ILLINOIS POLLUTION CONTROL BOARD
March 11, 1992

IN THE MATTER OF:	)	
	)	R91-3
SAFE DRINKING WATER ACT	)	(Identical in Substance)
UPDATE (7/1/90 - 1/31/91)	)	

PROPOSAL FOR PUBLIC COMMENT

PROPOSED OPINION OF THE BOARD (by J. Anderson):

Pursuant to Section 17.5 of the Environmental Protection Act (Act), the Board is proposing to update its regulations which are identical in substance to USEPA regulations implementing the Safe Drinking Water Act (SDWA). The Board rules are contained in 35 Ill. Adm. Code 611. The text of the proposed rules is in a separate Proposed Order, adopted this same day. The Board will receive written public comment for 45 days after the date of publication in the Illinois Register.

Section 17.5 of the Act provides for quick adoption of regulations which are "identical in substance" to federal regulations; Section 17.5 provides that Title VII of the Act and Section 5 of the Illinois Administrative Procedure Act (APA) shall not apply. Because this rulemaking is not subject to Section 5 of the APA, it is not subject to first notice or to second notice review by the Joint Committee on Administrative Rules (JCAR).

The SDWA program was drawn from 40 CFR 141 and 143 (1989). Only two amendments occurred during this update batch:

56 Fed. Reg. 1557	January 8, 1991
56 Fed. Reg. 3578	January 30, 1991

The two USEPA rulemakings appeared in January, 1991. The first concerned additional approvals for the use of the "MMO-MUG" test for E. coli. The second was the USEPA "Phase II" rules.

The Board normally "batches" USEPA rules which appeared in a calendar half year. This Docket would normally address USEPA during the period July 1, 1990 through December 31, 1990. However, no USEPA actions occurred during that time. The Board therefore extended the batch period to include January, 1991.

The Board will also address the additional approvals of the "MMO-MUG" test for E. coli negative results, which appeared at 57 Fed. Reg. 1850, January 15, 1992. This is closely related to the January 8, 1991, Federal Register, and hence can be added to this Docket without causing any delay.

PUBLIC COMMENT

The Board has received some public comment in advance of the formal proposal in this Docket. This is summarized as follows:

PC 1 Illinois Environmental Protection Agency (Agency) June 17, 1991

PC 2 Agency, June 19, 1991

PC 3 Environetics, February 10, 1992

PC 4 Agency, January 23, 1992

PC 3 and 4 requested inclusion of the January 15, 1992, Federal Register, which is discussed above, and in connection with Section 611.526, below.

PC 1 and 2 are preliminary comments by the Agency, which the Board received in the course of developing the Proposal.

"PHASE II" RULES

Most of this Update concerns the USEPA "Phase II" rules. This involves the adoption of "revised MCL's" for some eight inorganic contaminants, ten organic contaminants and fourteen pesticides and PCBs. Accompanying these revised MCLs is a major overhaul of the monitoring and reporting requirements.

The Board staff began working on the Phase II rules in February, 1991, shortly after they appeared in the Federal Register.

The Phase II rules consist of 19 pages of new federal regulations, in the Federal Register format. Compared to the other "identical in substance" programs, this would be a moderate sized rulemaking which could have been completed within a few weeks. However, as discussed below, it has taken 13 months to prepare this proposal.

Most USEPA rules subject to an "identical in substance" mandate are "pattern" rules which serve at least two purposes: they govern the conduct of the regulated public in states where USEPA administers the program directly, and they serve as patterns for the rules the states are supposed to adopt. Very few of the Phase II rules are pattern rules. Rather, most are "directives" to the states to adopt rules. While some of the directives are highly specific, others appear to allow the states wide latitude as to the text to be adopted.

Although the "directive" approach makes it in some ways easier to write approvable rules, it also imposes a greater

burden on the Board to draft new text. In very few cases is it possible to "just adopt the federal text". Almost every provision has to at least be converted from "The state shall require X" to "The supplier shall do X". Usually one needs to understand what X is to accomplish the conversion from directive to correctly worded State rule.

The main problem with preparing a proposal implementing the Phase II rules has been ambiguities and errors in the USEPA text. One way of looking at these is that, because USEPA is not writing "pattern rules", it is not necessary for USEPA to be very specific as to what it is requiring. In other words, USEPA is relying on the State to fill in gaps in its requirements. However, another way of looking at the Phase II rules is that they are just rife with errors.

Although the Board staff has not yet compiled a complete list, there appear to be well in excess of 1000 errors and ambiguities in the (19 page) Phase II rules. The general discussion below identifies more than 50 types of repeated errors. And, the Section-by-Section discussion identifies many more isolated errors. Moreover, the errors are so numerous that it was simply impossible to even note all of them in the Opinion.

At many points in the USEPA text, apparent errors occur at a rate greater than three errors per line. When errors become this dense, it is often impossible to understand what the intended meaning of the rule was. The process of developing the proposal became one of forming hypothetical meanings for rules, attempting to "best fit" the text to several hypotheses, and then editing the rule to conform with the best. This was extremely time consuming.

Beyond this level of review, the Phase II rules have a problem caused by the interaction of errors. The interpretation of each USEPA rule must be made in the context of other interrelated rules. These other rules are also rife with apparent errors. The result is that the interpretation of one USEPA rule may depend on the correct interpretation of several other USEPA rules.

During development of the Proposal, the Board staff sought help from USEPA and the Agency several times. For several rules, the Board obtained valuable insights which helped greatly in the formulation of the proposal. However, it took a great deal of time to get answers from these agencies. The staff stopped seeking clarification in this manner, after it became clear that it would have taken several more years to resolve all problems. The Board has determined that the most efficient way to proceed is to put a complete proposal out for comment, even with the knowledge that it may well be necessary to make it conform with USEPA's intended meaning for the "Phase II" rules.

REASONS FOR DELAY

Section 7.2(b) of the Act requires that identical in substance rulemakings be completed within one year after the first USEPA action in the batch period. If the Board is unable to do so, it must find that an "extension of time" is necessary, give the reasons why the one year period is insufficient, publish the finding and reasons in the Illinois Register and specify a date when the Board anticipates completion of the rulemaking. The Board entered a reasons for extension Order on January 9, 1992. The Board cited the errors in the Phase II rules, and indicated that it hoped to have a proposal out by March 1, 1992.

HISTORY OF SDWA PROGRAM

The SDWA rules were recently adopted in Docket R88-26. The Board entered a Proposed Opinion and Order on October 5, 1989. The proposal appeared on December 1, 1989, at 13 Ill. Reg. 18690. Following the public comment period, the Board adopted a "Final" Opinion and Order on May 24, 1990. The Board then allowed a post-adoption comment period. On August 9, 1990, the Board withdrew the May 24 Opinion and Order, and substituted a new Opinion and Order.

The actions on the SDWA rules are summarized as follows:

R88-26	August 9, 1990; 14 Ill. Reg. 16517, effective September 20, 1990. Original adoption (through June 30, 1989).
R90-4	Dismissed June 21, 1990 (No USEPA amendments July 1 through December 31, 1989)
R90-13	December 20, 1990; 15 Ill. Reg. 1562, effective January 22, 1991 (January 1, 1990 through June 30, 1990)
R90-21	Adopted November 29, 1990; 14 Ill. Reg. 20448, effective December 11, 1990 (Corrections to R88-26)

GENERAL DISCUSSION OF PROBLEMS IN DEVELOPING STATE RULES ERRORS AND AMBIGUITIES IN USEPA TEXT

Before entering into the Section-by-Section discussion of the Proposal, the Board will set forth a general discussion of issues which recur frequently in the detailed discussion. The first portion of this will address errors and ambiguities in the USEPA rules. The second portion will deal with problems which arise more from special Illinois situations than from errors in the USEPA rules per se.

Most of this Proposal is derived from the USEPA "Phase II" rules in the January 30, 1991, Federal Register. This rulemaking has many perceived errors. We have made every effort to attempt to correct each of these. This effort has been further complicated by the cumulative effect of the errors: The interpretation of many USEPA provisions depends on whether the Board's interpretation of other provisions was correct.

Most of the body of this Proposed Opinion is a line-by-line discussion of the errors in the USEPA rules. The Board has attempted to document exactly what it has changed in the USEPA rules, and why. This is for the purpose of soliciting meaningful comment on the Proposal, and to lay the groundwork for the final Opinion, which will memorialize these interpretations.

In this section of the Opinion, the Board will provide a generalized discussion of USEPA errors which are repeated. This discussion will be back referenced in more detailed discussion.

Authority to Correct USEPA Errors

Section 7.2 of the Act defines "identical in substance", and lists specific types of changes which the Board can make to USEPA rules. Section 7.2(a)(7) allows the Board to correct apparent typographical and grammatical errors in USEPA rules. Although some of the USEPA errors fall into this category, most fall outside it.

At one time typographical errors involved misspelled words, and would be present in only one occurrence of repeated text. However, spell checking has largely eliminated simple misspelling, so that a typo is more likely to be the wrong word, spelled correctly. Moreover, typos can propagate through a document through copying and phrasing, so that multiple occurrences no longer necessarily mean the language is not a typo.

The type of apparent grammatical error common in these rules involves sentences which have a grammatically correct reading, but which say something absurd. For example, "Don't put anything in the water which is harmful to fish of other than natural origin". Usually it is obvious what the sentence is supposed to say. If the Board can make a grammatically correct sentence with the apparent intended meaning by moving and changing a few words, it has done so.

Grammatical errors are closely related to logical errors, which are discussed below. In most cases USEPA uses "and" to mean "or", and vice versa. Where the resulting rule is absurd, the Board has corrected it as a grammatical error.

At some point the USEPA errors cannot be characterized as

grammatical or typographical errors. The authority to correct these goes back to the basic definition of "identical in substance" in Section 7.2(a) of the Act. The Board is supposed to adopt:

> State regulations which require the same actions with respect to protection of the environment, by the same group of affected persons, as would federal regulations if USEPA administered the subject program in Illinois.

Where the USEPA rule says "Do A", but USEPA would interpret this to mean "Don't do A" or "Do B" if it administered the Illinois Program, the Board has modified the language of the State rule to reflect USEPA's intent. Persons in Illinois would be required to do the same actions under the Board rule. The only difference is that they can read the Board rule and perform the required action, without first obtaining in each instance the proper interpretation of the USEPA rule.

One problem with this approach occurs when it is unclear what the USEPA intent is. In the proposed Opinion and Order, the Board has offered an interpretation of what each of these mean, and modified the rule to state what it interprets is the intended meaning. We must emphasize that USEPA, the Agency, suppliers or anyone else must express any disagreement in the public comment. If the Board receives no comment, it likely will adopt the rule as proposed; this will constitute a final determination as to what the USEPA rule intends to say, and will apply as Illinois regulatory law.

This mechanism cannot be used to correct what are perceived as substantive errors of USEPA. For example, the Board cannot decide that the USEPA MCL for a parameter is too strict, or not strict enough, and "correct" the error. As long as the USEPA rule has a meaning which makes sense, the Board will not disturb it. However, as will become apparent below, it can be difficult to discern whether a number of provisions in the Phase II rules do or do not fall into this category (apart from the numerical values of most of the MCLs).

We appreciate the difficulty in framing regulations. However, we believe we should make every effort to avoid repeating unclear or erroneous language at the State level. We note that, in typical identical in substance rulemaking, the most serious problems comprise less than 1% of the text, but take up 90% of the Opinion. This is not the case in this Docket. Serious errors appear to exist in more than 50% of the USEPA text.

Typos and Misprints

The Phase II rules have relatively few straight typographical errors. Most of these involve symbols, such as "≤". These are apparently wrong in the printed copy of the Federal Register from which the Board is working, although the problem may be one of legibility. However, they are correct on the diskettes provided by USEPA. The Board has generally followed the diskettes.

Conjunctions and Related Errors

CONJUNCTIONS

The Phase II rules usually use "and" to mean "or", and vice versa. The Board has attempted to discern the meaning of the rule, and inserted the correct conjunction, as appropriate.

It may be helpful to set out examples of the use of "and" and "or". When a rule says "If A and B are true, do X", it means that you only have to do X if both A and B are true. If A is false, you don't have to do X. Or, if B is false, you don't have to do X.

When a rule says "If A or B is true, do X", it means you have to do X if either A or B is true, or if both are true. Also, you don't have to do X if neither A nor B is true.

Confusion may arise with respect to the negation of "and". Suppose a rule says "Don't do X and Y". This is ambiguous as to whether it means "Do not do (X and Y)" or "(Do not do X) and (do not do Y)". There is a big difference between these two interpretations: Someone who does X, but not Y, is in violation of the latter, but not the former. When the Board sees these rules, it attempts to determine what USEPA means, and places the rule into a less ambiguous format. Of the two possible meanings, rules which really mean "Don't do (X and Y)" are rare, and are dealt with by making the language clearer.

AND/OR

"Don't do X and Y" more often means "(Do not do X) and (do not do Y)". The Board often expresses this as "Do not do X or Y", which is logically identical. In other words, "Don't kick and bite your brother" becomes "Don't kick or bite your brother".

Another type of logical error centers on the use of "and/or". The Administrative Code Division objects to the use of "and/or" in a rule. (1 Ill. Adm. Code 100.180, Style Manual, Section 1-21) As normally used in English, and as defined above, "A or B" means "A or B or both", which is exactly what "and/or" appears to mean.

The Board has generally modified the "and/or's" to accept the Code Division's usage. This usually involves replacing "and/or" with the equivalent "or". However, in some instances, it appears that USEPA really means "and", or something which requires an entire rewrite of the rule to accomplish.

QUARTER(S)

Closely related is the category of errors from using "quarter(s)" in provisions requiring monitoring in the "quarter(s)" in which a parameter reached its highest level. [For example, 40 CFR 141.23(d)(5) , Section 611.604(e)] This appears to be acceptable to the Code Division as an abbreviation for "quarter or quarters". However, in the context in which it occurs repeatedly, "or quarters" would appear to require monitoring in two or more quarters if equal maximum levels were reached at one sampling location. This would contradict more specific language requiring monitoring once each year (or period). The Board has therefore changed "quarter(s)" to "quarter", with the understanding that, if two or more quarters have equal maxima, the Agency is to pick one for future monitoring.

Another possible meaning of the USEPA use of "quarter(s)" is that it is addressing the possibility that different sampling points might reach maxima during different quarters. As the Board understands the USEPA rules, unless the contrary is indicated, they are addressing a single sampling point. In other words, when a rule says "initiate quarterly monitoring if you detect a contaminant", it means quarterly monitoring at that sampling point, but not in the rest of the system. The Board **solicits comment** as to whether this interpretation is correct, and as to whether any provisions need to be more specific on this point.

USEPA Guidance Materials

While the Board was working on the proposal, the Agency obtained from USEPA a set of charts with a graphical presentation of what these rules were supposed to say. The staff observed that, on many points, the charts not only said the opposite of the rules, but also were internally contradictory. The Board contacted USEPA headquarters, and was advised that both the charts and rules needed correction. The Board accordingly discarded the charts as a source of clarification. [40 CFR 141.24(f)(9), Section 611.646(e)]

In a few instances the Preamble to the USEPA rule provides guidance as to what a provision is supposed to mean. In at least one case, Section 611.296, the Board has completely rewritten the Section to say what the Preamble says, after observing that the adopted rule said the opposite of the Preamble. [40 CFR 141.111,

56 Fed. Reg. 3558] However, in most cases in which the Board has looked, the preamble is silent on what a given Section is trying to say. Since it is very difficult to find the discussion of a given Section in the Preamble, the Board has not undertaken a systematic search. However, commenters are invited to find the appropriate discussion to see if it squares with the Board's interpretation.

