abamectin on the RAC chili peppers and the proposed 7-day PHI.

B. Toxicological Profile

All the toxicity data on which this petition is based have previously been submitted to EPA in support of other petitions, and were summarized in the recent notice of filing (61 FR 65043). In the recent final rule (62 FR 13833) EPA concluded that acute dietary exposure risk evaluations should be based on a no observed effect level (NOEL) of 0.06 mg/kg bw/day (mouse pup NOEL in a developmental toxicity study using the delta 8,9-isomer of abamectin) and that a margin of exposure of 300 should be required. EPA determined that chronic dietary exposure risk evaluations should be based on a reference dose (RfD) of 0.0004 mg/kg bw/day, derived from a 2-generation rat reproduction study with a NOEL of 0.12 mg/kg/day and an uncertainty factor of 300.

This petition contains a supplemental a document setting forth new acute exposure and chronic exposure and risk analyses that corrects previously submitted analyses to reflect newly available residue data on chili peppers (the previously submitted report used data on bell peppers only) and to reflect current Agency preferences regarding the handling of blended foods. The results of the old and new analyses are substantially similar.

C. Aggregate Exposure

1. *Dietary exposure*. The March 1997 rule was based on an exposure analysis submitted by Merck that included exposure attributable to grapes and peppers. The exposure contribution for chili peppers was calculated using data on bell peppers. With the present petition, Merck is submitting new residue data on chili peppers and a revised acute and chronic risk assessment that incorporates that data; the exposure levels have not changed significantly. The chronic exposure for the U.S. population at large is estimated to be 0.000006 mg/kg bw/day, and for children aged 1-6, the highest exposure group, chronic exposure is estimated to be 0.000014 mg/kg bw/day. The estimated acute exposure (at the 99.9th percentile level) is for the U.S. population at large, 0.000025 mg/kg bw/day.

2. *Drinking water*. In the final rule EPA also concluded that drinking water exposure assumptions were not of concern.

3. *Non-dietary exposure*. In the final rule published on March 24, 1997, EPA concluded that there is no likelihood of significant exposure from the registered residential indoor and outdoor nonfat use of abamectin. Approval of tolerances for grapes and chili peppers would not change that conclusion.

D. Cumulative Effects

Abamectin is a member of the avermectin family of natural and semi-synthetic compounds. Ivermectin, another member of that family, is very closely similar to abamectin in structural standpoint; it is used as a human and animal drug. Emamectin, a proposed new pesticide, is made from abamectin but is less similar to abamectin than is avermectin. These compounds are all Merck products. Other companies product certain other drugs have certain structural similarities. Merck in not aware of any information indicating what, if any, cumulative effect would result from exposure to two or more of these compounds. The March 1997 rule discussed cumulative effects and stated that in view of the lack of information on how to evaluate possible common mechanisms, it would not assume that abamectin has a common mechanism of toxicity with any other substance.

E. Safety Determination

In the recently issued final rule (62 FR 13833, March 24, 1997) EPA discussed analyses of risks from chronic and acute exposure for all existing or pending tolerances. Those analyses included exposure to grapes and peppers, among other previously-approved and then-pending uses. In the final rule, EPA found the risks to be acceptable, with regard to both the general U.S. population and with regard to infants and children. As noted earlier, Merck now has submitted specific residue data on chili peppers, but the exposure analyses are not significantly affected thereby.

F. International Tolerances

Codex has not issued abamectin tolerances for grapes and chili peppers. (George LaRocca)

[FR Doc. 97–21147 Filed 8–8–97; 8:45 am]

BILLING CODE 6560–50–F

ENVIRONMENTAL PROTECTION AGENCY

[FRL–5873–4]

Four Documents Required Under the Safe Drinking Water Act as Amended

AGENCY: Environmental Protection Agency.

ACTION: Notice of Availability.

SUMMARY: In this notice, the Environmental Protection Agency (EPA or the Agency) is publishing two documents, and announcing the public availability of three other documents. All the documents relate to provisions in the Safe Drinking Water Act, as amended in 1996 (SDWA), and were issued by the Agency on August 6, 1997.

The documents that can be obtained from the Agency are: (1) EPA 816–R–97–009, ''State Source Water and Assessment Guidance'' which is guidance for states to follow in developing state source water assessment and petition programs (SDWA sections 1453 and 1454); (2) EPA 816–R–97–010, ''Guidance for Future State Ground Water Protection Grants' which establishes procedures for application for state ground water protection program assistance and identifies key elements of state ground water protection programs (SDWA section 1429(b)); and (3) EPA–815–R–97–002, ''Small System Compliance Technology List for the Surface Water Treatment Rule'' which contains detailed information on the list of technologies published in this notice.

Published in this notice are the list of small system compliance technology that meets the Surface Water Treatment Rule (SWTR) for three population sizes of small drinking water systems as required by SDWA section 1412(b)(4)(E)(v) and alternative monitoring guidelines for states to follow in proposing alternative monitoring requirements for chemical contaminants as required by SDWA 1418(b)(2). The alternative monitoring guidelines are also available as a separate document, EPA 816–R–97–001.

DATES: The documents are available beginning August 6, 1997.

