANCE STANDARD vs. PRESCRIPTIVE STANDARD**

The proposed regulation would impose a performance standard of 0.002 mg/L for the determination of perchlorate in drinking water.

1. **UNNECESSARY DUPLICATION WITH FEDERAL REGULATIONS**

The State Water Board determined that the proposed regulations are neither duplicative of, nor in conflict with, any existing federal regulations. There is no existing federal regulation addressing perchlorate in drinking water. In addition, should the United States Environmental Protection Agency promulgate any drinking water standard for perchlorate, HSC 116270 states California’s legislative intent to establish a program that is more protective of public health than the minimum federal requirements. HSC 116365 further requires the State Water Board to adopt primary drinking water standards for contaminants at levels as close as feasible to the corresponding PHG, placing primary emphasis on the protection of public health, and meeting, to the extent technologically and economically feasible, specified conditions. Therefore, differing regulations are not only authorized by law, but are in certain instances, required.

1. **TECHNICAL, THEORETICAL, OR EMPIRICAL STUDIES, REPORTS, OR SIMILAR DOCUMENTS RELIED UPON**
2. CalEPA OEHHA, 2015. Public Health Goal, Perchlorate in Drinking Water, California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, February 2015 <https://oehha.ca.gov/media/downloads/water/public-health-goal/perchloratephgfeb2015.pdf>
3. U.S. Census Bureau, 2018. Historical Households Tables, Table HH-4. Households by Size: 1960 to Present, November 2017 https://www.census.gov/data/tables/time-series/demo/families/households.html
4. USEPA, 1999. “Method 314.0 Determination of Perchlorate in Drinking Water Using Ion Chromatography”, Revision 1.0, U.S. Environmental Protection Agency, Office of Research and Development, National Exposure Research Laboratory, Cincinnati, Ohio, November 1999 <https://www.nemi.gov/methods/method_summary/7399/>
5. USEPA, 2005. “Method 314.1 Determination of Perchlorate in Drinking Water using Inline Column Concentration/Matrix Elimination Ion Chromatography with Suppressed Conductivity Detection”, Revision 1.0, U.S. Environmental Protection Agency, Office of Ground Water and Drinking Water, Technical Support Center, Cincinnati, Ohio, May 2005 <https://www.nemi.gov/methods/method_summary/9800/>
6. USEPA, 2005. “Method 331.0 Determination of Perchlorate in Water by Liquid Chromatography Electrospray Ionization Mass Spectrometry”, Revision 1.0, U.S. Environmental Protection Agency, Office of Research and Development, National Exposure Research Laboratory, Cincinnati, Ohio, January 2005 <https://www.nemi.gov/methods/method_summary/9796/>
7. USEPA, 2005. “Method 332.0 Determination of Perchlorate In Drinking Water by Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry”, Revision 1.0, U.S. Environmental Protection Agency, Office of Research and Development, National Exposure Research Laboratory, Cincinnati, Ohio, March 2005 <https://www.nemi.gov/methods/method_summary/9791/>
8. SWRCB, 2018. Water Quality Information replacement (WQIr) database, State Water Resources Control Board, accessed on April 27, 2018
9. SWRCB, 2018. Safe Drinking Water Information System (SDWIS) database, accessed on September 6, 2019.

Appendix
Reported Perchlorate Detections Above the DLR