Delayed Effective Dates

USEPA adopted these rules with a delayed effective date, following the "old rule effective until (date); new rule effective after (date)" approach, which has been used in several recent rulemakings. This causes major confusion in the printed version of the CFR, since there are two printed versions of the affected sections until (date). It would help greatly if the rules could be formulated as: "until (date) do this; after (date) do that." To meet the "identical in substance" mandate within the specified time frames, the Board has had to essentially modify the USEPA rules so they say this. The alternative would be to set up a schedule of future rulemakings to revise the Board rules as the effective dates of the USEPA rules arrive. However, the time frames of Section 7.2(b) of the Act are triggered by the dates of publication, with no mention of federal delayed effective dates. Therefore, the Board has proposed to adopt rules presently, which will require compliance by the federal dates.

In connection with the inorganic contaminants, USEPA adopted a delayed effective date for the revised MCLs, but left the old MCLs in place until that date. [For example, 40 CFR 141.11 and 141.62 and Section 611.300] USEPA has adopted the same delayed date for the organic revised MCLs, but has not left the old MCLs in place pending that date. [For example, 40 CFR 141.12 and 141.61 and Section 611.310] This would leave no MCL for chlordane, lindane, methoxychlor, toxaphene and 2,4,5-TP, pending the effective date of the revised MCLs. The Board assumes this is an error by USEPA, and has proposed to retain these MCLs in Section 611.310 until the effective date for the revised MCLs. The Board **solicits comment.**

Are BATs Alternative or Sequential Processes?

The USEPA BAT tables have a fundamental ambiguity: does USEPA mean to be specifying alternative BATs for these parameters, or is it specifying a sequence of technologies which, taken together, constitute BAT? [For example, 40 CFR 141.62(c) and Section 611.301(c)] The Board assumes that, unless the contrary is indicated, the former is the case, since some of the entries are clearly alternatives which would not be placed in sequence.

Asbestos appears to be a contrary example. BAT is "2,3,8" or "coagulation/filtration, direct and diatomite filtration, corrosion control" ("C/F, DDF, CC"). It is unlikely that USEPA means to require "coagulation/filtration" followed by "direct and diatomite filtration". However, corrosion control could be used in conjunction with either of the other two. Apparently USEPA means that corrosion control ("CC") would be required only where corrosion has been found, in which case it would be required along with "C/F" or "DDF". The others appear to be alternatives. The Board has modified these provisions to actually say this, but **solicits comment.**

Monitoring Provisions Addressing Several MCLs

The USEPA rules address monitoring in blocks of related contaminants. For example, 40 CFR 141.23(c)(7) [611.603(g)] imposes monitoring for six inorganic contaminants. It reads:

> Systems which exceed the maximum contaminant levels as calculated in § 141.23(i) of this section shall monitor quarterly beginning in the next quarter after the violation occurred.

This is ambiguous in the context of a subsection which regulates six contaminants. Taken literally, it would require a violation of all six MCLs before quarterly monitoring kicked in. Although this interpretation is obviously wrong, it is still far from clear what this provision means. It could be read either as requiring monitoring just for the contaminant whose MCL was exceeded, or monitoring for all six, or, for that matter, all regulated contaminants.

The Board has generally construed these provisions as triggering stepped-up monitoring if any one contaminant exceeds the MCL (or other threshold). The additional monitoring is required only of the parameter for which the MCL was exceeded.

In actual practice the Agency may analyze for more parameters; here, however, what is required is being addressed. The Board **requests comment**, including whether we need to address additional contaminants which may be linked to the contaminant for which the level was exceeded.

Optional Additional Sampling

Several provisions appear to require State approval before a supplier can take samples beyond the minimum required. The Board does not see any reason why PWSs in Illinois should need prior approval before conducting additional monitoring, since the

Agency largely oversees the sampling and testing itself.[1] The Board has proposed to adopt a rule allowing additional samples without prior authorization, but requiring that all results be reported to the Agency.[2]

Structural Problems: Blocking of Related Text

40 CFR 141 has a small number of very large Sections. It would be much easier to follow if USEPA would break these Sections up into smaller Sections. It would then be possible to use the Table of Contents to find the topic sought, and the main text would not occur so far down in the outline. The Board followed this format when adopting Part 611 in R88-26, such that Board Sections generally correspond with USEPA's first level of subsections.

As was discussed in the R88-26 Opinion, pages 17-21, although the levels of subdivision have been promoted, the structure of Part 611 follows the USEPA rules very closely. One of the Board's goals in adopting these rules is to preserve as much of the structure of the USEPA rules as possible, in part for ease in comparing the texts.

The Phase II rules have a number of ambiguities which result from the failure to block together related text. Most of text of the Phase II rules is at the second level of subdivision. For example, 40 CFR 141.24(f) [611.646] consists of 21 numbered subparagraphs (with some subdivision beyond that). The rules actually include related blocks of subsections, such as: (f)(1) - (3), dealing with sampling points; and, (f)(7) - (10), dealing with "waivers". One problem with this structure is that it is very difficult to decide whether, for example, (f)(8) through (10) are setting conditions for the (f)(7) "waiver", or are a part of another type of "waiver". Moreover, it is not clear whether (f)(11) is a continuation of the "waiver" provisions (imposing quarterly monitoring on people who exceed "waiver" conditions), or a return of the main subsection (imposing quarterly monitoring whether a "waiver" has been granted or not).

These provisions would be much easier to read if the Board were to block them together under a subheading. For example,

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[1]There is a related provision in existing Section 611.491 which allows suppliers to run control tests in uncertified laboratories. The tests in this Section differ in that they might be done exactly like the required monitoring.

[2]As is discussed above, most analyses are conducted in Agency labs. This authorization to suppliers to conduct additional monitoring should not be construed as allowing them to force the Agency to analyze the samples.

(f)(1) - (3) could become (f)(1)(A) - (C). However, this approach would destroy the simple correspondence between the Board and USEPA rules. The Board has therefore not generally done this, except where other problems have forced a restructuring of the rules.

Where the Board has retained the USEPA structure, the Board has used other devices to clearly indicate the apparent blocking of these parallel subsections. The main devices are the addition of subsection headings, and explicit cross references.

Structural Problems: Awkward Arrangement

Much of the Phase II rules consists of specialized procedures for adjusting monitoring provisions, for example, 40 CFR 141.23(c)(2) - (6) [611.603(b) et seq.] One problem with this series of subsections is its scrambled order: Application, Conditions, Standard for action, Standard for conditions, Procedures, More about the Application and Revision. This would be much easier to use if it were in the chronological order in which the provisions would ordinarily arise in a proceeding: Application, Procedures, Standard for action, Standard for conditions, Conditions, and Revision. The Board has proposed to rearrange these provisions. The proposed language appears below.

Unless there are other problems, or unless the USEPA rule is very confusing, the Board has just left the scrambled order alone. However, in other cases the Board has rearranged these procedural provisions into a simpler order. In some cases this is done by preserving the USEPA subsection structure, but moving the provisions within that structure into a better order. In other cases, the Board has gone on to completely reorganize the subsection, along the lines discussed above. In either event, this destroys the simple correspondence between Board and USEPA subsection lettering. Where this has happened, the Board has added "Board Notes" to clearly mark the text, and to alert readers that provisions have been rearranged or restructured.

Structural Problems: Misplaced Provisions

DELETION OF SAMPLING ERRORS

Two provisions are apparently misplaced at multiple points. The first authorizes the State to "delete the results of obvious sampling errors" [for example, 40 CFR 141.23(f)(2) [611.606(b)]:

> If a ... confirmation sample is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to determine the system's compliance... **States have the discretion to delete results of obvious sampling errors.**

Read in isolation, this language seems to authorize the deletion of any "obvious sampling errors". As such, it would be seriously misplaced.

Read in the context of the rule on confirmation samples, the most obvious interpretation would be that this authorizes only the deletion of the confirmation sample. However, deletion of the confirmation sample would seem to go against the whole idea of taking a confirmation sample.

The Board suggests that this language authorizes only the deletion of the original sample, based on the results of the confirmation sample. The Board has reworded this provision so as to actually say this. For example:

> The Agency shall delete the original sample if it determines that a sampling error occurred, in which case the confirmation sample will replace the original sample.

So construed, the provision winds up correctly located with the confirmation sample provisions. The Board **solicits comment** as to whether this is the correct interpretation, and as to whether this is the only sample deletion mechanism, or whether there is another general mechanism which we have not identified.

NOTICE TO PORTION OF PWS

The second example of an apparently misplaced provision usually appears right next to the sample deletion requirement [for example, in 611.606(c)]. This provides for notice to only a portion of a separable system. It should cross reference the notice requirements of 40 CFR 141.32, instead of stating a new notice requirement. Furthermore, it needs to draw on the general rules in 40 CFR 141.29 for the decision as to whether the system is separable. The Board has generally proposed to insert cross references, and **solicits comment.**

Unnecessary Special Rules

The Phase II rules include a number of "special rules" which appear to say the same thing as the general rule applied to the special case. [For example, "Everybody has to take four samples. New sources have to take four samples."] These are apparently surplusage. Every word in a rule is supposed to be construed as having a meaning. The only way to give these rules a meaning is to construe the general rule to mean something different than

what it says.[3] The Board has noted many of these in the Opinion, and either deleted the special rule, or inserted a "Board Note" stating the result of the general rule as applied to a specific situation.

Does the Averaging Rule Apply?

The Phase II rules include several averaging rules associated with groups of contaminants. Clearly the averaging rule applies to a determination as to whether a supplier has violated the MCLs. Usually the USEPA rule specifically says this. The Board has generally followed the USEPA rule on this, but suggests that a general rule might be preferable, instead of repeated references. The Board **solicits comment.**

On the other hand, the rules also include a large number "trigger" provisions which require stepped-up monitoring, notices, etc., based on detection, the MCL, or some fraction of the MCL. Sometimes the trigger references the averaging rule, sometimes not. The Board is generally assuming that the averaging rule does not apply to these triggers, unless specifically stated. In other words, a single sample in excess of the MCL would trigger stepped-up monitoring.

It is potentially confusing that there are two general rules here which are unstated, and which go in opposite directions in very similar situations. Unless otherwise stated, the averaging rule applies to an MCL violation. Unless otherwise stated, the averaging rule does not apply to a trigger provision.

Confirmation Samples on a Case-by-Case Basis?

The Phase II rules allow the States to require "confirmation samples". [For example, 40 CFR 141.23(f) and Section 611.606] These rules are vague as to whether this is to be a programmatic decision which is to be made at the time the State sets up the program, or whether it is to be a case-by-case decision which the State is to make each time a situation arises. Because the USEPA rules do not include criteria by which the State would make a case-by-case decision, the Board has generally proposed to make these as programmatic decisions. Because there is a tradition of requiring confirmation samples in Illinois, the Board has generally adopted rules requiring confirmation samples in each instance, as appropriate for the group of contaminants.

The confirmation sample provisions are worded as self-

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[3]In the example, "Everybody" would be construed to mean "everybody except new sources". This would operate to exempt "new sources" from all other requirements, unless they were specifically included.

implementing rules. However, the Agency usually would be analyzing the sample, and would be notifying the supplier that the sample exceeded the MCL (or trigger). This notification would usually take the form of a sample request.

Some of the USEPA confirmation sample rules allow the State to require confirmation samples for "positive or negative results". As the Board understands this, a negative result would indicate either that the sample was below the MCL, or below the detection limit. In either case, in the absence of criteria from USEPA as to when to require these, and no tradition of requiring negative confirmation samples, the Board has not proposed to require these, but **solicits comment**.

Composite Samples

Several provisions authorize the State to allow "composite samples", in which samples from several sampling points are combined prior to analysis. If the composite exceeds a certain level, each sampling point must be resampled, if necessary, and individually analyzed. [For example, 40 CFR 141.23(a)(4), Section 611.601].

These "composite samples" are different from the usual type of composite sample, in which aliquots drawn from a single sample point at different times are mixed prior to analysis. That type of composite sample serves as a simpler way to obtain a time-weighted average than analyzing individual aliquots.

The "composite samples" involved in this rulemaking involve aliquots taken at different sampling locations. Such a composite sample does not necessarily correlate with the water quality at any point, and hence does not provide any direct information about compliance. To use the information, it is necessary to define fractions of the MCLs (or detection levels) which, if exceeded, indicate that one or more of the sampling points may have exceeded the MCL. If the composite sample exceeds the specified fraction, then individual samples have to be taken at each sampling point.

These provisions are apparently aimed at reducing analytical costs. Whether they succeed depends in part on how often one has to resample. In Illinois, where the Agency analyzes most samples, whether composites are worth the trouble is largely an Agency management decision. As the Board understands it, the Agency generally opposes this type of compositing. (PC 2)

A similar provision exists in 40 CFR 141.24(g)(7) [611.648(g), renumbered to 611.647(g)]. As was discussed on p. 95 in the R88-26 Opinion, the Agency opposed adoption of that provision. However, the Board construed that provision as a "pattern rule", which the Board was required to adopt. The Board

rule allows the Agency to decide whether to allow composites on a case-by-case basis.

On the other hand, the provisions involved in this rulemaking are clearly programmatic directives, and they are totally optional. The Board has therefore not proposed to adopt the composite sample rules at this time. **The Board solicits comment, especially from the Agency, as to what its position is as to whether the Board ought to adopt the composite sample rules.**

An option would be to adopt these rules, but allow the Agency to act on a case-by-case basis. The main drawback to this is that it would add considerable length and complexity to the rules, which would accomplish nothing if the Agency is not going to use the compositing provisions anyway.

Previous Data

Several provisions allow the use of "previous data" to meet initial monitoring requirements or to get a "waiver" from a monitoring requirement. For example, 40 CFR 141.23(b)(10), [611.602(j)]:

> If monitoring data collected after January 1, 1990 are generally consistent with the requirements of Section 141.23(b), then the State may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

There is no problem in principle to allowing such previous data. However, these provisions seem to include a galaxy of editorial problems. Where these problems can be resolved, the Board has allowed the prior data. Where no simple solution presents itself, the Board has proposed not to allow the prior data, but has solicited comment as to what the USEPA rule means.

One basic question is the standard which the prior data must meet. Usually this is something like "generally consistent" with the monitoring requirements. This could be construed as "more or less" consistent with the monitoring requirements. The Board does not believe this is USEPA's intent. Rather, prior data should be accepted only if it is fully consistent with the new requirements, other than having been taken prior to the date on which the new monitoring was required. Accordingly, the Board has edited this to allow prior data which is "consistent" with the new requirements.

Some of the past data provisions could be read to mean "generally consistent with monitoring requirements in existence when the data was collected." The Board does not accept this interpretation. The monitoring needs to be consistent with the

new rules.

Another question has to do with the future use of "prior data". As written, some provisions appear to allow suppliers to use "generally consistent" monitoring data even after the new monitoring requirements become effective. The Board does not accept this interpretation either. After the federal effective date, all monitoring must be fully in compliance. The Board **solicits comment** on this.

After USEPA adopts new rules, the Agency sometimes requests samples based on the new USEPA rules, but prior to the USEPA effective date, and prior to Board adoption. The Board has generally proposed to limit prior data to that collected pursuant to such sample requests. An example is in Section 611.602(j):

> Data collected after January 30, 1991, but prior to the effective date of this Section, pursuant to Agency sample request letters, are deemed to meet the requirements of this Section, if the data are consistent with 40 CFR 141.23.

Although this solves the problems noted above, it is a more restrictive limitation on prior data than appears to be required by the USEPA rule. The Board **solicits comment** as to whether there are other types of past data which ought to be allowed, including specific monitoring programs which may have been undertaken in the past. The Board requests specific language identifying any such data.

Definitions with Ambiguous Scope ["Detected"]

The Phase II rules have a few definitions which may be stated as applying more broadly than USEPA intended. For example, 40 CFR 141.24(f)(7) and (10) include parenthetical definitions of "detected", which are stated as being "for purposes of this section". However, it is likely that USEPA meant the terms to be defined only for subsection (f), since parallel provisions exist in the other subsections. The Board has dealt with these on a case-by-case basis, in some instances following the USEPA text, and in others following the apparent intent. These are individually discussed below, with a request for comment.

