

INITIAL STATEMENT OF REASONS - ADDENDUM

Perchlorate Detection Limit for Purposes of Reporting (DLR) Title 22, California Code of Regulations

This addendum identifies changes to the Initial Statement of Reasons (ISR). If there is revision to the text in the ISR, this document will refer to the specific heading from the previously noticed ISR and present the subsequent text. All text changes will be indicated using a single underline for revised text and single ~~strikeout~~ for deleted text.

I. 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 initially lower the perchlorate DLR from 0.004 mg/L to 0.002 mg/L, which is consistent with current laboratory analytical capabilities (Phase I). The State Water Board further proposes to lower the perchlorate DLR from 0.002 mg/L to the PHG of 0.001 mg/L in a second phase effective January 1, 2024, which allows time for the laboratory industry to develop sufficient capacity at the lower concentration (Phase II). The proposed DLRs would not have a significant adverse impact on businesses, water systems, or individuals served by the water systems.

(No change for the remainder of section)

III. 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.~~

- In Table 64432-A, replace the current perchlorate DLR of 0.004 mg/L with a revised perchlorate DLR of 0.002 mg/L and a DLR of 0.001 mg/L (effective January 1, 2024).

The primary purpose of the proposed regulations is to adopt a revised DLR 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.

(No change for the remainder of section)

IV. 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 0.001 mg/L, using a two-phase implementation approach over the span of three years. Following receipt of oral and written comments, State Water Board staff consulted with the Environmental Laboratory Technical Advisory Committee and with staff of the Environmental Laboratory Accreditation Program regarding time required for laboratories to acquire the necessary instrumentation, train analysts, and gain accreditation to perform methods capable of achieving the proposed DLR of 0.001 mg/L. Responses indicated approximately 18 to 24 months for a large municipal laboratory and 4 months for a large commercial laboratory. To adequately allow for variability in financing, approval, and procurement processes across commercial and municipal laboratories, and in consideration of the current economic

uncertainty associated with the COVID-19 pandemic, the State Water Board is proposing an effective date of January 1, 2024 to allow adequate time for the laboratory industry to develop sufficient analytical capacity at 0.001 mg/L.

(No change for the remainder of section)

V. 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). The proposed regulation maintains the existing monitoring schedules for each source. Therefore, any new detections above the DLR are expected to occur during routine sampling schedules. 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. Based on existing routine sampling schedules, surface water sources are monitored every year and ground water sources are monitored every three years. Therefore, the full implementation of any new perchlorate DLR would occur in the span of a three-year period. 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

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.

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. If businesses providing laboratory analytical services for required monitoring opt to seek accreditation to comply with Phase II, there would likely be substantial costs related to new equipment procurement and laboratory staff training. Businesses providing laboratory analytical services for required monitoring could experience increased demand. During Phase I and Phase II of the proposed regulation, increased increased costs experienced by the PWS for increased sampling needs and from laboratory services 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~~ Phase I of 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 source, and \$9 per year for individuals/businesses served by the affected water systems. In Phase II, these costs are estimated to quadruple to \$6,444,824 from additional sampling costs for PWS, resulting in an approximate additional \$896 per year for each affected water source, and \$36 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 analyses \$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)]

(No change for the remainder of section)

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 during Phase I of the proposed regulation. During Phase II, there is an expected increase in cost per analysis. Therefore, for the first three years of the implementation of the regulation, any anticipated increased costs would result from the change from routine monitoring to increased monitoring frequencies, while in Phase II, the incurred cost would result from the cost per analysis as well as the change in 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 DLRs 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	

3. 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. Routine sampling is once a year for surface water sources and once every three years for ground water sources. Surface water and ground water sources represent 7% and 93% of the identified sources, respectively.
4. 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 revisions 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 DLRs of 0.002 mg/L or 0.001mg/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 County²

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

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.

County	Estimated Number of Affected Sources	Estimated Number of Affected Systems
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, the State Water Board expects that quantifying perchlorate detections in drinking water to 0.001 mg/L will not be is not immediately feasible for all PWS statewide until January 1, 2024.

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. Using EPA Methods 331.0 or 332.0, the average cost per sample increases four-fold to \$224.00.