from January 1, 2012, through April 27, 2018

|  |  |  |  |
| --- | --- | --- | --- |
| COUNTY | SAMPLE POINT | SAMPLE DATE | FINDING (µg/L) |
| Sacramento | 3410015-020 | 1/2/2018 | 85 |
| San Bernardino | 3610038-029 | 6/27/2012 | 85 |
| San Bernardino | 3610038-035 | 6/27/2012 | 85 |
| San Bernardino | 3610038-036 | 1/31/2012 | 82 |
| San Bernardino | 3610038-038 | 1/31/2012 | 81 |
| San Bernardino | 3610038-039 | 1/31/2012 | 81 |
| Los Angeles | 1910048-005 | 4/9/2012 | 79 |
| San Bernardino | 3610038-037 | 2/5/2013 | 79 |
| Los Angeles | 1910060-002 | 12/19/2012 | 78 |
| San Bernardino | 3610038-034 | 1/31/2012 | 72 |
| Los Angeles | 1910039-115 | 10/3/2017 | 68 |
| Los Angeles | 1910039-027 | 2/10/2016 | 66 |
| San Bernardino | 3610038-009 | 2/24/2012 | 64 |
| Los Angeles | 1910039-087 | 7/5/2017 | 61 |
| Los Angeles | 1910039-114 | 1/4/2012 | 55 |
| Los Angeles | 1910039-088 | 6/4/2012 | 55 |
| Los Angeles | 1910039-089 | 2/28/2012 | 54 |
| Los Angeles | 1910039-099 | 6/4/2012 | 54 |
| Los Angeles | 1910124-001 | 1/24/2012 | 51.1 |
| Los Angeles | 1910039-112 | 11/6/2017 | 50 |
| San Bernardino | 3610038-046 | 2/2/2017 | 49 |
| Riverside | 3310031-036 | 7/28/2016 | 47 |
| San Bernardino | 3610013-030 | 4/7/2015 | 47 |
| San Bernardino | 3610038-713 | 2/1/2012 | 47 |
| San Bernardino | 3610038-718 | 1/30/2012 | 47 |
| Riverside | 3310047-012 | 8/21/2013 | 46 |
| San Bernardino | 3610043-011 | 2/6/2017 | 45 |
| Los Angeles | 1910048-004 | 10/15/2015 | 40 |
| San Bernardino | 3610038-001 | 1/21/2015 | 38 |
| Los Angeles | 1910039-204 | 7/5/2017 | 36 |
| Los Angeles | 1910063-003 | 5/15/2012 | 35 |
| Los Angeles | 1910077-001 | 3/1/2016 | 34 |
| Riverside | 3310037-063 | 2/19/2015 | 34 |
| San Bernardino | 3610038-700 | 8/9/2012 | 33 |
| San Luis Obispo | 4010831-001 | 1/26/2016 | 32.1 |
| Los Angeles | 1910063-026 | 4/17/2012 | 32 |
| Riverside | 3310031-154 | 12/13/2012 | 32 |
| Los Angeles | 1910063-002 | 1/7/2014 | 31 |
| San Bernardino | 3610038-712 | 2/1/2012 | 30 |
| Los Angeles | 1910060-023 | 6/27/2012 | 29 |
| Los Angeles | 1910077-037 | 3/19/2018 | 29 |
| San Bernardino | 3610013-032 | 11/1/2017 | 29 |
| Los Angeles | 1910039-026 | 11/12/2014 | 27 |
| Los Angeles | 1910142-003 | 4/8/2014 | 27 |
| Los Angeles | 1910039-090 | 3/5/2012 | 27 |
| Shasta | 4510800-001 | 10/3/2012 | 27 |
| Los Angeles | 1910142-050 | 2/21/2013 | 26 |
| Los Angeles | 1910062-042 | 1/29/2014 | 26 |
| San Bernardino | 3610004-008 | 2/23/2012 | 26 |
| Los Angeles | 1910039-113 | 2/6/2018 | 25 |
| Riverside | 3310031-167 | 5/1/2013 | 25 |
| San Bernardino | 3610038-040 | 1/31/2012 | 25 |
| Kern | 1503660-001 | 7/1/2015 | 24 |
| Los Angeles | 1910142-005 | 8/13/2013 | 24 |
| San Bernardino | 3610012-009 | 8/5/2014 | 23 |
| Tulare | 5402047-018 | 7/27/2015 | 23 |
| Los Angeles | 1910063-027 | 12/26/2017 | 22 |
| Riverside | 3310031-044 | 10/28/2016 | 22 |
| San Bernardino | 3610038-030 | 9/28/2016 | 22 |
| Los Angeles | 1910039-077 | 11/12/2014 | 21 |
| Los Angeles | 1910062-046 | 12/7/2017 | 21 |
| Los Angeles | 1910142-004 | 10/14/2014 | 21 |
| San Bernardino | 3610012-011 | 12/3/2013 | 21 |
| San Luis Obispo | 4010831-003 | 1/26/2016 | 20.8 |
| Los Angeles | 1910039-208 | 6/27/2017 | 20 |
| Los Angeles | 1910060-029 | 7/23/2013 | 20 |
| Los Angeles | 1910043-076 | 10/12/2012 | 20 |
| Riverside | 3310031-032 | 4/13/2012 | 20 |
| Sacramento | 3400434-001 | 5/22/2014 | 20 |