Failure to use Terms as Defined

The Phase II rules have a problem with failure to use terms as defined in 40 CFR 141.2. This is a continuation of a long-standing problem with Part 141. The Board has generally corrected these to express the apparent intent, using defined terms.

"PWS" and "Supplier"

As was discussed in R88-26 (Opinion, p. 39), 40 CFR 141.2 defines "PWS", and related terms, as the physical plant, and "supplier of water" as the owner or operator of a PWS. However, this term is almost totally unused in the rules. Rather, USEPA uses "PWS", "CWS" or "system" to mean the owner or operator. In R88-26, the Board shortened "supplier of water" to "supplier", and generally edited the text to use this term, and will follow that convention here.

In some situations USEPA appears to be using limited types of PWS, such as "CWS", so as to limit the applicability of a provision. In such cases the Board has used "CWS supplier" to indicate the special type of owner or operator. In some Sections the "CWS" is dropped after an initial applicability statement when it is sufficiently clear that the subsequent use of the broader term "supplier" does not expand the scope.

"Compliance Period" and "Cycle"

USEPA has defined two new, important terms in this rulemaking. These are "compliance period" and "compliance cycle". These are specifically defined in 40 CFR 141.2, both as to their length and starting dates. However, in the rules, USEPA has almost always attached phrases such as "three-year" or "starting on (date)" to these terms. At many places these parenthetical redefinitions could be interpreted as setting up new types of compliance periods and cycles which would be inconsistent with the basic scheme set out in the definitions. The Board construes these as parentheticals merely intended to explain the new terms to the readers, and, as such, has removed them.

The Board assumes that USEPA intends all monitoring to be keyed into the compliance period/compliance cycle system set up in 40 CFR 141.2. Unless the contrary is clearly indicated, "waivers", etc. will be issued for even periods or cycles. For example consider a rule which allows a "waiver" from a monitoring requirement for a compliance period. A supplier may apply for the adjustment prior to the beginning of the compliance period. The Agency may also grant the adjustment prior to the beginning of the period. The adjustment will govern monitoring for the parameters in question during the period, and will expire at the end of the period. Normal monitoring will then be reinstituted, unless the Agency has granted a new adjustment.

Undefined Terms

USEPA uses a large number of undefined terms. These include the following:

Combined system
Distribution system
Ground water system
New sources
Point of entry
Repeat monitoring frequency
Rounds of monitoring
Surface water system
System

"System"

The first problem area is the undefined term "system". This is related to the above discussion concerning the use of "PWS" to mean "supplier of water". In most cases, the Board has changed "system" to "supplier".

In other situations, USEPA apparently uses "system" to mean "PWS, CWS, NTNCWS or transient, non-CWS, as appropriate", where the types of CWS represent limited subsets of "PWS". The Board has generally replaced these with the most general term, "PWS", with the understanding that this is not intended to expand the applicability, which should be set out specifically somewhere in any rule with limited applicability.

"GWS" and "SWS"

The second problem area is the undefined terms "ground water system", "surface water system" and "combined system". These terms are not only undefined, but may have a shifting meaning in various parts of the rules. Usually a rule provides separately for ground and surface systems, with a note placing the combined systems into one category or the other, depending on the parameter. This is very confusing. The Board has therefore defined "GWS", "SWS" and "mixed system" as Section or Subpart definitions, where needed. The rules have been edited to specifically state whether they apply to GWSs, SWSs or mixed systems. The Board **solicits comment**.

In connection with these definitions, it became apparent that the existing definition of "surface water" does not include "groundwater under the direct influence of surface water", an important new concept recently added to the USEPA rules. This is defined in Section 611.212 in the Board rules, and discussed on p. 42 in the R88-26 Opinion. It is apparent that USEPA intends to regulate systems drawing "groundwater under the direct influence of surface water" as SWSs. One way to accomplish this would be to add it to the definition of "surface water". This would, however, create a circular definition, since the term "surface water" is used in defining "groundwater under the direct influence of surface water". The Board has therefore proposed to add the concept to the definition of "SWS".

"Point of Entry" and "Distribution System"

These are two important terms which are used to define the sampling point locations. As is discussed below, in connection with sampling points, the Board has proposed definitions of these terms.

Other Terms

The remaining terms, "rounds of monitoring", "new sources" and "repeat monitoring frequency", in some cases appear to be defined by the provisions in which they appear. In several instances the Board has moved the term out of what appears to be the defining language, and placed it into a heading, so that a local definition is created. In other cases, the Board has just requested comment as to the meaning.

Timing of Provisions [Resampling Times]

There are many provisions which require resampling or notification within certain time frames. For example, 40 CFR 141.23(f)(2), [611.606(b)]:

> [T]he State may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point.

This is ambiguous as to when the time frame starts. In Illinois, the Agency analyzes most samples. Therefore, at least for these suppliers, the trigger must be notification of the result. Indeed, where resampling is required, the trigger would be an Agency request for a new sample.

For suppliers which use private labs, or which analyze their own samples, the USEPA intent is apparently that the resampling should be given within a certain time after the supplier learns the result. This is the formulation which the Board has followed.

Some of the USEPA rules are worded so that they appear to be triggered by the original sampling. One concern may be that too much time would elapse while the samples were waiting to be analyzed. However, the holding time for analysis is specified separately. The Board has not construed these provisions as indirectly setting a shorter holding time.

An example of the Board's resolution of these types of problems is in Section 611.606(b):

> [T]he supplier shall take a confirmation sample within 24 hours after the supplier's receipt of notification

of the analytical results of the first sample.

Sampling Point Rules

The Phase II rules contain several sets of provisions which specify the locations at which samples must be taken. There are major differences in the wording which have no obvious substantive significance. Moreover, each set appears to be either internally contradictory, or, at the very least, their interrelationship is unclear. The organic sampling point rules in 40 CFR 141.24(f)(1) - (3) [611.646(a) - (c)] present special problems of construction. The Board will set forth a complete discussion of this here, as an example, and refer back to it in the discussion of the others, which have fewer problems.

USEPA SAMPLING POINT RULES

40 CFR 141.24(f)(1) - (3) govern organic sampling points. They read as follows:

> (1) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). If conditions warrant, the State may designate additional sampling points within the distribution system or at the consumer's tap which more accurately determines consumer exposure. Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.
>
> (2) Surface water systems shall take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment (hereafter called a sampling point). If conditions warrant, the State may designate additional sampling points within the distribution system or at the consumer's tap which more accurately determines consumer exposure. Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system. [Note: For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.]

(3) If the system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water representative of all sources is being used).

STRUCTURE

The first problem concerns the structure of the rule. There are two ways the rule could be written: one could define "sampling point", and then require samples at the "sampling point"; or one could just require samples at certain points. However, requiring samples at a certain point, and then defining that point as the "sampling point", places the definition after the principal usage in the rules. Furthermore, "sampling point" is redefined in the next paragraph, creating fundamental confusion when the term is subsequently used. As is discussed below, the Board has proposed to replace this with a simple rule requiring samples at certain points, but **solicits comment.**

The next problem concerns the large block of repeated text in the second and third sentences of (f)(1) and (2). The Board has proposed to consolidate these, but **solicits comment.**

LACK OF DEFINITIONS

The next problem concerns the need for definitions of "entry point" and "distribution system". The Board has proposed definitions for these terms. In particular, as the Board understands the term, the "entry point" is a point downstream from the final treatment operation, but upstream of the first user, and upstream of any mixing with other water.

The next problem concerns the need for a definition of "groundwater system", and "surface water system", coupled with the parenthetical inclusion of mixed systems in the latter category. The Board has proposed definitions for "GWS", "SWS", and "mixed system", and provided rules governing "GWSs" on the one hand, and "SWSs" and "mixed systems" on the other. This is intended to avoid confusion after the proposed radium rules are adopted, since the latter regulate mixed systems as GWSs.

The next problem is the use of the undefined term "system" to mean "PWS" or "supplier", as is discussed in general above.

SAMPLING POINT FOR GWSs

The next problem concerns the meaning of the operative language for the sampling points for GWSs in (f)(1):

> [A] minimum of one sample at **every** entry point to the distribution system which is representative of **each** well **after treatment**...

As the Board interprets this rule, it would work in the following example. Consider a PWS with two wells, each of which contributed water to its own treatment plant, each of which had its own "entry point". The supplier would have to take two samples, each representative of one well after treatment. However, consider a system consisting of three wells feeding raw water into a single treatment plant and a single entry point. How could one take a sample at the entry point which would be representative of "each" well "after treatment"? As the USEPA rule is worded, one would have to take three samples at different times, each with only one well operating. However, this would contradict the "normal operating conditions" language in (f)(3), which is discussed below, as well as the basic concept of one sample at each sampling point.

The Board suggests that the specific language concerning "normal operating conditions" in (f)(3) is the real USEPA rule governing representativeness, and that the "representative of each well" language in (f)(1) is surplusage, stating the result of (f)(3) as applied to a specific situation for the guidance of the reader. The requirement of (f)(1) is therefore simply to take a sample "at each entry point". The Board has proposed to adopt a rule along these lines, but **solicits comment**.

SAMPLING POINT FOR SWSs

The next problem concerns the grammar in the operative language concerning surface systems in (f)(2):

> [A] minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system **after treatment**...

This appears to have a misplaced modifier. The Board assumes this should read:

> [A] minimum of one sample at points in the distribution system that are representative of each source **after treatment** or at each entry point to the distribution system...

At a deeper level, however, the entire "representative" clause appears to be misplaced. The samples taken at the entry point need to also be "representative". So construed, the SWS rule suffers from the same problems as the language for wells. Suppose there are three reservoirs feeding into a single treatment plant. How could one take a sample in the distribution

system (or at the entry point) which would be representative of "each" source after treatment? The Board has proposed to simplify the language, so that the points would be representative of the "sources" together. Furthermore, the representativeness concept needs to be controlled by the language in (f)(3). The Board **requests comment.**

ONE OR TWO ADJUSTMENT PROCEDURES?

The next problem concerns the relationship among sentences 1, 2 and 3 in (f)(1) and (2). Are sentences 2 and 3 to be read together as establishing a single procedure for modifying the point in sentence 1, or do they represent two different procedures? In other words, do sentences 2 and 3 contemplate a single procedure for modifying the sampling point to a new point "which more accurately determines consumer exposure" and is "more representative of each source or treatment plant"? Or, does sentence 2 authorize an additional point "which more accurately determines consumer exposure", and sentence 3 a point which is "more representative of each source or treatment plant"?

The main argument against the "two procedure" interpretation is that, while sentence 2 specifies that "the State may designate", no such language appears in sentence 3. This makes it look like two conditions for one determination. However, in practice, the conditions of sentences 2 and 3 are such that it would be virtually impossible to simultaneously meet both conditions. Generally, to find a point which "more accurately determines consumer exposure", one would have to move downstream, closer to the consumers. However, to find a point which is "more representative of each source or treatment plant", one would have to move upstream, toward the source. The Board has therefore construed these as two different procedures, but **solicits comment.**

PROCEDURES FOR MODIFICATION OF ADDITIONAL SAMPLING POINTS?

The next problem concerns the following clause in sentence 3 in (f)(1) and (2):

> Each sample must be taken at **the same** sampling point unless...

Read in isolation, this seems to say that all the samples taken by the operator have to be taken at one point. This is obviously not what USEPA means. The rest of the rule is talking about multiple sampling points.

When this sentence says "the same sampling point", it appears to refer to "the" sampling point designated in sentence 2. In other words, sentence 3 would be a procedure for modifying the point established in sentence 2. However, it seems to make

no sense at all to have a rule which moves from the generally required point, A, to point B, in order to "more accurately determine consumer exposure", and then move that point to C, to make it "more representative".[4]

We construe this language as likely meaning that sentence 3 is referring to the generally required sampling point in sentence 1. This is consistent with the "two procedure" interpretation above. The Board **requests comment.**

"MORE REPRESENTATIVE" SAMPLING POINTS

The next problem concerns the "more representative" standard itself. As construed above, sentence 3 of (f)(1) and (2) is a separate procedure which allows the supplier to move the sampling point to an alternative point which is "more representative of each source, treatment plant, or within the distribution system". As is discussed below, the "representativeness" concept needs to be collected into a single provision governed by (f)(3).

This presents a question then as to what the "more representative" procedure of sentence 3 is saying. One possibility is that it is just saying: "if you didn't start sampling at the 'representative' point in the first place, move to the 'representative' point now". However, this type of rule is not necessary, since this is always understood. If this is all the provision means, it should be deleted as surplusage.

The other possibility, which the Board suggests is correct, is that sentence 3 is allowing operators to adjust sampling points so as to make it easier or cheaper for them to take the samples. However, the "more representative" terminology may not fit this procedure. For example, consider the simplest case, a single well, feeding into a treatment plant which feeds into a single main. (f)(1) would require sampling at the "entry point". Suppose the "entry point" is inaccessible. The only way the supplier could get an alternative point would be to show that some downstream point is "more" representative of the source. How would this be possible? It seems that there is a need for a rule which would allow the supplier to show that a downstream point is equally "representative". The Board has proposed to retain the "more representative" language, but **solicits comment** as to whether "equally representative" points ought to be allowed.

[4]When an agency modifies a decision, it is usually applying the same criterion to new facts. As this rule is written, it appears to require modification based on wholly different criteria. Indeed, as is discussed above, the criteria for sentence 3 seem to be the opposite of sentence 2.

DEFINITION OF "REPRESENTATIVE"

The next problem concerns the language of (f)(3), which the Board takes to be a definition of "representative":

> If the system draws water from more than one source and the sources are combined before distribution, the system must sample **at an entry point** to the distribution system during periods of normal operating conditions (i.e., when water representative of all sources is being used).

As discussed above, there is language in (f)(2) which authorizes sampling within the distribution system. How does the "entry point" language in paragraph (3) relate to paragraph (2)? There are four possible ways to read this language. The first is that it means to override all the language in the foregoing paragraphs, so as to require all sampling to be at "an entry point". This is unlikely, since (f)(2) goes to such lengths to specifically authorize the distribution system samples.

A second interpretation is that the condition which follows applies only to sampling "at an entry point". In other words, it would be acceptable to sample in the distribution system during periods of abnormal operations, when all sources were not being used. This doesn't appear to make any sense either.

A third interpretation is that, if a system draws water from more than one source, "distribution system" samples are prohibited, and samples have to be taken at an "entry point" during "periods of normal operations". However, there are at least two problems with this language. For one thing, this would make (f)(3) strictly subsidiary to (f)(2), contrary to the overall structure of the USEPA rule. Moreover, this would mean that the "normal operating conditions" language would not apply to entry point samples for wells under (f)(1). The Board has rejected the third interpretation, but **solicits comment.**

We suggest that the most likely interpretation of "at an entry point" is that this is mere surplusage, stating the result in a special case for the aid of the reader. As construed by the Board, this sentence is defining "representative", and it applies whether sampling is at an entry point or in the distribution system. The Board has therefore proposed to reword this provision as a definition of "representative", but **solicits comment.**

The next problem concerns the standard of (f)(3) itself:

> [T]he system must sample ... during periods of **normal operating conditions** (i.e., when water **representative of all sources** is being used).

Suppose a system has wells which it uses only during the summer to meet peak water demand. Suppose these wells have very different contaminant levels than a reservoir which is ordinarily used in the fall, winter and spring. One could interpret this language to mean that the system could not sample except in the summer. The Board has rejected this interpretation, which would be inconsistent with other provisions which specifically require quarterly samples.

