

FINAL STATEMENT OF REASONS
Arsenic Primary Maximum Contaminant Level (MCL) Revision
Title 22, California Code of Regulations

All suppliers of domestic water to the public are subject to regulations adopted by the U.S. Environmental Protection Agency (U.S. EPA) under the Safe Drinking Water Act (42 U.S.C. 300f et seq.) as well as by the California Department of Public Health (Department) under the California Safe Drinking Water Act [Sections 116270-116751 of the Health and Safety Code (H&S Code)]. Pursuant to California Public Health Act of 2006 (Act; S. B. 162, Section 1, Chap. 241, Stats. 2006, specifically H&S Code Sections 131050, 131051 and 131200), effective July 1, 2007, the California Department of Public Health has authority to adopt the subject regulations. California has been granted primacy for the enforcement of the Federal Act. In order to receive and maintain primacy, states must promulgate regulations that are no less stringent than the federal regulations.

In accordance with federal regulations, California requires public water systems to sample their sources and have the samples analyzed for inorganic and organic substances in order to determine compliance with drinking water standards, including maximum contaminant levels (MCLs). Primary MCLs are based on health protection, technical feasibility, and costs. The water supplier must notify the Department and the public when a primary MCL has been violated and take appropriate action. In 1977, the Department adopted the then effective federal MCL of 0.050 mg/L (50 ppb) for arsenic.

On January 22, 2001, the U.S. EPA adopted a revised MCL of 0.01 mg/L for arsenic [Federal Register 66(14), 6976-7066], to be effective January 23, 2006; subsequently U.S. EPA postponed the regulation, but on April 17, 2002, confirmed a January 23, 2006, effective date for implementing the MCL [Federal Register 67(74), 19037, footnote 3 of Table III-2]. Later, U.S. EPA added a terminal “zero” to the MCL and clarified that the revised MCL for arsenic is 0.010 mg/L [Federal Register 68(57), 14501-14507, March 25, 2003]. Under federal primacy requirements, the State is required to adopt the 0.010 mg/L arsenic MCL or one more stringent.

Section 116361(b) of the California H&S Code mandates that the Department adopt a revised arsenic MCL, and Section 116365 of the California H & S Code requires that the Department set the MCL as close as possible to the public health goal (PHG), while considering cost and technical feasibility.

The California Environmental Protection Agency’s Office of Environmental Health Hazard Assessment (OEHHA) finalized its PHG for arsenic in April 2004. OEHHA set the PHG at 0.004 µg/L (4 ppt). Subsequently, the Department conducted a comprehensive cost-benefit analysis to consider cost and feasibility, evaluating possible MCLs of 0.002, 0.004, 0.006, 0.008, and 0.010 mg/L. Based on that cost-benefit analysis, the Department is proposing to adopt an arsenic MCL in conformance with the federal MCL of 0.010 mg/L.

Therefore, to conform to the federal regulations, the Department proposes the following amendments to Chapter 15, Division 4, Title 22 of the California Code of Regulations:

- Amend Section 64431 (Maximum Contaminant Levels – Inorganic Chemicals) to adopt a revised arsenic MCL of 0.010 mg/L for conformance with the Code of Federal Regulations (CFR) 141.23 [Federal Register 66(14), 6976-7066];
- Amend Section 64432 (Monitoring and Compliance – Inorganic Chemicals), revising existing subsections (f) and (g) to establish compliance determination requirements in conformance with CFR 141.23(c) [Federal Register 66(14), 6976-7066];
- Amend Section 64447.2 [Best Available Technologies (BATs) – Inorganic Chemicals] by establishing two additional BATs for arsenic remediation (electrodialysis and oxidation/filtration);
- Amend Section 64445.1(c)(5) to clarify compliance determination requirements for organic contaminants in conformance with CFR 141.24(h)(11)(iv) and 141.24(f)(15)(iv) [Federal Register 66(14), 6976-7066];
- Amend Section 64482 to adopt additional health information in conformance with the CFR 141.154 [Federal Register 66(14), 6976-7066]. Additionally, subsection (d) would be repealed as it is no longer necessary.

In addition, the Department proposes to amend:

- Section 64413.1(b), to clarify the calculation of points for determining water treatment facility classifications.
- Section 64413.1(b)(4), Table 64413.1-E, to clarify that the points are assigned for each contaminant. In addition, paragraph (b)(5) would be revised to reflect the proposed renumbering of Section 64432.
- Section 64414, to include subsection (f), which identifies the monitoring procedures specific to a standby source having had previous perchlorate detections. In addition, paragraph (a) would be revised to reflect the proposed renumbering of Section 64432 and the inclusion of a reference to the asbestos waivers described in 64432.2(c), which had been inadvertently previously omitted.
- Section 64432, as follows:
 - Amend subsection (a) to reflect the renumbering of 64432 and the addition of proposed subsections (b) and (h);
 - Adopt subsection (b) to clarify when monitoring for newly adopted inorganic MCLs would be initiated. The existing regulations do not provide such information;
 - Amend existing subsection (f)(2), renumbered as (g)(2), to clarify existing confirmation sampling requirements;
 - Adopt subsection (h) to require that water supplier to discontinue use of the source if the source is confirmed to exceed ten times an inorganic chemical MCL, consistent with existing Section 64445.1(c)(7) for organic chemicals;
 - Amend existing subsection (g), renumbered as proposed subsection (i), to clarify the running annual average calculation when more than one sample is taken in a quarter;
 - Existing subsections would be renumbered due to the addition of subsections (b) and (h); and