ADDRESSES: Copies of these documents are available from the Safe Drinking Water Act Hotline, telephone (800) 426–4791 or e-mail hotline-sdwa@epamail.epa.gov. Copies are also available from the Office of Water Resource Center (RC4100), U.S. EPA, 401 M Street, SW, Washington, DC 20460, (202) 260–7786. The Center is open from 8:30 a.m. until 5:00 p.m. Monday through Friday. The documents are available, as of August 6, 1997, on EPA's Web Site at the following address: ''http://www.epa.gov/OGWDW''.

SUPPLEMENTARY INFORMATION:

Table of Contents

I. State Source Water Assessment and Protection Programs Guidance
II. Guidance for Future State Ground Water Protection Grants
III. Small System Compliance Technology List for the Surface Water Treatment Rule
IV. Alternative Monitoring Guidelines

I. State Source Water Assessment and Protection Programs Guidance

The reauthorized SDWA, which was signed by President Clinton on August 6, 1996, established state source water assessment programs and state source water petition programs. The term ''source water'' denotes any ground or surface water supply source destined for use as public drinking water. A source water assessment program is required of all states with primary enforcement responsibility for administering drinking water programs and consists of delineating drinking water source protection areas and conducting contaminant source inventories and susceptibility analyses within those delineated areas. The source water petition program is voluntary for states, and consists of developing incentive-based voluntary management measures to reduce or eliminate threats to drinking water sources within assessed drinking water source protection areas. The SDWA requires EPA to publish guidance for both programs by August 6, 1997. This guidance was released in draft on April 8, 1997 for public review and comment. To solicit comments on the guidance EPA held 22 stakeholder meetings around the country. In addition, the agency received over 100 written comments as well as recommendations from the National Drinking Water Advisory Council. States have until February of 1999 (with a possible 18 month extension) to develop a source water assessment program utilizing a public participation process and submit it to the appropriate EPA regional administrator for approval.

The guidance document (EPA 816–R–97–009) is available from the Safe Drinking Water Act Hotline, telephone (800) 426–4791 or e-mail hotline-sdwa@epamail.epa.gov, the Office of Water Resource Center (RC4100), U.S. EPA, 401 M Street, SW, Washington, DC 20460, (202) 260–7786 and on EPA's Web Site at the following address: ''http://www.epa.gov/OGWDW''. For more information contact Roy Simon, phone: (202) 260–7777, E-mail: simon.roy@epamail.epa.gov.

II. Guidance for Future State Ground Water Protection Grants

Section 1429 of the SDWA as amended authorizes a new state grant program to encourage states to develop and implement programs to ensure the coordinated and comprehensive protection of ground water resources. The purpose of this guidance is to fulfill the statutory requirement to issue grants guidance for this program although the Administration has not yet requested nor has Congress appropriated funds for these grants. This guidance outlines EPA's approach for state ground water protection program assistance should funding be made available and identifies key elements of state ground water protection programs.

The guidance document (EPA–815–R–97–002) is available from Safe Drinking Water Act Hotline, telephone (800) 426–4791 or e-mail hotline-sdwa@epamail.epa.gov, the Office of Water Resource Center (RC4100), U.S. EPA, 401 M Street, SW, Washington, DC 20460, (202) 260–7786 and on EPA's Web Site at the following address: ''http://www.epa.gov/OGWDW''. For more information contact Denise Coutlakis at (202) 260–5558 or coutlakis.denise@epamail.epa.gov.

III. Small System Compliance Technology List for the Surface Water Treatment Rule

The SDWA, as amended, (Section 1412(b)(4)(E)(v)) requires EPA to list technologies that meet the SWTR for each of the three small system population size categories by August 6, 1997. EPA is also announcing the public availability of a guidance document entitled ''Small System Compliance Technology List for the Surface Water Treatment Rule'' (EPA 815–R–97–002) which contains the list in this notice accompanied by more detailed explanation.

Background

The SWTR was published in the **Federal Register** on June 29, 1989. It requires compliance with treatment techniques rather than a Maximum Contaminant Level (MCL). Section 1412(b)(7)(A) of SDWA specifies the conditions under which the Administrator can promulgate a treatment technique in lieu of an MCL. In those cases, the Administrator must identify those treatment techniques which, in the Administrator's judgement, would prevent known or anticipated adverse effects on the health of persons to the extent feasible. Section 1412(b)(4)(D) of SDWA states that ''the term 'feasible' means feasible with the use of the best technology, treatment techniques and other means which the Administrator finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration)''.

The cost assessments for the feasibility determinations have historically been based upon impacts to regional and large metropolitan water systems serving populations greater than 50,000 persons. This standard was established when the SDWA was enacted in 1974 [H.R. Rep. No. 93–1185 at 18(1974)] and when the Act was amended in 1986 [132 Cong. Rec. S6287 (May 21, 1986)]. Since large systems served as the basis for the feasibility determinations, the technical and/or cost considerations associated with these technologies often made them inappropriate or unavailable for small water systems. The 1996 amendments to the SDWA specifically require EPA to make technology assessments for small systems for both existing and future regulations. The 1996 SDWA amendments list three population size categories of small public water systems: those serving 10,000–3,301 persons, 3,300–501 persons, and 500–25 persons.