| Los Angeles | 1910126-016 | 12/12/2012 | 19 |
| Los Angeles | 1910199-014 | 7/7/2014 | 19 |
| Los Angeles | 1910060-024 | 3/3/2014 | 19 |
| Los Angeles | 1910060-028 | 8/13/2013 | 19 |
| Riverside | 3310031-042 | 11/17/2016 | 19 |
| Riverside | 3310031-111 | 12/30/2014 | 19 |
| San Bernardino | 3610038-711 | 2/7/2013 | 19 |
| Kern | 1510802-001 | 8/10/2016 | 18.2 |
| Los Angeles | 1910060-008 | 8/29/2013 | 18 |
| Los Angeles | 1910043-077 | 10/10/2012 | 18 |
| Sacramento | 3410015-008 | 10/3/2017 | 18 |
| San Benito | 3500563-001 | 7/6/2014 | 18 |
| Los Angeles | 1910124-018 | 4/9/2013 | 17.4 |
| Los Angeles | 1910062-018 | 8/2/2017 | 17 |
| Los Angeles | 1910126-015 | 5/30/2012 | 17 |
| Los Angeles | 1910126-017 | 12/6/2012 | 17 |
| Los Angeles | 1910039-205 | 6/27/2017 | 17 |
| Los Angeles | 1910039-209 | 5/2/2017 | 17 |
| Los Angeles | 1910060-025 | 12/31/2012 | 17 |
| San Bernardino | 3610012-008 | 2/8/2018 | 17 |
| San Bernardino | 3610013-700 | 2/21/2012 | 17 |
| San Bernardino | 3610038-028 | 1/21/2016 | 17 |
| San Bernardino | 3610038-714 | 2/11/2014 | 17 |
| San Bernardino | 3690001-022 | 8/15/2017 | 17 |
| Kern | 1510802-002 | 8/10/2016 | 16.6 |
| Kern | 1502670-001 | 7/18/2016 | 16 |
| Los Angeles | 1910062-016 | 5/9/2012 | 16 |
| Los Angeles | 1910039-097 | 2/24/2012 | 16 |
| Los Angeles | 1910062-012 | 1/4/2012 | 15 |
| Los Angeles | 1910159-005 | 5/20/2013 | 15 |
| Los Angeles | 1910039-181 | 1/5/2015 | 15 |
| Los Angeles | 1910199-003 | 10/31/2012 | 15 |
| Los Angeles | 1910043-079 | 4/9/2015 | 15 |
| Riverside | 3310031-038 | 7/21/2016 | 15 |
| San Bernardino | 3610014-012 | 1/22/2014 | 15 |
| Los Angeles | 1910009-007 | 1/25/2012 | 14 |
| Los Angeles | 1910126-006 | 11/7/2013 | 14 |
| Los Angeles | 1910126-052 | 4/17/2012 | 14 |
| Los Angeles | 1910039-207 | 5/9/2017 | 14 |
| San Bernardino | 3610012-004 | 12/4/2012 | 14 |
| San Bernardino | 3690001-016 | 5/2/2016 | 14 |
| Los Angeles | 1910124-006 | 5/7/2013 | 13.9 |
| Los Angeles | 1910060-003 | 6/4/2012 | 13 |
| Los Angeles | 1910199-005 | 10/7/2013 | 13 |
| Los Angeles | 1910205-045 | 8/13/2013 | 13 |
| Los Angeles | 1910001-108 | 2/10/2016 | 13 |
| Los Angeles | 1910142-041 | 8/29/2013 | 13 |
| Los Angeles | 1910205-027 | 12/13/2017 | 13 |
| Riverside | 3310031-085 | 1/12/2012 | 13 |
| Los Angeles | 1910124-028 | 5/7/2013 | 12.6 |
| Kern | 1502315-002 | 5/14/2014 | 12 |
| Los Angeles | 1910007-010 | 7/12/2016 | 12 |
| Los Angeles | 1910126-003 | 1/16/2013 | 12 |
| Los Angeles | 1910126-007 | 12/11/2013 | 12 |
| Los Angeles | 1910126-025 | 3/15/2018 | 12 |
| Los Angeles | 1910142-013 | 8/13/2015 | 12 |
| Los Angeles | 1910062-041 | 11/13/2013 | 12 |
| Los Angeles | 1910199-016 | 9/5/2017 | 12 |
| Los Angeles | 1990001-011 | 11/15/2012 | 12 |
| Riverside | 3310031-030 | 5/17/2012 | 12 |
| Riverside | 3310037-013 | 12/16/2014 | 12 |
| San Bernardino | 3610038-045 | 12/13/2017 | 12 |
| San Bernardino | 3610041-033 | 1/8/2013 | 12 |
| San Bernardino | 3610064-018 | 12/11/2013 | 12 |
| San Bernardino | 3610041-069 | 9/18/2013 | 12 |
| Tulare | 5402013-001 | 8/25/2015 | 12 |
| Los Angeles | 1910124-021 | 3/19/2013 | 11.4 |
| Los Angeles | 1910039-023 | 8/22/2013 | 11 |
| Los Angeles | 1910077-009 | 5/20/2014 | 11 |
| Los Angeles | 1910126-002 | 10/26/2016 | 11 |
| Los Angeles | 1910126-014 | 8/21/2013 | 11 |
| Los Angeles | 1910126-018 | 8/21/2013 | 11 |
| Los Angeles | 1910126-049 | 2/15/2018 | 11 |