- Section 64432.2(a) and (b), Monitoring and Compliance – Asbestos, would be amended to revise the references to existing subsections in section 64432, which are proposed to be renumbered.
- Section 64432.8, to clarify that the confirmation sampling and exceedance procedures specified in existing sections 64432.1(a)(1), 64432.1(b)(1), 64432.1(c), and 64432.3(d) - for nitrate, nitrite, nitrate plus nitrite, and perchlorate, respectively - should be followed.
- Section 64433.3(d) would be revised to reflect the proposed renumbering of Section 64432.
- Section 64445.1(c)(5)(A) and (B) would be revised to reference existing Section 64469, as opposed to repealed Section 64451(a). Additionally, section 64445.1(c) would be revised to clarify existing requirements.

The net effects of the proposed regulations on community and nontransient-noncommunity water systems (CWS and NTNCWS) would be as follows:

- CWS and NTNCWS would be subject to a state arsenic MCL of 0.010 mg/L, instead of 0.05 mg/L. CWS and NTNCWS are currently required to comply with the federal MCL of 0.010 mg/L;
- CWS and NTNCWS would determine MCL compliance for all inorganic chemicals except nitrate, nitrite, perchlorate, and asbestos, on the basis of a running annual average of quarterly monitoring results instead of an average of a sample and its follow-up confirmation sample;
- CWS and NTNCWS that have a source exceeding ten times an inorganic chemical MCL would be required to discontinue use of the source until approved for use by the Department;
- CWS and NTNCWS that have annual arsenic averages exceeding 0.005 mg/L, but less than or equal to the proposed MCL of 0.010 mg/L, would have to provide specific health effects language in their Consumer Confidence Reports; and
- CWS and NTNCWS that need to treat sources to comply with the arsenic MCL would have two additional BATs from which to choose.

None of the proposed amendments would affect California's primacy status, because the net effect of these amendments is conformance with the new federal regulations.

The following paragraphs describe and explain the proposed amendments.

Article 2. General Requirements

Section 64413.1. Classification of Water Treatment Facilities.

The purpose of this section is to specify the classification process of water treatment facilities.

(b) The text would be revised for clarity. The existing text's sentence structure and use of "except", may be incorrectly construed to mean that the points from paragraphs (2) – (5) is a substitution for the total points from paragraphs (1) – (13).

(b)(4) Table 64413.1-E, would be revised to clarify that the points are assigned for *each* contaminant.

(b)(5) The text would be revised to reflect the proposed renumbering of Section 64432.

Section 64414. Standby Sources.

The purpose of this section is to specify the monitoring and activation requirements for standby sources.

(a) The text would be revised to reflect the proposed renumbering of Section 64432 and the inclusion of a reference to the asbestos waivers described in 64432.2(c), which had been inadvertently previously omitted.

(f) This proposed subsection identifies the monitoring procedures specific to a standby source having had previous perchlorate detections. Although subsection (c) limits the use of standby sources to short durations, some contaminants pose a risk of adverse health effects upon short-term exposures and need to have unique standby monitoring requirements in place. Therefore, similar to subsection (b) identifying standby source monitoring for nitrate/nitrite, the Department proposes to require annual monitoring of standby sources that have had previous perchlorate detections. Additionally, if a water system chooses to use a standby source under the conditions of Section 64414, the system will need to monitor the source upon activation and report the result to the Department within 48 hours of activation. The 48-hour timeframe is consistent with the perchlorate reporting requirements in existing Section 64432.3(d). The proposed standby source monitoring requirements will allow the Department and the water system to determine whether use of the source would be appropriate.

Article 4. Primary Standards – Inorganic Chemicals

Section 64431. Maximum Contaminant Levels – Inorganic Chemicals.

The purpose of this section is to list the inorganic chemicals for which primary maximum contaminant levels (MCLs) have been established to protect the health of consumers of public drinking water served by community and nontransient-noncommunity water systems. The MCL for arsenic would be revised in Table 64431-A for conformance with the federal MCL of 0.010 mg/L. The following paragraphs detail the rationale for the proposed MCL.

Arsenic MCL Revision

On January 22, 2001, the US Environmental Protection Agency (USEPA) adopted a revised MCL of 0.010 mg/L for arsenic [Federal Register 66(14), 6976-7066] - subsequently delayed until 2002; under primacy, the State is required to adopt this MCL or one more stringent by January 23, 2005. Further, Section 116361 of California's Health and Safe Code (H&S Code) mandates that the Department adopt a revised arsenic MCL; Section 116365 of the H&S Code mandates that the MCL be as close as possible to the public health goal (PHG), while considering cost and feasibility.