A second interpretation is that (f)(3) would require the supplier to bring the summer-time wells into operation at other times of the year just for the purpose of taking the samples. Returning to the prior example, suppose the reservoir had high nitrate levels, and the summer-time wells had low levels. This interpretation would require sampling at times when the nitrate level was diluted by well water which would not ordinarily be present at that time of the year. In addition to being burdensome to the supplier (to turn on wells just to sample), this would produce samples which would not be "representative", in the usual sense of the word, of the water being delivered to the customers at that time of the year. A much more "representative" picture would be obtained by averaging four quarterly samples, or by taking an annual sample during the "highest quarter", under normal seasonal operating conditions. The Board has therefore rejected this interpretation. **The Board solicits comment, especially from USEPA, as to whether it is correct in rejecting this interpretation.**

The Board suggests that the correct interpretation of (f)(3) is that it means "during periods of normal **seasonal** operations", but **requests comment.** The concept of **"representative of all sources"** appears in the general definition of "representative" in the proposed language.

COMPLETENESS OF THE USEPA RULE

The final problem concerns what is missing from the USEPA rule. The rule does not appear to address how many sampling points are needed for a given system. At a minimum, shouldn't the rule say that the set of sampling points needs to be representative of the entire PWS? Is some of the language we find confusing, as discussed above, trying to say this? The Board **requests comment.**

Another missing component is that contaminants may be expected to decrease (or increase) in the distribution system. For example, an organic contaminant could be converted to a different contaminant by the chlorine residual in the distribution system. The USEPA rule does not appear to say that samples in the distribution system should be taken at points where the maxima are expected. The Board **solicits comment** on this.

PROPOSED SAMPLING POINT RULES FOR ORGANIC CONTAMINANTS

The Board has proposed to resolve the above problems with the following language, which appears as Section 611.646, discussed below:

a) Definitions. As used in this Section:

"Distribution system" includes all points downstream of an "entry point".

"Entry point" means a point just downstream of the final treatment operation, but upstream of the first user and upstream of any mixing with other water. If raw water is used without treatment, the "entry point" is the raw water source. If a PWS receives treated water from another PWS, the "entry point" is a point just downstream of the other PWS, but upstream of the first user on the PWS, and upstream of any mixing with other water.

"GWS" means "groundwater system", a PWS which uses only groundwater sources.

"Mixed system" means a PWS which uses both groundwater and surface water sources.

"Representative" means that a sample is expected to reflect the properties of water averaged over the period of time and portion of the PWS to be sampled. To be representative, a sample must be taken under normal seasonal operating conditions.

"Source" means a well, reservoir or other source of raw water.

"SWS" means "surface water system", a PWS which uses only surface water sources.

"Treatment" means any process: which changes the physical or chemical properties of water; which is under the control of the supplier; and, which is not a "point of use" or "point of entry treatment device" as defined in Section 611.101. "Treatment" includes, but is not limited to: aeration, coagulation, sedimentation, filtration, activated carbon, chlorination and fluoridation.

b) Required sampling. Each supplier shall take a minimum of one sample at each sampling point at the times required in Section 611.646(u). Each sampling point must be "representative." The total number of sampling points must be representative of the water delivered to users throughout the system.

c) Sampling points.

1) Sampling points for GWSs. Unless otherwise provided by SEP, the following are the sampling points for GWSs: Each entry point.

2) Sampling points for SWSs and mixed systems. Unless otherwise provided by SEP, the following are sampling points for SWSs and mixed systems:

A) Each entry point; or

B) Points in the distribution system.

3) Additional sampling points. The Agency shall, by SEP, designate additional sampling points in the distribution system or at the consumer's tap if it determines that such samples are necessary to more accurately determine consumer exposure.

4) Alternative sampling points. The Agency shall, by SEP, approve alternate sampling points if the supplier demonstrates that the points are more representative than the generally required point.

Programmatic or Case-by-case Decisions?
[Confirmation Samples]

The Phase II rules include many provisions which direct or allow the State to make a decision. For example: "The State may require confirmation samples". Most of these are ambiguous as to whether USEPA expects the State to make a decision at the time it sets up the program, or, alternatively, on a case-by-case basis as the situation arises in the course of administering the program. If the USEPA rule contemplates a programmatic decision, then the Board must generally make the decision (whether to require confirmation samples) at the time it adopts the rules. For example, the Board would adopt a rule providing that "The supplier shall take a confirmation sample if any sample exceeds the MCL". (PC 2) On the other hand, if USEPA contemplates a case-by-case decision, the Board needs to adopt a rule which will

usually specify that the Agency is act on a case-by-case basis. For example, the Board rule might provide: "The Agency shall require a confirmation sample if..."

Many of the USEPA provisions include a criterion for State action which includes factors which are obviously appropriate for case-by-case decision in the course of administering the program. These the Board has rendered into State law as a case-by-case decision. These are usually to be made by the Agency. In a few cases they are to be made by the Board. A general discussion appears below concerning how the Board decides whether a given decision is to be made by the Board or Agency.

Since the Board is the agency with rulemaking authority over this program, programmatic decisions are intrinsically to be made by the Board. In other words, the Board makes the decision in this Docket at the time it adopts the rules.

Few of the USEPA provisions are expressly calling for a programmatic decision. Rather, the Board has inferred the programmatic nature of the decision from the absence of a criterion which could be applied on a case-by-case basis. Indeed, in most of these provisions, there is no criterion at all.

One weakness in this analysis is that some of these USEPA provisions may actually be calling for a case-by-case decision, but have omitted the criteria for decision from the rule. If commenters want these to be treated as case-by-case decisions, they will have to give a criterion for the decision. The Board **solicits comment.**

Programmatic Directives

OPTIONAL PROGRAM COMPONENTS

Most of the programmatic directives simply say "The State may..." or "The State shall..." do something, with no criteria for the action. Where the USEPA rule says "may", with no criteria, the Board has construed this as an complete elective from the USEPA perspective.

Sections 7.2 and 17.5 of the Act require the Board to adopt "identical in substance" rules, which are defined as rules "which require the same actions ... by the same group of affected persons as would federal regulations if USEPA administered the subject program in Illinois." The status of the elective provisions is ambiguous, since the USEPA rules are unclear as to whether USEPA would require this program component in a USEPA-administered program. There are a number of factors which the Board considers in deciding whether the elective provisions are necessary and appropriate for the Illinois program. One factor

is whether the provision is necessary to the program, in the sense that the program would be incomplete and unworkable without the component. Another factor is whether there is a tradition of similar requirements in previous Board rules.

ABSENCE OF PATTERN RULES

Many of the USEPA programmatic directives also provide a "pattern" for the Board to follow. In some cases, however, the rule the State is to adopt is "prescribed" in more general terms. Section 7.2(a)(3) authorizes the Board to adopt such regulations "to the extent possible consistent with other relevant USEPA regulations and existing State law". In most of these cases, the content of the State rule can be formed by rearranging the prescription into a pattern. [For example, see 40 CFR 141.23(b)(9). Section 611.602(i)]. However, in a few cases the Board has to request comment as to the appropriate text of the prescribed rule.

Subjective Criteria for State Action

When the USEPA rule is calling for the State to adopt a rule providing for a case-by-case decision, there generally needs to be a criterion for the State action. The criteria specified in the USEPA rules have a lot of problems. These are discussed in general in the following Sections. Specific criteria which are repeated in the rules are discussed below the general problems.

The USEPA rules include a few subjective criteria, such as "If the State director believes X", or "If the system believes X". These have generally been converted to objective standards.

A closely related problem concerns rules which specify personal decisions by the director of the "State agency", Regional Administrator or Administrator. These have generally been rendered as collective decisions by the appropriate agency.

The USEPA BAT rules are also worded as personal decisions by the USEPA administrator. These have been reworded as collective decisions. However, no State action is involved, since the State will not be involved in directly specifying BAT. Rather, the State rule will specify BAT as determined by USEPA.

Criteria Worded as Preconditions to Filing Application ["Vulnerability Assessment"]

Among the more annoying USEPA provisions are the criteria which are worded as preconditions to the filing of the application, rather than as criteria on which the State is to act on the application. An example is 40 CFR 141.23(b)(2) [611.602(b)]. The provision reads: "If the system believes it is not vulnerable ..., it may apply ... for a waiver..." As worded,

if a request is filed, the State has to determine whether the system truly believed it was not vulnerable. Whether the system in fact was vulnerable is irrelevant, but the system is subject to enforcement the State determined that the system actually believed it was vulnerable when it filed the request. The Board has proposed this as an objective standard for State action.

"Consideration of Factors" Criteria
["Vulnerability Assessment"]

Some USEPA criteria for case-by-case State action are worded as "considerations" of certain factors. [For example, 40 CFR 141.23(b)(3)]. In some cases, it is clear that this is just sloppy drafting, and that there really are definite criteria on which the State is to act. In these situations, the Board has made the appropriate edits to the USEPA rule. However, in other situations, it is clear that USEPA means for the State to consider a set of factors, and render a result based on a balancing of the factors, but without a hard rule linking the result to a certain criterion. These are generally acceptable, and have been retained in the State rules.

Some USEPA rules have a mixture of criteria and considerations. These might take the form of "The State shall grant the waiver if A, B and C are true, considering X and Y". In some instances it is likely that USEPA really means this. In other situations, however, there is a linkage between the criteria and the considerations. For example, consideration X might simply be a paraphrase of criterion B. In such cases, the Board has attempted to combine the considerations and criteria into a simpler rule.

Fractured Criteria

Many USEPA rules have the criteria for case-by-case decision spread over several subsections. For example, subsection (a) might say: "The State shall grant a waiver if A". Subsection (b) would then say: "The State shall grant a waiver if B". The Board has generally tried to group these so that the rule says: "The State shall grant a waiver if A and B". However, sometimes the criteria seem to be contradictory when they are brought together. In such cases, the Board has attempted to discern USEPA's intent, and edit the criteria so as to avoid conflict. In such cases, however, there is always a possibility that USEPA intends two types of "waivers", A and B, with different criteria. [For example, 40 CFR 141.24(f)(9) and (10) and Section 611.646(i) and (j)].

Repeated Criteria

Closely related to the fractured criteria are the repeated criteria. In many rules, USEPA seems to repeat the same

provision several times. In such cases, the Board has attempted to consolidate the repeated provisions.

For one thing, repeated provisions are objectionable because they are verbose. Second, unless the provisions are repeated exactly, you wind up with a loophole or a contradiction, to the extent the repetitions do not agree exactly. Third, rules of construction argue against mere surplusage, opening the door to interpretations which give meaning to each repetition, which meaning is unlikely to bear much resemblance to the intent.

Adequacy of Specific Criteria

The Phase II rules include a number of specific criteria which occur numerous times. These are discussed in the following sections of this Opinion. Criteria which occur less frequently are discussed in the section-by-section portion below.

"RELIABLY AND CONSISTENTLY" BELOW THE MCL

Many USEPA provisions allow the State to reduce the monitoring frequency if "the system is reliably and consistently below the MCL". [For example, 40 CFR 141.23(b)(9) and Section 611.602(i)]. What does "reliably and consistently" mean? For example, would the Agency be justified in rejecting, as unreliable or inconsistent, data with a wide deviation, even though it was below the MCL? Could the Agency refuse to reduce the monitoring if data showed an upward trend toward the MCL?

The Board has proposed to add the following definition, based in part on PC 2:

> "Reliably and consistently" below a specified level for a contaminant means that:
>
> > Levels are below the specified level;
> >
> > The distribution of data is such that it is unlikely that future individual measurements will exceed the specified level unless the long term average increases;
> >
> > The data does not show an upward trend toward the specified level; and
> >
> > There are no factors which show that the source is vulnerable to the contaminant.

CATCH-22

Several USEPA rules have what can only be described as "Catch-22". This is associated with the "reliably and

consistently" language above. For example, 40 CFR 141.23(d)(2) [Section 611.604(b)]:

> ...the repeat monitoring frequency for ground water systems shall be quarterly for at least one year following any one sample in which the concentration is ≥50 percent of the MCL. The State may allow a groundwater system to reduce the sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than the MCL.

These provisions trigger quarterly monitoring if a single sample equals or exceeds 50% of the MCL, but allow a return to annual monitoring after 4 quarterly samples, if the supplier is "reliably and consistently below the MCL". Suppose a PWS takes a sample which is 60% of the MCL. It then goes to quarterly sampling, which is "reliably and consistently" at 60% of the MCL. The State then reduces the monitoring frequency back to annually. The PWS then takes an annual sample, which is still 60% of the MCL. Under the rule as worded, the supplier would then have to reinitiate quarterly monitoring. Such a supplier would be caught in an infinite loop, oscillating between quarterly and annual monitoring, with lots of paperwork between.

It is possible that USEPA has made a typo and means to allow annual monitoring only for those who are "reliably and consistently below 50% of the MCL". This possibility is unlikely, because this problem crops up several times in the rules. The Board **solicits comment** on this possibility, which it has rejected for purposes of the Proposal.

The alternative interpretation, which the Board suggests is correct, is that USEPA intends only a single round of quarterly monitoring for suppliers who equal or exceed 50% of the MCL. Rather than returning to the baseline annual monitoring, the supplier who exits quarterly monitoring would go to baseline monitoring subject to a modified trigger: the supplier would return to quarterly monitoring only if subsequent monitoring indicated a level in excess of the level at the time the "reliably and consistently" determination was made.

Although this interpretation makes sense in real world terms, it is difficult to square it with the language of the USEPA rule. The Board has therefore proposed major edits to effectuate this interpretation [611.604(b)(2)]:

> B) The Agency shall, by SEP, allow annual monitoring at a sampling point, if it determines that the sampling point is reliably and consistently below the MCL.
>
> C) In issuing the SEP, the Agency shall specify:

i) The level of the contaminant upon which the "reliably and consistently" determination was based; and

ii) The level of the contaminant which, if exceeded in any one sample, would cause the supplier to reinitiate quarterly monitoring.

Under the Board's interpretation, the Agency sets a specific trigger level which would cause the supplier to reinitiate quarterly sampling if a single sample exceeded the level. For example, with the MCL at 1 mg/L, the Agency might make the "reliably and consistently" determination based on four samples which average to 0.60 mg/L, ±0.09 mg/L. The Agency might establish 0.70 mg/L as the specific trigger which would cause quarterly monitoring to be reinstituted. Since this is outside the range of variability of the samples previously considered, it would be indicative that the levels have risen.

The true "Catch-22" problem only arises when the threshold for increased monitoring is different from the level on which the "reliably and consistently" determination is to be made. In the example above, the supplier enters quarterly monitoring with a single sample in excess of 50% of the MCL, but can exit quarterly monitoring if he establishes that levels are "reliably and consistently" less than 100% of the MCL. If these levels were the same, say 50% of the MCL, the supplier would not be caught in Catch 22.

The true Catch-22 situation is present in only about half of the "reliably and consistently" determinations. It is absent from the others, because the thresholds are the same.

The Board has proposed the above language with most of the "reliably and consistently" determinations even when the Catch-22 situation is not present, in order to give a uniform interpretation of "reliably and consistently". For example, suppose a rule required quarterly monitoring with a single sample at 50% of the MCL, but allowed a return to annual monitoring if levels were "reliably and consistently" less than 50% of the MCL (of 1 mg/L). A supplier might demonstrate that his levels were 0.35 mg/L ±0.09. Under the Board's proposed language, the Agency might establish 0.45 mg/L as the threshold for a return to quarterly monitoring, instead of the 0.50 mg/L threshold in the rule itself. In other words, future quarterly monitoring would be required when levels exceeded the levels on which the "reliably and consistently" determination was made, rather than under the general rule.

The Board has interpreted these rules in this manner in order to give "reliably and consistently" a uniform meaning throughout the rules. The alternative would be to use different

language for the "reliably and consistently" determination, depending on whether Catch-22 was present or not. The Board **solicits comment** as to whether it ought to follow the alternative course.