| Los Angeles | 1910039-206 | 7/28/2015 | 11 |
| Riverside | 3301046-001 | 2/24/2014 | 11 |
| Riverside | 3310031-165 | 5/11/2012 | 11 |
| Riverside | 3310044-002 | 4/1/2014 | 11 |
| San Bernardino | 3610038-002 | 3/31/2014 | 11 |
| San Bernardino | 3610041-042 | 1/8/2013 | 11 |
| San Bernardino | 3610064-028 | 10/4/2013 | 11 |
| Orange | 3010046-009 | 2/6/2017 | 10.7 |
| Kern | 1503104-001 | 4/14/2015 | 10 |
| Los Angeles | 1910022-005 | 4/1/2014 | 10 |
| Los Angeles | 1910062-010 | 1/4/2012 | 10 |
| Los Angeles | 1910126-023 | 4/10/2012 | 10 |
| Los Angeles | 1910126-026 | 4/12/2012 | 10 |
| Los Angeles | 1910205-064 | 2/20/2017 | 10 |
| Los Angeles | 1910126-046 | 5/6/2013 | 10 |
| Los Angeles | 1910060-027 | 2/24/2015 | 10 |
| Riverside | 3310031-031 | 11/19/2014 | 10 |
| Riverside | 3310031-080 | 5/10/2012 | 10 |
| Riverside | 3310037-029 | 3/14/2012 | 10 |
| San Diego | 3700938-027 | 4/9/2013 | 9.9 |
| Orange | 3010046-022 | 3/21/2016 | 9.8 |
| San Bernardino | 3610018-002 | 3/25/2013 | 9.8 |
| Riverside | 3310037-014 | 6/10/2015 | 9.7 |
| Los Angeles | 1910009-034 | 5/16/2012 | 9.6 |
| Los Angeles | 1910039-182 | 11/4/2014 | 9.5 |
| Madera | 2000619-001 | 2/19/2014 | 9.5 |
| San Bernardino | 3610041-035 | 11/29/2016 | 9.5 |
| San Bernardino | 3610038-042 | 11/18/2014 | 9.5 |
| Los Angeles | 1910067-120 | 11/21/2012 | 9.42 |
| Los Angeles | 1910062-039 | 5/10/2017 | 9.4 |
| Los Angeles | 1910199-020 | 10/2/2017 | 9.4 |
| Riverside | 3310031-027 | 8/9/2017 | 9.4 |
| Riverside | 3310031-029 | 2/28/2018 | 9.4 |
| Riverside | 3310031-045 | 2/3/2012 | 9.3 |
| Sacramento | 3410015-046 | 5/27/2014 | 9.3 |
| San Bernardino | 3610014-021 | 10/7/2015 | 9.3 |
| Los Angeles | 1910060-030 | 6/12/2017 | 9.2 |
| Los Angeles | 1910039-186 | 11/17/2014 | 9.1 |
| Riverside | 3310044-023 | 8/1/2012 | 9.1 |
| Kern | 1510025-016 | 7/20/2015 | 8.9 |
| Los Angeles | 1910009-112 | 6/13/2017 | 8.9 |
| Riverside | 3310031-028 | 5/9/2014 | 8.9 |
| Los Angeles | 1910009-033 | 11/19/2014 | 8.8 |
| Los Angeles | 1910138-002 | 4/23/2013 | 8.8 |
| Riverside | 3310044-004 | 1/7/2015 | 8.8 |
| Riverside | 3310031-178 | 7/29/2016 | 8.7 |
| Riverside | 3310037-055 | 9/4/2013 | 8.6 |
| Los Angeles | 1910022-014 | 9/19/2017 | 8.5 |
| Riverside | 3310075-001 | 9/5/2013 | 8.5 |
| Los Angeles | 1910039-185 | 12/8/2014 | 8.4 |
| Los Angeles | 1910062-025 | 8/2/2017 | 8.4 |
| Los Angeles | 1910039-183 | 12/3/2014 | 8.3 |
| Los Angeles | 1910039-189 | 12/19/2016 | 8.3 |
| San Bernardino | 3610029-039 | 6/7/2012 | 8.3 |
| Los Angeles | 1910067-121 | 10/17/2012 | 8.25 |
| Los Angeles | 1910126-041 | 11/1/2016 | 8.2 |
| Los Angeles | 1910163-010 | 9/7/2016 | 8.2 |
| Riverside | 3310031-164 | 8/2/2017 | 8.2 |
| Riverside | 3310037-027 | 6/10/2015 | 8.2 |
| Riverside | 3310075-002 | 1/8/2013 | 8.2 |
| Los Angeles | 1910126-050 | 12/10/2014 | 8.1 |
| Riverside | 3310044-006 | 5/16/2012 | 8.1 |
| Sacramento | 3410015-048 | 8/16/2016 | 8.1 |
| Los Angeles | 1910062-008 | 4/2/2014 | 8 |
| San Diego | 3700938-003 | 1/10/2012 | 8 |
| Ventura | 5610006-005 | 2/25/2016 | 8 |
| Los Angeles | 1910199-007 | 3/2/2015 | 7.9 |
| Los Angeles | 1910009-161 | 2/11/2016 | 7.9 |
| Riverside | 3310031-120 | 7/21/2016 | 7.9 |
| San Bernardino | 3610012-005 | 2/5/2013 | 7.9 |
| San Diego | 3700938-005 | 3/12/2013 | 7.9 |
| San Diego | 3700938-028 | 1/14/2014 | 7.9 |
| Riverside | 3310009-074 | 1/10/2017 | 7.8 |