In April 2004, OEHHA released its final PHG of 0.004 µg/L (4 ppt) for arsenic ("Public Health Goal for Arsenic in Drinking Water", Office of Environmental Health Hazard Assessment, April 2004). OEHHA derived its PHG from a comprehensive evaluation of the scientific information available on arsenic's health effects both from epidemiological studies on arsenic-exposed people and toxicologic studies on arsenic-exposed laboratory animals. It determined that human cancers of the lung and bladder observed in epidemiological studies of populations in Taiwan, Chile and Argentina provided the appropriate endpoint for the PHG. OEHHA concluded that the PHG would be based on protection from those types of cancers and set the PHG at a "*de minimis*" level, equivalent to a lifetime cancer risk of up to one excess case of cancer per million people per 70-year lifetime. The *de minimis* level is used as the PHG risk level by OEHHA for contaminants that are considered to pose a cancer risk.

Thus, pursuant to H&S Code sections 116361 and 116365, the Department's MCL should be as close as possible to 0.004 µg/L, once cost and technical feasibility are taken into account.

The Department conducted a comprehensive cost benefit analysis. The analysis used compliance monitoring data from the Department's Water Quality Monitoring (WQM) database for the period January 1, 1999, through December 31, 2002, in order to capture a complete monitoring compliance period (3 years commencing January 1, 1999, as defined in Section 64400.30, Chapter 15, Title 22).

The analysis evaluated five possible MCLs: 0.002, 0.004, 0.006, 0.008, and 0.010 mg/L. Since the existing detection limit for purposes of reporting (DLR) for arsenic is 0.002 milligrams per liter (mg/L) [22 CCR Section 64432(c), Table 64432-A], it is not feasible to consider an MCL below 0.002 mg/L. Therefore, 0.002 mg/L was the setting for the lower boundary of the analysis. The federal MCL of 0.010 mg/L set the upper boundary, since any MCL proposed and adopted would have to be at least as stringent as the federal MCL.

The incremental costs associated with any revision of the arsenic MCL will impact those water systems with active sources that exceed the new standard. The sources in violation will need to be monitored quarterly, treated, and the treated effluents monitored monthly. An additional cost impact results from the fact that treatments to remove arsenic produce residuals (solid and liquid waste streams) that are quite costly to dispose of in California, particularly if other contaminants such as uranium are also present.

- To estimate capital costs and operation and maintenance (O&M) costs, the Department used the approach developed by the U.S. Environmental Protection Agency (USEPA); for groundwater, costs were developed for activated alumina treatment; for surface water, costs were developed for enhanced coagulation (Technologies and Costs for Removal of Arsenic from Drinking Water, December 2000, EPA 815-R-00-028, www.epa.gov).
- To estimate treatment waste residual costs, the Department used information from “Arsenic Residuals Research Report, Implications for Alternative Arsenic MCLs for California Water Systems,” Tables 6.1, 6.2, and 8.1, McGuire Environmental Consultants, Inc., dated July 16, 2003. Residual disposal costs cover residual permitting, transportation, and disposal.
- To amortize the total capital costs and determine the estimated annual capital costs to install treatment, the Department used the capital recovery method with an interest rate (i in decimal format) of 7% (i.e., 0.07) and an amortization period (n) of 20 years, with Annualized capital cost = (initial capital cost) x (amortization factor).

$$\text{Amortization factor} = \frac{i \times (1 + i)^n}{[(1 + i)^n - 1]} = 0.0944$$

Table 1 provides a detailed breakdown of the cost estimates for treating and monitoring sources exceeding the evaluated MCLs by system size, i.e., the number of connections served by the CWS or NTNCWS: 200 connections, 200 to <1000 connections, 1000 to <10,000 connections and 10,000 or more connections. The costs are also broken down by type of source, because different treatments were used to estimate costs for each, i.e., activated alumina for groundwater sources and enhanced coagulation/filtration for surface water sources.

Table 1 shows that if the total number of sources affected at 0.010 mg/L (487 groundwater + 6 surface water = 493) is used as a base, the increases in the number of sources affected are 29%, 73%, 163%, and 436% as the MCL becomes more stringent. The total costs to California’s drinking water systems at 0.008 mg/L are approximately 50% higher than those at 0.010 mg/L while those at 0.002 mg/L are more than 6 times as much.

Table 1
Total Annualized Costs for Monitoring, Treatment, and Residual Disposal
for Evaluated Arsenic MCLs by System Size

MCL (mg/L)	# of Sources Violating MCL by System Size in Terms of No. Service Connections					Total Annualized Costs by System Size in Terms of No. Service Connections (\$M)				
	<200	200 - <1000	1000 - <10,000	≥ 10,000	Total # sources	<200	200 - <1000	1000 - <10,000	≥ 10,000	Total Costs
<i>Groundwater</i>										
0.002	642	265	727	912	2,546	46.3	42.7	328.1	768.1	1,185.2
0.004	390	146	393	348	1,277	24.3	22.2	167.9	348.3	562.7
0.006	281	106	265	190	842	16.6	14.8	110.4	220.4	362.2
0.008	206	85	210	130	631	12.6	11.2	83.3	157.6	264.7
0.010	154	74	165	94	487	8.5	8.3	60.3	106.1	184.2
<i>Surface water</i>										
0.002	14	9	24	49	96	0.53	0.56	1.48	43.42	46.0
0.004	6	5	6	4	21	0.22	0.23	0.44	9.99	10.9
0.006	3	3	3	2	11	0.11	0.12	0.22	4.29	4.7
0.008	3	2	1	1	7	0.09	0.10	0.19	4.14	4.5
0.010	3	1	1	1	6	0.05	0.05	0.10	2.20	2.4

