



United States
Environmental Protection
Agency

Implementation Guidance for the Arsenic Rule

Drinking Water Regulations for Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring

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Purpose of this Document

This document provides guidance to States, Tribes, and U.S. Environmental Protection Agency (EPA) Regions exercising primary enforcement responsibility under the Safe Drinking Water Act (SDWA). Throughout this document, the terms “State” or “States” are used to refer to all types of primacy agencies including U.S. territories, Indian Tribes, and EPA Regions.

The SDWA provisions and EPA regulations described in this document contain legally binding requirements. This document does not substitute for those provisions or regulations, nor is it a regulation itself. Thus, it does not impose legally binding requirements on EPA, States, Tribes or the regulated community, and may not apply to a particular situation based upon the circumstances. EPA, State, and Tribal decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. Any decisions regarding a particular facility will be made based on the applicable statutes and regulations. Therefore, interested parties are free to raise questions and objections about the appropriateness of the application of this guidance to a particular situation, and EPA will consider whether or not the recommendations or interpretations in the guidance are appropriate in that situation. EPA may change this guidance in the future.

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Abbreviations and Acronyms

µg – Microgram, one-millionth of a gram (3.5×10^{-8} of an ounce)
µg/L – Micrograms per liter
ASTM – American Society for Testing and Materials
AWWA – American Water Works Association
BAT – Best available technology
CCR – Consumer confidence report
CFR – Code of Federal Regulations
CWS – Community water system
DWSRF – Drinking Water State Revolving Fund
EPA – U.S. Environmental Protection Agency
EPTDS – Entry point to the distribution system
FED – Federal
FR – Federal Register
ICP-AES – Inductively coupled plasma atomic emission spectroscopy
ICP-MS – Inductively coupled plasma mass spectroscopy
IOCs – Inorganic contaminants
L – Liter, also referred to as lower case “l” in older citations
MCL – Maximum contaminant level
MCLG – Maximum contaminant level goal
MDL – Method detection limit
mg – Milligram, one-thousandth of a gram; 1 milligram = 1,000 micrograms
mg/L – Milligrams per liter
NAS – National Academy of Sciences
NDWAC – National Drinking Water Advisory Council for EPA
NIPDWR – National Interim Primary Drinking Water Regulation
NPDWR – National Primary Drinking Water Regulation
NTNCWS – Non-transient non-community water system
OECA – Office of Enforcement and Compliance Assurance
OGC – Office of General Counsel
OGWDW – Office of Ground Water and Drinking Water in EPA
ORC – Office of Regional Counsel
pH – Negative logarithm of hydrogen ion concentration
PN – Public notification
POE – Point-of-entry
POU – Point-of-use
ppb – Parts per billion
PWS – Public water system
PWSS – Public Water System Supervision
SAB – Science Advisory Board
SBREFA – Small Business Regulatory and Enforcement Flexibility Act
SDWA – Safe Drinking Water Act

SDWIS – Safe Drinking Water Information System
SM – Standard Method
SNC – Significant non-complier
SOCs – Synthetic organic contaminants
SSCTs – Small system compliance technologies
STEP – Simple Tools for Effective Performance
U.S. – United States
VOCs – Volatile organic contaminants

Introduction

The purpose of this guidance manual is to provide assistance to United States (U.S.) Environmental Protection Agency (EPA), State,¹ and public water system (PWS) staff for the implementation of the Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Rule published in the Federal Register on January 22, 2001 (66 FR 6976). Developed through a public comment process involving EPA Regions, States, and Stakeholders, this manual is organized as follows:

- Section I summarizes the Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Rule and presents a timeline of important dates.
- Section II addresses compliance determination and associated reporting requirements, including violation tables to assist States in their compliance activities.
- Section III covers State Primacy Revision Requirements, including a time frame for application review and approval. This section also contains guidance and references to help States adopt new special primacy requirements included in this Rule.
- Section IV provides information about where to find additional technical information on the Rule.

The appendices of this document provide information that will be useful to States and EPA Regions in the primacy revision application process and in implementation of the Arsenic Rule.

- Appendix A contains a glossary of select terms used in this document.
- Appendix B contains a copy of the Final Rule.
- Appendix C contains a copy of the delay of the effective date for the Final Rule.
- Appendix D contains EPA's guidance on the calculation of compliance for the revised arsenic maximum contaminant level (MCL).
- Appendix E contains violation tables arranged for data management and enforcement purposes.

¹In accordance with 40 CFR 141.2, this guidance manual uses the term "State" to include Tribal governments that have primacy and EPA Regions in situations of non-primacy.

- Appendix F contains the Small Entity Compliance Guide for Arsenic, which is part of the Simple Tools for Effective Performance (STEP) series.
- Appendix G contains an exemptions guidance for the Arsenic Rule.
- Appendix H contains the State reporting guidance for the Arsenic Rule.
- Appendix I contains a sample extension agreement between EPA and the States that will enable EPA and States to document how they will share Rule implementation responsibilities if the State does not submit a primacy application by the deadline.
- Appendix J contains the primacy revision crosswalks for the Rule.
- Appendix K is EPA's Statement of Principles on the effect of State audit immunity/privilege laws on enforcement authority for federal programs.
- Appendix L contains descriptions of and links to training presentation materials for the Rule.
- Appendix M lists references used to develop this document.
- Appendix N contains two fact sheets on the Rule.

To help explain the provisions of the Arsenic Rule, this Guidance also includes a series of illustrations based on the four hypothetical systems described below. The examples that appear throughout the document (as “sidebars”) are based on these systems’ characteristics and are meant for illustrative purposes only. Since a large majority of approximately 4,000 systems that will be affected by the Arsenic Rule are small (serving 3,300 people or fewer) and use ground water as a source of supply, the hypothetical systems included in the illustrations are modeled on these characteristics.

<p style="text-align: center;"><i>System 1</i></p> <p>System 1 is a ground water non-transient non-community water system (NTNCWS) serving 151 people that has been in operation since 1985. The system has one entry point to its distribution system (EPTDS), referred to as a sampling point.</p> <p>Before January 23, 2006, a NTNCWS is not required to sample for arsenic.</p> <p>The system collected its first arsenic sample at its one sampling point on January 23, 2007, to satisfy the monitoring required during the 2005-2007 compliance period. The sample was analyzed by EPA Method 200.8 (inductively coupled plasma mass spectroscopy (ICP-MS)) with a detection limit of 0.0014 mg/L (1.4 µg/L). The result of the sample was 0.0105 mg/L (10.5 µg/L).</p>	<p style="text-align: center;"><i>System 2</i></p> <p>System 2 is a ground water community water system (CWS) serving 3,287 people that has been in operation since 1987. System 2 collected arsenic samples at each of its three sampling points every three years, and most recently in April 1999. Compliance samples taken during these years ranged from 0.015 mg/L to 0.045 mg/L (15 µg/L to 45 µg/L). All of these samples were analyzed by EPA Method 200.9 (Atomic Absorption; Platform–Stabilized Temperature) with a detection limit of 0.0005 mg/L (0.5 µg/L).</p> <p>To satisfy the monitoring required during the 2002-2004 compliance period, the system collected samples in April 2002. The results of the samples were:</p> <p>Sampling point 1: 0.006 mg/L (6 µg/L) Sampling point 2: 0.027 mg/L (27 µg/L) Sampling point 3: 0.015 mg/L (15 µg/L)</p>
<p style="text-align: center;"><i>System 3</i></p> <p>System 3 is a ground water CWS serving 2,304 people that has been in operation since 1995. The system has collected arsenic samples at its one sampling point during the 1993-1995, 1996-1998, 1999-2001, and 2002-2004 compliance periods. The samples were analyzed by EPA Method 200.8 (ICP-MS) with a detection limit of 0.0014 mg/L (1.4 µg/L). The results of the samples ranged from “non-detect” (less than or equal to 0.0014 mg/L, or 1.4 µg/L) to 0.004 mg/L (4 µg/L).</p> <p>The system collected a sample on November 4, 2005, to satisfy the monitoring required during the 2005-2007 compliance period. This sample was also analyzed using EPA Method 200.8 (ICP-MS). The result of the sample was 0.003 mg/L (3 µg/L).</p>	<p style="text-align: center;"><i>System 4</i></p> <p>System 4 is a ground water CWS serving 1780 people that has been in operation since 1994. The system collected arsenic samples at both of its sampling points during the 1993-1995, 1996-1998, 1999-2001, and 2002-2004 compliance periods. All of these samples were analyzed by EPA Method 200.7 (inductively coupled plasma atomic emission spectroscopy (ICP-AES)) with a detection limit of 0.008 mg/L (8 µg/L). The results of the samples ranged from “non-detect” (less than or equal to 0.008 mg/L, or 8 µg/L) to 0.012 mg/L (12 µg/L).</p> <p>The system collected samples on March 6, 2007, to satisfy the monitoring required during the 2005-2007 compliance period. The laboratory used EPA Method 200.8 (ICP-MS) to analyze the samples for this round of monitoring, because EPA withdrew approval of the less sensitive method 200.7 (ICP-AES) in the Final Arsenic Rule published January 22, 2001.</p>

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Section I.

Rule Requirements

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I-A. Summary of the Rule

I-A.1 Introduction

I-A.1.a What is the purpose of this document?

The purpose of this guidance manual is to acquaint primacy agency decision makers, PWSs, and public health officials with the Final Rule for Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring. The Arsenic Rule was published in the Federal Register on January 22, 2001 (66 FR 6976). This Rule updates the current maximum contaminant level (MCL) for arsenic, and clarifies compliance and new source contaminant monitoring requirements for inorganic contaminants (IOCs), synthetic organic contaminants (SOCs), and volatile organic contaminants (VOCs). See Appendices B and C for the Final Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Rule and the Delay of Effective Date.

I-A.2 Background of the Arsenic Provisions

I-A.2.a How was the arsenic standard set?

In 1942, the U.S. Public Health Service established an arsenic drinking water standard for interstate water carriers of 0.05 mg/L (50 µg/L). On December 24, 1975, under the authority of the Safe Drinking Water Act (SDWA) of 1974, EPA issued a National Interim Primary Drinking Water Regulation (NIPDWR) for arsenic of 0.05 mg/L (50 µg/L).

While scientific studies linked arsenic in drinking water to skin cancer in humans as early as 1898, the first studies reporting dose-dependent effects came from studies published in 1968 and 1977. EPA's arsenic work reflected scientific uncertainties about health effects of low concentrations of carcinogens and animal studies suggesting that arsenic may be an essential nutrient. The 1986 SDWA Amendments converted the 1975 NIPDWR to a National Primary Drinking Water Regulation (NPDWR), directed EPA to revise NPDWRs by 1989, and specified that maximum contaminant levels goals (MCLGs) be promulgated simultaneously with MCLs.

As a result of a citizen suit brought after EPA missed the 1989 deadline, the Agency entered into a consent decree providing deadlines for issuing a new arsenic regulation. The 1996 Amendments to the SDWA included new statutory deadlines for the arsenic regulation, requiring EPA to propose a revised Arsenic Rule by January 1, 2000, and issue a Final Rule by January 1, 2001.

EPA proposed arsenic regulations to revise the existing NPDWR on June 22, 2000 (65 FR 38888), which proposed an MCL of 0.005 mg/L (5 µg/L). The October 2000 appropriations bill for EPA amended the SDWA, directing EPA to promulgate a final arsenic standard no later than June 22, 2001. The Final Rule, published on January 22, 2001, established

the MCL at 0.01 mg/L (10 µg/L) (40 CFR 141.62(b)(16)). The Rule was to become effective on March 23, 2001, 60 days after publication. The Rule established that the 0.01 mg/L (10 µg/L) MCL becomes enforceable on January 23, 2006, and that the clarifications to compliance and new source contaminants monitoring regulations become enforceable on January 22, 2004 (40 CFR 141.6(j) & (k)).

Following Federal Register publication of the Arsenic Rule, the new Administration learned of concerns raised by States, PWSs, and other stakeholders regarding the adequacy of the science and the basis for national cost estimates underlying the Rule. Because of the importance of the Arsenic Rule and the national debate surrounding it related to science and costs, EPA's Administrator publicly announced on March 20, 2001, that the Agency would take additional steps to reassess the scientific and cost issues associated with this Rule. After taking public comment on the Agency's plan to review the basis for the Arsenic Rule, EPA extended the effective date to February 22, 2002, while maintaining the compliance dates of January 23, 2006, for the arsenic MCL and January 22, 2004, for the clarifications to compliance and new source contaminants monitoring (66 FR 28350). EPA requested that the National Academy of Sciences (NAS) convene a panel of scientific experts to review the Agency's interpretation and application of arsenic research discussed and evaluated as part of the NAS's 1999 arsenic report, and review and evaluate any new arsenic research that had become available since the 1999 NAS report. At the same time, EPA worked with its National Drinking Water Advisory Council (NDWAC) to review the assumptions and methodologies underlying the Agency's estimate of arsenic compliance costs. Finally, EPA asked its Science Advisory Board (SAB) to look at the benefits associated with the Rule.

The overall finding of the NDWAC was that, given the various limitations and uncertainties, EPA produced a credible estimate of the cost of compliance. The committee recommended areas where the estimate could be improved to better account for costs of equipment, labor costs, emerging technologies that may soon be available, and engineering and other secondary costs. Based on preliminary analysis, EPA believes the net result of these recommendations would be a modest increase in EPA's cost of compliance estimates.

The SAB commented that many aspects of the Agency's economic analysis that supported the January 2001 Rule are commendable, and discussed areas that could be improved. The recommendations included, for example, cessation lag adjustments and quantitative benefits from non-cancer endpoints, such as diabetes. Based on preliminary analysis, EPA believes that the net result of incorporating the SAB recommendations into a revised economic analysis would be an increase in net benefits for any of the regulatory levels considered, as compared to the benefits estimated for the January 2001 Rule.

The 2001 NAS report affirmed the use of southwestern Taiwan data and noted that new studies in Chile and Taiwan discount the effects of poor nutrition, differences in diet, smoking, and lifestyle in the quantitative risk assessments. NAS noted that limitations in recent studies in New Hampshire and Utah prevent their use in quantifying risk in the U.S. The risks calculated in the 2001 report were higher than those in the 1999 NAS report on arsenic. The 2001 report

evaluated several hundred new studies, yet could not determine which arsenic species are most toxic, nor the shape of the dose-response curve at 0.050 mg/L (50 µg/L) or less. Therefore, NAS recommended that EPA assume effects are linear to zero. EPA believes that, overall, recommendations in the NAS report would increase the risks EPA presented in the January 2001 Rule.

On October 31, 2001, Administrator Whitman announced that the 10 ppb (0.010 mg/L) standard for arsenic would remain. In her press statement, the Administrator reiterated that the additional study and consultation did not delay the compliance date for implementing a revised standard for arsenic in 2006. “Instead it has reinforced the basis for the decision,” said Whitman. “I said in April that we would obtain the necessary scientific and cost review to ensure a standard that fully protects the health of all Americans, we did that, and we are reassured by all of the data that significant reductions are necessary. As required by the SDWA, a standard of 10 ppb protects public health based on the best available science and ensures that the cost of the standard is achievable.”

EPA will continue to evaluate the expert panel reports, the voluminous public comments received, and other relevant information and comments as they become available as part of the next round of review of existing NPDWRs under SDWA §1412(b)(9). As part of this review due August 2008, EPA expects to make a decision on whether to further revise the arsenic standard.