| Los Angeles | 1910124-019 | 4/1/2014 | 7.75 |
| Los Angeles | 1910039-188 | 10/28/2014 | 7.7 |
| Riverside | 3310016-004 | 4/17/2013 | 7.7 |
| Los Angeles | 1910062-032 | 6/7/2017 | 7.6 |
| Los Angeles | 1910126-040 | 12/5/2012 | 7.6 |
| Los Angeles | 1910139-044 | 8/8/2016 | 7.6 |
| Riverside | 3310075-003 | 4/17/2013 | 7.6 |
| Riverside | 3310075-004 | 12/4/2012 | 7.6 |
| San Bernardino | 3610004-011 | 12/30/2013 | 7.5 |
| San Diego | 3700938-029 | 4/9/2013 | 7.5 |
| Los Angeles | 1910063-025 | 10/15/2013 | 7.4 |
| Riverside | 3310075-008 | 8/6/2012 | 7.4 |
| San Bernardino | 3610039-012 | 11/24/2014 | 7.4 |
| Los Angeles | 1910022-011 | 1/19/2016 | 7.3 |
| Los Angeles | 1910039-187 | 12/19/2016 | 7.3 |
| Riverside | 3310021-017 | 5/1/2013 | 7.3 |
| San Diego | 3700938-031 | 4/9/2013 | 7.3 |
| San Luis Obispo | 4000207-001 | 10/18/2017 | 7.2 |
| Los Angeles | 1910039-184 | 3/30/2015 | 7.1 |
| Monterey | 2700853-001 | 12/19/2017 | 7.1 |
| Riverside | 3310037-031 | 12/7/2016 | 7.1 |
| San Bernardino | 3610038-705 | 2/4/2015 | 7.1 |
| San Diego | 3701408-002 | 4/9/2013 | 7.1 |
| Los Angeles | 1910126-010 | 9/14/2017 | 7 |
| San Bernardino | 3610029-038 | 8/3/2017 | 7 |
| San Bernardino | 3610034-042 | 9/18/2012 | 7 |
| Los Angeles | 1910090-002 | 4/7/2015 | 6.9 |
| Los Angeles | 1910142-053 | 11/12/2013 | 6.9 |
| Riverside | 3310009-088 | 8/12/2013 | 6.9 |
| San Bernardino | 3610004-034 | 7/27/2017 | 6.9 |
| San Bernardino | 3610012-012 | 7/1/2014 | 6.9 |
| San Bernardino | 3610028-006 | 6/15/2016 | 6.9 |
| Sutter | 5100102-001 | 1/15/2013 | 6.9 |
| San Bernardino | 3610037-060 | 10/18/2012 | 6.831 |
| Los Angeles | 1910126-069 | 11/1/2016 | 6.8 |
| Los Angeles | 1910154-002 | 8/2/2016 | 6.8 |
| Los Angeles | 1910142-043 | 3/12/2013 | 6.8 |
| San Bernardino | 3610018-037 | 4/25/2016 | 6.8 |
| San Bernardino | 3610034-050 | 2/1/2017 | 6.8 |
| San Diego | 3700938-030 | 7/10/2012 | 6.8 |
| San Diego | 3700938-025 | 3/12/2013 | 6.8 |
| San Bernardino | 3610037-037 | 3/3/2014 | 6.763 |
| San Diego | 3700847-001 | 1/6/2014 | 6.76 |
| Kern | 1502670-005 | 1/11/2016 | 6.7 |
| Los Angeles | 1910090-008 | 10/1/2013 | 6.7 |
| Los Angeles | 1910036-048 | 12/10/2012 | 6.7 |
| Riverside | 3310037-024 | 3/6/2013 | 6.7 |
| San Bernardino | 3610038-015 | 10/8/2013 | 6.7 |
| Los Angeles | 1910124-010 | 3/31/2015 | 6.69 |
| Los Angeles | 1910036-004 | 1/23/2012 | 6.6 |
| Los Angeles | 1910205-030 | 12/13/2017 | 6.6 |
| San Bernardino | 3610038-706 | 2/4/2015 | 6.6 |
| Tulare | 5400935-002 | 2/11/2014 | 6.6 |
| Los Angeles | 1910067-188 | 7/26/2012 | 6.5 |
| Riverside | 3310037-032 | 3/14/2012 | 6.5 |
| Riverside | 3310075-007 | 8/5/2013 | 6.5 |
| San Bernardino | 3610029-036 | 8/3/2017 | 6.5 |
| San Bernardino | 3610050-045 | 7/2/2013 | 6.5 |
| Los Angeles | 1910061-003 | 3/25/2013 | 6.4 |
| Los Angeles | 1910036-049 | 4/22/2014 | 6.4 |
| Riverside | 3310031-133 | 7/3/2017 | 6.4 |
| San Bernardino | 3610012-003 | 9/25/2012 | 6.4 |
| Riverside | 3310031-109 | 8/9/2017 | 6.3 |
| San Bernardino | 3610004-032 | 7/17/2012 | 6.3 |
| San Bernardino | 3610038-017 | 8/5/2013 | 6.3 |
| Riverside | 3310037-030 | 12/7/2016 | 6.2 |
| San Bernardino | 3610014-010 | 1/10/2017 | 6.2 |
| Los Angeles | 1910240-048 | 12/28/2017 | 6.1 |
| Los Angeles | 1910126-072 | 10/26/2015 | 6.1 |
| Los Angeles | 1910060-026 | 2/4/2013 | 6.1 |
| Los Angeles | 1910060-031 | 7/29/2013 | 6.1 |