Table 2 shows average annualized costs per source. The range of averages is broad, reflecting a number of variables, e.g., level of contamination, volume of treated flow, and type of treatment (residual disposal costs vary as a function of the type and volume of waste produced by different treatment technologies). Generally, larger system sources cost more to treat due to volume of flow and amount of residual disposed of, and surface water treatment residuals are more costly to dispose.

Table 2
Average Annualized Costs per Source
for Evaluated Arsenic MCLs by System Size

MCL (mg/L)	# of Sources Violating MCL by System Size in Terms of No. Service Connections					Average Annual Cost Per Source by System Size in Terms of No. Service Connections (\$)				
	<200	200 - <1k	1000 - <10k	≥ 10k	Total # sources	<200	200 - <1000	1000 - <10,000	≥ 10,000	Average for all System Sizes
<i>Groundwater</i>										
0.002	642	265	727	912	2,546	72,100	161,000	451,300	842,300	465,500
0.004	390	146	393	348	1,277	62,500	151,500	427,200	1,000,700	440,600
0.006	281	106	265	190	842	58,900	140,700	416,600	1,160,000	430,200
0.008	206	85	210	130	631	58,100	132,300	396,300	1,212,100	419,500
0.010	154	74	165	94	487	55,200	112,600	364,800	1,129,000	378,200
<i>Surface water</i>										
0.002	14	9	24	49	96	38,100	62,100	61,000	887,600	479,200
0.004	6	5	6	4	21	36,300	46,300	73,200	2,488,600	519,000
0.006	3	3	3	2	11	37,500	40,600	75,300	2,580,300	427,300
0.008	3	2	1	1	7	31,400	49,100	184,000	4,137,400	642,900
0.010	3	1	1	1	6	17,100	51,200	99,000	2,210,100	400,000

Table 3 shows the number of systems that have sources that will exceed the evaluated MCLs. At 0.002 mg/L, the total number of systems that would be impacted is more than 7 times as many as would be at 0.010 mg/L; for the smaller systems, more than 4 times as many systems would be impacted. To cover the compliance costs, these systems will be competing for a limited number of low-cost loans through the Safe Drinking Water Act State Revolving Fund Loan Program (SRF) and a few other sources of funding, but there is major competition, and administrators of the SRF and other funds are required to consider many other regulatory compliance issues in their review of applications.

Table 3
Average Annualized Costs per System
for Evaluated Arsenic MCLs by System Size

MCL (mg/L)	No. Systems Violating MCL					Annual Cost Per System (\$)			
	<200	200 - <1k	1k - <10k	≥10k	Total # Systems	<200	200 - <1k	1k - <10k	≥10k
0.002	541	144	231	140	1,972	86,600	300,200	1,426,700	5,797,400
0.004	329	90	133	79	631	74,600	248,300	1,265,600	4,534,300
0.006	242	67	91	55	455	68,800	224,400	1,215,800	4,101,100
0.008	180	52	76	35	343	67,100	218,100	1,097,400	4,620,300
0.010	136	46	66	28	276	62,900	182,200	913,400	3,869,200

Table 4 clearly shows the major impact that the arsenic MCL revision, even at a level of 0.010 mg/L, will have on small water systems and their customers. For systems serving less than 200 connections with small populations that must bear the burden of treatment costs, the average per service connection cost ranges from \$1,870 to \$1,950 a year, depending on the MCL. For any family, this is a significant budget impact; for a family on a fixed income, this is probably not manageable. At an MCL of 0.010 mg/L, there are 276 systems (4,580 service connections) that would be impacted to this extent, for which funding approaches to achieve compliance would have to be developed. If the MCL were to be adopted at a more stringent level, the number of impacted systems, burdened families, and stress on loan programs would increase significantly.

The National Drinking Water Advisory Council (NDWAC) developed affordability criteria for MCL compliance (Recommendations of NDWAC to the U.S. EPA on its National Small Systems Affordability Criteria, July 2003, (http://www.epa.gov/safewater/ndwac/pdfs/report_ndwac_affordabilitywg_final_08-08-03.pdf)). This action was taken to address provisions of the federal Safe Drinking Water Act (SDWA) Sec. 300g-4 (e)(3)(A) specifying that a variance can only be available to a system "...that cannot afford to comply, in accordance with affordability criteria established by the Administrator (or the State in the case of a State that has primary enforcement responsibility under section 300g-2 of this title)...". California has not developed its own general affordability criteria, but was active in the NDWAC that drafted the cited recommendations and believes that they provide an excellent basis for evaluating a water system's ability to pay for treatment.