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 average laboratory cost /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

Table 4 – Highest Annual Statewide Costs for Perchlorate Monitoring Based on System Ownership for Phase I and Phase II

<u>System Ownership</u>	<u>Number of Affected Sources</u>	<u>% of All Affected Sources</u>	<u>Phase I Cost (January 1, 2021- December 31, 2023)</u>	<u>Phase II Cost (January 1, 2024 – Subsequent Years)</u>
<u>Federal</u>	<u>96</u>	<u>1.3%</u>	<u>\$21,504</u>	<u>\$86,016</u>
<u>State</u>	<u>92</u>	<u>1.3%</u>	<u>\$20,608</u>	<u>\$82,432</u>
<u>Local</u>	<u>3,735</u>	<u>52%</u>	<u>\$836,640</u>	<u>\$3,346,560</u>
<u>Private</u>	<u>3,257</u>	<u>45%</u>	<u>\$729,568</u>	<u>\$2,918,272</u>
<u>Mixed (Private/Public)</u>	<u>5</u>	<u>0.1%</u>	<u>\$1,120</u>	<u>\$4,480</u>
<u>Blank (Not Designated)</u>	<u>9</u>	<u>0.1%</u>	<u>\$2,016</u>	<u>\$8,064</u>

<u>System Ownership</u>	<u>Number of Affected Sources</u>	<u>% of All Affected Sources</u>	<u>Phase I Cost (January 1, 2021-December 31, 2023)</u>	<u>Phase II Cost (January 1, 2024 – Subsequent Years)</u>
<u>Totals:</u>	<u>7,194</u>	<u>100%</u>	<u>\$1,611,456</u>	<u>\$6,444,824</u>

Breakdown of Costs

Routine monitoring costs would continue unless there is a detection above the proposed DLR of 0.002 mg/L during Phase I and above the proposed DLR of 0.001 mg/L during Phase II. If a detection exceeds the DLR, the source would require increased monitoring at four times per year (quarterly) at \$56.00/sample during the first phase of the regulation and \$224.00/sample during the second phase of the regulation.

1. Estimated Maximum Annual Cost per Water System and per Person during Phase I and Phase II of the proposed regulation

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 and \$896.00/year per source, for Phase I and Phase II, respectively.

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. As an example, during Phase I of the proposed regulation, the ~~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	Median	Mode
Estimated Cost per Person	\$2.80	\$1.49	\$8.96
Estimated Cost per Water System	\$682.89	\$224.00	\$224.00

Table 4 – Highest Statewide Annual Average Costs per Person and Water System for Impacted Water Systems during Phase I and Phase II

	<u>Mean³</u>	<u>Median</u>	<u>Mode</u>
<u>Estimated Cost per Person – Phase 1 (January 1, 2021- 2024)</u>	<u>\$2.80</u>	<u>\$1.49</u>	<u>\$8.96</u>
<u>Estimated Cost per Water System – Phase 1 (January 1, 2021- 2024)</u>	<u>\$682.89</u>	<u>\$224.00</u>	<u>\$224.00</u>
<u>Estimated Cost per Person – Phase 2 (January 1, 2024 -)</u>	<u>\$11.20</u>	<u>\$5.96</u>	<u>\$35.84</u>
<u>Estimated Cost per Water System – Phase 2 (January 1, 2024 -)</u>	<u>\$2,731.56</u>	<u>\$896.00</u>	<u>\$896.00</u>

2. 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 and \$896.00/year for systems with one drinking water source during Phase I and Phase II, respectively.

3. Estimated Annual Cost per Person

For the proposed DLR of 0.002 mg/L for Phase I, 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)

³ ~~The mean is the average; the median is the middle value between the extremes, and the mode is the most commonly occurring value.~~

³ The mean is the average; the median is the middle value between the extremes, and the mode is the most commonly occurring value.

was a conservative representative estimated cost per individual. This is approximately \$9.00/ year. During Phase II, the highest estimated cost per individual for the proposed DLR of 0.001 mg/L is approximately \$36.00/year.

VI. 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 Phase I of 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 at an earlier date. 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~~ existing laboratories currently accredited for more sensitive analytical methods at this time. ~~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.

VII. 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.~~

The proposed regulation would impose two performance standards of 0.002 mg/L and 0.001 mg/L for the determination of perchlorate in drinking water for Phase I and Phase II, respectively.

(No changes for the remainder the ISR)