DOES EVERYBODY HAVE TO TAKE A ROUND OF QUARTERLY SAMPLES?

Several USEPA provisions require that, once a supplier has taken a set of quarterly samples, subsequent baseline sampling has to be taken "during the quarter(s) which previously resulted in the highest analytical result". One problem with this formulation is that, for several parameters, the USEPA rules do not require that all suppliers have to take a round of quarterly samples. The Board construes this omission as an editorial error by USEPA, and has proposed to require an initial round of quarterly monitoring for all parameters.

OBVIOUS SAMPLING ERRORS

Several USEPA provisions allow the State to "delete the results of obvious sampling errors". [For example, 40 CFR 141.23(f)(3), Section 611.606(c)]. As is discussed above, the Board has construed this as meaning that the Agency can substitute a confirmation sample for the original sample if an "obvious sampling error" occurred. Apart from that problem, there is a question as to whether this says what USEPA probably means.

"Obvious sampling errors" is not acceptable as a standard for Agency action, both in terms of accuracy and specificity. Why should compliance be judged based on erroneous data, even where the error may not be "obvious"? Furthermore, what factors should the Agency consider in deciding whether a sampling is in error? Is this restricted to known instances of sample contamination, or can a sample be rejected based on statistical analysis of prior data?

The Board has proposed to require the Agency to delete "sampling errors", whether obvious or not. The Board **solicits comment** as to exactly how "sampling error" should be defined, and as to the appropriate procedures for sample deletion.

LABORATORY APPROVAL STANDARDS

Several USEPA rules appear to set laboratory approval standards. For example, 40 CFR 141.23(k)(5) [Section 611.611(e)], limits analyses to labs approved by USEPA or the State, and sets standards for lab approval. Labs must analyze performance evaluation samples and "achieve quantitative results on analyses that are within the following acceptance limits:"

Contaminant	Acceptance Limit

Asbestos	2 standard deviations based on study statistics
Barium	± 15% at ≥0.15 mg/l...

This rule is discussed at 56 Fed. Reg. 3571, without any explanation as to what it means. It is possible that the rule is implicitly referencing a larger set of lab approval rules. The Board has added a cross reference to the Agency's lab approval rules in 35 Ill. Adm. Code 183, but **solicits comment** as to whether those rules fully explain the meaning the USEPA provisions.

For purposes of soliciting comment, the Board offers the following hypothetical interpretation. A set of samples are spiked with known amounts of the contaminants at levels in excess of the indicated concentrations. The lab analyses the samples. The known value is subtracted from the measured value, and the difference converted to a percent of the known. One standard deviation of the results must be within the indicated percent of the known, in either the plus or minus direction. The Board **solicits comment** as to whether this is correct.

If this interpretation is correct, the USEPA rule may have a fatal flaw. As can be seen from the table, the acceptance limits become wider at lower concentrations, reflecting the reality that analysis becomes more difficult at lower levels. However, as written, the rule would require certification of a lab which, for example, could achieve an acceptance limit of ± 15% at 10 mg/L barium. Such results would not be particularly good at such high levels. Nor would they be indicative of the ability to analyze samples at drinking water levels. Therefore, where this language occurs, the Board has added a requirement that performance evaluation samples be at levels which are not in excess of levels expected to be in drinking water.

GENERAL DISCUSSION OF PROBLEMS IN DEVELOPING STATE RULES ILLINOIS PROBLEMS

While the above discussion focused on errors and ambiguities in the USEPA rules, the following will focus on recurring problems in developing the proposal, which stem not so much from the USEPA rules as from special situations in Illinois. Many of these stem from USEPA rules which direct "the State" to do something. In Illinois it is often unclear whether the Board or the Agency is supposed to act for the State. Once the appropriate agency is determined, it is necessary to decide the appropriate procedural context for the decision.

Should a Decision be made by Board or Agency?

The Board's SDWA rules are based mainly on 40 CFR 141. The USEPA rules include many directives that "the State" should make

a decision. Ambiguities in these directives are discussed above. In this portion of the general discussion, the Board will set forth factors it considers in deciding whether the Board or Agency should make the decision contemplated in the USEPA rule.

Section 7.2(a)(5) of the Act requires that the Board, in adopting an "identical in substance" rule:[5]

> [S]pecify whether a decision is to be made by the Board, the Agency or some other State agency, based upon the general division of functions within this Act and other Illinois statutes.

As is discussed above, the USEPA directives may either contemplate a programmatic decision to be made in setting up the program, or a case-by-case decision to be made in the course of administering the program. The programmatic decisions intrinsically must be made by the Board when it adopts these rules. The following discussion concerns the case-by-case decisions.

As it happens, almost all of the case-by-case decisions involve detailed adjustments to the monitoring and reporting requirements, which are clearly within the Agency's jurisdiction. Most of the problems center on the appropriate procedural vehicle for the decision, which is discussed below. However, the Board will first set forth the general factors it relies on in deciding whether a decision is to be made by the Board or Agency. This is taken from the R88-26 Opinion, at p. 7. The Board considers the following factors in determining the general division of authority between the Agency and the Board:

1. Is the entity making the decision applying a Board regulation, or taking action contrary to ("waiving") the Board regulation? While the Agency may apply Board regulations in the issuance of a permit, it takes some form of Board action to "waive" a Board regulation. For example, the Agency clearly has authority to apply a regulation which says "If A do X, otherwise do Y". On the other hand regulations which say "If not A, the

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[5]Most USEPA rules which are the subject of identical in substance rulemaking are drafted as "pattern rules" which apply directly in USEPA-administered states. Most decisions are worded as "Regional Administrator" decisions, with the understanding that the state is to make the decision after a program is delegated. These rules differ in that they are explicitly worded as directives for state action. Thus, the usual ambiguities as to whether "the State" or "the Regional Administrator" is supposed to make a given decision are absent.

State shall waive X" may require Board action.

2. Is there a clear criterion for action such that the Board could give meaningful review to an Agency decision?

3. Is there a right to appeal? Agency actions must generally be appealable to the Board.

4. Does the action concern an entity which is required to have a permit anyway? If so, there is a pre-existing permit relationship which can easily be used as a context for an Agency decision. If the action concerns an entity which does not have a permit, it would be more difficult to place the decision into a procedural context which would be within the Agency's initial jurisdiction.

5. Does the action amount to an exemption from the permit requirement itself? If so, Board action is generally required.

6. Does the action amount to "determining, defining or implementing environmental control standards" within the meaning of Section 5(b) of the Act? If so, it must be made by the Board.

Many of the State decisions are called "waivers" in the USEPA rules and Preamble. However, these are not "waivers" in the sense used in the above discussion, under item 1. Rather, these are mostly provisions which allow the State to reduce the frequency of monitoring if certain conditions are met. The monitoring requirement is not "waived" in any sense of the term, legal or otherwise. The supplier still has to monitor after the "waiver" is granted, but at a level which the State has determined is appropriate under the circumstances. Indeed, these provisions fit exactly into the above example of what is not a waiver.

In a least one situation the "waiver" allows the supplier to stop monitoring altogether [40 CFR 141.23(b)(3), Sec. 611.602(c)]. This is more like a "waiver", but one which is based on a determination that the contaminant (asbestos) is not likely to be present. To the extent it is a "waiver" it is still not a waiver of the MCL. This is still a technical decision applying a Board rule of the form "If A, monitor; otherwise don't monitor", and is within the Agency's competence.

The Board has generally changed the name of these procedures from "waivers" to "adjustments" in order to avoid confusion with the general concepts.

Some specific examples of Agency decisions are discussed below, following a discussion of the available procedural mechanisms. The limiting factor for most of the decisions in this rulemaking is item 4: the procedural context for the Agency decision. As is discussed below, the Agency does not issue a "master permit" for PWSs. A result of this is that there was no procedural vehicle available for most of the decisions in R88-26. This would have forced almost all of the decisions contemplated by the federal rules into Board variances or adjusted standards. This would have been administratively impossible to manage, and not appropriate for decisions which are traditionally made by the Agency, in other programs, in a permit context. To avoid this result, in R88-26, the Board added the special exception permit, or "SEP", to provide a procedural vehicle for Agency decision.

Procedures for Board Decisions

If a case-by-case decision must be made by the Board, rather than the Agency, it is necessary to determine what procedural context is best suited for that decision. There are four common classes of Board decision: variance, adjusted standard, site specific rulemaking and enforcement. The first three are methods by which the effect of a regulation can be temporarily postponed (variance) or modified to meet specific situations (adjusted standard or site specific rulemaking).

The term "variance" is used in the Illinois Act in a different sense than in the USEPA regulations. The difference in terminology has caused past misunderstanding with USEPA. In the USEPA rules the term "variance" sometimes refers to a permanent waiver of a rule, something which is not allowed in an Illinois "variance". Indeed, the equivalent USEPA procedure is often a "delayed compliance order".

A variance is initiated by the operator filing a petition pursuant to Title IX of the Act and 35 Ill. Adm. Code 104. The Agency files a recommendation as to what action the Board should take. The Board may conduct a public hearing, and must do so if there is an objection to the variance. Board variances are: temporary; based on arbitrary or unreasonable hardship; and, require a plan for eventual compliance with the general regulation. To the extent a decision specified in the USEPA rules involves these factors, a Board variance may be an appropriate mechanism.

A variance is not an appropriate mechanism for a decision which is not based on arbitrary or unreasonable hardship, or which grants permanent relief without eventual compliance. To grant permanent relief, the Board would need to grant a site-specific regulation or an adjusted standard pursuant to Sections 27 or 28.1 of the Act, and 35 Ill. Adm. Code 102 or 106.

Procedures for Agency Decisions

As is discussed above, the USEPA rules include many provisions which require "the State" to make a decision. These could be either programmatic decisions or case-by-case decisions. While the former are intrinsically Board decisions, the latter could be appropriate either as Board or Agency decisions. Once the Board has determined that such a decision is appropriate as an Agency decision, the next question is the procedural mechanism for the Agency decision.

Almost all of the case-by-case decisions involved in this rulemaking concern detailed adjustments to monitoring and reporting requirements, and are appropriate as Agency decisions. The main question is the procedural context for the decision.

As was discussed on p. 14 and 49 of the R88-26 Opinion, the Agency does not issue a "master permit" for public water supplies. Rather, it issues construction and operating permits for each project associated with the PWS. The absence of a "master permit" causes the most severe problems in attempting to fashion Board rules meeting the USEPA requirements.

There are three procedural vehicles available for Agency case-by-case decisions. These are:

> Issuance or modification of a construction or operating permit, where the decision is germane to a pending application.
>
> Issuance of a "SEP" under Section 611.110.
>
> Self-implementing provision.

When a decision involves new construction, or a physical modification to the PWS, a construction permit is the appropriate mechanism for Agency action. There do not appear to be many of these.

The most common procedure for an Agency decision in this proposal is a "Special Exception Permit" ("SEP"). This was a new procedure, which the Board added in adopting the SDWA rules in R88-26 (Opinion, p. 49). Although the SEP was not specifically required by the USEPA rules, it was necessary for the Board to create a procedural context for the numerous case-by-case decisions required by the USEPA rules. In the absence of a SEP, these would have to have been handled by Board variances, adjusted standards or site-specific rules.

Some "decisions" in the USEPA rules are worded as self-implementing provisions. For example, a rule might say "If A and B, the supplier takes a sample for X". The problem with these

rules is that it is unclear who decides whether A and B have happened. In some rules the Board has required a SEP.

In the absence of a SEP, or other prior determination by the State, the supplier would be subject to enforcement for failing to sample for X, without prior notice that the Agency believes A and B are true. Furthermore, the only mechanism by which the supplier could challenge the Agency's determination would be to refuse to take the samples, and contest the determination in an enforcement proceeding. This has due process problems, and is administratively inefficient. However, the Board has allowed a few "self-implementing" provisions, especially where a quick response is needed and a factual dispute appears unlikely. For example, some USEPA rules require a confirmation sample, within a short time, after a single sample exceeds the MCL (or some other threshold). These are appropriate as self-implementing provisions, since a quick response is needed, there is unlikely to be a factual dispute and the response (another sample) is not particularly burdensome.

As the Board understands the Agency's practices, most samples are actually analyzed by Agency labs, pursuant to sample requests from the Agency. In actual practice, the "self-implementing" provision would actually be initiated with an Agency determination and notification, by way of the sample request letter.

Agency Initiated SEPs

The SEP procedure adopted in R88-26 contemplated an application from the supplier. This procedure was focused on "waivers" or adjustments from the baseline requirements in the rules, things the supplier would want to apply for.

Many of the procedures in this Update are focused on increases in monitoring following a "bad" sample, or other circumstances. To the extent these require a prior decision by the Agency, a procedural context is required. The Board has, in Section 611.110, proposed to allow Agency-initiated SEPS, when authorized by a specific Board rule.

Time for Monitoring

The USEPA rules include a number of provisions governing the "time" for monitoring. This refers to the day, month and year on which a specific sample is to be taken, as opposed to the "frequency" of monitoring, which is governed by other rules. For example, while a "frequency" rule might specify quarterly monitoring, a "time" rule would might require that the quarterly samples be taken on the 15th of March, 15th of June, etc.

An example of a time of monitoring rule is 40 CFR

141.24(f)(21) [611.646(u)]:

> (21) Each public water system shall monitor at the time designated by the State within each compliance period.

The time of monitoring requirement appears to be a new USEPA requirement. In the past, time for monitoring has not been expressly addressed in the rules. This may be in response to the complexity of the monitoring frequency rules in the Phase II rules, which include quarterly, annual, three-year and nine-year monitoring cycles. Especially for the infrequent monitoring, there appears to be a need for greater specificity.

The Board has proposed to require that the Agency specify monitoring times by SEP, but **solicits comment** as to other mechanisms.

Specific Examples of Agency Decisions

Most of the case-by-case decisions involve adjustments to monitoring frequencies. An example appears in 40 CFR 141.23(c)(2) et seq. [611.603(b) et seq.] The baseline monitoring requirement for barium, cadmium, etc. is one sample each (three year) compliance period for GWSs, and an annual sample for SWSs. "The State" can reduce this to (nine year) compliance cycle monitoring after an initial round of monitoring indicates all previous results less than the MCLs, depending on the variability. This is clearly within the Agency's traditional authority to specify monitoring frequencies in permits.

Other examples of Agency case-by-case decisions are at the following locations:

141.23(b)(3)	611.602(c)
141.23(b)(9)	611.602(i)
141.23(c)(2) et seq.	611.603(b) et seq.
141.23(e)(2)	611.605(b)
141.24(f)(1) and (2)	611.646(a) and (b)
141.24(f)(7)	611.646(g)

Stringency

Section 7.2(a)(6) of the Act provides that:

> Wherever appropriate, the Board regulations shall reflect any consistent, more stringent regulations adopted pursuant to the rulemaking requirements of Title VII of this Act and Section 5 of the Illinois Administrative Procedure Act.

In R88-26, as discussed on p. 6 of the Opinion, the Board

reviewed its existing PWS requirements, and identified all of the consistent, more stringent requirements which involved the same subject matter as the USEPA rules. These were moved into Part 611 so that they would be stated along side the related federal requirements. These provisions are marked by means of "Board Notes" or other devices as "additional State requirements".

As was also discussed in R88-26, it is sometimes difficult to make a direct comparison of stringency between the State and USEPA requirements, if the requirements are expressed in a different way. [Opinion, p. 7, 23-27] When the rules themselves and comments do not give a clear answer as to stringency, the Board will adopt the USEPA requirement and testing methodology. [Opinion, p. 25]

Both the USEPA and Board rules generally consist of a numerical standard, a testing method, requirements as to monitoring frequency and a reporting requirement. The Board makes the stringency comparison with respect to the standards, and then adopts the testing method, monitoring frequency and reporting requirement associated with the more stringent standard. One could argue that, for example, while a USEPA MCL was more stringent, the State monitoring requirement was more stringent. However, the Board has rejected this type of stringency comparison, which would result in a "mix and match" standard. Such a standard and associated monitoring requirement would generally be more stringent than either the USEPA or State requirements. The requirement could be totally irrational, if the monitoring requirement was to measure something different from the standard.