I-A.3 Applicability and Compliance Dates

I-A.3.a To whom does this Rule apply?

The Arsenic Rule applies to all community water systems (CWSs) and nontransient, noncommunity water systems (NTNCWSs) (40 CFR 141.62(b)).

I-A.3.b What is the effective date of the Rule?

The effective date of the Arsenic Rule is February 22, 2002.

I-A.3.c What is the compliance date of the revised MCL?

The compliance date for the revised arsenic MCL is January 23, 2006 (40 CFR 141.6(j)). To satisfy the arsenic monitoring requirements, all surface water systems must complete monitoring for the revised arsenic MCL by December 31, 2006. All ground water systems must complete monitoring for the revised arsenic MCL by December 31, 2007 (40 CFR 141.23(c)(1)).

The compliance date for the new consumer confidence reporting requirements is February 22, 2002 (40 CFR 141.6(j)). The compliance date for the clarified monitoring and compliance determinations for IOCs, SOCs, and VOCs is January 22, 2004 (40 CFR 141.6(k)).

I-A.4 MCL and MCLG

I-A.4.a What is the revised arsenic MCL?

The Final Rule establishes an arsenic MCL of 0.01 mg/L (10 µg/L or 10 ppb) (40 CFR 141.62(b)(16)). The compliance date is January 23, 2006 (40 CFR 141.6(j)). A special rule requirement was published in the Arsenic Rule, “Arsenic sampling results will be reported to the nearest 0.001 mg/L (40 CFR 141.23(i)(4),” to demonstrate that EPA clearly intended 10 ppb (0.010 mg/L) to be used for determining compliance.

I-A.4.b What is the new arsenic MCLG?

The Rule also finalizes an MCLG for arsenic of 0 mg/L (40 CFR 141.51(b)).

I-A.5 Benefits of the Arsenic Rule

I-A.5.a What are the benefits of lowering the arsenic MCL?

EPA estimated in the Economic Analysis (EPA 815-R-00-026) that reducing arsenic from 50 ppb (0.050 mg/L) to 10 ppb (0.010 mg/L) would prevent:

- More than 19-31 cases of, and 5-8 deaths from, bladder cancer each year;
- More than 19-25 cases of, and 16-22 deaths from, lung cancer each year; and,
- A number of cases of cancerous and noncancerous diseases, such as skin cancer and heart disease.

I-A.6 Record Keeping

I-A.6.a What records are primacy States required to keep?

The standard record keeping requirements for primacy States under the SDWA apply to the Arsenic Rule (40 CFR 142.14). Each State that has primary enforcement responsibility must maintain records of tests, measurements, analyses, decisions, and determinations performed on each PWS to determine compliance with applicable provisions of State primary drinking water regulations. States must keep the following records for the stated period of time:

- Certifications of compliance with the public notification (PN) requirements received from PWSs, copies of the public notices received from PWSs, and records of any State determinations establishing alternative PN requirements for three years (40 CFR 142.14(f)).

- Records pertaining to each arsenic variance and exemption determination for five years following the expiration of the variance or exemption (40 CFR 142.14(e)).
- Records of analyses, including the date and place of sampling and the date and results of analyses, for 12 years (40 CFR 142.14(a)(6)).
- Current inventory information for every PWS in the State for 12 years (40 CFR 142.14(c)).
- Reports of sanitary surveys for 12 years (40 CFR 142.14(d)(1)).
- Records of any State approvals for 12 years (40 CFR 142.14(d)(2)).
- Records of any arsenic enforcement actions for 12 years (40 CFR 142.14(d)(3)).
- Records of determinations of a system's vulnerability to contamination from arsenic, including the monitoring results and other data supporting the determination, the State's findings based on the supporting data, and any additional bases for such decisions. This information must be kept in perpetuity or until a more recent vulnerability assessment has been issued (40 CFR 142.14(d)(4)).
- All current monitoring requirements and the most recent monitoring frequency decision pertaining to each contaminant, including the monitoring results and other data supporting the decision, the State's findings based on the supporting data, and any additional bases for such decision. This information must be kept in perpetuity or until a more recent monitoring frequency decision has been issued (40 CFR 142.14(d)(5)).

I-A.6.b What records are systems required to keep?

The standard record keeping requirements for PWSs under the SDWA apply to the Arsenic Rule (40 CFR 141.33).

Owners and operators must keep the following records for the stated period of time:

- Records of action taken by the system to correct violations of the arsenic regulation for at least three years after the last action taken with respect to the particular violation involved (40 CFR 141.33(b)).
- Copies of arsenic public notices and certifications made to the primacy agency for at least three years after their issuance (40 CFR 141.33(e)).
- Records concerning a variance or exemption granted to the system for at least five years following the expiration of such variance or exemption (40 CFR 141.33(d)).

- Records of chemical analyses for at least 10 years. Data may be kept as laboratory reports or can be transferred to tabular summaries. The summaries should include the date, place, and time of sampling; the name of the person who collected the sample; identification of the sample as a routine distribution system sample, check sample, raw or processed water sample, or other special purpose sample; date of analysis; laboratory and person responsible for performing analysis; the analytical technology/method used; and the results of the analysis (40 CFR 141.33(a)).

I-A.7 Reporting and Public Notification

I-A.7.a What do primacy States need to report to EPA?

The standard reporting requirements for primacy States under the SDWA apply to the Arsenic Rule (40 CFR 142.15). States must submit, among other things, quarterly reports to EPA that detail:

- All violations committed by PWSs during the previous quarter (40 CFR 142.15(a)(1)).
- Enforcement actions taken by the State during the previous quarter to enforce State arsenic regulations (40 CFR 142.15(a)(2)).
- The variances or exemptions granted during the previous quarter. The State must provide a statement of the reasons for granting the variance or exemption, including documentation of the need for the variance or exemption and the finding that the granting of the variance or exemption will not result in an unreasonable risk to health (40 CFR 142.15(a)(3)).

States must submit an annual report that identifies changes (additions or corrections) to the State's PWS inventory and includes a summary of the status of each variance and exemption currently in effect (40 CFR 142.15(b)).

I-A.7.b How are analytical results rounded?

In order to clearly demonstrate that EPA intended 10 ppb (0.010 mg/L) as the arsenic MCL, EPA included a special rule requirement in the Final Rule, “Arsenic sampling results will be reported to the nearest 0.001 mg/L” (40 CFR 141.23(i)(4)). Further guidance on calculating compliance for the revised arsenic MCL can be found in Appendix D.

For the purposes of compliance determinations, analytical results for arsenic will be reported to the nearest 0.001 mg/L (40 CFR 141.23(i)(4)). For purposes of rounding, the last digit should be increased by one unit if the digit dropped is 5 or greater. If the digit dropped is 4 or less, do not alter the preceding number. For example, analytical results for arsenic of 0.0105 mg/L would round off to 0.011 mg/L, while a result of 0.0104 mg/L would round off to 0.010 mg/L. See Illustration 1 for an example on rounding.

Illustration 1 - System 1 Rounding Analytical Results

System 1 collected a sample at its single sampling point on January 23, 2007, to satisfy the monitoring requirements of the Arsenic Rule. The system received the lab result of 0.0105 mg/L (10.5 µg/L) on February 15, 2007. Because the laboratory did not report the result to the State, the system must report it to the State within either the first 10 days following the month in which the results were received or within 10 days from the end of the monitoring period, whichever comes first (40 CFR 141.31(a)). The system reports the analytical result of 0.0105 mg/L (10.5 µg/L) to the State on March 1, 2007.

For the purposes of compliance determination and monitoring requirements, the State rounds the result to the nearest 0.001 mg/L (1 µg/L) (40 CFR 141.23(i)(4)). In this case, the result rounds to 0.011 mg/L (11 µg/L).

Note: Although the result of the sample is above the 10 ppb (0.010 mg/L) MCL, the system is not in violation of the MCL. The State may require confirmation samples and must require the system to begin quarterly monitoring at that sampling point the quarter immediately after the exceedance. Systems triggered into increased monitoring will not be considered in violation of the MCL until they have completed one year of quarterly sampling and the running annual average is above the MCL. However, if any sample result will cause the running annual average to exceed the MCL, the system is out of compliance with the MCL immediately.

I-A.7.c What do systems or laboratories need to report to the States?

The standard reporting requirements for PWS monitoring programs under the SDWA apply to the Arsenic Rule (40 CFR 141.31).

- In accordance with State regulations, the system must report results within either the first 10 days following the month in which the results are received, or the first 10 days following the end of the required monitoring period, whichever of these is shortest (40 CFR 141.31(a)).
- The water supplier is not required to report analytical results to the State in cases where a State laboratory performs the analysis and reports the results to the State office (40 CFR 141.31(c)).

- Except where a different time is specified in other parts of the regulations (e.g., 40 CFR 141.202 (b)), the water supplier must also report to the State within 48 hours the failure to comply with the arsenic MCL or any monitoring requirement (40 CFR 141.31(b)).
- The water system must provide copies of each arsenic public notice and a letter certifying that the system has met all the PN requirements. The copies and letter are required within 10 days of the completion of each public notice (40 CFR 141.31(d)).

I-A.7.d What are the system’s public notification requirements?

Systems must provide public notice for violations and in certain other circumstances (40 CFR Part 141, Subpart Q). The revised PN Rule (40 CFR Part 141, Subpart Q) was effective for States and Tribes with primacy May 6, 2002, or the date the revised primacy became effective, whichever was sooner.²

The May 2000 PN Rule divides the public notice requirements into three tiers based on the seriousness of the violation or situation. “Tier 1” applies to violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure. Notice is required within 24 hours of the violation. “Tier 2” applies to other violations and situations with potential to have serious adverse effects on human health (i.e., failure to comply with the terms of a variance or an exemption). Notice must be sent within 30 days and must be repeated every three months as long as the violation exists, unless the State establishes another frequency, not to be less than once a year (40 CFR 141.203(b)(2)). Primacy agencies may grant extensions of up to three months for the initial notice under certain conditions. “Tier 3” applies to monitoring and testing violations not included in Tier 1 and Tier 2, operation under a variance or exemption, availability of unregulated contaminant monitoring results, and exceedance of the fluoride secondary MCL. Notices for Tier 3 violations can be combined into one annual notice,

Illustration 2 - System 1 Public Notice

The result of the sample taken by System 1 on January 23, 2007, was 0.011 mg/L (11 µg/L). The State required the system to take a confirmation sample since the initial result was above the 10 ppb (0.010 mg/L) MCL. The confirmation sample result was 0.013 mg/L (13 µg/L). The average of the initial result and confirmation sample was 0.012 mg/L (12 µg/L). The State required the system to begin quarterly monitoring in April 2007 (i.e., the quarter after taking the samples that were above the MCL).

After a year of quarterly sampling, System 1 has a running annual average arsenic concentration greater than 10 ppb (0.010 mg/L) at its sampling point. In January 2008, System 1 posts a notice in a conspicuous location and publishes it in the local newspaper. The notice describes the violation, lists the date the violation occurred, and includes information about arsenic’s potential adverse health effects.

The system has met its Tier 2 public notice requirements of notifying nontransient noncommunity water users by publishing a notice within 30 days of learning of the violation, and including all required information. (40 CFR 141.203(c)(2) and 141.205).

²For Direct Implementation programs, the revised PN Rule went into effect October 31, 2000.

including the consumer confidence report (CCR), if timing and delivery requirements can be met.

The Arsenic Rule requires CWSs and NTNCWSs to provide a Tier 2 public notice for an arsenic MCL violation and for failure to comply with the terms or schedule of a variance or an exemption, and to provide a Tier 3 public notice for a violation of the arsenic monitoring and testing procedure requirements and after the granting of a variance or an exemption (40 CFR Part 141, Subpart Q, Appendix A). See Illustration 2.

After providing notice to consumers, the water system must send the primacy agency a copy of each type of public notice (e.g., newspaper, radio, mail notices, etc.) along with a letter certifying that the system has met all of the PN requirements. The system must send this information to the State within 10 days of completion of each public notice (40 CFR 141.31(d)).

I-A.7.e What are the system's CCR requirements?

All CWSs must deliver a CCR to their customers by July 1 of each year (40 CFR 141.152(b)). The CCR provides a snapshot of water quality over the preceding year. CCRs must include information about source water, monitoring results and an explanation of their significance, and must include contact information so customers can obtain additional information. For MCL and treatment technique violations, the CCR must explain corrective actions being taken and include health effects language (40 CFR 141.153).

SDWA §1414(c)(4)(B) authorizes the Administrator to require systems to include certain information in their CCRs. EPA believes that customers should be provided the most current understanding of the risk presented by arsenic as soon as possible. Therefore, for CCRs issued from 1998 to February 22, 2002, systems had to include an informational statement for any sampling points with an arsenic concentration above 0.025 mg/L and up to and including 0.05 mg/L, and health effects information for any sampling points that exceeded the 0.05 mg/L MCL (40 CFR 141.154(b) and 141.154(f)).

The 2001 Arsenic Rule updates the informational statement for arsenic (40 CFR 141.154(b)). Systems had to begin complying with the revised CCR requirements for those CCRs distributed after February 22, 2002 (40 CFR 141.6(j)). Systems are required to include the informational statement if they detect arsenic at levels above 0.005 mg/L and up to and including 0.010 mg/L. In addition, until January 22, 2006, systems detecting arsenic at levels above 0.010 mg/L and up to and including 0.05 mg/L must include the health effects statement. Systems with sampling results above 0.05 mg/L must also include a notification explaining that they are in violation of the arsenic MCL and provide the health effects statement. After January 22, 2006, systems with a running annual average of arsenic at levels above 0.010 mg/L must include a notification explaining that they are in violation of the arsenic MCL and provide the health effects statement.

The February 22, 2002 effective date affects systems that monitored for arsenic before that date. A system that collected samples before the February 22, 2002 effective date from all required

sampling points, and does not sample again in 2002 or 2003, must use results from the samples taken before February 22, 2002, for CCRs due 2003 and 2004 (40 CFR 141.153(d)(3)(i)). If the result of the sample is greater than 0.005 mg/L but less than or equal to 0.010 mg/L, the system must include an informational statement. If the sample result is greater than 0.010 mg/L but less than or equal to 0.05 mg/L, the system must include the health effects statement from the Final Arsenic Rule (40 CFR 141.154(b)&(f)).

See Illustration 3, Table I-1, and Figure I-1 for more information about the CCR and PN requirements for PWSs.

**Illustration 3 - System 2
CCR Requirements for Calendar Years 2002-2004**

System 2 collects arsenic compliance samples at its three sampling points every three years. Results ranges from 0.015 mg/L to 0.045 mg/L (15 µg/L to 45 µg/L). To satisfy the monitoring required for groundwater systems during the 2002-2004 compliance period, the system collected samples in April 2002. The results at the three sampling points were:

Sampling point 1: 0.006 mg/L
 Sampling point 2: 0.027 mg/L
 Sampling point 3: 0.015 mg/L

Based on the dates and the results of sampling, System 2 must include:

In the CCR distributed:	Because the system:	At sampling point(s):	The following statement is required:
7/1/03 through 7/1/05	Detected arsenic in concentrations greater than 0.005 mg/L but less than or equal to 0.010 mg/L	Sampling point 1	A special informational statement for arsenic (see 40 CFR 141.154(b) for an example).
7/1/03 through 7/1/05	Detected arsenic in concentrations greater than 0.010 mg/L	Sampling points 2 and 3	The health effects language from Appendix A to Subpart O (see 40 CFR 141.154(f) for an example). ^a

^a The system can put this health effects language into context by explaining to customers that the system is complying with existing standards.