| Riverside | 3310016-014 | 9/24/2014 | 6.1 |
| Riverside | 3310031-007 | 12/29/2014 | 6.1 |
| San Bernardino | 3610029-041 | 5/3/2012 | 6.1 |
| San Bernardino | 3610038-719 | 9/11/2017 | 6.1 |
| San Bernardino | 3610037-039 | 12/10/2015 | 6.014 |
| Orange | 3010046-008 | 8/17/2016 | 6 |
| San Bernardino | 3610036-010 | 4/17/2012 | 6 |
| San Bernardino | 3610041-014 | 11/19/2015 | 6 |
| Santa Clara | 4300543-004 | 9/4/2013 | 6 |
| Stanislaus | 5000237-002 | 10/18/2017 | 6 |
| Ventura | 5602140-001 | 4/3/2017 | 6 |
| Los Angeles | 1910067-119 | 10/17/2012 | 5.97 |
| Kern | 1503212-001 | 3/13/2012 | 5.9 |
| Orange | 3010092-076 | 12/2/2013 | 5.9 |
| Riverside | 3310031-100 | 8/6/2014 | 5.9 |
| San Bernardino | 3610041-037 | 3/5/2018 | 5.9 |
| San Bernardino | 3600152-002 | 9/24/2013 | 5.9 |
| Stanislaus | 5000530-002 | 7/13/2015 | 5.9 |
| Stanislaus | 5000530-004 | 9/13/2012 | 5.9 |
| Tulare | 5400638-002 | 4/25/2012 | 5.9 |
| Los Angeles | 1910139-050 | 1/3/2017 | 5.8 |
| Orange | 3010022-025 | 3/8/2016 | 5.8 |
| Riverside | 3310037-056 | 6/27/2012 | 5.8 |
| San Benito | 3500563-005 | 11/27/2015 | 5.8 |
| San Bernardino | 3610034-044 | 5/21/2014 | 5.8 |
| Santa Clara | 4300971-001 | 8/16/2012 | 5.8 |
| Los Angeles | 1910124-023 | 2/23/2016 | 5.77 |
| Los Angeles | 1910124-030 | 6/21/2016 | 5.77 |
| Lassen | 1805004-004 | 7/26/2012 | 5.75 |
| Los Angeles | 1910212-002 | 2/28/2013 | 5.7 |
| Los Angeles | 1910205-072 | 12/22/2012 | 5.7 |
| Orange | 3000519-001 | 4/4/2016 | 5.7 |
| Orange | 3010001-032 | 6/4/2013 | 5.7 |
| Sacramento | 3410015-045 | 9/25/2012 | 5.7 |
| San Benito | 3500563-002 | 8/17/2016 | 5.7 |
| San Bernardino | 3601089-001 | 3/15/2013 | 5.7 |
| San Bernardino | 3610038-707 | 2/4/2015 | 5.7 |
| San Diego | 3700938-047 | 8/9/2016 | 5.7 |
| Santa Clara | 4300542-003 | 5/8/2012 | 5.7 |
| Los Angeles | 1910103-002 | 7/1/2014 | 5.6 |
| Los Angeles | 1910163-005 | 8/7/2013 | 5.6 |
| Riverside | 3310031-131 | 6/26/2012 | 5.6 |
| Ventura | 5610059-001 | 7/2/2014 | 5.6 |
| Los Angeles | 1910139-007 | 6/6/2016 | 5.5 |
| Los Angeles | 1910205-075 | 1/13/2017 | 5.5 |
| Los Angeles | 1910077-028 | 8/28/2013 | 5.5 |
| Riverside | 3310021-018 | 3/18/2015 | 5.5 |
| Riverside | 3310044-017 | 8/8/2012 | 5.5 |
| San Bernardino | 3610028-007 | 10/1/2015 | 5.5 |
| San Bernardino | 3610039-117 | 10/31/2012 | 5.5 |
| San Bernardino | 3610038-704 | 2/4/2015 | 5.5 |
| Los Angeles | 1910067-189 | 6/20/2012 | 5.49 |
| Los Angeles | 1910067-124 | 1/11/2013 | 5.4 |
| Los Angeles | 1910163-012 | 10/3/2012 | 5.4 |
| Orange | 3000585-001 | 4/2/2012 | 5.4 |
| Riverside | 3310031-177 | 5/12/2016 | 5.4 |
| San Bernardino | 3610029-045 | 11/13/2017 | 5.4 |
| San Bernardino | 3610034-043 | 6/22/2012 | 5.4 |
| San Bernardino | 3610034-745 | 7/26/2012 | 5.4 |
| Santa Clara | 4300542-005 | 6/12/2012 | 5.4 |
| Los Angeles | 1910166-003 | 9/3/2013 | 5.3 |
| Los Angeles | 1910142-044 | 6/10/2014 | 5.3 |
| San Bernardino | 3610039-030 | 2/22/2012 | 5.3 |
| San Bernardino | 3610038-041 | 7/20/2015 | 5.3 |
| Sutter | 5100176-001 | 7/5/2015 | 5.3 |
| Tulare | 5400935-001 | 5/7/2012 | 5.3 |
| Los Angeles | 1910166-002 | 9/3/2013 | 5.2 |
| Orange | 3010046-021 | 5/31/2017 | 5.2 |
| Riverside | 3310031-052 | 4/7/2017 | 5.2 |
| Riverside | 3310031-074 | 2/8/2012 | 5.2 |
| San Bernardino | 3610018-039 | 10/16/2014 | 5.2 |
| San Bernardino | 3610036-009 | 12/12/2012 | 5.2 |