The 1996 SDWA identifies two classes of technologies for small systems—compliance technologies and variance technologies. However, small system variances are not available for an NPDWR for a microbial contaminant (including a bacterium, virus, or other organism) or an indicator or treatment technique for a microbial contaminant [Section 1415(e)(6)(B)]. As a result, variance technologies will not be listed for these contaminants because the systems involved cannot receive a small system variance. The 1996 SDWA requires EPA to list compliance technologies for the SWTR for each of the three population size categories for the small systems by August 6, 1997 [Section 1412(b)(4)(E)(v)]. For other information on Technologies for Small Drinking Water Systems please contact Jeffrey Kempic, Phone: (202) 260–9567, Fax: (202) 260–3762 or Tara Cameron, Phone: (202) 260–3702, Fax: (202) 260–3762 at the U.S. Environmental Protection Agency.

Explanation of Effect of This List

1. Rationale for Guidance Instead of Regulation

The 1996 SDWA does not specify the format for the compliance technology lists. Section 1412(b)(15)(D) does state that the variance technology lists can be issued either through guidance or regulations. Moreover, since the listing provided in today's notice is informational and interpretative, it doesn't require any changes to existing rules or the promulgation of new ones. The purpose of this notice and the guidance referred to in this notice is to provide small systems with information concerning the types of technologies that comply with the SWTR requirements. This notice does not alter any of the SWTR requirements. Thus, EPA believes the compliance technology

list issued today is appropriately provided through this notice and guidance rather than through rulemaking.

The SWTR was published in the **Federal Register** on June 29, 1989. Even though many systems have already installed a treatment technology, there are systems that still need to select a treatment technology to comply with the SWTR. Since technology decisions for these systems will need to be made soon, meeting the August 6, 1997 deadline in the SDWA with respect to this list of technologies provides these systems with valuable information regarding their treatment technology options.

EPA has chosen to issue the list through this Notice and a guidance document because regulation development is unnecessary and could considerably delay publication of the list. Issuing the list without rulemaking will allow EPA to meet the deadline and to provide information to more small systems as they make their treatment technology decisions.

2. Relationship Between This Guidance and Regulatory Requirements; State Role

The SWTR lists four disinfection technologies and four filtration technologies that can be used by any size system. Those technologies and several new disinfection and filtration technologies have been evaluated as possible compliance technologies. Six technologies are listed today as small system disinfection compliance technologies.

The SWTR lists four types of approved filtration technologies. They are described in § 141.73(a)–(d): (a) conventional filtration treatment or direct filtration; (b) slow sand filtration; (c) diatomaceous earth filtration; and (d) other filtration technologies. A public water system could not use the fourth option unless it could demonstrate to the state, using pilot plant studies or other means, that the filtration technology, in combination with the disinfection treatment meets the three log removal requirement of Giardia and four log removal requirement of viruses.

For these alternative filtration technologies, there are typically two stages of evaluation prior to approval. The first stage is to determine if the process effectively removes/inactivates the contaminants of concern. The second stage is to determine if the individual system under consideration can effectively operate the process and to assess site-specific considerations that can affect the technology's performance. Under the SWTR, the filtration processes listed in § 141.73(a)–(c) already meet the first stage requirement and will generally have some degree of site-specific testing to meet the second stage. The ''other filtration technologies'' (§ 141.73(d)) have needed pilot testing to meet both criteria.

For the ''other filtration technologies'' on the SWTR compliance technology list, the national-level pilot testing for viability can be waived under § 141.73(d). National level pilot plant studies are just one mechanism identified in § 141.73(d) to demonstrate that the process is capable of meeting the goals of the SWTR. A filtration technology can be demonstrated using ''other means'' besides pilot testing. The alternative filtration technologies on the compliance technology list in today's notice have been demonstrated to EPA to be effective under § 141.73(d) and thus do not require national-level pilot testing for viability. This puts these new filtration technologies on the same footing as the technologies listed in § 141.73(a)–(c) regarding national-level pilot testing. A state may still require site-specific testing to assess factors that affect technology performance for all of the compliance technologies. A state may also still require testing to demonstrate that the system is capable of operating the process for all the compliance technologies.

For filtration technologies that are not on the compliance technology list, the existing mechanism in the SWTR for alternative filtration technologies can still be used. Pilot testing for viability could be required for these systems under § 141.73(d).

Explanation of List

1. Development of the Small System Compliance Technology List for the Surface Water Treatment Rule (SWTR)

The August 6, 1997, deadline necessitates that the SWTR small system compliance technology list be a very general expansion of the original SWTR technology list. The 1996 Safe Drinking Water Act does not specify the degree of specificity of this or any of the future small system compliance technology lists. This list will be followed by a revised SWTR compliance technology list to be published in August 1998, which will provide additional details about water quality requirements and other constraints for the listed technologies. Future lists may also include additional technologies not listed in this guidance because of current informational deficiencies with respect to the capabilities of those technologies. The SWTR small system compliance technology list will continue to evolve over time as updates are published.

2. Small System Compliance Technology Lists and Product-Specificity

The small system compliance lists will not be product-specific since EPA's Office of Ground Water and Drinking Water does not have the resources to review each product for each potential application; nor does EPA feel it would be appropriate to do so. However, information on specific products are expected to soon be available through another mechanism. The EPA Office of Research and Development has a pilot project under the Environmental Technology Verification (ETV) Program to provide technology purchasers with performance data generated by independent third parties. The EPA and National Sanitation Foundation International are cooperatively organizing and conducting this pilot project in part to address the needs of community water systems for verification testing of packaged drinking water treatment systems. The ETV pilot project includes development of verification protocols and test plans, independent testing and validation of packaged equipment, government/industry partnerships to obtain credible cost and performance data, and preparation of product verification reports for wide-spread dissemination.