Table I-1. CCR Informational Statements and Health Effects Language

CCR Due Date	Arsenic Result	The System Must Include the Following Statement(s) in the CCR	
		Informational Statements ¹	Health Effects Statements
July 1, 1999, thru July 1, 2006	Any sample greater than 0.05 mg/L ²	None.	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer (40 CFR 141.154(f) and 141.153(d)(6)).
July 1, 2002, and beyond ³	Any sample greater than 0.005 mg/L but less than or equal to 0.01 mg/L	While your drinking water meets EPA’s standard for arsenic, it does contain low levels of arsenic. EPA’s standard balances the current understanding of arsenic’s possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems (40 CFR 141.154(b)(1)).	None.
July 1, 2002, thru January 22, 2006 ³	Any sample greater than 0.010 mg/L but less than or equal to 0.05 mg/L ^{4,5}	None.	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer (40 CFR 141.154(f) and 141.153(d)(6)).
July 1, 2007, and every July 1 thereafter	Any sample greater than 0.010 mg/L ⁶	None.	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer (40 CFR 141.154(f) and 141.153(d)(6)).

¹Systems may write their own informational statements, but only in consultation with the Primacy Agency (40 CFR 141.154(b)(2)). Variations with State approval are permissible. The following statement suggested by the Western Coalition for Arid States is generally consistent with the federal CCR rules: “Although your drinking water contains low levels of arsenic, it fully complies with EPA’s standard for arsenic. Systems that are not in compliance with the standard must provide the following information: ‘Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.’ EPA will continue to research the health effects of low levels of arsenic in drinking water as part of its periodic review of all drinking water standards.”

²After January 22, 2004, the clarifications to compliance requirements move arsenic into the standardized monitoring framework and by doing so, compliance is now based on a running annual average. Therefore, for the CCRs due 2005 and 2006, a system with a running annual average above 0.05 mg/L must include, among other things, the violation that occurred during the year, a clear and readily understandable explanation of the violation, the steps the system has taken to correct the violation, and the health effects language.

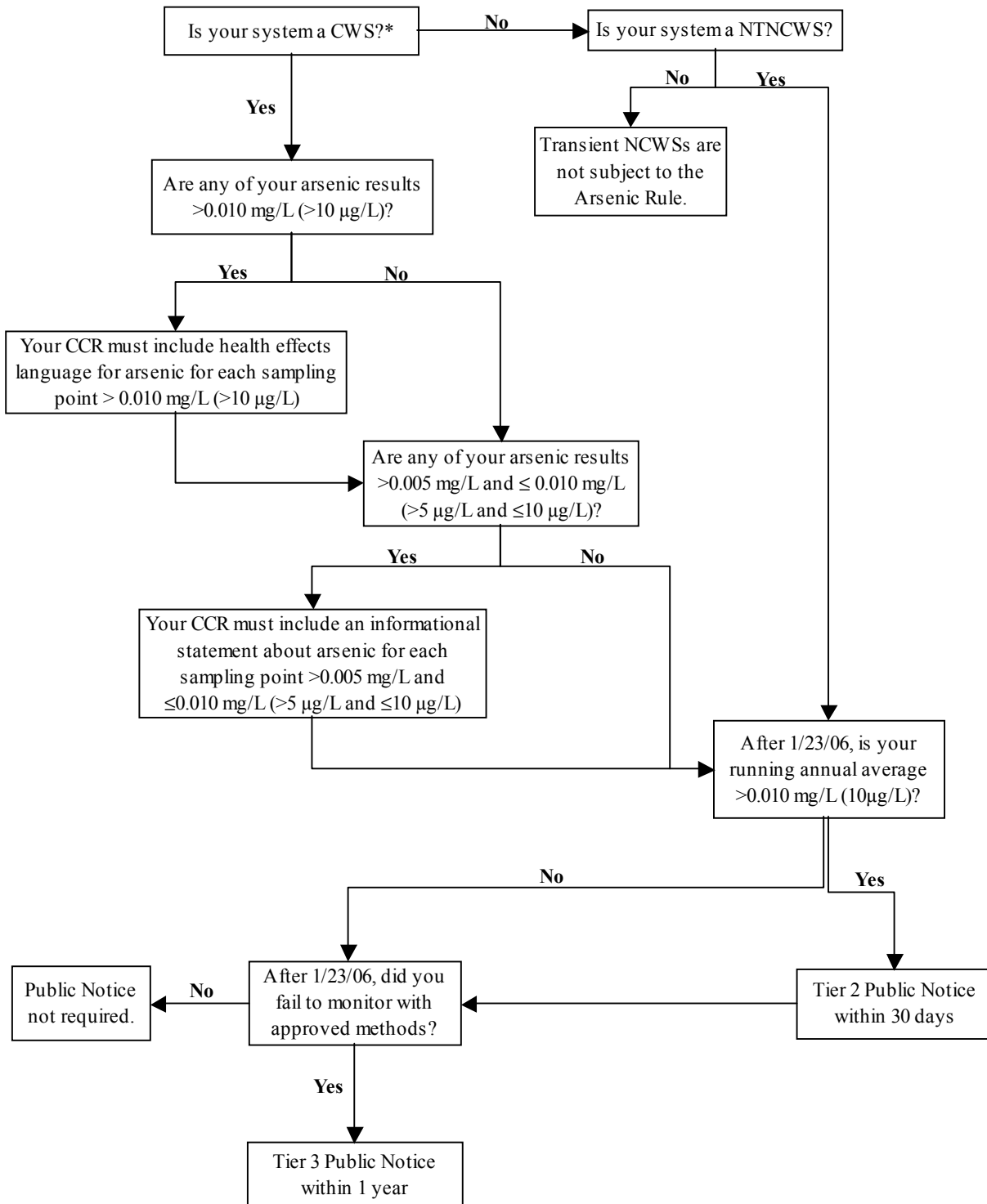
³A system that collected samples before the February 22, 2002 effective date from all required sampling points, and does not sample again in 2002 or 2003, must use results from the samples taken before February 22, 2002 for CCRs due 2003 and 2004 (40 CFR 141.153(d)(3)(i)). If the result of the sample is greater than 0.005 mg/L but less than or equal to 0.010 mg/L, the system must include an informational statement. If the result sample is greater than 0.010 mg/L but less than or equal to 0.05 mg/L, the system must include the health effects statement from the Final Arsenic Rule (40 CFR 141.154(b)&(f)).

⁴Although the revised 0.010 mg/L MCL does not take effect until January 23, 2006, if the running annual average at any sampling point is between 0.010 mg/L and 0.05 mg/L the system must include health effects language in the CCR (40 CFR 141.153(d)(6)).

⁵SDWA §1414(c)(4)(B) authorizes EPA to require the inclusion of health effects language for arsenic exceedances between the February 22, 2002, effective date and the January 23, 2006 compliance date. Systems are required to include this health effects information even though, technically, the system is not in violation of the Arsenic Rule. Systems may put this health effects information into context by explaining to customers that the system is complying with existing standards.

⁶A system with a running annual average above 0.010 mg/L must include, among other things, the violation that occurred during the year, a clear and readily understandable explanation of the violation, the steps the system has taken to correct the violation, and the health effects language.

Figure I-1. Public Notification and Consumer Confidence Requirements*



**CCR requirements only apply to CWSs.*

I-A.8 Monitoring

This section presents the monitoring requirements for arsenic under the Final Arsenic Rule.³

I-A.8.a Where do systems need to sample under the Rule?

Systems must sample at each entry point to the distribution system (EPTDS). Systems that use more than one source that are combined before distribution (e.g., an intermittent source of supply or a supply affected by seasonal demand) must sample at each EPTDS during periods of normal operating conditions (i.e., when the water is representative of the water that usually enters the system) (40 CFR 141.23(a)(3)).

However, systems may sample at a more representative sampling point to satisfy the monitoring requirements if:

- The State has determined that conditions make another sampling point more representative of each source (40 CFR 142.11(a)(1) and 141.23(a)(1)).
- The State has modified the monitoring requirements of a PWS that supplies water to one or more other PWSs, and the interconnection of the systems justifies treating them as a single system for monitoring purposes (i.e., consecutive PWSs) (40 CFR 141.29).

I-A.8.b What are the monitoring requirements for arsenic under the Rule?

The effective date of the Rule is February 22, 2002 (40 CFR 141.6(j)). The Rule makes the arsenic monitoring requirements consistent with monitoring for other IOCs regulated under the Phase II/V standardized monitoring framework. To satisfy the monitoring requirements, all new systems or systems that use a new source that begin operation after January 22, 2004, must begin complying with the clarified compliance and new source contaminants monitoring, in accordance with a State-specified plan (40 CFR 141.23(c)(9)). The compliance date for requirements related to the revised arsenic standard is January 23, 2006. The 2005-2007 compliance period is the first monitoring period under the revised MCL. Because the Final Arsenic Rule allows grandfathered data and waivers, systems should not have to deviate from their current monitoring scheme.

Ground water systems required to sample once every three years must complete sampling by December 31, 2007, and surface water systems required to sample annually must complete sampling by December 31, 2006 (40 CFR 141.23(c)(1)). The State may require more frequent monitoring or may require confirmation samples for positive or negative results (40 CFR

³See Section I-B for information on the clarified new source and new system monitoring regulations for IOCs, VOCs, and SOCs in 40 CFR 141.23(c)(9), 141.24(f)(22), and 141.24(h)(20). For existing systems, the requirements related to the clarifications for compliance are covered in 40 CFR 141.23(i)(1)&(2), 141.24(f)(15), and 141.24(h)(11). The effective date for all of these requirements is January 22, 2004.

141.23(g)). Monitoring frequency to determine compliance is set by the State. Systems may not monitor more frequently than specified by the State for compliance determinations. However, systems may apply to the State to conduct more frequent monitoring under Alternative Monitoring Programs as described in Section II-B (40 CFR 141.23(h)). Other exceptions may apply. See Sections I-A.9 and I-A.10 for information on grandfathered data and monitoring waivers.

In accordance with the standardized monitoring framework, if compliance monitoring samples show arsenic levels below the MCL at each sampling point, ground water systems must continue to take routine samples once every three years at each sampling point, and surface water systems must take annual samples at each sampling point (40 CFR 141.23(c)(1)).

States may allow systems to composite up to five samples. Compositing of samples must be done by the laboratory (40 CFR 141.23(a)(4)). The laboratory that analyzes the samples is required to use a method with a detection limit of 0.002 mg/L (2 µg/L; i.e., 1/5th of the MCL)⁴ (40 CFR 141.23(a)(4)). If the five composited samples are above 1/5th of the MCL, the system must take follow-up samples at each sampling point within 14 days (40 CFR 141.23(a)(4)). Compliance determinations will be based on the follow-up sample result. EPA encourages States to discontinue allowing systems to composite samples if arsenic is detected at levels greater than 1/5th of the MCL.

I-A.8.c When must a system increase its monitoring frequency?

Any system that has a sampling point monitoring result that exceeds the MCL must increase the frequency of monitoring at that sampling point to quarterly sampling⁵ (40 CFR 141.23(c)(7)). Compliance with the revised MCL will be calculated on a running annual average. Quarterly sampling must begin the quarter after the exceedance occurred and continue until the State determines that the system is reliably and consistently below the MCL⁶ (40 CFR 141.23(c)(7)&(8)). States may also set a sampling schedule as a condition to a variance, exemption, or enforcement action. States may require a system that fails to take a quarterly sample to either collect the missing sample as soon as possible, or collect the sample the following year in the quarter that was missed.

⁴After January 23, 2006, analytical methods using the ICP-AES technology may not be used because the detection limits for these methods are 0.008 mg/L (8 µg/L) or higher (40 CFR 141.23(k)(1)). This restriction means that the two ICP-AES methods (EPA Method 200.7 and SM 3120 B) may not be used for compliance determinations, the grandfathering of data, or waiver determinations.

⁵States have the flexibility to require confirmation samples.

⁶Reliably and consistently below the MCL means that a groundwater system has collected a minimum of two consecutive quarters of samples at the sampling point with the exceedance and a surface water system has collected four consecutive quarters of samples at the sampling point with the exceedance (40 CFR 141.23(c)(8)).

Systems triggered into increased monitoring will not be considered in violation of the MCL until they have completed one year of quarterly sampling.⁷ However, if any sample result will cause the running annual average to exceed the MCL at any sampling point (e.g., the sampling result is four times the MCL), the system is out of compliance with the MCL immediately.

Systems with an MCL violation must meet all PN requirements (40 CFR Part 141 Subpart Q). A detailed list of violations for data management and enforcement purposes is included as Appendix E.

I-A.9 Grandfathered Data

I-A.9.a What data may ground water systems be allowed to grandfather?

For ground water systems, the term grandfathered data refers to monitoring samples collected between January 1, 2005, the start of the first compliance period for ground water systems for the revised MCL, and January 23, 2006, the compliance date for the revised MCL. Because January 23, 2006, falls in the middle of a compliance period, States may allow systems to use grandfathered data collected after January 1, 2005, to satisfy the sampling requirements for the compliance period.

States may allow systems to grandfather ground water data under the following circumstances:

- The system collects its sample for the 2005-2007 compliance period between January 1, 2005 and January 23, 2006; and,
- The data are consistent with the analytical methodology approved for use by the January 22, 2001 Final Rule.

Data collected using inductively coupled plasma atomic emission spectroscopy (ICP-AES) technology are not eligible for grandfathering. EPA has determined that these methods are not adequate to reliably determine the presence of arsenic at 0.010 mg/L, because the detection method limits are .008 mg/L or higher (40 CFR 141.23(k)(1)).

⁷The preamble to the Final Arsenic Rule (66 FR 7032) states that “systems monitoring annually or less frequently whose sample result exceeds the MCL for any IOC in §141.23(c), or whose sample result exceeds the trigger level for any IOC listed in §141.24(f) or §141.24(h), must revert to quarterly sampling for that contaminant the next quarter.” However, an editorial oversight retained the existing regulatory language in 40 CFR 141.23(i)(2), while correctly stating the quarterly monitoring requirements for determining compliance for organics in 40 CFR 141.24(f)(15)(i) and 40 CFR 141.24(h)(11)(i) in the Final Arsenic Rule. EPA intends to consistently implement compliance determinations for IOCs, SOCs, and VOCs. Compliance determination for IOCs is the same as for organic contaminants. See Appendix D for guidance on the calculation of compliance for the revised arsenic MCL. For the purpose of calculating the running annual average, the initial exceedance is considered to be the first quarterly sample. See Section II-B for more information on determining compliance.

Ground water systems that do not use grandfathered data must collect a sample by December 31, 2007, to demonstrate compliance with the revised MCL (40 CFR 141.23(c)(1)).

I-A.9.b What data may surface water systems be allowed to grandfather?

For surface water systems, the term grandfathered data refers to monitoring samples collected between January 1, 2006, the start of the first compliance period for surface water systems for the revised MCL, and January 23, 2006, the compliance date for the revised MCL. States may allow systems to use grandfathered data collected after January 1, 2006, to satisfy the sampling requirements for the 2006 year.

States may allow systems to grandfather surface water data under the following circumstances:

- The system collects its annual sample for 2006 between January 1, 2006 and January 23, 2006; and,
- The data are consistent with the analytical methodology approved for use by this Rule.