| San Bernardino | 3610037-071 | 11/15/2013 | 5.2 |
| San Diego | 3700938-012 | 1/14/2014 | 5.2 |
| Sutter | 5100112-002 | 7/5/2015 | 5.2 |
| Los Angeles | 1910029-007 | 10/2/2013 | 5.1 |
| Los Angeles | 1910142-051 | 2/15/2018 | 5.1 |
| Madera | 2000695-001 | 10/9/2014 | 5.1 |
| Orange | 3010038-019 | 12/4/2017 | 5.1 |
| Tulare | 5403110-002 | 9/16/2012 | 5.1 |
| Los Angeles | 1910067-187 | 9/26/2012 | 5.02 |
| Kern | 1502670-003 | 1/9/2017 | 5 |
| Los Angeles | 1910139-004 | 4/23/2013 | 5 |
| Monterey | 2702452-002 | 2/26/2018 | 5 |
| Orange | 3010038-025 | 8/8/2017 | 5 |
| Orange | 3010092-015 | 3/13/2018 | 5 |
| Orange | 3010092-066 | 3/8/2018 | 5 |
| Riverside | 3310075-005 | 9/5/2013 | 5 |
| San Bernardino | 3610041-067 | 10/2/2017 | 5 |
| San Bernardino | 3610036-022 | 9/5/2017 | 5 |
| Los Angeles | 1910124-031 | 4/25/2017 | 4.94 |
| Los Angeles | 1910054-002 | 3/11/2013 | 4.9 |
| Los Angeles | 1910166-004 | 7/2/2013 | 4.9 |
| Los Angeles | 1910166-005 | 10/2/2012 | 4.9 |
| Napa | 2800717-002 | 6/28/2012 | 4.9 |
| Riverside | 3310044-024 | 8/23/2017 | 4.9 |
| Santa Clara | 4300543-007 | 8/1/2012 | 4.9 |
| San Bernardino | 3610037-031 | 2/22/2018 | 4.808 |
| Fresno | 1010029-008 | 8/8/2012 | 4.8 |
| Los Angeles | 1910043-027 | 1/12/2015 | 4.8 |
| Los Angeles | 1910199-004 | 9/2/2014 | 4.8 |
| Los Angeles | 1910062-026 | 10/16/2013 | 4.8 |
| Orange | 3010062-019 | 7/24/2013 | 4.8 |
| Riverside | 3310009-034 | 4/28/2014 | 4.8 |
| Riverside | 3310009-070 | 4/28/2014 | 4.8 |
| Riverside | 3310044-020 | 9/2/2014 | 4.8 |
| San Bernardino | 3610034-041 | 5/15/2013 | 4.8 |
| San Bernardino | 3610039-049 | 10/7/2014 | 4.8 |
| Tulare | 5400638-001 | 4/25/2012 | 4.8 |
| Tulare | 5403046-001 | 10/12/2017 | 4.8 |
| Los Angeles | 1910001-008 | 2/6/2014 | 4.7 |
| Los Angeles | 1910039-018 | 1/31/2014 | 4.7 |
| Los Angeles | 1910126-028 | 5/8/2013 | 4.7 |
| Monterey | 2702452-001 | 12/20/2017 | 4.7 |
| Riverside | 3310037-033 | 3/8/2017 | 4.7 |
| San Bernardino | 3610004-030 | 7/1/2015 | 4.7 |
| San Bernardino | 3610034-014 | 11/16/2012 | 4.7 |
| San Bernardino | 3600372-002 | 9/8/2017 | 4.7 |
| San Bernardino | 3610012-022 | 12/2/2014 | 4.7 |
| Los Angeles | 1910062-009 | 1/4/2012 | 4.6 |
| Los Angeles | 1910199-006 | 9/3/2013 | 4.6 |
| Los Angeles | 1910240-018 | 8/14/2013 | 4.6 |
| Los Angeles | 1910199-009 | 4/4/2016 | 4.6 |
| Los Angeles | 1910126-071 | 3/13/2018 | 4.6 |
| Riverside | 3310006-028 | 6/19/2013 | 4.6 |
| Riverside | 3310009-047 | 1/27/2014 | 4.6 |
| San Bernardino | 3610034-045 | 7/13/2015 | 4.6 |
| San Bernardino | 3610041-016 | 10/13/2015 | 4.6 |
| San Bernardino | 3610012-026 | 3/6/2018 | 4.6 |
| Santa Barbara | 4210004-026 | 6/19/2013 | 4.6 |
| San Mateo | 4100517-003 | 8/15/2012 | 4.55 |
| Los Angeles | 1910249-009 | 12/10/2013 | 4.5 |
| Los Angeles | 1910126-038 | 1/30/2012 | 4.5 |
| Los Angeles | 1910163-006 | 11/11/2015 | 4.5 |
| Riverside | 3310083-002 | 10/10/2012 | 4.5 |
| Riverside | 3310016-037 | 5/7/2014 | 4.5 |
| San Bernardino | 3610034-027 | 1/7/2013 | 4.5 |
| San Bernardino | 3610034-047 | 11/18/2015 | 4.5 |
| San Diego | 3700938-006 | 1/10/2012 | 4.5 |
| Solano | 4810020-001 | 9/7/2016 | 4.5 |
| Los Angeles | 1910067-123 | 12/27/2016 | 4.44 |
| Los Angeles | 1910043-025 | 9/8/2014 | 4.4 |
| Los Angeles | 1910077-003 | 2/5/2015 | 4.4 |
| Los Angeles | 1910086-009 | 10/17/2013 | 4.4 |
| Los Angeles | 1910166-008 | 8/31/2015 | 4.4 |