Sometimes a problem is addressed through a group of interrelated standards which are measuring different aspects of the same thing. The Board makes stringency comparisons with respect to the clusters of interrelated requirements. Once the Board decides which cluster is more stringent, it follows through by adopting the entire interrelated cluster. [R88-26 Opinion, p. 25]

Laboratory Certification

As was discussed on p. 16 - 17 in R88-26, the Agency has statutory authority for lab certification under Sections 4(o) and (p) of the Act. In R88-26, the Agency had claimed that this prevented the Board from adopting rules specifying analytical methods. However, Sections 7.2 and 17.5 of the Act require the Board regulations which are "identical in substance" to the USEPA regulations which specify analytical methods. Moreover, approval of analytical methods is a part of the adoption of an "environmental protection standard", a power reserved to the Board under Section 5 of the Act. In certifying a laboratory, the Agency is supposed to assure that the lab is using the

correct analytical methods, as specified in the Board rules.

Laboratory certification comes up in a different context in this rulemaking. Several USEPA rules require "performance evaluation standards", and specify the maximum spread of data allowed if the lab is to be certified. For example, 40 CFR 141.24(f)(17) [611.646(q)]. This type of rule is more of a "lab certification" rule than those discussed in R88-26, and appears to be within the Agency's authority. However, Sections 7.2 and 17.5 of the Act still require the Board to adopt equivalents, without exception for lab certification rules.

Board Notes

In R88-26, the Board adopted Part 611, based on the 1989 Edition of the CFR. The Board added "Board Notes" to show the source of each Section, or, in some cases, subsection. There is some potential confusion in these citations to the 1989 CFR Edition, which nominally shows amendments through June 30, 1989. That Edition shows both the before and after text relative to the June 29, 1989, filtration and disinfection rules. Therefore, many of the Board Notes show the 1989 Edition, as amended June 29, 1989, to indicate which version in the 1989 Edition.

The 1990 Edition of the CFR is now available. It shows the rules as adopted through June 30, 1990. The Board has proposed to routinely update the Board notes, in all Sections subject to this rulemaking, to reference the 1990 Edition, as amended. The Board has proposed to delete all Federal Register citations prior to July 1, 1990, since these are encompassed in the new Edition. Since July 1, 1990, is also the starting date for this batch period, the remaining Federal Register citations will all be to the Federal Registers involved in this update.

Although the 1991 Edition of the CFR is also available, the Board will not update citations to that Edition in this Docket, which runs only through January 31, 1991. The Board will update the references in the next Docket, whose ending date should be after the June 30, 1991, date of the 1991 Edition.

SUBPART A: GENERAL PROVISIONS

Section 611.101

This Section is derived from 40 CFR 141.2, which was amended at 56 Fed. Reg. 3578, to add four definitions associated with the revised MCLs. The definitions involved are "compliance cycle", "compliance period", "initial compliance period" and "repeat compliance period".

The definitions set up a series of nine year "compliance cycles", each consisting of three three-year "compliance

periods". The initial period begins with the first period which begins at least 18 months after federal promulgation. The Board has proposed to substitute the actual date for the beginning of the first period, January 1, 1993.

The USEPA rules also define "repeat compliance periods" as "any subsequent compliance period after the initial ..." The Board has proposed to delete "subsequent" as redundant.

In R88-26, the Board adopted the existing definitions based on the 1989 CFR, with any subsequent amendments noted in Board Notes following each definition. As is discussed above, the Board has proposed to update these notes to the 1990 Edition, as amended.

The existing definition of "BAT" references "Subpart G", in which the revised MCLs were to be located under the R88-26 proposal. However, these were combined with the other MCLs in Subpart F on final adoption. The Board has proposed to correct this cross reference.

The Board has proposed to add a definition of "MFL", the unit of measure for asbestos. The definition is 40 CFR 141.23(a)(4)(i):

> "MFL" means millions of fibers per liter larger than 10 micrometers.

The Board has proposed to add three definitions used in the amendments to Section 611.526(e) and (f). These are "MUG" (4-methyl-umbelliferyl-beta-d-glucuronide, "nm" (nanometer) and "ug" (microgram). "MUG" is already implicitly defined, in Section 611.103, in the name of the "MMO-MUG" test. However, "MUG" is now used as a term alone in the amendments below.

The Board adopted the definition of "RDC" in R88-26. As was discussed in the Opinion at pages 26 and 40, the Board intended to add language to the definition of "RDC" to make it clear that, for purposes of the requirement of Section 611.241(d) of maintaining a detectable RDC in the distribution system, "RDC" means a residual of free or combined chlorine. However, this change was inadvertently omitted from the final Order. The Board has therefore proposed to modify the definition in this Docket.

Section 611.102

This Section is the consolidated listing of incorporations by reference. These references are scattered throughout the USEPA rules, and the current modifications. The Board will review the incorporations against the documents currently referenced in the amendments, and make any needed changes here.

Inorganic Monitoring Methods: 40 CFR 141.23(k)

USEPA has made several changes to the incorporations by reference concerning inorganic monitoring. These are now in 40 CFR 141.23(k), which corresponds with Section 611.611 below.

Environetics

The MMO-MUG test was formerly supplied by Access Analytical Systems, Inc. This is now called "Environetics, Inc." (PC 3). The Board has proposed to revise the entries in the incorporation by reference Section to use the new name.

As is discussed below in connection with Section 611.526, this update includes approvals for new uses of the MMO-MUG test. The Board has not received any updated material from the company. The Board **solicits comment** as to whether the material previously received suffices for the new purposes.

Millipore Corporation

This is a new reference to an ion chromatography method for nitrate/nitrite. The reference is in 40 CFR 141.23(k)(1), footnote 10. That Section references both "B-1011" and "B-1001". According to Millipore, the former is correct.

Inorganic Methods

40 CFR 141.23 makes numerous references to the 1983 Edition of "Methods for Chemical Analysis of Water and Wastes", which USEPA refers to as "EPA Methods". The Board references this as "Inorganic Methods", to distinguish it from other USEPA publications which are also called "EPA Methods".

USEPA has updated this reference from the 1979 Edition to the 1983 Edition, for some, but not all, parameters. USEPA indicates that the 1983 document is available from "ORD Publications, CERI, USEPA, Cincinnati, OH 45268 (EPA-600/4-79-020).

ORD Publications actually exists, and has a telephone. But, they don't have this document. They did know the NTIS number. Also, the EPA number cited in the USEPA rule is the number for the 1979 Edition, not the 1983 Edition. One can tell by the "4-79" in it.

The Board has added a separate citation to the 1983 Edition under the NTIS heading. The Board rule currently cites to the 1979 Edition under the heading "NTIS". However, the NTIS number, previously given by NTIS, is actually for the 1983 Edition. NTIS has now provided a separate number for the 1979 Edition. The Board has corrected this in the rule. But, it won't do a bit of

good: NTIS automatically sends the 1983 Edition to anyone trying to order the 1979 Edition.

Asbestos Methods

40 CFR 141.23(k)(1) cites to "Analytical Method for Determination of Asbestos Fibers in Water". Footnote 9 indicates that the document is available from USEPA in Athens, GA. We were unable to verify whether they actually have the document. However, the document is available from NTIS, to which the Board has cited.

The USEPA rule also give numbers from the 14th Edition of Standard Methods, but cites to the 16th Edition. The Board has used the 16th Edition numbers.

Orion Research

40 CFR 141.23(k)(1), footnote 5 cites to Orion Research for a nitrate/nitrite method, WeWWG/5880. Orion is actually in Boston, rather than Cambridge, as cited by USEPA. The Board has provided the correct address and phone number for this standard.

USGS Methods

This involves the USGS "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments", which the Board refers to as "USGS Methods". In R88-26, USEPA provided the Board with a copy of this document, but was unable to find an address. USEPA has now provided a wrong address. At least it was in the right area code, so it was possible to get a phone number. The Board has placed the correct address and phone number in the rule.

The previous USEPA rules cited to the 1971 and 1979 Editions of this document. 40 CFR 141.23(k)(1), footnote 4 cites to the "1985" Edition. Wrong again. According to USGS, there was no 1985 Edition. The current Edition is the 1989 Edition, to which the Board has cited.

USGS no longer makes the 1971 and 1979 Editions available to the public. However, the Board will continue to cite them, as required by USEPA.

USEPA also cites this as "Chapter A-1". It is useful to know that it's in Book 5.

Section 611.110

This Section concerns "Special Exception Permits" ("SEPs"). As is discussed in general above, the Board is proposing to allow the Agency to initiate the SEP process, where specifically

provided in the Board rule governing the particular SEP. This will provide a mechanism for Agency decisions related to increasing monitoring frequencies.

The proposed new language is as follows:

d) A SEP may be initiated either:

1) By an application filed by the supplier; or

2) By the Agency, when authorized by Board regulations.

Section 611.111

This Section is derived in part from 40 CFR 141.4, which was amended at 56 Fed. Reg. 1557. This Section concerns variances under Section 1415(a)(1)(A) of the SDWA. The amendment affects Section 611.111(f), which prohibits variances from the MCL for total coliform or the related treatment requirements. USEPA has "stayed" the portion of the prohibition relating to variances from the MCL where the violation is due to "persistent growth ... in the distribution system", rather than contamination, treatment deficiency, or operation or maintenance problems.

The Board has proposed to split Section 611.111(f) into two subsections, one dealing with MCL variances, the other with treatment variances. This allows insertion of the USEPA "stay" as a proviso relating only to the MCL subsection.

The USEPA regulation is referred to as a "stay". However, it has been adopted as a general regulation of indefinite duration, which will require future rulemaking by USEPA to remove or modify. This is not a "stay" as the term is usually used by the Board. The Board has therefore dropped the term from the rule. When USEPA modifies the rule to remove or modify the "stay", the Board will amend this Section to reflect the result.

Section 611.112

This Section is also derived from 40 CFR 141.4, which was amended at 56 Fed. Reg. 1557. This Section concerns variances under Section 1416 of the SDWA. The amendment is the same as is discussed above in connection with Section 611.111. The new language is in Section 611.112(g).

SUBPART D: TREATMENT TECHNIQUES

This is a new Subpart which establishes treatment technique requirements in lieu of MCLs. This is placed after Subparts B and C, which also set treatment technique requirements.

This Subpart may become very large as USEPA adopts future regulations. In R88-26, the Board left only 9 numbers in this space. It may be advisable to renumber the MCLs to allow more space for growth of this Subpart. An alternative would be to renumber Section 611.290 to 611.281, allowing room for growth that-a-way.

Section 611.295

This Section is derived from 40 CFR 141.110, which was added at 56 Fed. Reg. 3578. It is the introduction to this Subpart. The Board has used "NPDWR" ("national primary drinking water regulation") and "MCL" ("maximum contaminant level"), which are acronyms defined in Section 611.102.

The second sentence provides that "These regulations establish..." The Board has replaced this with "This Subpart establishes..." to be consistent with Administrative Code terminology.

Section 611.296

This Section is derived from 40 CFR 141.111, which was added at 56 Fed. Reg. 3578. This establishes a certification requirement as a "treatment technique" for acrylamide and epichlorohydrin, which are sometimes used in or as coagulants in PWS treatment. (56 Fed. Reg. 3558)

There are several minor editorial problems with this short Section, which reads as follows:

> 141.111 Treatment techniques for acrylamide and epichlorohydrin.
>
> Each public water system must certify annually in writing to the State (using third party or manufacturer's certification) that when acrylamide and epichlorohydrin are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the levels specified as follows:
>
> Acrylamide = 0.05% dosed at 1 ppm (or equivalent); and
>
> Epichlorohydrin = 0.01% dosed at 20 ppm (or equivalent).
>
> Certifications can rely on manufacturers or third parties, as approved by the State. (40 CFR 141.111; 56 Fed. Reg. 3594)

First, since the title of the Subpart is "Treatment Techniques", it is not necessary to repeat this in the Section

title.

Second, the USEPA rule requires that "Each public water system" ("PWS") certify. As is discussed in general above, the Board has proposed to use "supplier", which is defined in Section 611.102.

Third, a comma is needed at the beginning of the "when" clause in the first sentence.

Fourth, the USEPA rule requires certification only if "acrylamide and epichlorohydrin" are used. USEPA probably means "or", which the Board has proposed to use. And, for reasons discussed below, the rule is really referring to "products containing" traces of acrylamide or epichlorohydrin.

Fifth, the USEPA rule requires certification only if the chemicals are used in "drinking water systems", a term which is not defined in 40 CFR 141. The Board has proposed to substitute the term defined in Section 611.102, "PWS". However, it is possible that USEPA intended this to apply only to a subset of PWSs.

Sixth, while the USEPA rule starts off requiring "Each" PWS to certify, it then speaks of "systems", in the plural. The Board has proposed to make this singular.

Seventh, the USEPA Section has a "hanging paragraph", which is prohibited by the Code Division. The Board has proposed to split the Section into subsections (a) and (b). The hanging paragraph deals with manufacturer's certifications, which is discussed below. The language is actually repeated in the introduction to the Section, which the Board has deleted as redundant. An alternative would be to delete the hanging paragraph, and retain the language in the introduction. However, the Board has not done this, since the question of Agency approval of manufacturer's certifications may become to complex to address in a parenthetical.

Beyond these minor editorial problems, this Section has what may be major problems. First, the PWS is required to certify that the "combination (or product) of dose and monomer level does not exceed ... Acrylamide=0.05% dosed at 1 ppm (or equivalent)..." What does "combination of dose and monomer level" mean? What does "product of dose and monomer level" mean? What is the 0.05% referenced to, the finished water? What is the 1 ppm referenced to? Is this by weight, or by volume?

In the Preamble, the proposed rule is quite different, as follows:

EPA proposed to limit the allowable monomer levels in

products used during water treatment, storage and distribution. These levels are:

> Acrylamide: 0.05 percent acrylamide in polyacrylamide dosed at 1 ppm... (56 Fed. Reg. 3558)

The USEPA Preamble then discusses changes which are unrelated to the differences in wording between the above and the final rule (concerning the use of manufacturers' certifications). The Preamblé then concludes the discussion by saying: "...with the modification as noted above, the treatment technique requirements are promulgated as proposed." (56 Fed. Reg. 3559)

As presented in the Preamble, the rule is marginally understandable. The supplier has to certify that polyacrylamide products dosed at 1 ppm (in the finished water) contain less than 0.05% unreacted monomer (relative to the total polyacrylamide in the product). The 0.05% is supposed to be corrected for the dose level, so that the same quantity of unreacted monomer is present after dosing: i.e. 0.025% when dosed at 2 ppm, and 0.10% when dosed at 0.5 ppm. These are presumably weight ratios. The Board has undertaken to write a rule saying this, as follows:

a) Each supplier shall certify annually in writing to the Agency that, when products containing acrylamide or epichlorohydrin are used in the PWS, the product of monomer level and dose does not exceed the levels specified as follows:

P = A * B

Where:

A = Percent by weight of unreacted monomer in the product used.

B = Parts per million by weight of finished water at which the product is dosed.

P = Product of monomer level and dose:

1) For acrylamide, P = 0.05; and

2) For epichlorohydrin, P = 0.20.

This brings us to the hanging paragraph, which the Board has labeled "b". The first problem is: what is meant by "third party" certifications? This is not really explained in the Preamble (56 Fed. Reg. 3558). The Board assumes this refers to outside testing laboratories. These would not necessarily be certified under the SDWA, since testing for unreacted monomer is

outside the usual scope of drinking water testing.