Data collected using inductively coupled plasma atomic emission spectroscopy (ICP-AES) technology are not eligible for grandfathering. EPA has determined that these methods are not adequate to reliably determine the presence of arsenic at 0.010 mg/L because the detection method limits are .008 mg/L or higher (40 CFR 141.23(k)(1)).

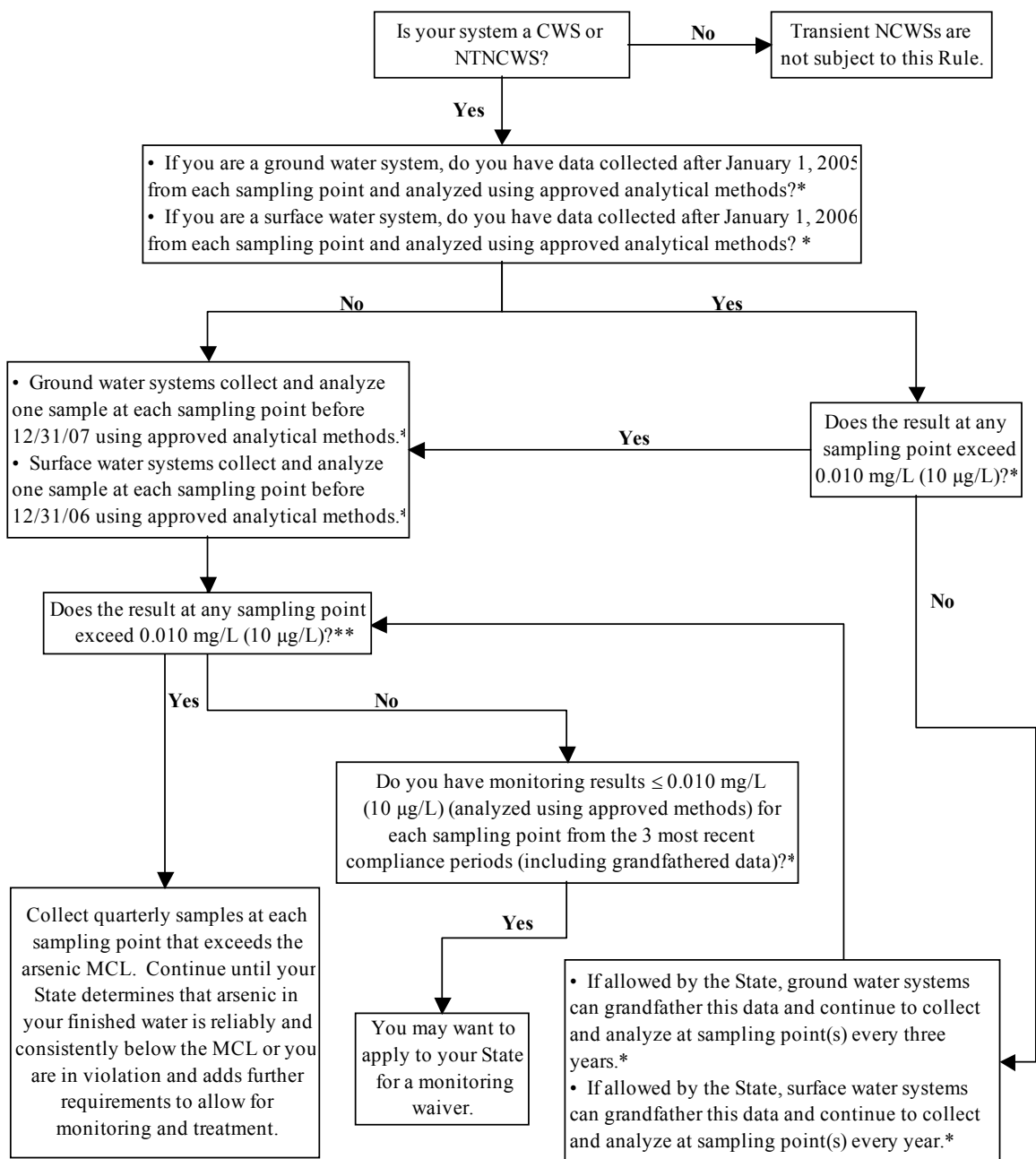
Surface water systems that do not use grandfathered data must collect a sample by December 31, 2006, to demonstrate compliance with the revised MCL (40 CFR 141.23(c)(1)).

I-A.9.c What happens if a system grandfathers data with results above the MCL?

If grandfathered data are used to comply with the compliance period and the analytical result is greater than 10 ppb (0.010 mg/L), that system will be in violation of the revised MCL on January 23, 2006.

Figure I-2 depicts the arsenic monitoring and grandfathering requirements for PWSs.

Figure I-2. Arsenic Monitoring and Grandfathering Requirements for PWSs



*After January 23, 2006, analytical methods using the ICP-AES technology may not be used because the detection limits for these methods are 0.008 mg/L (8 µg/L) or higher (40 CFR 141.23(k)(1)). This restriction means that the two ICP-AES methods (EPA Method 200.7 and SM 3120B) may not be used for compliance determinations, the grandfathering of data, or waiver determinations.

** If your State requires you to take any confirmation samples, then the average of the initial sample and any confirmation samples will be used to determine your future monitoring frequency.

I-A.10 Monitoring Waivers

I-A.10.a Can States issue monitoring waivers under the Arsenic Rule?

Because the Final Rule incorporates arsenic into the standardized monitoring framework for IOCs, States may grant a nine-year monitoring waiver to a system.⁸ States must consider all previous monitoring data; the variation in reported concentrations; and other factors that may affect concentrations, such as changes in pumping rates, system configuration, operating procedures, or stream characteristics (40 CFR 141.23(c)(5)). States should also consider the quality and amount of data available, the length of time covered, the volatility/stability of the sampling results, and the proximity of results to the MCL. Source water assessments currently being conducted by the States are another valuable tool that may assist States in determining whether to grant a waiver. In deciding whether to grant a waiver, States should use all available information.

I-A.10.b Which systems are eligible for monitoring waivers?

To qualify for an arsenic waiver, a system must have data from at least three previous sampling periods. At least one sample has to be taken after January 1, 1990. The analytical results from all previous samples must be below the 10 ppb (0.010 mg/L) MCL, and the samples must be analyzed with EPA Methods 200.8 or 200.9, SM 3113B, 3114B, or ASTM D-2972-93C or D-2972-93B. See Illustration 4 for an example on monitoring waivers.

Illustration 4 - System 3 Monitoring Waiver

System 3 collected a sample on November 4, 2005, to satisfy the monitoring required during the 2005-2007 compliance period. The sample was analyzed by EPA Method 200.8 (ICP-MS) with a detection limit of 0.0014 mg/L (1.4 µg/L). The result of the sample was 0.003 mg/L (3 µg/L).

A State may allow System 3 to use the 2005 sampling result to satisfy the monitoring requirements since System 3 is a ground water system that sampled after January 1, 2005, and the system used approved analytical methodology for this rule.

System 3 may continue to collect one sample every three years, with the next sample due between 2008 and 2010, or apply to the State for a nine-year waiver. Since the method used to analyze the samples was an EPA approved method with detection limits significantly below the revised arsenic MCL of 10 ppb (0.010 mg/L), the State may use at least three rounds of monitoring (one sample from 1999-2001, one sample from 2002-2004, and one sample from 2005-2007) to see if the system qualifies for a waiver. The State could grant the waiver, since all of the analytical results were below 10 ppb (0.010 mg/L) and the system had them analyzed using an EPA approved method. If the State issues a waiver, the system will now be required to collect one sample during the period from 2008-2016.

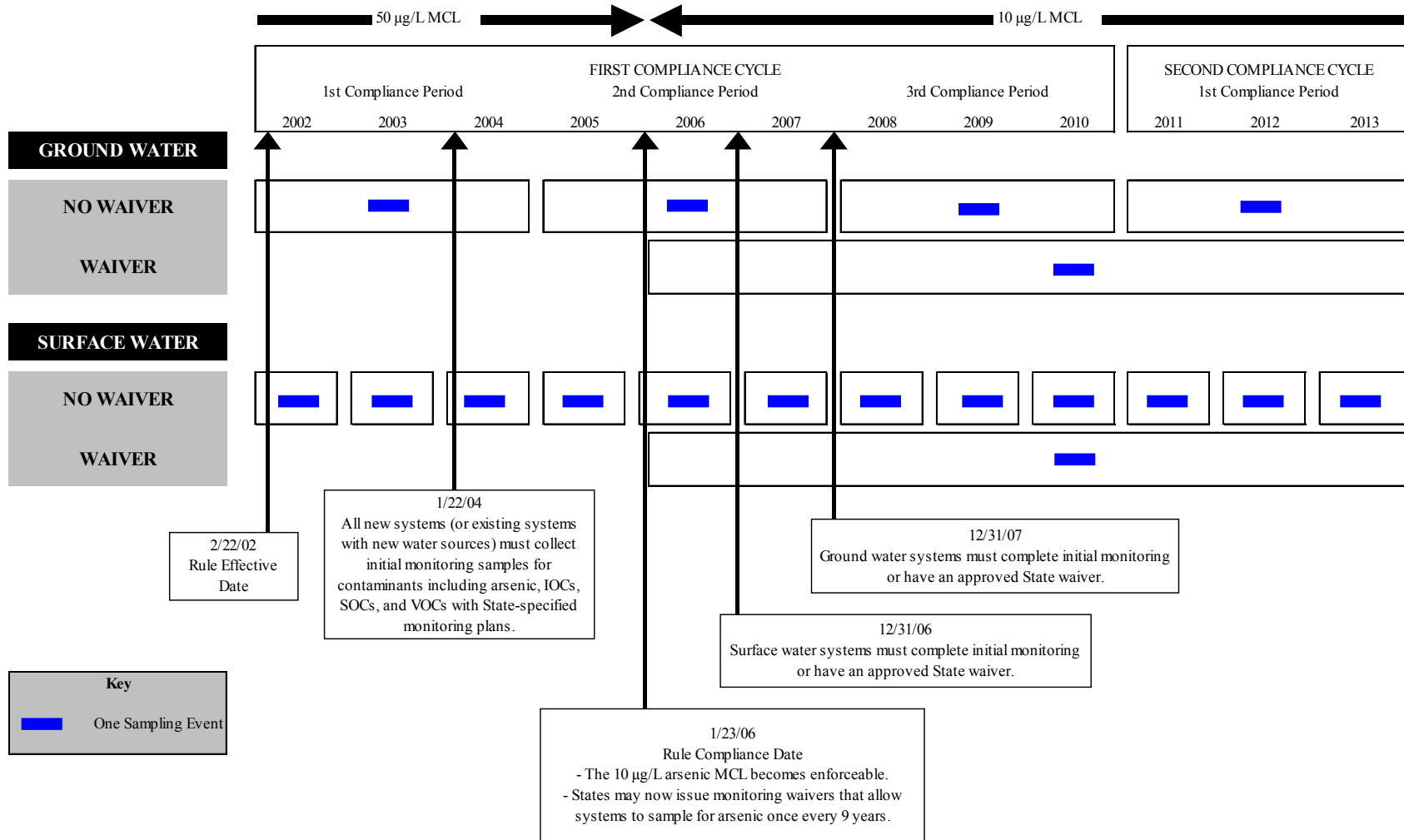
⁸Compliance with the existing 50 ppb standard is met through compliance with the old monitoring provisions for arsenic, which do not allow for monitoring waivers. Therefore, systems may not currently be eligible for arsenic monitoring waivers. Once a State adopts arsenic into its standardized monitoring framework and adopts the revised arsenic MCL provisions, the primacy agency may begin granting monitoring waivers for the revised standard.

Systems may be eligible for waivers if (40 CFR 141.23(c)(3)&(4)):

- Ground water systems conducted a minimum of three rounds of monitoring and demonstrated that all previous analytical results were below the revised MCL. Once a waiver is issued, the system must take at least one sample during each nine-year period.
- Surface water systems monitored annually for at least three years and demonstrated that all previous analytical results were less than the MCL. Once a waiver is issued, the system must take at least one sample during each nine-year period.

Figure I-3 depicts the standardized monitoring framework for IOCs as applied to arsenic.

Figure I-3. Standardized Monitoring Framework for Inorganic Contaminants



I-A.11 Laboratory Methods

I-A.11.a Which analytical methods are acceptable for arsenic?

Several analytical methods and method updates were approved for the analysis of arsenic in drinking water in previous rulemakings. The methods and updates, listed in Table I-2, are based on atomic absorption, atomic emission, and mass spectroscopy methodologies and have been used for compliance monitoring of arsenic at the 0.05 mg/L (50 µg/L) MCL by State, federal, and private laboratories for many years.

I-A.11.b Which analytical methods are unacceptable for arsenic?

Effective January 23, 2006, EPA has withdrawn approval of Method 200.7 and SM 3120B as analytical methods that can be used to determine the presence of arsenic in drinking water (40 CFR 141.23(k)(1)). See Illustration 5. These methods are inadequate for determining compliance, determining eligibility for monitoring waivers, and for the grandfathering of data for the revised arsenic MCL of 10 ppb (0.010 mg/L).

Illustration 5 - System 4 Analytical Methods

The lab analyzing the samples from System 4 used EPA Method 200.7 (ICP-AES) with a detection limit of 0.008 mg/L (8 µg/L) to analyze all of the compliance samples taken before 2006. The system collected samples on March 6, 2007, to satisfy the monitoring required during the 2005-2007 compliance period. The laboratory switched to EPA Method 200.8 (ICP-MS) to analyze the samples taken during 2007 because EPA withdrew approval of the less sensitive method 200.7 (ICP-AES) in the Final Arsenic Rule published January 22, 2001.

**Table I-2. 40 CFR 141.23(k)(1):
Table of Approved Analytical Methods for Arsenic at the MCL of 0.01 mg/L (10 µg/L)**

Contaminant and Methodology¹³	EPA	ASTM³	SM⁴
Arsenic ¹⁴			
Inductively Coupled Plasma	200.7 ²		3120B ¹⁵
ICP- Mass Spectroscopy	200.8 ²		
Atomic Absorption; Platform	200.9 ²		
Atomic Absorption; Furnace		D-2972-93C	3113B
Hydride Atomic Absorption		D-2972-93B	3114B

²Methods for the Determination of Metals in Environmental Samples--Supplement I³, EPA/600/R-94/111, May 1994. Available at NTIS, PB95-125472.

³Annual Book of ASTM Standards, 1994 and 1996, Vols. 11.01 and 11.02, American Society for Testing and Materials. The previous versions of D1688-95A, D1688-95C (copper), D3559-95D (lead), D1293-95 (pH), D1125-91A (conductivity) and D859-94 (silica) are also approved. These previous versions D1688-90A, C; D3559-90D, D1293- 84, D1125-91A and D859-88, respectively are located in the Annual Book of ASTM Standards, 1994, Vols. 11.01. Copies may be obtained from the American Society of Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

⁴18th and 19th editions of Standard Methods for the Examination of Water and Wastewater, 1992 and 1995, respectively, American Public Health Association; either edition may be used. Copies may be obtained from the American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005.

* * * * *

¹³Because method detection limits (MDLs) reported in EPA Methods 200.7 and 200.9 were determined using a 2X preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct analysis (i.e., no sample digestion) will be higher. For direct analysis of cadmium and arsenic by Method 200.7, and arsenic by Method 3120B sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits. Preconcentration may also be required for direct analysis of antimony, lead, and thallium by Method 200.9; antimony and lead by Method 3113B; and lead by Method D3559-90D unless multiple in-furnace depositions are made.