Unfortunately, variances are not available for the arsenic MCL, because U.S. EPA's assessment of compliance costs for the federal MCL of 0.010 mg/L (which did not include the high waste disposal costs associated with arsenic mitigation in California) concluded that any water system could afford the costs associated with arsenic treatment. However, based on its own analysis, the Department does not agree that treatment is affordable for the smaller water systems. Therefore, it utilized the NDWAC criteria in its feasibility evaluation of MCLs more stringent than 0.010 mg/L to demonstrate that fact.

The NDWAC's criteria for affordability is that the estimated annualized treatment cost per household (i.e., service connection) for treatment to comply with an MCL should not exceed 1% of the median household income (MHI) in the community within which the customers served by the water system reside. Note that in California, the average MHI for disadvantaged communities is ~\$34,000/year, while the statewide average MHI is \$52,400/year. Thus, even at the federal MCL of 0.010 mg/L, the average per -service-connection MCL-compliance cost of \$1,870/year for the smallest water systems exceeds by more than several magnitudes 1% of either the disadvantaged community or statewide MHI. Since the MHIs provided are averages, it is important to note that there will likely be communities with MHIs below the average that will be required to install treatment to comply with the arsenic MCL, shouldering an even greater burden related to affordability.

Table 4
Average Annualized Costs per Service Connection
for Evaluated Arsenic MCLs by System Size

MCL (mg/L)	Total No. Service Connections				Annual Cost Per Service Connection (\$)			
	<200	200 - <1k	1k - <10k	≥10k	<200	200 - <1k	1k - <10k	≥10k
0.002	24,006	67,385	842,876	4,581,720	1,950	640	390	180
0.004	12,565	41,042	523,769	2,524,058	1,950	540	320	140
0.006	8,853	30,209	335,883	1,958,522	1,880	500	330	120
0.008	6,179	25,148	295,696	1,430,466	1,950	450	280	110
0.010	4,580	21,841	271,481	791,950	1,870	390	220	140

The Department's estimate of benefits (theoretical excess cancer cases avoided as a function of the evaluated arsenic MCLs) found that for the smallest water systems, 2 cases might be avoided at the 0.010 mg/L MCL, while only 3.8 would be avoided at 0.002 mg/L; cases avoided for the other three evaluated MCLs range between 2 and 3.8. The Department does not believe that the small increment in benefits that would be achieved by a more stringent MCL than 0.010 mg/L justifies increasing the burden on the smaller water system communities that clearly do not meet the affordability criteria developed by NDWAC.

Therefore, with particular consideration given to the burden on small water systems, the Department believes that it is prudent to propose an MCL of 0.010 mg/L be adopted in conformance with the federal MCL.

Section 64432. Monitoring and Compliance – Inorganic Chemicals

The purpose of this section is to establish the monitoring and compliance requirements for inorganic chemicals in drinking water, and to define the levels of detection for reporting purposes (DLRs) for all chemicals with MCLs.

(a) The existing language would be revised to reflect the renumbering of Section 64432 resulting from the addition of proposed subsections (b) and (h) described below.

(b) This proposed subsection provides details of when monitoring would be initiated. The existing regulations do not provide such information. In the absence of a regulatory requirement, this requirement would be applied to all contaminants added to Table 64331-A and would provide a six-month timeframe for water systems and their laboratories to prepare for the implementation of a newly adopted MCL.

(c), (d), (e) and (f) Existing subsections (c), (d), (e) and (f) would be renumbered as (d), (e), (f) and (g), respectively, as a result of the addition of proposed subsection (b).

(c) The language would be amended to delete its existing reference to compliance monitoring. Since the advent of (c), compliance determinations are detailed in proposed subsection (i), consistent with the federal requirements. Continued reference to compliance determinations in (c) may be confusing.

(g) The existing language in this subsection details the procedure for determining a violation of an MCL for any system that is not already monitoring quarterly at the time that it has a sample result exceed the MCL. Either a single sample or the combination of the initial sample and a confirmed sample is used to determine MCL compliance. By changing the word “violation” to “exceedance”, the proposed language would eliminate this type of compliance determination for inorganic MCLs and would conform with the federal requirements in CFR 141.23(c) [Federal Register 66(14), 6976-7066]. Existing subsection (f)(2), renumbered as (g)(2), would also be amended to clarify existing confirmation sampling requirements.

(h) The purpose of this proposed subsection is to ensure public health is protected by requiring that water highly contaminated with an inorganic chemical for which there is an MCL is not served to the public, consistent with a similar requirement for organic chemicals in Section 64445.1(c)(7). Typically, if a source exceeds an MCL, the water system may continue to serve the water while treatment to remove the contaminant is being installed; quarterly notifications of the violation are distributed to the public until the water is in compliance with the MCL. However, when the source is highly contaminated, the Department believes that the source should not be used at all until it has been treated to protect the public from any potential risk of acute health effects from the higher contaminant levels. The criterion of “ten times the MCL” has been historically used by the Department to recommend that a highly contaminated source be taken out of service. Prior to resuming use of the source, the Department’s approval for the use of the source would be required to ensure remedial action has first been taken.

(g), (h), (i), (j), (k), (l) and (m) Existing subsections (g), (h), (i), (j), (k), (l), and (m) would be renumbered as (i), (j), (k), (l), (m), (n), and (o), respectively, as a result of the addition of proposed subsection (b) and (h).