3. The August 1998 Small System Compliance Technology List for the Surface Water Treatment Rule (SWTR)

When the small system compliance technologies list for the SWTR is updated in August 1998, it will be supplemented by information on applicability ranges and other issues that a water system should consider prior to selecting a disinfection or filtration technology. The level of detail that might be provided concerning these factors was discussed at a public meeting concerning technologies for small drinking water systems held on July 22 and 23, 1997, in Washington, DC. Additional information that could be incorporated into this list of compliance technologies includes: (1) Influent water quality range specificity and pre-treatment requirements; (2) an evaluation of log removal credits for technologies not originally listed in the SWTR; and (3) guidance on operation and maintenance requirements, waste disposal, and other technical concerns.

In addition to the technologies listed in today's notice, there are ''new'' technologies that merit consideration for small system application: advanced

oxidation or ''prozone'' (the combined use of ozone and hydrogen peroxide), pulsed ultraviolet radiation (UV), ultraviolet oxidation (the combined use of UV and chemical oxidants). These technologies will be evaluated in the future and, if found viable for small system applications, will be incorporated in the updated list.

EPA will also consider listing point-of-entry (POE) devices in future notices. However, there are several difficulties that would need to be overcome and questions answered before POE devices can be considered as viable treatment options for microbial contaminants. For instance, how would disinfection be applied? The National Research Council, a principal operating agency of the National Academy of Sciences advises that POE devices not be used for disinfection purposes since ''control of acute disease should be accomplished with the highest feasible degree of competence.'' (National Research Council. *Safe Water From Every Tap: Improving Water Service to Small Communities.* National Academy Press. Washington, DC. 1997). In addition, since disinfection following filtration is considered good engineering practice, the absence of disinfection following POE filtration devices presents a dilemma for the use of these devices. Finally, if POE devices were used despite such considerations, what would be the required monitoring frequency? Monitoring requirements may make POE devices inappropriate as small systems technologies for SWTR compliance.

EPA cannot consider point-of-use (POU) devices for the current list because section 1412(b)(4)(E)(ii) of the Safe Drinking Water Act specifically prohibits the use of POU devices as compliance technologies for any MCL or treatment technique requirement for microbial contaminants (or indicators of microbial contaminants).

4. Availability of a Guidance Document Regarding This Notice

This **Federal Register** Notice is supported by the guidance document entitled ''Small System Compliance Technology List for the Surface Water Treatment Rule.'' The guidance document may be obtained from EPA by calling the Safe Drinking Water Hotline at (800) 426–4791. It is also available through the Internet at <www.epa.gov/OGWDW/>.

The guidance document is organized into several chapters describing the listed small system compliance technologies for the SWTR. Chapter 1 discusses the requirements of the 1996 amendments to the SDWA and the approach EPA is following to meet those requirements. Chapter 2 discusses the list of technologies that were evaluated for the initial compliance technology list. Chapter 3 discusses the technologies that require further evaluation over the next year. This chapter also discusses some of the criteria that may be evaluated over the next year for the approved compliance technologies so that applicability ranges can be developed.

July 22–23, 1997 Stakeholder Meeting

EPA held a stakeholder meeting on July 22 and 23, 1997. The meeting took place at RESOLVE, 1255 23rd Street, N.W., Washington, D.C. Approximately 60 people registered and participated at the meeting. Those who participated included representatives from States, water systems and equipments manufacturers. One subject discussed at this stakeholder meeting was the draft guidance document, ''Small System Compliance Technology List for the SWTR.'' The three major goals of the meeting were: (1) to inform stakeholders of the initial list of compliance technologies for the SWTR, (2) to seek input on technologies that are not on the list because of a concern about feasibility, and (3) to seek input on the level of detail needed to describe compliance technologies in the updated list. Stakeholders were asked to review the list of compliance technologies for the three size categories of small systems. The major changes between the stakeholder draft of the list of technologies and the list in today's notice is that several of the technologies that were not listed or were not listed for all size categories have now been listed for all size categories. In the stakeholder draft, EPA did not list technologies because of treatment system implement ability or performance consistency concerns. Several stakeholders indicated that they preferred that EPA list the technologies along with the concerns rather than exclude these technologies from the list. Some stakeholders also expressed a desire for the compliance technology list to provide more technology options for an individual system that could be capable of operating a more complex technology. Many stakeholders felt that the consistency concerns could be addressed through the site-specific pilot testing that can be required by the state. EPA agrees with these comments and today's notice reflects this change in approach.

List of Compliance Technologies for the SWTR

The following tables contain the initial list of compliance technologies for the SWTR for the three small system size categories. A description of each technology can be found in the guidance document. The three population size categories of small public water systems as defined in the SDWA are those serving: 10,000—3,301 persons, 3,300—501 persons, and 500—25 persons. The technologies are listed for all three size categories; however, systems should examine the ''Limitations'' column before selecting a technology. This column contains information that could limit the applicability of the technology for some systems within a size category or categories.

Water treatment plant operator skills vary with each piece of unit technology. The tables for filtration and disinfection technologies include a skill level for each technology ranging from basic to advanced. For a piece of unit technology that requires ''basic operator skill'', an operator with minimal experience in the water treatment field can perform the necessary system operation and monitoring if provided with written instruction. ''Intermediate operator skill'' implies that the operator understands the principles of water treatment and has a knowledge of the regulatory framework. ''Advanced operator skill'' implies that the operator possesses a thorough understanding of the principles of system operation, including water treatment and regulatory requirements. The ''operator skill level required'' column in the tables refers to the skill level needed for the unit technology. If pretreatment is required, the required operator skill levels will likely increase.