¹⁴If ultrasonic nebulization is used in the determination of arsenic by Methods 200.7, 200.8, or SM 3120B, the arsenic must be in the pentavalent state to provide uniform signal response. For methods 200.7 and 3120B, both samples and standards must be diluted in the same mixed acid matrix concentration of nitric and hydrochloric acid with the addition of 100 µL of 30% hydrogen peroxide per 100ml of solution. For direct analysis of arsenic with method 200.8 using ultrasonic nebulization, samples and standards must contain one mg/L of sodium hypochlorite.

¹⁵After January 23, 2006 analytical methods using the ICP-AES methods (EPA Method 200.7 and SM 3120B) approved for use for the MCL of 0.05 mg/L may not be used for compliance determinations for the revised MCL of 0.01 mg/L. However, prior to 2005 systems may have compliance samples analyzed with these less sensitive methods.

I-A.12 Treatment Technologies and Costs

I-A.12.a Did EPA list best available technologies in the Rule?

EPA listed seven best available technologies (BATs) in the Final Arsenic Rule (66 FR 6976). EPA determined these technologies to be the BATs for the removal of arsenic in drinking water based on a demonstration of efficacy under field conditions, taking cost into consideration

(40 CFR 141.62(c) and SDWA §1412(b)(4)(D)). EPA reviewed several technologies to determine the BATs for the removal of arsenic.⁹ EPA has identified seven BATs, including:

- Activated Alumina;
- Coagulation/Filtration (not a BAT for systems with fewer than 500 service connections);
- Ion Exchange;
- Lime Softening (not a BAT for systems with fewer than 500 service connections);
- Reverse Osmosis;
- Electrodialysis; and,
- Oxidation/Filtration.¹⁰

The BATs' removal efficiencies and a brief discussion of the major issues surrounding the usage of each technology can be found in the preamble to the Final Arsenic Rule (66 FR 6976 at 6981). Additional details can be found in the EPA's *Technologies and Costs for the Removal of Arsenic From Drinking Water*, December 2000.

Systems are not required to use BATs to achieve compliance with the MCL. Any technology that is accepted by the State primacy agency and achieves compliance with the MCL is allowed. However, if a system is unable to meet the MCL with its chosen technology, the system is not eligible for a general variance unless it agrees to install a BAT. For more information on variances and exemptions see Section I-A.13.

I-A.12.b Did EPA list small system compliance technologies in the Rule?

The technologies examined for BAT determinations were also evaluated as small system compliance technologies (SSCTs). EPA must list SSCTs for three sizes of small systems: systems serving between 25 and 500 people, systems serving between 501 and 3,300 people, and systems serving between 3,301 and 10,000 people (SDWA §1412(b)(4)(E)(ii)). EPA has listed SSCTs that may achieve compliance with the arsenic MCL and that are affordable and applicable to small drinking water systems. Table I-3 below identifies the compliance technologies that EPA deems affordable to small systems. Appendix F contains a STEP guide designed to help small systems comply with the Rule.

Because EPA has listed SSCTs, small systems:

- Have the latitude to choose the type of treatment technology that is most cost effective and appropriate (from an operation and maintenance standpoint).

⁹BATs are for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V (40 CFR 141.62(c)).

¹⁰To obtain high removal rates, the iron to arsenic ratio must be at least 20:1 (40 CFR 141.62(c)).

- Are not eligible for a *small system variance* since EPA has determined that SSCTs exist for all three size categories.
- May be eligible for a general variance under SDWA §1415(a) after they have installed or agreed to install the BAT but, due to source water quality, will not be in compliance with the MCL.

For more information on variances and exemptions see Section I-A.13.

Table I-3. SSCTs¹ for Arsenic²

Small System Compliance Technology	Affordable for listed small system categories³
Activated Alumina (centralized)	All size categories
Activated Alumina (point-of-use) ⁴	All size categories
Coagulation/Filtration ⁵	501-3,300; 3,301-10,000
Coagulation-assisted Microfiltration	501-3,300; 3,301-10,000
Electrodialysis Reversal ⁶	501-3,300; 3,301-10,000
Enhanced Coagulation/Filtration	All size categories
Enhanced Lime Softening (pH>10.5)	All size categories
Ion Exchange	All size categories
Lime Softening	501-3,300; 3,301-10,000
Oxidation/Filtration ⁷	All size categories
Reverse Osmosis (centralized) ⁶	501-3,300; 3,301-10,000
Reverse Osmosis (point-of-use) ⁴	All size categories
¹ Section 1412(b)(4)(E)(ii) of the SDWA specifies that SSCTs must be affordable and technically feasible for small systems. ² SSCTs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V (40 CFR 141.62(d)). ³ SDWA §1412(b)(4)(E)(ii) specifies three categories of small systems: (i) those serving 500 or fewer, but more than 25; (ii) those serving 3,300 or fewer, but more than 500; and (iii) those serving 10,000 or fewer, but more than 3,300. ⁴ When POU or POE devices are used for compliance, programs to ensure proper long-term operation, maintenance, and monitoring must be provided by the water system to ensure adequate performance (SDWA §1412(b)(4)(E)(ii)). ⁵ Unlikely to be installed solely for arsenic removal. May require pH adjustment to optimal range if high removals are needed. ⁶ Technologies reject a large volume of water—may not be appropriate for areas where water quantity may be an issue. ⁷ To obtain high removals, iron to arsenic ratio must be at least 20:1 (40 CFR 141.62(d)).	

The challenges facing small drinking water systems were a major focus of the 1996 Amendments to the SDWA. One way Congress sought to help systems meet these challenges was by allowing systems to install point-of-use (POU) treatment devices to achieve compliance with the NPDWRs (SDWA §1412(b)(4)(E)(ii)). Point-of-entry (POE) devices were already allowed under the SDWA and are regulated under 40 CFR 141.100.

POU and POE treatment devices rely on many of the same treatment technologies that have been used in central treatment plants. However, while central treatment plants treat all water distributed to consumers, POU devices treat water at a single tap typically intended for direct consumption, and POE treatment devices treat all water used within a single home. After

evaluating a variety of treatment technologies, EPA has concluded that POU reverse osmosis and POU activated alumina are SSCTs (40 CFR 141.62(d)).

While EPA prefers centralized treatment as the first option for systems, centrally managed POU and POE treatment strategies have been successfully demonstrated in the lab and used in communities to provide ongoing compliance with the arsenic MCL.¹¹ Given the improving effectiveness and decreasing costs of POU and POE treatment equipment, EPA believes that it may be feasible for many small systems to own, control, and maintain POE/POU devices for arsenic MCL compliance.

To ensure that POU and POE devices are as protective of public health as central treatment, the SDWA requires that (SDWA §1412(b)(4)(E)(ii)):

- POU and POE units be owned, controlled, and maintained by the PWS or by a contractor hired by the PWS to ensure proper operation and maintenance of the devices and compliance with the MCL. Therefore, the burden to ensure compliance remains with the system and is not transferred to the customer.
- POU and POE units have mechanical warnings to automatically notify customers of operational problems.

The primary advantage of using a POU or POE treatment strategy is that implementation may be less expensive than constructing, upgrading, or expanding a central treatment plant.¹² The cost savings achieved through POU or POE treatment may enable some systems to provide more protection to their consumers than they might otherwise be able to afford.

The successful implementation of a POU or POE treatment strategy will require a system to address several issues:

- As with any treatment technology, not all treatment devices are compatible with all sources of water. Pilot testing on the local source water is necessary prior to the implementation of a POU or POE strategy.
- Public education is crucial to the success of a POU or POE strategy. The system must be able to obtain regular access to POU or POE units to perform necessary maintenance and

¹¹See the Final Arsenic Rule (66 FR 6976 at 6984) for more information. In addition, see K. Fox, "Field Experience with Point-of-Use Treatment Systems for Arsenic Removal," Journal AWWA, February, 1989, for a case study of small communities' success in treating for arsenic.

¹²EPA estimates that implementation of a centrally managed POU treatment strategy for arsenic can be less expensive than central treatment for communities with populations of up to 250 people (66 CFR 6976). After evaluating and incorporating NDWAC Arsenic Cost Working Group cost recommendations, EPA may revise this number.

monitoring. Some systems have successfully passed local ordinances requiring access to be granted as a condition of water delivery.

- Implementing a POU or POE treatment strategy will require a rigorous preventative maintenance program. Devices may also require frequent sampling. Systems should ensure, prior to implementation, that they have available staff to perform the necessary maintenance, monitoring, and record keeping, or they can make arrangements to contract out their maintenance and monitoring duties.

I-A.12.c What are the estimated national costs for complying with the Rule?

EPA estimates the total national annualized costs of treatment, monitoring, reporting, record keeping, and administration for this Rule to be approximately \$181 million (using 1999 dollars at a three percent discount rate; see Table I-4).¹³ Most of the cost is due to the cost of installing and operating the treatment technologies needed to reduce arsenic in PWSs (both CWSs and NTNCWSs). EPA estimates the total treatment cost to be approximately \$177 million per year and the annual monitoring and administrative costs to be about \$2.7 million.

**Table I-4. Annual National System and State Compliance Costs
(3% Discount Rate, \$ millions)**

System Costs for:	CWS	NTNCWS	Total
Treatment	\$170	\$7.0	\$177
Monitoring/Administrative	\$1.8	\$0.9	\$2.7
State Costs	\$0.9	\$0.1	\$1.0
Total Estimated Cost	\$173	\$8	\$181

Table I-5 provides the average estimated annual cost per household to comply with the revised MCL.

¹³Information on the costs of treatment technologies used by small systems to comply with the arsenic rule may be found in “Arsenic Treatment Technology Design Manual for Small Systems,” EPA 816-R-02-011.

Table I-5. Average Annual Cost per Household for Systems Installing Treatment to Meet the Revised MCL for Arsenic of 10 ppb (0.010 mg/L)

System Size	Cost in 1999 dollars
Less than 100	\$326.82
101-500	\$162.5
501-1000	\$70.72
1001-3,300	\$58.24
3,301-10,000	\$37.71
10,001-50,000	\$32.37
50,001-100,000	\$24.81
100,001-1,000,000	\$20.52
Greater than 1,000,000	\$0.86
All Categories	\$31.85

Additional information on treatment technologies and costs can be found in EPA's *Technologies and Costs for the Removal of Arsenic From Drinking Water*, December 2000.

I-A.13 Variances and Exemptions

I-A.13.a May States grant small system variances for arsenic?

Small system variances are not available for the Final Arsenic Rule. In certain circumstances, SDWA §1415(e) authorizes States to issue small system variances from a requirement to comply with an MCL or treatment technique to systems serving fewer than 10,000 persons. However, EPA did not identify any small system variance technologies for arsenic under SDWA §1415(e).

I-A.13.b Which systems are eligible for a general variance?

A general variance allows a system to provide drinking water that may be above the MCL, on the condition that the quality of the drinking water is still protective of public health. If a system cannot meet the arsenic MCL because of the characteristics of its raw water sources, it may be eligible for a variance under SDWA §1415(a) and 40 CFR 142.20(a), provided that:

- The system install a BAT (SDWA §1415(a)(1)(A) and 40 CFR 142.62(c));
- A State evaluation indicates that alternative sources of water are not reasonably available (SDWA §1415(a)(1)(A)); and,

- The quality of the water delivered under the variance will not result in an unreasonable risk to health (SDWA §1415(a)(1)(A)). A variance may allow a system to provide water that exceeds the MCL.

Eligibility for a variance requires that: the public be given an opportunity for a public hearing on the new schedule to comply with the revised MCL; the system install, operate, and maintain a BAT specified in the Final Arsenic Rule; and the system enter into a compliance schedule with the primacy agency (SDWA §1415(a)(1)(A) and 40 CFR 142.62(b)&(c)).

I-A.13.c Which systems are eligible for an exemption?

EPA's goal is to have all water systems comply with the 10 ppb arsenic MCL by January 23, 2006. EPA understands, however, that additional time may be necessary for some systems, and believes that exemptions under §1416 of the SDWA are an appropriate mechanism to provide this additional time. Exemptions can help ensure that systems which are unable to comply with the arsenic MCL will have the opportunity to gain the resources or take the steps needed to comply with the rule in an appropriate period of time. EPA feels that exemptions can be an especially effective tool to help small systems achieve and maintain compliance with the Arsenic Rule. See Illustration 6.

PWSs are required to meet the revised MCL for arsenic by January 23, 2006 (40 CFR 141.6(j)). SDWA §1416(a), 40 CFR 142.50, and 40 CFR 142.20(b) allow a State to grant an exemption to a PWS from the arsenic MCL if it meets all of the following four criteria:

- Due to compelling factors, the system is unable to achieve compliance by January 23, 2006, through any means, including treatment or an alternative source of water supply;
- The system was in operation by January 23, 2006, or, if a system not in operation by then has no reasonable alternative source of drinking water available to it;

Illustration 6 - System 2 Exemption

System 2 collected samples in April 2002. The results at the three sampling points were:

Sampling point 1: 0.006 mg/L (6 µg/L)
 Sampling point 2: 0.027 mg/L (27 µg/L)
 Sampling point 3: 0.015 mg/L (15 µg/L)

The system has not had to treat for arsenic under the 50 µg/L MCL. However, with two sampling points above the revised MCL of 10 ppb (0.010 mg/L), System 2 plans to install treatment in order to comply with the Rule. The system has started researching various technologies and plans to pilot test three different technologies.

Due to a relatively small customer base, System 2 will need time to obtain financing, pilot test, and install new treatment. The system applies to the State for an exemption.

The State decides that System 2 will not be able to implement the most appropriate technology without additional time. In addition, the financial burden of all of the activities associated with choosing and installing treatment would be better allocated over a longer period of time.

The State grants System 2 an exemption and works with the system to develop a compliance schedule to obtain financing and install treatment.

- The exemption will not result in an unreasonable risk to health; and,
- The system cannot reasonably make management or restructuring changes that would result in compliance or improve the quality of drinking water if compliance cannot be achieved.

If granted an exemption, a PWS would have an additional three years to comply (January 23, 2009). When granting an exemption, the State must issue a schedule requiring compliance with the MCL as expeditiously as practicable but no later than January 23, 2009 (SDWA §1416(a)(2)(A)). Systems serving 3,300 people or fewer may be eligible for up to three additional two-year exemptions, allowing them to delay compliance for a total of nine years beyond 2006 (40 CFR 142.20(b)(2) and 40 CFR 142.56). Therefore, some small systems may be given exemptions allowing them a total of 14 years after the published Rule to obtain needed financial assistance and implement compliance strategies to comply with the revised arsenic MCL. Guidance on how to implement the exemptions provisions is included in Appendix G.

I-A.13.d What constitutes a compelling factor under the exemptions provisions?

EPA recognizes that promising arsenic treatment technologies are in development and that premature decisions by systems may result in unnecessary costs being incurred and passed on to the public. A State may conclude that a system is unable to comply with the revised arsenic MCL due to compelling factors under SDWA §1416, when it would not be possible or reasonable for the system to select and implement appropriate technology, or otherwise implement reasonable measures to bring the system into compliance, before January 23, 2006. Exemptions under SDWA §1416 are an appropriate mechanism for primacy agencies to provide additional time. A State will determine what constitutes a compelling factor. Among the factors a State may wish to consider in determining whether a system needs additional time to achieve compliance are the following:

1. The number and types of activities that should reasonably be undertaken, consistent with the size of the system and the financial consequences to its ratepayers, in order to select and implement an appropriate technology. These activities may include pilot-testing or field-testing arsenic-removal technologies, selecting an engineering consultant, coordinating with state and local agencies, preparing plans and specifications, obtaining financing, obtaining bids for construction, obtaining permits, constructing the facilities, and testing the completed facilities.
2. The time appropriately allocated for each of the activities identified in (1) and the total time allocated for all activities.
3. The cost of performing the activities identified in (1) and any savings that might be obtained from additional time.