(i) The existing language in this subsection details the compliance determination for those water systems that are already monitoring quarterly subsequent to an arsenic finding exceeding the MCL; the finding may or may not have resulted in a violation. In conformance with federal regulations [Federal Register 66(14), 6976-7066], this subsection would be amended to establish that a running annual average compliance determination is to be used to determine inorganic chemical MCL compliance for all systems. If a system fails to collect the required four quarterly samples, compliance would be determined by an average of those that were collected. Further, to prevent skewing of a running annual average resulting from more monitoring having been performed in one quarter than another, the proposed language clarifies that the running annual average is to be determined utilizing quarterly averages when more than one sample is taken in quarter.

(m) and (n) The text would be revised to reflect the proposed renumbering of Section 64432.

Section 64432.2. Monitoring and Compliance – Asbestos.

The purpose of this section is to establish the monitoring and compliance requirements for asbestos in drinking water.

(a) and (b) The text would be revised to reflect the proposed renumbering of Section 64432.

Section 64432.8. Sampling of Treated Water Sources.

The purpose of this section is to establish the sampling requirements for treated water sources.

(a) The text would be amended to clarify that the confirmation sampling and exceedance procedures specified in existing section 64432.1(a) for nitrate, 64432.1(b)(1) for nitrite, 64432.1(c) for nitrate plus nitrite, and 64432.3(d) for perchlorate, must be followed, to the extent any differences may exist between those sections and existing section 64432.8.

Article 4.1. Fluoridation

Section 64433.3. Monitoring and Compliance – Fluoride Levels.

The purpose of this section is to establish the monitoring and compliance requirements for fluoride levels in drinking water.

(d) The text would be revised to reflect the proposed renumbering of Section 64432.

Article 5.5. Primary Standards – Organic Chemicals

Section 64445.1. Repeat Monitoring and Compliance – Organic Chemicals.

The purpose of this section is to establish the repeat monitoring and compliance requirements for organic chemicals in drinking water.

(c)(5)(A) and (B) The text would be amended to clarify existing confirmation sampling and compliance determination requirements for organic contaminants in conformance. The existing language does not clearly describe the regulatory intent. Additionally, (A) and (B) would be revised to reference existing Section 64469, as opposed to formerly repealed Section 64451(a).

(c)(5)(C) This subsection would be adopted to include general compliance determination requirements applicable to both types of water systems described in (A) and (B), consistent with the federal requirements or the existing state requirements. The U.S. EPA requires compliance to be based on the results of available data in the event a water system fails to complete four consecutive quarters of monitoring [see CFR Sections 141.24(f)(15)(iv) and 141.24(h)(11)(ii)]. Further, to prevent skewing of a running annual average resulting from more monitoring having been performed in one quarter than another, the proposed language clarifies that the running annual average is to be determined utilizing quarterly averages when more than one sample is taken in quarter.

(c)(7)(B) The Department recognizes that some situations may exist where ceasing use of a source may pose a greater risk to public health than continued use of the source, even when a source exceeds ten times the MCL. Therefore, the phrase “if directed by the Department” has been added to allow the Department the flexibility to allow use of the source after evaluating the circumstances and the risks.

Article 12. Best Available Technologies (BATs)

Section 64447.2. Best Available Technologies (BATs) – Inorganic Chemicals

The purpose of this section is to identify the best available technologies (BATs) for reducing the level of inorganic chemicals in drinking water in order to comply with the MCLs, pursuant to section 116370 of the H&S Code.

For conformance with the federal regulations, electro-dialysis would be designated as a BAT for arsenic. In addition, oxidation/filtration would be added to the “Key to BATs” list of treatments and would be designated as BAT for arsenic in Table 64447.2-A. There is no specific technology required by the proposed regulations.

Article 20. Consumer Confidence Report

Section 64482. Required Additional Health Information.

The purpose of this section is to specify the required additional health information that shall be included in the Consumer Confidence Report when specific chemicals are detected in drinking water.

(a) The text would be amended to adopt additional health information in conformance with the Code of Federal Regulations (CFR) 141.154 [Federal Register 66(14), 6976-7066]. The existing language reflects past federal requirements for additional health

information when the arsenic MCL was 0.050 mg/L. With the adoption of the federal standard of 0.010 mg/L, additional health information is now required in Consumer Confidence Reports for values between 0.005 mg/L and the MCL of 0.010 mg/L, pursuant to CFR 141.154(b). The Department proposes to revise its text accordingly.

(b) The text would be amended to include a closing quotation mark missing from the existing language.

(d) Subsection (d) would be repealed as it is no longer necessary since the MCL for total trihalomethanes (TTHMs) is now 0.080 mg/L, pursuant to existing section 64553, making the language nonsensical. Although a similar requirement still exists in CFR 141.154(e), the language refers to a federal section that no longer exists [CFR 141.12].