These lists will be updated in August 1998 and may include new technologies or additional information.

SWTR COMPLIANCE TECHNOLOGY TABLE: FILTRATION

Unit technologies [1]	Limitations (see footnotes)	Raw water quality range [2]	Operator skill level required [2]
Conventional Filtration (includes dual-stage and dissolved air flotation).	([d])	Wide Range	Advanced.
Direct Filtration (includes In-line Filtration)	([d])	High quality	Advanced.
Diatomaceous Earth Filtration	([e])	Very high quality or pre-treatment	Intermediate.
Slow Sand Filtration	([f])	Very high quality or pre-treatment	Basic.
Reverse Osmosis Filtration	N/A	Requires pre-filtration for surface waters	Advanced.
Nanofiltration	N/A	Very high quality or pre-treatment	Basic.
Ultrafiltration	N/A	Very high quality or pre-treatment	Basic.
Microfiltration	N/A	High quality or pre-treatment	Basic.
Bag Filtration	([g])	Very high quality or pre-treatment	Basic.
Cartridge Filtration	([g])	Very high quality or pre-treatment	Basic.

[1] New technologies added by this notice in italics.
[2] National Research Council (NRC) *Safe Water From Every Tap: Improving Water Service to Small Communities*. National Academy Press. Washington, DC. 1997.

SWTR COMPLIANCE TECHNOLOGY TABLE: DISINFECTION

Unit technologies [3]	Limitations (see footnotes)	Raw water quality range [4]	Operator skill level required [2]
Free Chlorine	([a])	All, but better with high quality	Basic.
Ozone	N/A	All, but better with high quality	Intermediate.
Chloramines	([b])	All, but better with high quality	Basic.
Chlorine Dioxide	([c])	All, but better with high quality	Intermediate.
Mixed-Oxidant Disinfection	N/A	All, but better with high quality	Basic to Intermediate.
Ultraviolet (UV) radiation	N/A	Visual clarity; suspended and dissolved materials can impede performance [5].	Basic.

[3] New technologies added by this notice in italics.
[4] National Research Council (NRC). *Safe Water From Every Tap: Improving Water Service to Small Communities.* National Academy Press. Washington, DC. 1997.
[5] U.S. Environmental Protection Agency. Ultraviolet Light Disinfection Technology in Drinking Water Application: An Overview. Office of Water. EPA 811–R–96–002 (1996).

Limitations Footnotes to SWTR Compliance Technology Tables

a Chlorine is available in several forms: solid, liquid, and gaseous. Gaseous chlorine, due to its hazardous nature, requires special handling and storage care. Special training of operators is recommended.

b Chloramine disinfection requires careful monitoring of the ratio of added chlorine to ammonia. Chloramines also possess less potency than other disinfectants and thus need longer CTs.

c The process of generating chlorine dioxide is complicated and requires intermediate operator skill. Because of this complexity and the high monitoring requirements, this technology may not be appropriate for many small water systems.

d Involves coagulation. Coagulation chemistry requires advanced operator skill and extensive monitoring. A system needs to have direct full-time access or full-time remote access to a skilled operator to use this technology properly.

e Filter cake should be discarded if filtration is interrupted. For this reason, intermittent use is not practical. Recycling the filtered water can remove this potential problem.

f Water service interruptions can occur during the periodic filter-to-waste cycle, which can last from six hours to two weeks.

g Site-specific pilot testing prior to installation of a bag or cartridge filter likely to be needed to ensure adequate performance.

IV. Alternative Monitoring Guidelines for Chemical Contaminants Overview

These guidelines for alternative monitoring, formerly referred to as Permanent Monitoring Relief (PMR), are being issued pursuant to section 1418(b) of the Safe Drinking Water Act (SDWA), which requires the Environmental Protection Agency (EPA) to issue guidelines for states to follow in proposing alternative monitoring requirements for chemical contaminants. Congress recognized that as a state gains a better understanding of the contamination sources that may affect the quality of a drinking water supply, the state would be in an appropriate position to tailor the monitoring requirements for the system while continuing to provide effective public health protection. The SDWA, therefore, provides that a state may allow a system to implement the alternative monitoring offered by these guidelines, if the state has an approved source water assessment program, and has completed a source water assessment for that system. The SDWA further requires EPA to issue guidance for states to use in meeting these source water assessment requirements, and directs EPA to issue the source water assessment guidance at the same time as these alternative monitoring guidelines. Accordingly, the source water assessment guidance was also issued on August 6, 1997 as described earlier in this notice.

On July 3, 1997, EPA published draft guidelines in the **Federal Register** [62 FR 36100] in conjunction with an Advance Notice of Proposed Rule Making (ANPRM) for revising the federal chemical monitoring requirements (then referred to as Chemical Monitoring Reform). The draft guidelines were included in that notice in order to consolidate all of the draft changes to the federal provisions for chemical monitoring into a single document. These alternative monitoring guidelines have been developed after considering timely public comments received on the draft guidelines.