4. The benefits that may be obtained from additional time, including any improvements in cost-effectiveness that may be obtained from non-BAT technologies or from ascertaining which technology may be most appropriate for the raw water supplies available to the system.

EPA recognizes that many systems may have difficulty in achieving compliance by January 23, 2006, that there will be a wide variety of circumstances that the States will have to consider, and that there may be sufficient variation so that “compelling circumstances” cannot be strictly defined. States will have to exercise their discretion in granting exemptions. EPA will review the decisions made by a State in accordance with 40 CFR 142 Subpart C (which provides that EPA will review a State’s exemptions to determine whether the State has abused its discretion or failed to establish a compliance schedule as required by SDWA §1416).

I-B. Summary of Clarifications to Compliance and New Source Contaminants Monitoring for Inorganic Contaminants, Volatile Organic Contaminants, and Synthetic Organic Contaminants

I-B.1 Clarifications to Compliance

I-B.1.a To whom do the clarifications to compliance and new source monitoring apply?

This regulation applies to all CWSs and NTNCWSs (40 CFR 141.62(b)).

I-B.1.b How does the Rule affect compliance determinations for inorganic contaminants, volatile organic contaminants, and synthetic organic contaminants?

States have the flexibility to require confirmation samples (40 CFR 141.23(f), 141.24(f)(13) & 141.24(h)(9)) and more frequent monitoring (40 CFR 141.23(g), 141.24(f)(19), & 141.24(h)(15)) in addition to the required quarterly samples (40 CFR 141.23(i)(2), 141.24(f)(15), & 141.24(h)(11)) if an exceedance occurs. Therefore, the clarifications to compliance specify that compliance determinations for contaminants subject to 40 CFR 141.23(i)(2), 141.24(f)(13) & (15)(ii), and 141.24(h)(9) & (11)(ii) will be based on the average of the initial MCL exceedance and subsequent state-required confirmation samples.¹⁴ This average constitutes the requirement for the first quarter, and compliance with the MCL will be based on the running annual average (i.e., three more quarterly samples, unless any quarterly sample would cause the running annual average to exceed the MCL. Then the system is out of compliance immediately).

In addition, the clarifications address calculation of compliance when a system fails to collect the required number of samples. This is intended to address systems that may not have collected the required number of quarterly samples in the past. Under these clarifications, a system that only collects two samples when required to collect four, must divide by two to obtain the average (40 CFR 141.23(i)(1) & (2), 141.24(f)(15)(iv), & 141.24(h)(11)(iv)). Uncollected samples are still a monitoring and reporting violation. For purposes of calculating MCL averages, non-detections continue to be set at zero unless States specify another value (e.g., the detection limit or a fraction of the MCL) (40 CFR 141.23(i), 141.24(f)(15)(v), and 141.24(h)(11)(v)).

¹⁴The 2001 Arsenic Rule did not revise the compliance determination provisions governing the 50 ppb MCL for arsenic found at 40 CFR 141.23(m) & (n). As a result, under the existing rules, systems would need to comply both with those provisions and 40 CFR 141.23(i) from January 22, 2004 through January 22, 2006. EPA is considering a regulatory revision to clarify its intent that systems need comply ONLY with the standardized monitoring framework beginning on January 22, 2004 for all inorganics, including arsenic. EPA intends to consistently implement compliance determinations for IOCs, SOCs, and VOCs for all CWSs and NTNCWSs, as described in the preamble to the Final Rule (66 FR 6990).

I-B.2 Requirements for New Systems and Sources

I-B.2.a What are the requirements for new systems and sources?

All new systems, or systems that use a new source of supply, that begin operation after January 22, 2004, must demonstrate compliance with the MCLs within a period of time specified by the State.¹⁵ 40 CFR 141.23 and 141.24 did not address compliance determinations for new systems or systems using a new source of supply. The State must specify sampling frequencies to ensure that a system can demonstrate compliance with MCLs (40 CFR 141.23(c)(9), 141.24(f)(22), and 141.24(h)(20)). This requirement is effective for all contaminants listed in 40 CFR 141.23(c) and 141.24.

CWSs and NTNCWSs are required to have at least one operator certified through State operator certification programs (SDWA §1419(a)). Certified operators pass an exam to demonstrate that they have the knowledge, skills, and ability to properly operate the system (64 FR 5916). By 1999, States, in order to receive their Drinking Water State Revolving Fund (DWSRF) capitalization grant from EPA, had to acquire:

the legal authority or other means to ensure that all new community water systems and new nontransient, noncommunity water systems commencing operation after October 1, 1999, demonstrate technical, managerial, and financial capacity with respect to each national primary drinking water regulation in effect, or likely to be in effect, on the date of commencement of operations (SDWA §1420(a)).

Systems may consider operational constraints when selecting treatment technologies and establishing operational controls. EPA's Operator Certification Guidelines require that a certified operator be responsible and available to CWSs and NTNCWSs. However, this does not imply that a certified operator need be on site 24 hours a day, 7 days a week. Treatment technologies do not require constant supervision of operators. Depending on State requirements, regional certified operators may travel from facility to facility on a regular basis to oversee the efforts of noncertified operators. Hence, the certified operator would be available (i.e., on-call) to the systems.

Many States' new system capacity development programs may include specific monitoring requirements designed to demonstrate that a system meets MCLs prior to system start-up.

¹⁵40 CFR 141.2 defines "State" to include Tribal governments that have primacy and EPA Regions in situations of non-primacy. Therefore, EPA Regions have the responsibility to establish the new system monitoring requirements for non-primacy States and Tribes.

I-B.2.b Do States need to update their monitoring programs?

The special primacy requirements require States to submit a monitoring plan which ensures that all systems will complete the required monitoring by the regulatory deadlines (40 CFR 142.16(j)(2)). However, many existing monitoring programs include the standardized monitoring framework. This Rule moves arsenic into the standardized monitoring framework. Therefore, EPA believes States will be able to simply note any revisions or updates to their existing plan. States may also submit notice with the primacy revision package that the existing plan will be used if no changes are made (40 CFR 142.16(j)(2)).

New systems or systems with new sources are required to demonstrate compliance within the time frame specified by the State. 40 CFR 142.16(k) requires States to explain how their initial monitoring schedules will ensure that new systems, or systems using a new source of supply, will comply with the arsenic MCL, and the time frame in which these systems will demonstrate compliance with the MCL. Many States have approved monitoring programs for new systems and systems using a new source of supply. Therefore, these States may simply note revisions or updates to their existing plan, or submit a notice with the primacy revision package indicating that the existing plan will be used (40 CFR 142.16(k)).

States that develop or modify their monitoring program for new systems and for systems using a new source should ensure that the program reflects contaminants of concern, known contaminant use, historical data, and vulnerability. Because of varying contaminant uses and sources, some contaminants occur at higher levels in some regions of the country. Additionally, the concentrations of some contaminants are known to show clear seasonal peaks, while others remain constant throughout the year. For example, some States may be concerned with atrazine levels in drinking water and may therefore require systems to take multiple samples during a specified vulnerable period (e.g., May 1-July 31). Another State may only require one sample of atrazine, but four quarterly samples of trichloroethylene, since trichloroethylene concentrations are of concern. States are encouraged to consider contaminant variability when developing or modifying their programs.

For more information on assessing the potential spatial and temporal distributions of currently regulated contaminants, States are encouraged to consult *A Review of Contaminant Occurrence in Public Water Systems* (EPA 816-R-99-006).

I-C. Key Dates of the Rule

I-C.1 Applicability and Compliance Dates for Arsenic

I-C.1.a Which systems must comply with the Rule?

The Arsenic Rule applies to all CWSs and all NTNCWSs.

I-C.1.b What are important dates of the Rule?

The revised MCL of 10 ppb (0.010 mg/L) becomes enforceable on January 23, 2006, five years after promulgation of the Rule. The timetable presented in Table I-6 is based on the Final Arsenic Rule published on January 22, 2001 (66 FR 6976), and the May 22, 2001 Final Rule revising the effective date (66 FR 28342). Key dates are captured in Table I-6.

Table I-6. Timetable for the Arsenic Requirements

Date	Arsenic in Drinking Water Rule Requirement
January 22, 2001	EPA promulgates the Final Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Rule
February 22, 2002	Revised effective date for the arsenic provisions in the Rule.
February 22, 2002	Systems that detect arsenic concentrations between 0.005 mg/L and 0.010 mg/L must include the revised educational statement in their CCR. (See Section I-A.7.e for more information.)
July 1, 2002-January 22, 2006	CCR requirements for reports due in calendar years 2002 to 2006 have been expanded for systems that detect arsenic at levels greater than 0.010 mg/L to include specific health effects language. (See Section I-A.7.e for more information.)
January 22, 2003	State primacy revision application package due.
January 22, 2004	Revised effective date for the Clarifications to Compliance and New Source Contaminants Monitoring Provisions in the Rule. NEW systems and/or sources beginning service after January 22, 2004 must collect monitoring samples for all inorganic contaminants (IOCs), synthetic organic contaminants (SOCs), and volatile organic contaminants (VOCs) within a period and at a frequency determined by the State. (See Section I-B.2.a for more information.)
January 1, 2005	When allowed by the State, ground water systems may grandfather data collected after this date to satisfy the monitoring requirements for the 2005-2007 compliance period. (See Section I-A.9.a for more information.)
January 22, 2005	State primacy revision application package due for States that received two-year extensions.
January 1, 2006	When allowed by the State, surface water systems may grandfather data collected after this date to satisfy monitoring requirements for the 2006 compliance period. (See Section I-A.9.b. for more information.)
January 23, 2006	Revised MCL of 10 ppb (0.010 mg/L) becomes enforceable, and ICP-AES methods are no longer allowed for determining compliance. (See Section I-A.11.a for more information.)
December 31, 2006	Surface water systems must complete monitoring for the revised arsenic MCL.
July 1, 2007 and every July 1 thereafter	For CCRs due calendar years 2006 and beyond, systems that detect arsenic between 0.005 mg/L and 0.010 mg/L must include a revised educational statement. In addition, systems violating the revised 0.010 mg/L arsenic standard must include health effects language. (See Section I-A.7.e for more information.)
December 31, 2007	Ground water systems must complete monitoring for the revised arsenic MCL.

Section II.

SDWIS/FED Reporting, Compliance Determination, and SNC Definitions

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II-A. SDWIS/FED Reporting

Table II-1 is a summary of proposed Safe Drinking Water Information System/Federal (SDWIS/FED) reporting requirements for the Final Arsenic Rule. The summary contains SDWIS/FED violation and contaminant codes. It is important to note that the SDWIS/FED reporting requirements for the Final Arsenic Rule are no different from the existing reporting requirements for IOCs under the Phase II/V Rules. A detailed list of violations for data management and enforcement purposes is included in Appendix E. SDWIS/FED reporting summaries are included in Appendix H.

Table II-1. SDWIS/FED Codes for Federal Reporting under the Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Rule

Violation Code	Contaminant Code	Violation*
01	1005	MCL, Single Sample
02	1005	MCL, Average
03	1005	Failure to Monitor/Report (M&R), Regular
04	1005	Failure to Monitor/Report (M&R), Check/Repeat/Confirmation
06	1005	Failure to Provide the Appropriate Public Notice
08	1005	Variance/Exemption/Other Compliance
72	1005	Consumer Confidence Report (CCR), Inadequate Reporting

*Any violation of the Rule (66 FR 6976), whether included in Table II-1 or not, is a basis for a State or federal enforcement action.

II-B. Compliance Determination

States must determine compliance based on analytical result(s) obtained at each sampling point¹⁶ (40 CFR 141.23(i)). Compliance determinations for all IOCs, SOCs, and VOCs will now be implemented consistently (40 CFR 141.24(f)(15) & (h)(11)). An editorial oversight resulted in the retention of existing language in 40 CFR 141.23(i)(2). However, EPA intends to consistently implement compliance determinations for IOCs, SOCs, and VOCs as described in the preamble to the Final Rule and as stated for SOCs and VOCs in 40 CFR 141.24(f)(15)(i) & (h)(11)(i) respectively. States adopting these regulations by reference may want to take note.

Compliance determinations for all IOCs, SOCs, and VOCs are now consistent with the compliance determination for arsenic described here (40 CFR 141.24 (f)(15) & (h)(11)):

1. If one sampling point is in violation of the MCL, then the system is in violation of the MCL.
2. For systems monitoring more frequently than once per year, compliance with the MCL is determined by a running annual average at each sampling point.
3. Systems monitoring once a year or less frequently, whose sample result exceeds the MCL, must begin quarterly sampling the following quarter.¹⁷
4. If any sample result at any sampling point causes the running annual average to exceed the MCL, the system is out of compliance with the MCL immediately.

Systems are required to conduct quarterly monitoring at the sampling point at which the sample was collected and for the specific contaminant that triggered the system into the increased monitoring frequency. An exceedance does not necessarily mean a violation. **Systems triggered into increased monitoring are not considered to be in violation of the MCL until they have completed one year of quarterly sampling**, unless any sample collected during quarterly monitoring would result in the annual average exceeding the MCL (40 CFR 141.23(i)).

States have the flexibility to require confirmation samples for positive or negative results¹⁸ (40 CFR 141.23(g)). States may require the collection of these additional samples no later than

¹⁶For the purposes of compliance determination and monitoring requirements, systems, laboratories, and the State must report results to the nearest 0.001 mg/L (40 CFR 141.23(i)(4)).

¹⁷States have the flexibility to require confirmation samples. The average of the initial sample and any confirmation samples will be used for the determination of compliance and future monitoring requirements.

¹⁸Confirmation samples are any samples that the State requires beyond the minimum federally required samples.

two weeks after the initial exceedance, to confirm the initial results. States may require more than one confirmation sample to determine the average exposure (40 CFR 141.23(g)). If confirmation samples are required by the State, the initial analytical result and the confirmation sample must be averaged and must be used for compliance determinations (40 CFR 141.23(i)(1) & (2)). States have the discretion to delete obvious sampling result errors.

Systems may not monitor more frequently than specified by the State to determine compliance, unless they obtain approval from the State. If a system does not collect the required number of samples, compliance will be based on the total number of samples collected. Therefore, a system that collects only two samples, rather than the required four, must divide by two to obtain the average (40 CFR 141.23(i)(2), 141.24(f)(15)(iv), and 141.24(h)(11)(iv)). If a sample result is less than the method detection limit, zero will be used to calculate the annual average (40 CFR 141.23(i)(1) & (2)). States may be more stringent than EPA and set a higher value than zero. States also have the discretion to delete results of obvious sampling or analytic errors (40 CFR 141.23(f)(3)).