Business Impact Determination

The most significant incremental cost impact of this proposed regulation is on the estimated 276 water systems that would exceed the revised MCL. These systems would be required to monitor and treat the drinking water and dispose of treatment residuals; the estimated total costs are approximately \$186 million annually, at an average system cost ranging from \$62,000 to \$5.8 million, depending on a number of variables such as volume of flow being treated and number of affected sources operated by a system. Of the \$186 million, privately owned public water systems will incur annual costs of approximately \$52 million. Note that these costs will be incurred by the water systems regardless of state regulatory action since the U.S. EPA initiated implementation of the federal MCL in January 2006; and since that date, water systems have been subject to compliance with the federal standard even though the state has not yet adopted its revised standard.

The Department has determined that the proposed regulations would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states.

The Department has determined that these regulations will not significantly affect the following:

1. The creation or elimination of jobs within the State of California. The requirements summarized above should not have any affect in this area in that there would not be any change in public drinking water system or regulatory personnel needed for compliance with the proposed requirements.
2. The creation of new businesses or the elimination of existing businesses within the State of California. The nature of the water industry is such that the proposed regulation will not result in the creation or elimination of public drinking water systems. The impact of these regulations will be insignificant.
3. The expansion of businesses currently doing business within the State of California. Since water system size is basically a function of the number of service connections (customers) served, the proposed regulations should not have any affect on expansion.

The Department has determined that the proposed regulations would not affect small business, since Government Code Chapter 3.5, Article 2, Section 11342.610(b)(8) excludes a water company from the definition of small business.

Alternatives Considered

The Department of Public Health (Department) has determined that no reasonable alternative considered by the Department would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

Local Mandate Determination

The Department of Public Health (Department) has determined that the proposed regulations would not impose a mandate on local agencies or school districts, nor would there be any costs for which reimbursement is required by Part 7 (commencing with Section 17500) of Division 4 of the Government Code. It is not anticipated that local agencies will incur costs as a result of these regulations. However, if costs were incurred, those costs would be of the following nature:

First, as a result of the requirements established through this regulatory proposal, local agencies could potentially incur some costs in the operation of public drinking water systems. However, the state would not be required to provide a subvention of funds to reimburse for these costs since the Department has not mandated a new program or higher level of service on a local government (Article XIII B, Section 6 of the California Constitution).

Second, some local agencies that regulate small public drinking water systems (under 200 service connections) could incur additional costs in discharging their responsibility to enforce the new regulations. However, the Department has determined that additional costs resulting from the enforcement of these regulations would be insignificant. Furthermore, local agencies are authorized to assess fees to pay reasonable costs incurred from enforcing statutes and regulations related to small public water systems (Health and Safety Code, Section 101325). Therefore, no reimbursement of any incidental costs to local agencies in enforcing these regulations would be required [Government Code, Section 17556(d)].

Reporting Requirement

The Department has made the determination that these proposed regulations require reports from businesses, and it is necessary for the health, safety, or welfare of the people of California that the proposed regulations apply to businesses.

CEQA Statement

Note that the Department finds that adoption of the subject regulations constitutes action by a regulatory agency, which action is expressly authorized by state statute for protection of the environment and does not involve the relaxation of any standard for protection of the environment; and is therefore categorically exempt from compliance with the California Environmental Quality Act (CEQA) as a Class 8 exemption pursuant to CEQA Guidelines, 14 CCR 15308. The Department further finds that the adoption of the subject regulations does not fall within any exception to categorically exempt projects described in Public Resources Code 21084.

California Conference of Local Health Officers Review

Pursuant to Health and Safety Code section 131205, the Department provided a copy of the public notice document, including the text of the proposed regulation text and the Initial Statement of Reasons, to the California Conference of Local Health Officers for review and comment.

Public Hearing

At the time of the public notice, a public hearing was not scheduled and a public hearing was not subsequently requested.

Statement of Mailing Notice

45-Day Public Notice Mailing:

The Department has complied with the provisions of Government Code Section 11346.4(a)(1) through (4) regarding the mailing of notice of proposed action at least 45 days prior to public hearing or close of the public comment period and the date upon which the notice was mailed was May 16, 2008.

References

OEHHA, 2004, "Public Health Goal for Arsenic in Drinking Water," April 2004, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency.

"Technologies and Costs for Removal of Arsenic from Drinking Water," December 2000, EPA 815-R-00-028, www.epa.gov.

"Arsenic Residuals Research Report, Implications for Alternative Arsenic MCLs for California Water Systems," Tables 6.1, 6.2, and 8.1, McGuire Environmental Consultants, Inc., dated July 16, 2003.

Recommendations of NDWAC to the U.S. EPA on its National Small Systems Affordability Criteria, July 2003,
http://www.epa.gov/safewater/ndwac/pdfs/report_ndwac_affordabilitywg_final_08-08-03.pdf

Supplement - Revisions Following Public Comment

Section 64432(a) The word “other,” shown underlined in the regulation at the time of public notice, provides further clarification that the sentence does not pertain to the previous sentences.

Subsection 64432(g) At the time of public notice, existing subsection (f)(2), renumbered as (g)(2), and amended, also included some sentence restructuring to clarify existing confirmation sampling requirements.

Subsection 64432(l) At the time of public notice, proposed subsection 64432(l), included the term “agency”, as existing regulation text. The term has been removed from the text for conformity with how the existing text is presented in regulation.