EPA mentioned in the July 3, 1997 notice that regulations might be needed in order to implement fully the alternative monitoring guidelines. Pursuant to the statute, alternative monitoring must assure compliance

with applicable national primary drinking water regulations. To permit states to implement monitoring provisions that differ from the current requirements, EPA plans to propose alternative monitoring as regulations in conjunction with the proposal of the CMR regulations. Until such time as the provisions for alternative monitoring have been promulgated as regulations, these guidelines do not impose legally binding requirements on EPA, states or the regulated community. In compliance with the SDWA Amendments of 1996, they are intended to assist states in developing source water assessment programs that will generate the information to enable states to offer alternative monitoring to water systems in appropriate circumstances. EPA expects to issue final regulations for CMR and alternative monitoring in a single regulation for monitoring revision by August 6, 1998. This time frame for regulatory support of alternative monitoring should not pose a hardship for the states or public water systems (PWSs). It will take some time for many states to comply with the statutory pre-requisites concerning source water protection for granting alternative monitoring to its public water systems.

Under Section 1418(b) of the SDWA, the alternative monitoring guidelines must ensure that the public health will be protected from drinking water contamination, that a state program will apply on a contaminant-by-contaminant basis and that a public water system must show the state that the contaminant is not present in the drinking water supply or, if present, is reliably and consistently below the maximum contaminant level. The guidelines must further require that if a contaminant is detected at levels at or above the maximum contaminant level or is no longer reliably or consistently below the maximum contaminant level, the system must either demonstrate that the contamination source has been removed or that other action has been taken to eliminate the contamination or test for the detected contaminant according to the applicable national primary drinking water regulation.

The SDWA further provides that the alternative monitoring shall not apply to regulated microbiological contaminants (or indicators thereof), disinfectants and disinfection by-products, or corrosion by-products. The guidelines apply to the chemicals listed in the following table and to nitrate, as described in the sections below.

Chronic Chemical Contaminants

Inorganic Chemicals (IOCs):

[1] Antimony, [2] Arsenic, [3] Asbestos, [4] Barium, [5] Beryllium, [6] Cadmium, [7] Chromium, [8] Cyanide, [9] Fluoride, [10] Mercury, [11] Nickel, [12] Selenium, [13] Thallium.

Synthetic Organic Chemicals (SOCs):

[1] 2,4-D (Formula 40 Weeder 64); [2] 2,3,7,8-TCDD (Dioxin); [3] 2,4,5-TP (Silvex); [4] Alachlor (Lasso); [5] Atrazine; [6] Benzo[a]pyrene; [7] Carbofuran; [8] Chlordane; [9] Dalapon; [10] Di(2-ethylhexyl)adipate; [11] Di(2-ethylhexyl)phthalate; [12] Dibromochloropropane (DBCP); [13] Dinoseb; [14] Diquat; [15] Endothall; [16] Endrin; [17] Ethylene dibromide (EDB); [18] Glyphosate; [19] Heptachlor epoxide; [20] Heptachlor; [21] Hexachloro-cyclopentadiene; [22] Hexachlorobenzene; [23] Lindane; [24] Methoxychlor; [25] Oxamyl (Vydate); [26] Pentachlorophenol; [27] Picloram; [28] Polychlorinated Biphenyls (PCBs); [29] Simazine; [30] Toxaphene.

Volatile Organic Chemicals (VOCs):

[1] 1,1-Dichloroethylene; [2] 1,1,2-Trichloroethane; [3] 1,1,1-Trichloroethane; [4] 1,2,4-Trichlorobenzene; [5] 1,2-Dichloropropane; [6] 1,2-Dichloroethane; [7] Benzene; [8] Carbon tetrachloride; [9] cis-1,2-Dichloroethylene; [10] Dichloromethane; [11] Ethylbenzene; [12] Monochlorobenzene; [13] o-Dichlorobenzene; [14] p-Dichlorobenzene; [15] Styrene; [16] Tetrachloroethylene; [17] Toluene; [18] trans-1,2-Dichloroethylene; [19] Trichloroethylene; [20] Vinyl Chloride; [21] Xylenes.

After weighing the statutory requirements and considering public comment, EPA is providing states the option of offering three forms of alternative monitoring: monitoring waivers, surrogate sampling and reduced nitrate monitoring. These forms are described in detail below. For waivers and surrogate sampling, EPA considers ½ of the MCL the highest concentration at which a contaminant may be judged to be reliably and consistently < MCL, especially considering that five year renewable waivers could mean that the system would not be required to sample for a 10 year period or longer. For nitrate, EPA considers 2 mg/L as the threshold for determining that a system is reliably and consistently < MCL. Although 2 mg/L is 20% of the MCL, it was selected because nitrate has acute health effects and a greater safety factor is appropriate to provide effective public health protection from drinking water contamination.

A state with an approved source water assessment program may complete the source water assessments for a specific contaminant and grant alternative monitoring for that contaminant, even if the state has not yet completed assessments for the remaining contaminants. Although the SDWA specifies that the monitoring program apply on a contaminant by contaminant basis, states are not precluded from conducting area-wide assessments covering many systems and may, therefore, grant alternative monitoring to all the systems in the area-wide assessment consistent with the results of the assessment.

States are expected to incorporate the information gathered through the source water assessments in making waiver decisions, in designating surrogate sampling points and in conducting analyses to support reduced nitrate sampling. States are also expected to review changes to the conditions on which these forms of alternative monitoring are based before renewing them. An update to the source water assessment may provide this information. States are, therefore, encouraged to integrate the activities required for decisions related to alternative monitoring and the very similar activities supporting the source water assessment program to make them complementary.