| Orange | 3010046-017 | 9/6/2017 | 4.4 |
| Riverside | 3310037-021 | 3/12/2014 | 4.4 |
| Riverside | 3310021-029 | 10/2/2013 | 4.4 |
| Riverside | 3310031-129 | 12/10/2013 | 4.4 |
| Riverside | 3310031-168 | 8/27/2013 | 4.4 |
| Sacramento | 3410015-022 | 7/10/2012 | 4.4 |
| San Bernardino | 3610034-040 | 10/28/2014 | 4.4 |
| San Bernardino | 3610014-028 | 11/1/2017 | 4.4 |
| Siskiyou | 4710011-002 | 8/29/2013 | 4.4 |
| Los Angeles | 1910166-006 | 7/1/2013 | 4.3 |
| Orange | 3000811-001 | 4/18/2012 | 4.3 |
| Orange | 3010092-067 | 9/12/2016 | 4.3 |
| Riverside | 3310021-043 | 8/13/2014 | 4.3 |
| Riverside | 3310031-008 | 9/9/2016 | 4.3 |
| Riverside | 3310031-081 | 4/12/2012 | 4.3 |
| Riverside | 3310031-176 | 5/4/2016 | 4.3 |
| Riverside | 3310044-013 | 10/1/2013 | 4.3 |
| San Bernardino | 3600152-003 | 8/12/2016 | 4.3 |
| Tulare | 5410003-002 | 8/21/2014 | 4.3 |
| Tulare | 5410021-001 | 8/2/2017 | 4.3 |
| Fresno | 1010029-020 | 10/4/2012 | 4.2 |
| Kern | 1510025-018 | 6/15/2015 | 4.2 |
| Kings | 1600602-002 | 10/18/2017 | 4.2 |
| Los Angeles | 1910126-044 | 7/23/2012 | 4.2 |
| Monterey | 2701946-001 | 6/26/2017 | 4.2 |
| Riverside | 3310031-024 | 12/24/2014 | 4.2 |
| Riverside | 3310031-051 | 11/30/2017 | 4.2 |
| Riverside | 3310031-130 | 5/1/2015 | 4.2 |
| Riverside | 3310083-003 | 7/16/2013 | 4.2 |
| Riverside | 3310031-110 | 9/8/2015 | 4.2 |
| Sacramento | 3410017-003 | 10/19/2016 | 4.2 |
| San Bernardino | 3610004-012 | 11/1/2017 | 4.2 |
| San Bernardino | 3610018-027 | 3/5/2015 | 4.2 |
| San Bernardino | 3610036-001 | 4/10/2013 | 4.2 |
| San Bernardino | 3610052-029 | 5/12/2015 | 4.2 |
| San Bernardino | 3610041-078 | 6/13/2017 | 4.2 |
| San Bernardino | 3690001-023 | 8/16/2017 | 4.2 |
| Lassen | 1805004-012 | 7/26/2012 | 4.18 |
| Contra Costa | 0701706-003 | 10/2/2012 | 4.1 |
| Fresno | 1010017-037 | 12/15/2016 | 4.1 |
| Los Angeles | 1910098-007 | 5/6/2015 | 4.1 |
| Los Angeles | 1910205-065 | 1/12/2017 | 4.1 |
| Los Angeles | 1910077-014 | 1/23/2018 | 4.1 |
| Los Angeles | 1910142-052 | 3/13/2018 | 4.1 |
| Los Angeles | 1910061-006 | 8/21/2017 | 4.1 |
| Los Angeles | 1910126-033 | 8/25/2014 | 4.1 |
| Los Angeles | 1910126-045 | 8/22/2017 | 4.1 |
| Los Angeles | 1910126-064 | 11/21/2016 | 4.1 |
| Orange | 3010092-074 | 4/6/2015 | 4.1 |
| Riverside | 3310021-022 | 7/10/2012 | 4.1 |
| Riverside | 3310031-054 | 2/23/2012 | 4.1 |
| San Bernardino | 3610029-025 | 10/11/2017 | 4.1 |
| San Bernardino | 3610029-042 | 5/15/2012 | 4.1 |
| Santa Clara | 4300939-001 | 4/12/2012 | 4.1 |
| San Bernardino | 3610037-053 | 11/4/2016 | 4.031 |
| Placer | 3110048-001 | 1/19/2012 | 4.01 |

1. Some businesses may not rely on a public water system, but rather have a well that serves their business. If the business regularly serves at least 25 of the same persons over six months per year, it would be a PWS subject to the monitoring requirements in this regulation. [↑](#footnote-ref-1)
2. Affected Sources and Affected Systems are those sources and systems for which routine monitoring is consistent with the current regulations, but which may be affected by the lower DLR proposed by the new regulations because these systems might now have to monitor these sources quarterly. [↑](#footnote-ref-2)
3. The mean is the average; the median is the middle value between the extremes, and the mode is the most commonly occurring value. [↑](#footnote-ref-3)