Subparagraph 64445.1 (c)(7)(A) Although the addition of the phrase “or equal to” in amended subparagraph 64445.1(c)(7)(A) was presented to the public as an addition in the regulation text, more details than the general explanation provided in the initial statement of reasons may be useful. The purpose of the phrase is to provide clarification of the action to be taken in the unlikely event that the average of results is *exactly* ten times the MCL. Under the existing text, subparagraph (B) describes actions when results are greater than ten times the MCL and subparagraph (A) describes actions when results are less than ten times the MCL; leaving a result equal to exactly ten times the MCL unaddressed. The proposed amendment would clarify this issue. No comments were received on the proposed amendment, which would pose no additional burden on the regulated community.

Addendum 1

Response to Comments, Period Ending July 11, 2008

The Department solicited written comments on the proposed regulation package DPH-04-017; five sets of comments were received. The Department of Public Health did not receive a request for a public hearing.

Table 1: Commentators Providing Written Comments

<i>Number</i>	<i>Commentator(s)</i>	<i>Representation</i>
1	Chang, David	Golden State Water Company
2	Clark, Krista	Association of California Water Agencies
3	Hughes, Leon	Mount Weske Estates Water Company
4	Williams, Tim	American Water Works Association, California-Nevada Section
<i>The following commentator provided comments that were received after the close of the formal public comment period</i>		
5	Frye, Eric	Loch Haven Mutual Water Company

The following summarizes and responds to the comments.

GENERAL COMMENTS

Commentator 2 expressed support of the proposed arsenic standard; noting that the proposed level “allows communities to receive maximum health benefits while mitigating the high costs of treatment and residual disposal.” That said, Commentator 2 requested some clarification regarding the justification for the estimated benefits from alternative MCLs.

Response: The Department appreciates the expression of support. Regarding the benefit determination, the theoretical excess cancer cases avoided is determined for each hypothetical MCL between the DLR (the lowest feasible potential MCL) and the federal MCL (the highest potential MCL allowed by law). The theoretical excess cancer cases avoided is determined as a function of theoretical cancer risk, contaminant source concentrations, and population exposed by those sources.

Commentator 1 “noticed that point-of-use/point-of-entry (POU/POE) is not included in the proposed arsenic regulations as a treatment alternative for the removal of arsenic in drinking water.” Commentator 1 stated that POU/POE devices are effective and feasible means for smaller systems to remove arsenic and are approved for use by the U.S. EPA. Commentator 1 suggested the Department seek the authority needed to implement POU/POE devices as treatment alternatives. Commentators 2 and 4 echoed Commentator 1’s comments with respect to POU treatment; but Commentator 2 recognized that POE treatment is currently allowed pursuant to Section 116380 of the Health and Safety Code. Commentators 3 and 5 also requested allowance of POU devices as treatment.

Response: As noted by Commentator 2, POE devices are permissible in lieu of centralized treatment pursuant to Section 116380 of the Health and Safety Code. Regarding allowing POU devices in lieu of centralized treatment, the Department currently does not have the authority to allow POU devices in lieu of centralized treatment. Provision of such authority would require a statutory change and is outside the scope of the proposed regulation. It is within the purview of the regulated community to seek such a change via the California legislative process.

Commentators 3 and 5 requested a revision of the definition of Small Water Systems to permit reduced costs of regulatory compliance, noting that the costs for regulatory compliance are the same for small and large systems, but that “revenues are vastly different.”

Response: Based on the context of the comment and the fact that all public water systems (including small public water systems) that are classified as community water systems and nontransient-noncommunity water systems must comply with the proposed MCL under the federal regulations, the Department presumes that the comment refers to allowing small water systems to use POU devices as compliance technologies. The comment is beyond the scope of the regulatory package since the Department currently does not have the authority to allow POU devices in lieu of centralized treatment.

Section 64432

With respect to subsection (b), Commentators 1 and 4 requested that the Department consider allowing grandfathering of previous monitoring data in the case of the proposed arsenic standard since California’s public water systems have been monitoring for arsenic under the federal standard (10 ppb) since January 2006.

Response: Proposed subsection (b) sets forth a general initial monitoring requirement for inorganic chemicals with newly established MCLs. With respect to arsenic, pursuant to proposed subsection (b) the Department intends on providing direction to those water systems that have complied with the federal initial monitoring requirements.

Section 64447.2

While noting the proposed addition of electro dialysis and oxidation/filtration as best available technologies (BATs), Commentator 1 requested consideration of granular ferric hydroxide (GFH) as an additional BAT for arsenic treatment. Commentators 2 and 4 also recommended that the Department consider such iron-based adsorption media be included as BAT for arsenic treatment.

Response: While recognizing GFH’s potential as a treatment technology, the U.S. EPA did not designate GFH as a BAT because of the lack of published data on its performance and cost for varying water qualities. To date, the Department agrees with EPA’s position. However, it should be noted that this does not preclude one from receiving a permit that allows the use of GFH for arsenic treatment as an alternative technology. In fact, as noted by the commentators, the Department has permitted several systems utilizing iron-based media for arsenic treatment.