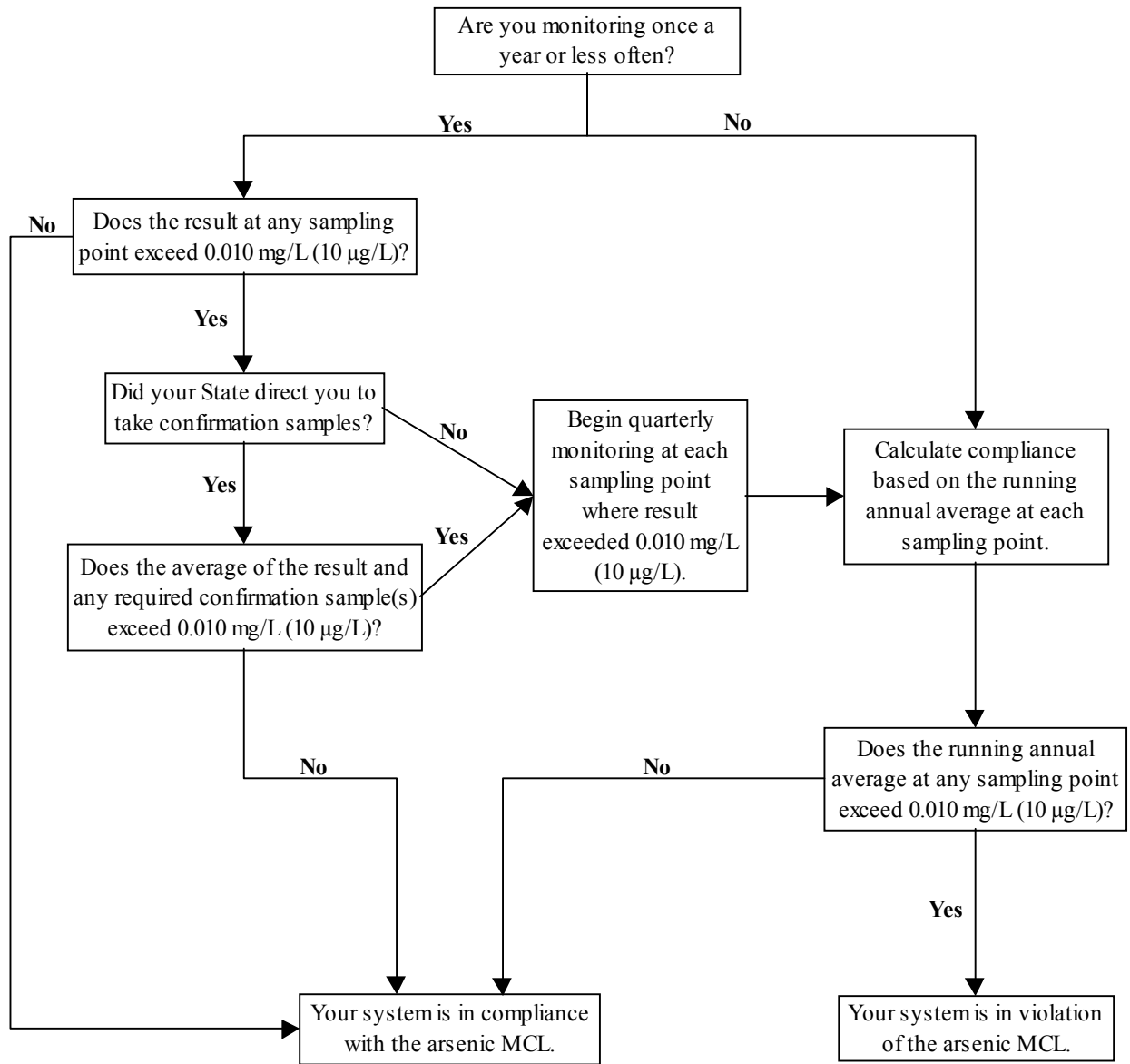
In determining the running annual average, the State may create a "best-case scenario" for a system that has not taken the required four quarterly samples. The State, in this scenario, would assume that any results from future quarters could be non-detects or zero, when computing the running annual average. The "best-case scenario" asks: if all of the system's future samples are non-detects (i.e., zero), will this system still mathematically be in violation of the MCL?

The Rule requires that monitoring be conducted at all sampling points representative of normal operating conditions (40 CFR 141.23(a)(1), (2) & (3)). However, the State can require monitoring and compliance determinations be based on a case-by-case analysis of individual drinking water systems. The State may determine compliance based on several factors, including the quantity of water supplied by a source, the duration of service of the source, and contaminant concentration.

EPA encourages drinking water systems to inform State regulators of their individual circumstances. Some systems have implemented elaborate plans including targeted, increased monitoring that is much more representative of the average annual mean contaminant concentration to which individuals are being exposed. Some States determine compliance based on a time- or flow-weighted average. Some States require that systems collect samples from wells that operate for only one month out of the year, regardless of whether they are operating during scheduled sampling times. In many cases, the State can demonstrate that compliance is being calculated based on scientific methods that are more representative of the true contaminant concentration to which individuals are being exposed over a year, but this substantially increases the sampling and analytical costs.

Figure II-1 depicts compliance determination with the revised arsenic MCL.

Figure II-1. Compliance Determination with the Revised Arsenic MCL



II-C. Alternative Monitoring Approaches

As noted in the preamble to the January 22, 2001 Arsenic Rule (66 FR 7032), EPA has encouraged systems to work with their primacy agencies to use the flexibility in the federal monitoring regulations to adopt alternative approaches. As a general matter, a water system may exceed 10 ppb (0.010 mg/L) at one or more sampling points and still be in compliance with the revised arsenic MCL, as long as (1) the State has approved a monitoring program that is more representative of the true arsenic concentration to which individuals are being exposed over the year, compared with the standard monitoring requirements, and (2) the monitoring program shows that the running annual average of water served to every point in the distribution system is less than the MCL. It is the water system's responsibility to demonstrate that all consumers receive water with annual concentrations below the MCL.

There are a number of alternative approaches that may meet this objective and are consistent with EPA's regulatory scheme, as long as the system can satisfactorily document to the State how its alternative monitoring approach keeps annual arsenic exposure below the MCL. For example, systems may wish to propose to the State, monitoring schemes in which quarterly monitoring takes place at the point of entry to the distribution system, as opposed to at the well. In addition, systems may propose a time-weighted averaging approach based on data showing how long a well is pumped during a year. However, this latter alternative option may be difficult to implement in practice because many systems will not be able to document how long each well is operated during the year. As noted in the preamble to the Final Rule, States have the flexibility to approve other alternatives as well.

II-D. SNC Definition

A system can be designated as a significant non-complier (SNC) when it has either (1) an MCL exceedance at any sampling point, or (2) commits a monitoring or reporting violation. The SNC framework is designed to assist States and EPA with prioritizing compliance efforts and providing consistent enforcement.

EPA's Office of Enforcement and Compliance Assurance (OECA) is in the process of developing new guidance to update its SNC definitions. At this time, EPA is using the following definitions to remain consistent with the Radionuclides Rule and OECA's draft guidance:

1. MCL violation:

If EPA has not established an unreasonable risk to health (URTH) level, then a system is generally characterized as a SNC if it has an analytical result twice the MCL. For arsenic, this will be 0.020 mg/L (20 ppb) based on a running annual average on or after January 23, 2006.¹⁹

2. Monitoring and reporting violation:

A system that monitors once a year or more frequently is characterized as a SNC if it fails to monitor or report arsenic analytical results for two consecutive compliance periods. A system monitoring less than once a year (e.g., a ground water system monitoring once every three years) is characterized as a SNC if it fails to monitor or report arsenic analytical results for one compliance period.

Systems operating under an exemption may have an arsenic concentration that would otherwise meet the SNC definition. However, an exemption grants systems additional time to come into compliance with the revised MCL. States may specify compliance measures for systems to implement as terms of the exemption. Since these systems are being addressed by the State, they do not receive a SNC designation unless the system fails to meet requirements specified in the terms of the exemption. If the system fails to meet those terms specified by the State, then the system is in immediate violation of the MCL and is characterized as a SNC.

¹⁹The January 23, 2006 compliance date for the revised arsenic MCL and the January 22, 2004 effective date for complying with clarifications to monitoring requirements, impact the SNC definition. From 2002 to January 22, 2004, one analytical result that is twice the MCL (2 X 0.05 mg/L or 0.100 mg/L) constitutes a SNC. On January 22, 2004, the clarifications to compliance requirements move arsenic into the standardized monitoring framework and by doing so, compliance is based on a running annual average. Therefore, from January 22, 2004 to January 23, 2006, a running annual average that exceeds 2X the MCL (2 X 0.05 mg/L or 0.100 mg/L) constitutes a SNC. After January 23, 2006, a running annual average that exceeds 2X the revised MCL (2 X 0.010 mg/L or 0.020 mg/L) constitutes a SNC.

Section III.

Primacy Revision Application

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III-A. State Primacy Program Revisions

40 CFR 142 sets out requirements for States to obtain and/or retain primary enforcement responsibility (primacy) for the Public Water System Supervision (PWSS) program, as authorized by SDWA §1413. The 1996 SDWA Amendments updated the process for States to obtain and/or retain primacy. On April 28, 1998, EPA promulgated the Primacy Rule to reflect these statutory changes (63 FR 23361).

Pursuant to 40 CFR 142.12(b)(1), complete and final requests for approval of program revisions to adopt new or revised EPA regulations must be submitted to the Administrator no later than two years after promulgation of the new or revised federal regulations (see Table III-1). Until those applications are approved, EPA Regions are responsible for directly implementing the Arsenic Rule. The State and EPA can agree to implement the Rule together during this period. EPA anticipates such agreements for the Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Rule. If a State is approved for primacy for each existing National Primary Drinking Water Regulation (NPDWR), once that State submits a complete and final revision package, it has interim primacy until EPA approves the package. A State may be granted an extension, up to two years, to submit its application package. During any extension period, the primacy rule requires an extension agreement outlining the State's and EPA's responsibilities (40 CFR 142.12(b)(3)). Appendix I contains a sample extension agreement.

Table III-1. State Rule Implementation and Revision Timetable

EPA/State Action	Time Frame
Rule published by EPA	January 22, 2001
State and EPA Region establish a process and agree upon a schedule for application review and approval	Spring 2002 (Suggested)
State, at its option, submits <i>draft</i> program revision package including: Preliminary Approval Request Draft State Regulations and/or Statutes Regulation Crosswalk	Summer 2002 (Suggested)
EPA Regional (and Headquarters if necessary) review of draft	Completed within 90 days of State submittal of draft (Recommended)
Suggested (goal) date for State to submit final program revision package	October 2002
Regulatory date for State to submit final program revision package including: Adopted state regulations (if necessary) Regulation crosswalk (40 CFR 142.12(c)(1)(i)) Primacy update documentation (40 CFR 142.12(c)(1)(i)) Special primacy requirements (40 CFR 142.12(c)(1)(ii)) Attorney General's certification (40 CFR 142.12(c)(1)(iii))	January 22, 2003*
EPA final review and determination: Regional review (program and ORC) Headquarters concurrence and waivers (OGWDW, OECA, OGC) Public notice Opportunity for hearing EPA's determination	Completed within 90 days of State submittal of final package (45 days Region, 45 days Headquarters)
Clarifications to Compliance and New Source Contaminants Monitoring becomes effective	January 22, 2004
Regulatory date for State to submit final program revision package with a two-year extension	January 22, 2005
Revised MCL of 10 ppb (0.010 mg/L) becomes enforceable	January 23, 2006
*An extension of up to two additional years may be requested by the State.	

III-A.1 The Revision Process

The approval of State program revisions is recommended to be a two-step process, comprised of submission of a draft request (optional) and then submission of a complete and final request for program approval.

Draft Request—A State may submit a draft request for EPA review and tentative determination. The request should include draft State statutory or regulatory changes, a side-by-side comparison (crosswalk) of State authorities with EPA requirements, and other primacy application materials. An Attorney General’s statement is not required in the draft application. EPA suggests that the draft request be submitted within nine months after rule promulgation. EPA will make a tentative determination on whether the State program meets the applicable requirements (40 CFR 142.12(d)(1)). This tentative determination should be made within 90 days.

Complete and Final Request—This submission must be in accordance with 40 CFR 142.12(c)(1) & (2) and (d)(2) and include the Attorney General’s statement. The State should also include its response to any comments and/or program deficiencies identified in the tentative determination (if applicable). EPA Regions should make States aware that submission of only a final request may make it more difficult for States to address any necessary changes within the available time for State rule adoption.

The State and Region should agree to a plan and timetable for submitting the State primacy revision application as soon as possible after rule promulgation—ideally the plan should be developed within five months of promulgation.

III-A.2 The Final Review Process

Once a State application is complete and final, EPA has a regulatory (and statutory) deadline of 90 days to review and approve or disapprove the revised program (40 CFR 142.12(d)(3)(i)). The Office of Ground Water and Drinking Water (OGWDW) and OECA will conduct a detailed review of the first State package from each Region. OGWDW and OECA request that the Region submit its comments with the State’s package for Headquarters review. When the Region has identified all significant issues, OGWDW and OECA will waive concurrence on all other State programs in that Region, retaining the option to review additional State programs with cause. The Office of General Counsel (OGC) has delegated its review and approval to the Office of Regional Counsel (ORC).

In order to meet the 90-day deadline for packages undergoing Headquarters review, the review period will be equally divided, giving both the Regions and Headquarters 45 days to conduct their respective reviews. For the first package in each Region, EPA Regional offices should forward copies of the primacy revision applications to the Drinking Water Protection Division Director in OGWDW, who will take the lead on the review process.

III-B. State Primacy Program Revision Extensions

III-B.1 The Extension Process

Under 40 CFR 142.12(b), States may request that the two-year deadline for submitting a program revision package for EPA approval be extended for up to two additional years. The extension request must be submitted to EPA within two years of the date that EPA published the regulation (40 CFR 142.12(b)(1)). Each Regional Administrator has been delegated authority to approve extension applications. Headquarters concurrence on extensions is not required.

III-B.2 Extension Request Criteria

For an extension to be granted, the State must demonstrate that it is requesting the extension because it cannot meet the original deadline for reasons beyond its control, despite a good faith effort to do so (40 CFR 142.12(b)(2)). A critical part of the extension application is the State's proposed schedule for submitting its complete and final request for approval of a revised primacy program. The application must also demonstrate at least one of the following (40 CFR 142.12(b)(2)(i)):

- (i) The State currently lacks the legislative or regulatory authority to enforce the new or revised requirements; or,
- (ii) The State currently lacks adequate program capability to implement the new or revised requirements; or,
- (iii) The State is requesting the extension to group two or more program revisions in a single legislative or regulatory action.

In addition, the State must be implementing the EPA requirements to be adopted in its program revision within the scope of its current authority and capabilities (40 CFR 142.12(b)(2)(ii)).

III-B.3 Conditions of the Extension

To be granted an extension, the State must agree to meet certain conditions during the extension period (40 CFR 142.12(b)(3)). These conditions will be negotiated by the Region and the State during the extension approval process and are decided on a case-by-case basis. The conditions must be included in an extension agreement between the State and the EPA Regional Office (40 CFR 142.12(b)(3)). Appendix I contains a sample extension agreement.

Conditions of an extension agreement may include:

- Informing PWSs of the new EPA (and upcoming State) requirements and that the Region will be overseeing implementation of the requirements until it approves the State program revisions, or until the State submits a complete and final revision package, if the State qualifies for interim primacy.
- Collecting, storing, and managing laboratory results, public notices, and other compliance and operation data required by EPA regulations.
- Assisting the Region in the development of technical aspects of enforcement actions and conducting informal follow-up on violations (telephone calls, letters, etc.).
- Providing technical assistance to PWSs.
- Taking steps agreed to by the Region and the State during the extension period to remedy the deficiency (for States whose request for an extension is based on a current lack of adequate program capability to implement the new requirements).
- Providing the Region with all the information required under 40 CFR 142.15 on State reporting.