The second problem is the mechanism by which the State approves the certifications. The first question is whether the approval (or disapproval) ought to come in this rulemaking, or whether the Board ought to adopt the rule allowing a case-by-case decision later. The Preamble is clear that the State does not have to allow the use of third party or manufacturer's certifications (56 Fed. Reg. 3558). One option would be for the Board to omit this language, thereby disapproving these certifications.

A second option would be for the Board to adopt a rule approving certain types of certifications. The Board would need input from the Agency and PWSs to develop such a rule.

The Board has proposed to follow a third option, and has proposed a rule allowing the Agency to make a case-by-case decision as to whether to approve individual certifications. This would be by special exception permit, as allowed under Section 611.110.

A problem with this approach is that the USEPA rule does not include a standard by which the State approves the certifications. The Board has proposed to require the Agency to approve certifications if it determines that the third party or laboratory has correctly measured the percent unreacted monomer, using correct methods. The Board **solicits comment** on this.

Another problem with the USEPA rule is that it fails to specify a method for measuring the percent of unreacted monomer. This should be a standard quality control test for the manufacturers. The Board **solicits comment** as to the identity of this test.

SUBPART F: MCLs

Section 611.300 Inorganic MCLs

This Section is derived from 40 CFR 141.11 and 141.62, which were amended at 56 Fed. Reg. 3578. This contains the standards for inorganic chemicals. As is discussed below, the Board is proposing to split this into two Sections, moving the portions derived from 40 CFR 141.62 to Section 611.301.

Types of Standards

There are three types of standards. There are the old State "MACs" moved from 35 Ill. Adm. Code 604. There are the "old" MCLs adopted by USEPA in 40 CFR 141.11. And, there are the "revised" MCLs adopted by USEPA pursuant to the 1986 amendments to the SDWA. The "revised" MCLs differ from the "old" MCLs in

that, pursuant to the 1986 amendments, USEPA must specify a BAT for meeting the "revised" MCL, and must specify an MCLG.[6]

As adopted in R88-26, this Section contains the State "MACs", the "old" USEPA MCLs and the "revised" USEPA MCLs. The Board consolidated these into a single table, pursuant to public comment. (R88-26 Opinion, p. 21, 73). The MCLGs were not adopted, since they are not enforceable. (R88-26 Opinion, p. 22). Likewise, the Board did not adopt the secondary MCLs, which, except with respect to fluoride, contain no enforceable provisions. The Board **solicits comment** as to whether anyone favors adopting additional secondary MCLs.

The standards which are derived from the State MACs are marked with a "*" in the table in Section 611.300. The old MCLs have no special marking. In R88-26, there was only one revised MCL, for fluoride, which bore no special marking.

Changes to Standards [611.300]

In the January 30, 1991 rulemaking, USEPA has adopted revised MCLs for eight parameters: asbestos, cadmium, chromium, mercury, nitrate, nitrite, total nitrate and nitrite, and selenium. These will become effective on July 30, 1992, replacing the old MCLs for chromium, mercury, nitrate and selenium. The following Table summarizes the changes:

[6]USEPA does not necessarily change the numerical value of the MCL when it adopts a "revised MCL". Rather, this is a term of art to indicate that the MCL has been adopted pursuant to the 1986 amendments, with BAT and an MCLG. (R88-26 Opinion, p. 22)

INORGANIC REVISED MCLs MOVED TO 611.301

CONTAMINANT	OLD MCL	REVISED MCL	COMMENT
Asbestos	--	Count	Mew MCL
Cadmium	0.010	0.005	MCL decreased
Chromium	0.05	0.1	MCL increased
Fluoride	4.0	4.0	Moving MCL to 611.301 without change
Mercury	0.002	0.002	No change
Nitrate	10.	10.	No change
Nitrite	--	1.	New MCL
Tot. Nitrate/ Nitrite	--	10.	New MCL
Selenium	0.01	0.05	MCL increased

Stringency

Many of these "changes" involve no change to the numerical standard: USEPA is simply ratifying the old MCL as a "revised MCL" under the 1986 amendments to the SDWA, and specifying BAT and an MCLG.

In other cases the revised MCL is "less stringent" than the old MCL. Presumably USEPA has reviewed the current knowledge of the contaminant, and determined that a higher MCL is sufficiently protective of public health.

In situations in which USEPA is raising the MCL, there is an argument that the existing Board rule is "more stringent", and hence should be retained. However, in each such case the existing Board rule was derived from the old USEPA MCL by way of identical in substance rulemaking, rather than adopted pursuant to full Title VII rulemaking. Because the old MCL has no independent basis in State law, the Board is not required to make a stringency comparison under Section 7.2(a)(6) of the Act.

BATs and Delayed Effective Dates

The January 30 rulemaking poses two format problems for modifying Section 611.300 to reflect the USEPA action in a single Section. First, the revised MCLs have BATs associated with them.

Second, the old MCLs will continue in effect for more than a year before the revised MCLs become effective. Attempting to show BATs and delayed effective dates would be too complicated to be understandable in a single Section. Therefore, the Board has proposed to place the revised MCLs in a new Section 611.301, together with their BATs and delayed effective dates. The Board will add "until" language to the old MCLs which are being replaced.

The "until" language has been placed at the end of the introductory language to Section 611.300(a). A "T" (for "temporary") has also been placed after each entry for an MCL which is being moved. These should be repealed in the next update after July 30, 1992.

Fluoride

This reorganization will more closely follow the USEPA structure, in which the old MCLs are in 40 CFR 141.11, and the new in 40 CFR 141.62. However, in order to make Section 611.301 the equivalent of 40 CFR 141.62, it is necessary to also move the revised MCL for fluoride. This poses a minor problem, in that the fluoride MCL is already effective. It would require a complex effective date statement to remove it from Section 611.300 immediately. The Board has instead proposed to duplicate the fluoride standard in Sections 611.300 and 611.301, with the former subject to the same "until" language, and the latter the same delayed effective date as the other revised MCLs. Note, however, that there is no change in the numerical standard (as is also the case with some of the other revised MCLs).

Nitrate Adjustments for non-CWSs [611.300(d)]

Section 611.300(d) is derived from 40 CFR 141.11(d). This establishes an adjustment provision (administered in Illinois by the Department of Public Health) concerning the nitrate standards for non-CWSs. This is not subject to the USEPA "until" clause. However, it would appear to be moot after July 30, 1992, at which time non-CWSs would be subject to the revised MCL for nitrate in 40 CFR 141.62. This subsection should also be repealed after that date.

Section 611.301 Revised Inorganic MCLs

As is discussed above, this new Section is derived from 40 CFR 141.62, which was amended at 56 Fed. Reg. 3578. This will contain the State equivalents of the "revised" MCLs adopted pursuant to the 1986 amendments to the SDWA, and will specify BATs. The Board will also move the existing revised MCL for fluoride to this Section.

Format

40 CFR 141.62(a) is a "reserved" subsection. This is prohibited by the Code Division. However, the Board has inserted a do-nothing cross reference to Section 611.100(e), which explains that some subsections are intentionally omitted to preserve correspondence with USEPA subsection labelling.

The delayed effective date for the revised MCLs is in 40 CFR 141.60. The Board has placed this with the MCLs for greater clarity. This has been worded as "These PWSs shall comply with these MCLs by July 30, 1992", so as to avoid complying with complex Code Division rules on delayed effective dates.

The USEPA MCLs are numbered as subsections. This is not necessary in the Administrative Code. And, it seems to add unnecessary confusion.

Although the USEPA table has a heading for "mg/l", the MCL for asbestos is actually in MFL (millions of fibers/L). The Board has proposed to place the applicable units beside each standard.

The USEPA entries for nitrate/nitrite has the "as nitrogen" after the standard. The Board has moved this to its traditional place next to the contaminant name. Also, the Board has expressed this as "as N", also in accordance with tradition.

Applicability [611.301(b)]

40 CFR 141.62(b) starts out with an amazingly complex applicability statement:

> The maximum contaminant levels for inorganic contaminants specified in paragraphs (b)(2) through (6) and (b)(10) of this section apply to community water systems and non-transient, non-community water systems. The Maximum Contaminant Level specified in paragraph (b)(1) of this section only applies to community water systems. The Maximum Contaminant Levels specified in paragraphs (b)(7), (b)(8), and (b)(9) of this section apply to community, non-transient non-community, and transient non-community water systems.

This notwithstanding, the applicability of the revised MCLs is really quite simple: They apply to all CWSs. Except for fluoride and selenium, they also apply to NTNCWSs. The MCLs for nitrate/nitrite also apply to transient non-CWSs. The Board has proposed the following language [611.301(b)]:

> The MCLs in the following table apply to CWSs. Except for fluoride and selenium, the MCLs also apply to NTNCWSs. The MCLs for nitrate, nitrite and total nitrate and nitrite also apply to transient non-CWSs...

Revised MCLs

This Section lists the revised MCLs adopted pursuant to the 1986 amendments to the SDWA. These are set out with the changes in the Table in the discussion on Section 611.300, above.

BATs

Section 611.301(c) is derived from 40 CFR 141.62(c). This is the table listing BATs.

Format for BATs

As is discussed in general above, the USEPA rule includes language which is personal to the Administrator of USEPA, and is not appropriate in State rules. The Board has adopted this as a neutral recital of what USEPA has identified as BAT.

The USEPA table in 40 CFR 141.62(c) is headed "chemical name" instead of "contaminant", the phrase used in the other tables. It's not clear what lies behind this shift in terminology. However, "chemical" is not appropriate, since asbestos is not really a chemical. Rather, it is a physical form of several chemicals. The Board has therefore proposed to use the traditional heading of "contaminant".

Definition of "BAT"

Section 611.101 includes a definition of "BAT", which includes a lot of the language in 40 CFR 141.62(c):

> "Best available technology" or "BAT" means the best technology, treatment techniques or other means which USEPA has found are available for the contaminant in question. BAT is specified in Subpart F.

The Board has simply used the defined term, rather than repeat the definition of "BAT" in this Section.

Specified Technologies

USEPA specifies a total of nine technologies in various combinations as BAT several of the contaminants. USEPA does this by assigning a number to each technology, and listing the appropriate numbers beside each contaminant. Because this is somewhat hard to follow, the Board has proposed to replace the numbers with a mnemonic for each technology. These are as follows:

AAL Activated alumina
C/F Coagulation/filtration
DDF Direct and diatomite filtration

GAC Granular activated carbon
IX Ion exchange
LIME Lime softening
RO Reverse osmosis
CC Corrosion control
ED Electrodialysis

The Board **solicits comment** as to whether there might be better mnemonics.

Footnotes

The USEPA rule has footnotes limiting several of the treatment techniques. Footnotes are prohibited in the Administrative Code. The Board has proposed to put the text of the footnote right after the mnemonic in the table.

BATs: Alternative or Sequential Processes?

The USEPA table has a fundamental ambiguity: does USEPA mean to be specifying alternative BATs for these parameters, or is it specifying a sequence of technologies which, taken together, constitute BAT? As is discussed in general above, the Board assumes that all BATs are alternatives, unless the contrary is indicated.

The only exception appears to be the BATs for asbestos. "Corrosion control" ("CC") is probably BAT only if corrosion in the distribution system has been identified as a source of asbestos. If the asbestos contamination is coming from the water source, "coagulation/filtration" ("C/F") or "direct and diatomite filtration" ("DDF") would be required. If asbestos were coming from both sources, BAT would be CC and [C/F or DDF]. The Board has proposed language so specifying.

Barium and Lead

The USEPA rule specifies BAT for barium, even though no revised MCL was adopted. The Board assumes this was an error. However, the Board has proposed to go ahead and adopt the BAT, since it seems to do no harm. Note that the old MCL for barium remains.

As is discussed below, USEPA has dropped the monitoring and analytical requirements for lead, even though the standard remains in 40 CFR 141.11.

Section 611.310 Organic MCLs

This Section contains the MCLs for organic chemicals, including the "old" MCLs derived from 40 CFR 141.12, and the

"MACs[7]" which are "additional State requirements" beyond those regulated by USEPA. Many of the MACs were regulated at 56 Fed. Reg. 3578, and hence will be moved to Section 611.311, which contains the USEPA revised MCLs for organics.

As is discussed below in connection with the organic monitoring requirements, the Board has defined certain terms which group the regulated organic contaminants into related blocks for purposes of monitoring. These terms are not used with the MCLs themselves. However, the Board will indicate these terms in the discussion below, to make it easier to cross reference this discussion.

The situation is rather complex with respect to this Section, since there are MACs and existing "old" MCLs under 40 CFR 141.12, some of which are moved to and/or modified in 40 CFR 141.62. The following table shows the status of the contaminants under this Section:

[7]For the remainder of the discussion on MCLs, the Board will use the term "MAC" to refer to MCLs in Part 611 which are "additional State requirements" derived from the old "MACs". The Board has actually dropped this terminology from Part 611.

ORGANIC MCLS IN 611.310

Contaminant	MAC	Old MCL	New MCL	Comment
Aldrin	0.001	---	---	MAC only
Chlordane	0.003	---	0.002	MCL now more stringent
DDT	0.05	---	---	MAC only
Dieldrin	0.001	---	---	MAC only
Endrin	---	0.0002	---	Still in 141.12
Heptachlor	0.0001	---	0.0004	MAC more stringent
Heptachlor Epoxide	0.0001	---	0.0002	MAC more stringent
Lindane	---	0.004	0.0002	Rev'd MCL
Methoxychlor	---	0.1	0.04	Rev'd MCL
Toxaphene	---	0.005	0.003	Rev'd MCL
2,4-D	0.01	0.1	0.07	MAC more stringent
2,4,5-TP	---	0.01	0.05	Upward Rev'd MCL
TTHM	0.10	0.1	---	MAC applies to more people

MAC Only

Three contaminants, aldrin, DDT and dieldrin, are regulated only as MACs. There is no USEPA MCL in either 40 CFR 141.12 or 141.61.

MAC More Stringent

Three other contaminants, heptachlor, heptachlor epoxide and 2,4-D, now have revised MCLs which are less stringent than the MAC.

As was discussed in the R88-26 Opinion at page 6 and 74, pursuant to Section 7.2(a)(6) of the Act, the Board makes a general determination as to whether the State or federal standard is "more stringent", and adopts the more stringent. With respect

to the heptachlors and 2,4-D, the MAC is more stringent than the revised MCL, and arguably ought to be retained. The Board has so proposed.

A possible problem with retaining these MACs is that the revised MCLs come with a specified BAT, and limitations on variances (Section 611.111 et seq.) Even though the MAC is more stringent, it would be possible for the Board to grant variances without following the federal requirements, which include the obligation to apply BAT before requesting a variance. (Section 611.111(b)(2)). The Board **solicits comment** from USEPA and the Agency as to whether this is a real concern.

It would be possible to fix this problem, with respect to the heptachlors and 2,4-D, by leaving a more stringent MAC in this Section, and placing the less stringent revised MCLs into Section 611.311. In this way it would be clear that it would be necessary to follow the federal procedures to get a variance above the revised MCL. There are other, more confusing ways to accomplish this result. The Board **solicits comment** as to whether this is necessary.

If it the less stringent revised MCLs must be adopted, it may be necessary for the Board to conduct a regular rulemaking to repeal the more stringent MACs. If the Agency favors this approach, it may wish to file a rulemaking petition to initiate this process.

TTHM: MAC Applies to More People

TTHM is regulated at 0.10 mg/L both as a MAC and an "old" MCL pursuant to 40 CFR 141.12. There is no revised MCL yet. While the MCL applies only to CWSs above 10,000 individuals, the MAC applies to all CWSs (after 1/1/92). The MAC is more stringent in the sense that it applies to more people. The Board has proposed no change to the TTHM provisions.