Specific Alternative Monitoring Provisions and Criteria

States may offer alternative monitoring under Sections A and B for the sixty four (64) contaminants listed in the table above, and under Section C for nitrate.

Section A—Sampling Waivers for Chronic Contaminants

(1) State Findings Required for Waivers: A state may grant a waiver allowing a system to forgo sampling during a five year monitoring period, if the state, at a minimum, makes one of the following determinations:

(a) The sampling point is *free of contamination* and there is a high probability that it will remain so during the term of the waiver. A state may not make this determination, if the contaminant has been detected within the source water review area of the

sampling point within the last five years; or

(b) The contaminant level will remain reliably and consistently below the MCL during the sampling period based on a finding that:

(i) The natural occurrence levels are stable and the contaminant does not occur because of human activity; or

(ii) All the sources of potential contamination within the source water review area: have been identified, brought under control, and will pose no increased or additional risk of contamination to the source water withdrawal point during the sampling period; and the contaminant levels have peaked based on the history of sampling results and the duration of the contaminant in the environment; or

(iii) The treatment at the sampling point is properly operated and maintained, and is working reliably and effectively; and

(iv) The highest contaminant levels are < ½ MCL.

(2) General Considerations : In making waiver decisions the state should, at a minimum, consider the following factors.

(a) The fate and transport of the contaminant;

(b) The patterns of contaminant use;

(c) The location of potential contamination sources within the source water review area;

(d) The hydrogeologic features within the source water review area;

(e) The integrity of the structures delivering source water to the sampling point;

(f) The results of all source water assessments that have been completed within the source water review area;

(g) The efficacy of any source water protection measures that have been enacted, and;

(h) For waivers based on the contaminant remaining reliably and consistently below the MCL for the sampling period, the relationship of the sampling results to the MCL, the variability of the sampling results over time, and the trend of the sampling results.

(3) System Responsibility: Each water system granted a sampling waiver under this paragraph should notify the state within 30 days of the time it first learns of any change in any of the conditions under which a waiver was granted.

(4) State Review of Waiver Determinations: The state should review its decision to grant or renew a waiver, whenever it learns of a change in the circumstances upon which the waiver was granted. The state may amend the terms of a waiver, or revoke a waiver at any time.

(5) Waiver Renewals: A state may renew a sampling waiver by making the same determination it made to initially grant the waiver, after reviewing current assessments of the factors that are subject to change during the term of the waiver, and that affect the finding(s) upon which the waiver is based.

(6) Waivers for Cyanide: Before granting a waiver for cyanide, the state should determine whether cyanide is present in the system's source water.

Section B—Surrogate Sampling Points

A State may allow a system, or several systems, to use the monitoring results from the sampling point(s) designated by the state as surrogate point(s), if the state determines that the source water serving the surrogate sampling points is drawn from the most vulnerable portion of the same contiguous source water.

(1) Intra-system Surrogate Sampling: For designating surrogate sampling points within one system, the state should consider a sufficient record of the pertinent information below and the results of the source water assessments that have been completed under section 1453 of the Safe Drinking Water Act:

(a) Monitoring data demonstrating that the sampling results are <½ MCL;

(b) Well log or surface water hydrology data demonstrating that the points to be included in the surrogate sampling point program draw from the same contiguous source water; and

(c) An inventory of the potential contamination sources within the source water review area affecting all the sampling points to be included in the surrogate sampling point program.

The state should also require the system to periodically validate the results of the surrogate sampling points. For example, where one sampling point among three in a small system has been designated as the surrogate point, the state might require the other two points to rotate the sample every five years.

(2) Inter-system Surrogate Sampling: For designating surrogate sampling points among systems, a state first needs to receive EPA approval of its criteria and procedures for implementing an Inter-system Surrogate Sampling Point Program, that meets the criteria of this paragraph. Two or more systems may use the monitoring results from surrogate sampling points designated by the state, based on a complete assessment of the contiguous source water that has been approved by the state and that describes:

(a) The requirements for validation sampling (For example, where several sampling points among dozens in several systems have been designated as the surrogate points, the state might require the next most vulnerable tier of sampling points to ''round robin'' the sample every five years. This could significantly reduce the overall sampling burden.) ;

(b) The location of potential contamination sources that could affect any of the community water systems or non-transient, non-community water systems drawing from the contiguous source water.

(c) The hydrogeologic features of the contiguous source water; and

(d) The relationships among potential contamination sources, the hydrogeologic features and the source water withdrawal points, with particular regard to their relative locations.

(3) Validation Sampling: Whenever the sampling results at a surrogate point are ≥½ of the MCL, the state should require the systems to conduct validation sampling at each of the points represented by that surrogate point. Surrogate sampling should be discontinued for that sampling point, and for any sampling points that it represents, if the contaminant is ≥½ MCL. The state should then decide which sampling points to target for increased sampling, which, if any, to default to once every five years, and which, if any, may be appropriate for a smaller surrogate sampling arrangement.

(4) System Responsibility: Each system should notify the state within 30 days of the time it first learns of any change in any of the conditions under which any surrogate sampling point has been designated.

(5) State Review of Surrogate Sampling Point Designations: The state should review its decision to designate any surrogate sampling point, whenever it learns of a change in the circumstances upon which the point was designated.

Section C—Reduced Nitrate Sampling

States may reduce the nitrate monitoring frequency from annual to biennial for a sampling point served exclusively by ground water.