Table III-2 provides a checklist the Region can use to review State extensions.

Table III-2. Extension Request Checklist

I. Reason for State Request		
<input type="checkbox"/>	Clustering of Program Revisions	
<input type="checkbox"/>	Statutory Barrier	
<input type="checkbox"/>	Regulatory Barrier	
<input type="checkbox"/>	Lack of Program Capability	
	<input type="checkbox"/> Insufficient Resources	
	<input type="checkbox"/> Funding Level	
	<input type="checkbox"/> Staffing	
	<input type="checkbox"/> Lack of Adequately Trained Staff	
	<input type="checkbox"/> Inadequate Procedures, Guidelines, and Policies	
	<input type="checkbox"/> Other _____	
II. Actions Taken by the State to Justify an Extension		
		Schedule Dates (or attachments)
<input type="checkbox"/>	Seeking Increases in Program Resources	
<input type="checkbox"/>	Training Existing Personnel/Revising Training Programs	
<input type="checkbox"/>	Revising State Regulations or Statutes	
<input type="checkbox"/>	Developing Revised/New Procedures, Guidelines, Policies	
<input type="checkbox"/>	Other _____	
III. Extension Decision		
<input type="checkbox"/>	Extension Request Approved	Date: ___/___/___
	<input type="checkbox"/> Period of Extension Request: ___/___/___	to ___/___/___
<input type="checkbox"/>	Extension Request Denied	Date: ___/___/___
	<input type="checkbox"/> Reason Cited: _____	
IV. Conditions of the Extension		
During the extension period the State will (check all that apply):		
<input type="checkbox"/>	Inform PWSs of the new requirements and the fact that EPA will be overseeing their implementation until the State's program is approved or submitted, if the State qualifies for interim primacy	
<input type="checkbox"/>	Collect and store laboratory results and other compliance data	
<input type="checkbox"/>	Provide technical assistance to PWSs	
<input type="checkbox"/>	Provide EPA with the information required under section 40 CFR 142.15 of the Primacy Rule	
<input type="checkbox"/>	Other _____	

III-C. State Primacy Package

The 1996 SDWA Amendments include several new provisions that allow interim primacy for States with approved up-to-date primacy programs, when a complete revision packet is submitted or when new or revised State Regulations become effective (40 CFR 142.12(e)). The application for primacy must be submitted by January 22, 2003, or by January 22, 2005 if the State has received an extension (40 CFR 142.12(b)).

The Primacy Revision Application package should consist of the following sections as discussed below:

III-C.1 The State Primacy Revision Checklist (40 CFR 142.10, 142.11, 142.12, &142.16)

This section is a checklist of general primacy requirements, taken from 40 CFR 142.10, as shown in Table III-3. In completing this checklist, the State must identify the program elements that it has revised in response to new federal requirements (40 CFR 142.12(c)(1)(i)). If an element has been revised, the State should indicate “Yes” in the second column next to the list of program elements and should submit appropriate documentation. For elements that need not be revised, EPA requests that the State list the citation and date of adoption in the second column. During the application review process, EPA will insert findings and comments in the third column.

Table III-3. State Primacy Revision Checklist

Required Program Elements		Revision to State Program	EPA Findings/Comments
40 CFR 142.2 and 142.10	Primary enforcement-Definition of PWS*		
40 CFR 142.10(a)	Regulations no less stringent		
40 CFR 142.10(b)(1)	Maintain inventory		
40 CFR 142.10(b)(2)	Sanitary survey program		
40 CFR 142.10(b)(3)	Laboratory certification program		
40 CFR 142.10(b)(4)	Laboratory capability		
40 CFR 142.10(b)(5)	Plan review program		
40 CFR 142.10(b)(6)(i)	Authority to apply regulations		
40 CFR 142.10(b)(6)(ii)	Authority to sue in courts of competent jurisdiction		
40 CFR 142.10(b)(6)(iii)	Right of entry		
40 CFR 142.10(b)(6)(iv)	Authority to require records		
40 CFR 142.10(b)(6)(v)	Authority to require public notification		
40 CFR 142.10(b)(6)(vi)	Authority to assess civil and criminal penalties		
40 CFR 142.10(b)(6)(vii)	Authority to require CWSs to provide CCRs**		
40 CFR 142.10(c)	Maintenance of records		
40 CFR 142.10(d)	Variance/exemption conditions (if applicable)***		
40 CFR 142.10(e)	Emergency plans		
40 CFR 142.10(f)	Administrative penalty authority*		
40 CFR 142.16(j)	Special primacy requirements, waiver criteria, monitoring plan		
40 CFR 142.16(k)	Special primacy requirements, new systems, new sources, monitoring requirements		

* New requirement from the 1996 Amendments. Regulations published in the April 28, 1998 *Federal Register*.

** New regulations published in the August 19, 1998 *Federal Register*.

*** New regulations published in the August 14, 1998 *Federal Register*.

III-C.2 Text of the State’s Regulation

Each primacy application package must include a citation to the applicable State regulation (40 CFR 142.12(c)(1)(i)).

III-C.3 Primacy Revision Crosswalk

The Primacy Revision Crosswalk, found in Appendix J, should be completed by States in order to identify State statutory or regulatory provisions that correspond to each revised federal requirement. If the State’s provisions differ from federal requirements, the State should explain how its requirements are “no less stringent.”

III-C.4 State Record Keeping and Reporting Checklist (40 CFR 142.14 and 142.15)

There are no new State record keeping or reporting requirements under the Arsenic Rule.

III-C.5 Special Primacy Requirements (40 CFR 142.16)

Section III-D of this guidance includes information on how States may choose to meet each Special Primacy Requirement.

III-C.6 Attorney General’s Statement of Enforceability

The complete and final primacy revision application must include an Attorney General’s statement certifying that the State regulations were duly adopted and are enforceable (40 CFR 142.12(c)(1)(iii)). If the State bundles the primacy revision packages for multiple rules, the Attorney General’s statement should reference the new requirements.

The Attorney General’s statement should also certify that the State does not have an audit privilege or immunity law, or if it has such a law, that it does not prevent the State from meeting the requirements of the SDWA. If a State has submitted this certification with a previous revision package, then the State should indicate the date of submission and the Attorney General need only certify that the status of the audit laws has not changed since the prior submission. An example of an Attorney General’s statement for the Arsenic Rule is presented in Table III-4. (See Appendix K for details on Audit and Privilege Laws.)

Table III-4: Example of Attorney General’s Statement

Model Language

I hereby certify, pursuant to my authority as (1) and in accordance with the Safe Drinking Water Act as amended, and (2), that in my opinion the laws of the [State/Commonwealth of (3)] [or Tribal ordinances of (4)] to carry out the program set forth in the “Program Description” submitted by the (5) have been duly adopted and are enforceable. The specific authorities provided are contained in statutes or regulations that are lawfully adopted at the time this Statement is approved and signed, and will be fully effective by the time the program is approved.

Guidance For States on Audit Privilege and/or Immunity Laws

In order for EPA to properly evaluate the State’s request for approval, the State Attorney General or independent legal counsel should certify that the State’s environmental audit immunity and/or privilege and immunity law does not affect its ability to meet enforcement and information gathering requirements under the Safe Drinking Water Act. This certification should be reasonably consistent with the wording of the State audit laws and should demonstrate how State program approval criteria are satisfied.

EPA will apply the criteria outlined in its “Statement of Principles” memo issued on 2/14/97 in determining whether States with audit laws have retained adequate enforcement authority for any authorized federal programs. The principles articulated in the guidance are based on the requirements of federal law, specifically the enforcement and compliance, State program approval provisions of environmental statutes, and their corresponding regulations. The Principles provide that if provisions of State law are ambiguous, it will be important to obtain opinions from the State Attorney General or independent legal counsel interpreting the law as meeting specific federal requirements. If the law cannot be so interpreted, changes to State laws may be necessary to obtain federal program approval. Before submitting a package for approval, States with audit privilege and/or immunity laws should initiate communications with appropriate EPA Regional Offices to identify and discuss the issues raised by the State’s audit privilege and/or immunity law.

Model Language

I. For States with No Audit Privilege and/or Immunity Laws

Furthermore, I certify that [State/Commonwealth of (3)] has not enacted any environmental audit privilege and/or immunity laws.

II. For States with Audit Laws that Do Not Apply to the State Agency Administering the Safe Drinking Water Act

Furthermore, I certify that the environmental [audit privilege and/or immunity law] of the [State/Commonwealth of (3)] does not affect (3) ability to meet enforcement and information gathering requirements under the Safe Drinking Water Act because the [audit privilege and/or immunity law] does not apply to the program set forth in the "Program Description." The Safe Drinking Water Act program set forth in the "Program Description" is administered by (5); the [audit privilege and/or immunity law] does not affect programs implemented by (5), thus the program set forth in the "Program Description" is unaffected by the provisions of [State/Commonwealth of (3)] [audit privilege and/or immunity law].

III. For States with Audit Privilege and/or Immunity Laws that Worked with EPA to Satisfy Requirements for Federally Authorized, Delegated, or Approved Environmental Programs

Furthermore, I certify that the environmental [audit privilege and/or immunity law] of the [State/Commonwealth of (3)] does not affect (3) ability to meet enforcement and information gathering requirements under the Safe Drinking Water Act because [State/Commonwealth of (3)] has enacted statutory revisions and/or issued a clarifying Attorney General's statement to satisfy requirements for federally authorized, delegated or approved environmental programs.

Seal of Office

Signature

Name and Title

Date

- (1) State Attorney General or attorney for the primacy agency if it has independent legal counsel
- (2) 40 CFR 142.11(a)(6)(i) for initial primacy applications or 142.12(c)(1)(iii) for primacy program revision applications.
- (3) Name of State or Commonwealth
- (4) Name of Tribe
- (5) Name of Primacy Agency

III-D. Guidance for Special Primacy Requirements

This section contains guidance States can use when addressing additional materials or the special primacy requirements of 40 CFR 142.16. It specifically addresses the special primacy conditions added for implementation of this Rule. The guidance addresses special primacy conditions in the same order that they occur in the Rule.

States should note that, in several sections, the guidance makes suggestions and offers alternatives that exceed the minimum requirements indicated by reading the subsections of 40 CFR 142.16. EPA does this to provide States with information and/or suggestions that may be helpful to their implementation efforts. Such suggestions are prefaced by “may” or “should” and are to be considered advisory. They are not required for program revision applications.

III-D.1 Special Primacy Requirements

Background

In the January 22, 2001 Arsenic Rule, EPA revised the special primacy requirements under 40 CFR 142.16(e) to apply to newly regulated contaminants, not existing regulated contaminants such as arsenic. The special primacy requirements under 142.16(e) require States to provide EPA with a detailed waiver program and a monitoring plan for the revised MCL by which the State would ensure that all systems monitor within the regulatory deadline. EPA recognized that, for already regulated contaminants, States could simply use the existing approved waiver programs and monitoring plans. Therefore, the Agency revised special primacy requirements for existing regulated contaminants such as arsenic. Under the Final Rule, the “contents of a State request for approval of a program revision” in 40 CFR 142.12(c) and the revised special primacy requirements in 142.16(j) and 142.16(k) are applicable for EPA review and approval of State programs adopting the arsenic revisions.

142.16 Special primacy requirements

40 CFR 142.16(j) requires:

An application for approval of a State program revision which adopts the requirements specified in §§141.11, 141.23, 141.24, 141.32, 141.40, 141.61, and 141.62 for an existing regulated contaminant must contain the following (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the federal requirements):

(1) If a State chooses to issue waivers from the monitoring requirements in 141.23, 141.24, and 141.40, the State shall describe the procedures and criteria which it will use to review waiver applications and issue waiver determinations. The State shall provide

the same information required in paragraph (e)(1)(i) and (ii)²⁰ of this section. States may update their existing waiver criteria or use the requirements submitted under the National Primary Drinking Water Regulations for the inorganic and organic contaminants (i.e., Phase II/V rule) in 16(e) of this section. States may simply note in their application any revisions to existing waiver criteria or note that the same procedures to issue waivers will be used.

States wanting to issue monitoring waivers may satisfy the special primacy requirement in 40 CFR 142.16(j)(1) by describing their waiver program, explaining any revisions to their existing waiver criteria, or noting that the same procedures to issue waivers will be used. States may wish to use the results of the data analysis to reevaluate their waiver program and monitoring schedules to focus on vulnerable systems. The Phase II/V waiver guidance and *A Review of Contaminant Occurrence in Public Water Systems* (EPA 816-R-99-006) provide additional information on waiver and monitoring programs.

40 CFR 142.16(j)(2) requires:

A monitoring plan by which the State will ensure all systems complete the required monitoring by the regulatory deadlines. States may update their existing monitoring plan or use the same monitoring plan submitted under the National Primary Drinking Water Regulations for the inorganic and organic contaminants (i.e. Phase II/V rule) in 16(e) of this section. States may simply note in their application any revisions to an existing monitoring plan or note that the same monitoring plan will be used. The State must demonstrate that the monitoring plan is enforceable under State law.

The Final Rule was developed so that arsenic monitoring would fit into the standardized monitoring framework. States therefore, may simply note any revisions or updates to their existing monitoring plan, or submit notice that the existing plan will be used if no changes are made (40 CFR 142.16(j)(2)). EPA recommends that States without Phase II/V primacy establish a schedule for revised MCL monitoring for all of their systems. Some States may choose to phase-in monitoring over the three-year compliance period, based on system size or source of water. Other States may simply require one-third of their systems to monitor during each year of the three-year compliance period. States may prepare and submit a schedule with their primacy revision application. States should describe how the schedule will be enforced and the authority that the State will use to enforce the schedule.

40 CFR 142.16(k) requires:

States establish the initial monitoring requirements for new systems and new sources. States must explain their initial monitoring schedules and how these monitoring

²⁰142.16(e)(1): *If a State chooses to issue waivers from the monitoring requirements in §§ 141.23 and 141.24, the State shall describe the procedures and criteria which it will use to review waiver applications and issue waiver determinations.*

schedules ensure that public water systems and sources comply with MCLs and monitoring requirements. States must also specify the time frame in which new systems will demonstrate compliance with the MCLs.

40 CFR 142.16(k) requires States to explain how their initial monitoring schedules will ensure that new systems, or systems using a new source of supply, will comply with the arsenic MCL, and the time frame in which these systems will demonstrate compliance with the MCL. Many States have approved monitoring programs for new systems and systems using a new source of supply. Therefore, States may note revisions or updates to their existing plan, or submit a notice with the primacy revision package indicating that the existing plan will be used (40 CFR 142.16(k)).

Section IV.

Other Resources and Guidance

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IV-A. Technical Information Available on the Arsenic Rule

A series of guidance manuals will support the Arsenic Rule. The manuals will aid EPA, State agencies, and affected PWSs in implementing the Rule and will help ensure that implementation among these groups is consistent. As these manuals become available, they may be found on the EPA website at www.epa.gov/safewater/arsenic.html.

In addition, EPA has developed two Fact Sheets on the Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Rule that are included in Appendix N and are available on the EPA website at www.epa.gov/safewater/arsenic.html.



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