(1) State Findings: States should allow this reduction in nitrate sampling only under the following conditions:

(a) *Maximum Allowed Concentration:* Nitrate measured as N has not exceeded a concentration equal to or greater than 2 milligrams per liter at any time during the past ten years; and

(b) *Integrity of Structures & Equipment:* The state has determined that the design and construction of the structures and equipment delivering water from the wellhead to the distribution system fully comply with

current state code for such structures and equipment; and

(c) *Freedom from Surface Water Intrusion:* The state has determined that the ground water serving the sampling point is not under the direct influence of surface water, and is not susceptible to significant changes in contamination levels during the period for which the sampling would be reduced e.g., not a shallow well, not in fractured bedrock; and

(d) *State Determination:* The state has determined that (a) nitrate sampling is not required as a precursor to microbial or viral contamination, (b) land uses, or relevant land use based conditions (such as the effective operation of septic systems) in the area affecting the sampling point are unlikely to change in a way that would increase the risk of nitrate contamination, and (c) any contamination at the sampling point is unlikely to exceed the 2 mg/l during the reduced sampling period.

(2) Effect of Detection ≥2 mg/l: If nitrate is detected at ≥2 mg/l, measured as N, the system would return to an annual sampling frequency under the state requirements adopted pursuant to the national primary drinking water regulations; and

(3) System Responsibility & State Review: Each system should notify the state within 30 days of the time it learns of any change the conditions under which the reduced sampling for nitrate has been allowed, particularly of any change in land use practices. The state will review its decision to reduce the sampling frequency, whenever it learns of a change in the circumstances upon which its decision was based.

Section D—Definitions

(1) Contiguous source water means, for the purposes of these guidelines, a source or several inter-connected sources of public drinking water:

(a) Comprised of surface water, or ground water, or ground water under the direct influence of surface water, or any combination thereof, that serves two or more source water withdrawal points; and

(b) From within which contamination that can reach any one of the source water withdrawal points, can also reach any of the other source water withdrawal points.

(2) Monitoring period means the period during which water systems are required under federal regulations to take at least one sample.

(3) Source Water Review Area (SWRA) means the surface and subsurface area within which a contaminant can reach the source water withdrawal point, or any point between it and the entry point to the distribution system (e.g., an aqueduct), during the time between regularly scheduled samples. The size and shape will vary depending upon several factors, including the sampling period, the hydrogeologic features within the area, and particularly a specific contaminant's fate and transport. Where systems use ground water, the SWRA could be the Source Water Protection Area (SWPA) established under the Safe Drinking Water Act, where the SWPA is based on a time of travel delineation consistent with the sampling period i.e., 5 years. For surface water, the SWRA is the watershed upstream of the source water withdrawal point.

(4) Surrogate sampling points mean the sampling point(s) within a group of sampling points: within one water system e.g., under a Wellhead Protection Program, that meets the criteria for intra-system surrogate sampling point designations; or within a group of water systems, that are designated by the state as the most vulnerable to contamination and, therefore, can be used to represent all the sampling points within the group.

(5) Validation sampling means sampling at one or more points represented by surrogate sampling points, in order to verify that the surrogate points are representative of those sampling points.

State Adoption and EPA Approval of Alternative Monitoring

The Act specifies that state alternative monitoring provisions will be treated as ''applicable'' national primary drinking water regulations, which means they must be enforceable under both state and federal law.[1] The Act defines an enforceable state requirement as a ''state program approved pursuant to this part.''[2] In order to assure that the state alternative monitoring provisions will be federally enforceable, EPA will review and approve the state program. Therefore, any state adoption of alternative monitoring requirements must be at least as stringent as the federal program and adhere to each of the following steps.

(1) State Program Description: The State will describe the information it will review, and its procedures and decision criteria for issuing waivers under Section A, designating surrogate sampling points under Section B, or allowing systems to sample biennially for nitrate under Section C. At a minimum, the State Program Description should include the criteria under Sections A–C (respectively) for each form of alternative monitoring that the state proposes to offer, and specify that the state will retain a record of the most recent vulnerability determination for each sampling point, including:

(a) Those resulting in a decision to grant a sampling waiver under Section A;

(b) Those resulting in a decision to allow the use of intra-system surrogate sampling points under Section B(1); and

(c) Those resulting in the approval of source water assessments and the location of geographically targeted sampling points based on those source water assessments under Section B(2).

(2) Notice and Comment: The state should provide notice and opportunity for public comment on the state program.

(3) Attorney General Certification: The Attorney General needs to certify in writing that the alternative state monitoring requirements were duly adopted under state law, are enforceable under state law, and provide adequate authority to meet EPA's alternative monitoring guidelines.

(4) State source water assessment program: The state must obtain EPA approval of its source water assessment program.

(5) EPA Review & Decision: Under section 1428(c)(1), a state's program submittal will be reviewed in conformance with 40 CFR 142.10 through 142.12.

(6) EPA Review of State Determinations: A regional administrator may annul a state decision to grant a waiver, to designate a surrogate sampling point, or to reduce nitrate sampling, under the procedures specified in 40 CFR 142.18.

(7) State Reporting: EPA will address state reporting requirements in the subsequent rulemaking for Chemical Monitoring Reform, which will incorporate these guidelines.

Dated: August 5, 1997.

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[1] See section 1418(c).

[2] See section 1414(l)(4).