MAC Replaced with a More Stringent Revised MCL

For chlordane, the MAC is 0.003 mg/L. The new, revised MCL is 0.002 mg/L. The Board has proposed to replace the MAC with a revised MCL in Section 611.311, subject to the effective date problem discussed below.

Old MCL Replaced with Revised MCL

Lindane, methoxychlor, toxaphene and 2,4,5-TP are presently subject to an "old" MCL derived from 40 CFR 141.12. These have been replaced with revised MCLs under 40 CFR 141.61. The first three are more stringent, but the revised MCL for 2,4,5-TP is "less stringent".

There is a possible argument that the Board is not required to replace MCLs with "less stringent" federal MCLs. However, the MCL for 2,4,5-TP was derived from 40 CFR 141.12, and has no independent basis as a State regulations adopted pursuant full Title VII rulemaking. Section 7.2(a)(6) of the Act does not allow the Board to make a stringency comparison between two federal requirements.

The Board has proposed to move the MCLs for lindane, methoxyçhlor, toxaphene and 2,4,5-TP to Section 611.311, where the revised MCLs will appear, subject to the effective date problem.

Old MCL Unchanged

Endrin is presently subject to an "old" MCL under 40 CFR 141.12, which is unchanged. The Board has therefore proposed no change.

Effective Date Problem

In connection with the inorganic contaminants, discussed above, USEPA adopted a delayed effective date for the revised MCLs, but left the old MCLs in place until that date. USEPA has adopted the same delayed date for the organic revised MCLs, but has not left the old MCLs in place pending that date. Subject to the above discussion on stringency, this would leave no MCL for chlordane, lindane, methoxychlor, toxaphene and 2,4,5-TP, pending the effective date of the revised MCLs. The Board assumes this is an error by USEPA, and has proposed to retain these MCLs in Section 611.310 until the effective date for the revised MCLs. The Board has proposed to do this by the same mechanism discussed above, adding a note and marking the affected parameters with a "T". However, the Board **solicits comment** as to whether it ought to simply repeal these MCLs immediately.

Section 611.311

This Section is derived from 40 CFR 141.61, which was amended at 56 Fed. Reg. 3578. This is the revised MCLs for organic chemicals, together with the BATs. Many of the revised MCLs replace MCLs formerly in 40 CFR 141.12 [Section 611.310], as is discussed above.

The MCLs are now grouped into two subsections. The existing MCLs are in 40 CFR 141.61(a), which regulates solvents and other commercial organic chemicals. New 40 CFR 141.61(c) regulates pesticides and PCBs. Placed curiously between them are BATs for both groups, in 40 CFR 141.61(b).

Delayed Effective Date

As is discussed above in connection with Section 611.301 and 611.310, the January 30 USEPA amendments have a delayed effective date. The Board has placed this date into the introductory language, and, in Section 611.311(a), marked the standards subject to the delay with a "D". All of Section 611.311(c) is subject to the delayed effective date.

As was also discussed above, the Board has proposed to leave certain "old" MCLs in place pending the effective date for the revised MCLs.

Contaminants Regulated: List of Eight "VOCs" [611.311(a)]

This Section presently regulates eight "VOCs":

benzene
vinyl chloride
carbon tetrachloride
1,2-dichloroethane
trichloroethylene
1,1-dichloroethylene
1,1,1-trichloroethane
p-dichlorobenzene

These are referred to as the "eight organic contaminants" in connection with monitoring, below. These are retained in the new Section without change, except that the standard for 1,1,1-trichloroethane has been changed from "0.2" to "0.20" mg/L.

Ten Additional Organic Chemicals [611.311(a)]

USEPA has added ten solvents and other organic chemicals to the list in 40 CFR 141.61(a). These are:

cis-1,2-dichloroethylene
1,2-dichloropropane
ethylbenzene
monochlorobenzene
o-dichlorobenzene
styrene
tetrachloroethylene
toluene
trans-1,2-dichloroethylene
xylene

These have been added to Section 611.311(a). They are referred below to as the "ten organic contaminants" for purposes of monitoring.

USEPA has numbered each contaminant in the Table. It would be difficult to comply with codification requirements with numbered entries in the Table. The Board has therefore proposed

to omit the numbering. This will cause problems with cross references into this Section, which the Board will address below.

The original eight "VOCs" now appear as 40 CFR 141.61(a)(1) - (8), and the ten additional contaminants as (a)(9) - (18). While the first eight are in arbitrary order, the ten are more or less in alphabetical order as among themselves. The Board has proposed to alphabetize the entire list, in accordance with Code Division requirements.

Chemical lists are supposed to be alphabetized by the first letter of the name, ignoring numbers and positional prefixes, such as "cis-", "o-", etc. The letter by which the name is alphabetized is capitalized.

Thirteen Pesticides and PCBs [611.311(c)]

USEPA has added to 40 CFR 141.61(c) MCLs for 13 pesticides and PCBs. These are: alachlor, atrazine, carbofuran, chlordane, dibromochloropropane, 2,4-D, ethylene dibromide, heptachlor, heptachlor epoxide, lindane, methoxychlor, polychlorinated biphenyls, toxaphene and 2,4,5-TP.

As is discussed above in connection with Section 611.310, there are more stringent MACs for three of the contaminants: 2,4-D, heptachlor and heptachlor epoxide. The Board has not proposed to adopt the less stringent revised MCLs for these pesticides, but has above solicited comment. There are therefore only eleven proposed MCLs in Section 611.311(c). The Board has referred below to these as the "eleven pesticides and PCBs" for purposes of monitoring.

As is also discussed above, USEPA has replaced the "old" MCLs with revised MCLs for five pesticides: chlordane, lindane, methoxychlor, toxaphene and 2,4,5-TP. These are included in Section 611.311(c). In the Board proposal, however, only three represent simple replacement of old MCLs with more stringent revised MCLs. These are: lindane, methoxychlor and toxaphene. In the case of chlordane, the MAC was more stringent than the old MCL, so this really represents replacement of the MAC with a revised MCL.

In the case of 2,4,5-TP, the revised MCL is actually "less stringent" than the old MCL. However, as is discussed above, Section 7.2(a)(6) does not allow a stringency comparison as between two federally derived standards. The Board has therefore proposed to adopt the "less stringent" revised MCL.

USEPA has adopted revised MCLs for five new pesticides, and one for PCBs. These are alachlor, atrazine, carbofuran, dibromochloropropane, ethylene dibromide and PCBs. These are included in proposed Section 611.311(c).

As proposed by the Board, the list of fourteen becomes the following list of eleven pesticides and PCBs:

alachlor
atrazine
carbofuran
chlordane
dibromochloropropane
ethylene dibromide
lindane
methoxychlor
polychlorinated biphenyls
toxaphene
2,4,5-TP

These are referred to as the "eleven pesticides and PCBs" below, for purposes of monitoring.

The USEPA standards are numbered (c)(1) - (18). The 18 numbers represent 14 revised MCLs plus four "reserved" places. The Administrative Code rules do not allow "reserved" places.

The four missing pesticides (and/or residues) appear to be aldicarb, its sulfone and sulfoxide, and pentachlorophenol. As is discussed below, USEPA has adopted BATs for these contaminants, but no MCLs, probably due to an editorial error.

Nomenclature [611.311(a) and (c)]

As was discussed on page 76 in the R88-26 Opinion, the USEPA rules appeared to use three names for the chemicals regulated by this Section. 40 CFR 141.61 referred to them as "organic contaminants" and "synthetic organic chemicals". However, the associated monitoring requirements appeared to refer to the same chemicals as "VOCs", which the Agency defined as "volatile organic chemicals". In deference to the Agency, the Board changed all these names to "VOCs". With the addition of pesticides and PCBs, it is now clear that this name is no longer appropriate to describe the entire Section.

In the discussion in the Preamble, it appears that USEPA is using the following terminology. This Section regulates "Synthetic organic chemicals" ("SOCs"). These include "Volatile organic chemicals" ("VOCs"), Pesticides, PCBs and "Other SOCs" (namely acrylamide, discussed above). However, this nomenclature is not used at all in the regulations. All of these are referred to as "organic contaminants".[8]

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[8]In R88-26, the Agency repeatedly asserted that "All USEPA rulemaking" uses the term "VOCs". This assertion was false. Indeed, the Section in question, 40 CFR 141.61, did not use that

The nomenclature in the Preamble is misleading. Among the "SOCs", several are naturally occurring feedstocks, including benzene. Although "synthetics" are made out of them, they are not themselves synthetic. Among the "VOCs", several are much less volatile than water, including styrene, p-dichlorobenzene, toluene and xylene. And, they are less volatile than some of the pesticides, including ethylene dibromide.

Board has proposed to follow USEPA and use "organic contaminant" in this Section. Because of USEPA's inconsistent usage, and the inappropriateness of the terms, the Board will check other Sections to assure that "organic contaminant" is used there also. As is discussed above, the Board has defined special terms grouping these contaminants for purposes of monitoring requirements.

BATs [611.311(b)]

40 CFR 141.61(b) contains the "BATs" which USEPA has specified for the organic revised MCLs. As is discussed above in connection with Section 611.301, the 1986 amendments to the SDWA require USEPA to specify BAT when it adopts a revised MCL. The term "BAT" is defined in Section 611.101. Among other things, BAT limits the SDWA variances reflected in Section 611.111 and 611.112.

This subsection is placed between the revised MCLs in subsections (a) and (c). The Board has proposed to follow this placement.

GAC and PTA [611.311(b)]

40 CFR 141.61(b) identifies two technologies: "granular activated carbon" ("GAC") and "packed tower aeration" ("PTA") as BAT for various revised MCLs. Neither term is further defined.

As is discussed in general above, the BAT rules are ambiguous as to whether BATs are alternatives or sequences. The Board is generally construing BATs as alternatives, unless otherwise indicated. With respect to the organic BATs, although USEPA has actually worded the BATs as sequences, there are other factors which make it clear that USEPA means alternatives.

The introduction provides that BAT is "either ... (GAC), ... (PTA), or both". The rule then provides a table, with columns for "GAC" and "PTA". For vinyl chloride, only "PTA" is checked. For 14 contaminants (mostly pesticides and PCBs), only "GAC" is

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term at all, and still does not.

checked. For 19[9] contaminants, both "GAC" and "PTA" are checked. The USEPA rule is ambiguous for the contaminants for which both columns are checked: does this mean either GAC or PTA, or both? If USEPA means "both", this represents a substantive change with respect to seven of the original eight VOCs, which were clearly alternatives. In addition, USEPA appears to have calculated the compliance costs using "GAC or PTA". [56 Fed. Reg. 3556]. The Board therefore believes that the "or both" in the introduction is intended simply to negate any implication that PWSs are somehow prohibited from using both GAC and PTA. The Board has proposed to omit it as misleading, but **solicits comment**. If commenters believe that both GAC and PTA are required for certain contaminants, they need to identify those contaminants.

The Board has proposed a Table similar to USEPA's. The Board has proposed, however, to replace the "Xs" columns with a single column with the entry "GAC", "PTA", or "GAC, PTA". This format is simpler and easier to understand. It would also allow a simple addition of an entry for "GAC and PTA" if needed.

BATs: Central Treatment? [611.311(b)]

Old 40 CFR 141.61(b) was specific that BAT was "central treatment" using PTA or GAC. This correlates with 40 CFR 141.100 and 141.101 [611.280 and 611.290], which limit the use of non-centralized treatment. USEPA has dropped this limitation. The Board **solicits comment** as to whether this was an error by USEPA, and as to whether the Board ought to retain this limitation.

SUBPART L: MICROBIOLOGICAL MONITORING

Section 611.526

This Section is derived from 40 CFR 141.21(f), which was amended at 56 Fed. Reg. 636, January 8, 1991, and at 57 Fed. Reg. 1850, January 15, 1992. The Section specifies analytical methods for microbiological contaminants. The amendments concern approval of the "MMO-MUG" test, which was the main topic of R90-21.

As noted above, the Board has included the January 15, 1992, Federal Register approval of new uses of the MMO-MUG test in this Docket, even though it is outside the scope of this Update. Both the Agency and the manufacturer of the test reagent asked the Board to approve these new uses in this Docket. The Board has proposed to do so, since these new uses appear to represent a

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[9]These numbers do not add up to the total number of contaminants regulated, since, as discussed above, USEPA has adopted BATs for several contaminants for which there is no revised MCL.

simpler test method, and since it poses no problems in getting this Proposal out.

The MMO-MUG test reagent is now manufactured by Environetics, Inc., which was formerly Access Analytical Systems. As discussed above, the Board has changed the name in the incorporations by reference portion of these rules [611.102].

As was discussed in R90-21, following adoption of R88-26, the Board received requests from Environetics and the Agency for approval of the "MMO-MUG" test for total coliform. (PC 1, 3 and 5 in R90-21). This rulemaking extends this approval to include E. coli. The January 15, 1992, action extends approval to include E. coli negative results.

In R90-21, the Board added the "MMO-MUG" test for total coliform as Section 611.526(c)(4). However, the Board noted that the July 17, 1989, Federal Register, which the commenters cited as the source of USEPA's approval of the MMO-MUG test, amended federal rules which had been repealed on June 29, 1989. (R90-21 Opinion, p. 3-5) Because the base text for the amendment had been repealed, and was not present in the Board rules, it was difficult to place the approval into the Board rule.

The January 8, 1991, amendments are much different than the July 17, 1989 "approval". For one thing, they are amending language which is still present in the USEPA and Board rules. The amendments also specify conditions of the test, and what constitutes a positive result, details which are totally lacking in the earlier "approval". Furthermore, the "MMO-MUG" test is presented not as a totally new analytical method, but as a alternative way of performing the MTF, MF and P-A tests. This is more consistent with the way the tests are presented in the documentation supplied by Access in R90-21.

As adopted on January 8, 1991, the amendments were to 40 CFR 141.21(f)(5) and (6) [611.526(e) and (f)]. However, the January 15, 1992, amendments added a new (f)(6) [(f)], bumping the old (6) [(f)] to (7) [(g)]. The ensuing discussion uses the new numbering.

The Board has proposed to make a number of minor editorial corrections to Section 611.526(e), (f) and (g). These are discussed as follows.

40 CFR 141.21(e) - (g) are worded as "Public water systems must..." However, as discussed above, "supplier" is the term for the owner or operator of a PWS.

40 CFR 141.21(f) defines "MUG" as an acronym, and uses two metric units which need to be defined ("ug" for "microgram" and "nm" for "nanometer"). The Board has defined these above in

Section 611.102. "MUG" is implicitly defined in the name of the "MMO-MUG" test in Section 611.103, but is now used as a stand-alone term in these subsections.

The second sentence of 40 CFR 141.21(f)(5) [611.526(e)] formerly read: "...shake the lactose-positive tube or P-A bottle..." The USEPA amendment has dropped the word "bottle". The Board takes this to be a typo, and has proposed to retain it in Section 611.526(e)(1).

The third sentence of 40 CFR 141.21(f)(5) refers to "EPA-approved analytical methods..." In R88-26, the Board replaced this with a reference to "Microbiological Methods", a shortened name for the EPA analytical methods.

The USEPA rule includes repeated long references to the 16th Edition of "Standard Methods for the Examination of Waste and Wastewater" ("Standard Methods"). In R88-26, the Board placed the complete library references in Section 611.103, along with definitions of shorter names for these documents. The Board has continued to follow this format in these amendments.

40 CFR 141.21(f)(8)(ii) [611.526(g)(2)] includes a new reference to the method of preparing "nutrient agar". The Board has replaced the page number reference to Standard Methods with the Method number, to be consistent with other references. This is in Method 908C.

40 CFR 141.21(f)(7), as adopted on January 15, 1992, appears to have a cross reference error. The reference to "(f)(6)(i)" probably should be to "(f)(8)(i)", as renumbered [611.626(g)(1)]. The Board has proposed to correct this apparent error, but **solicits comment.**

40 CFR 141.21(f) was also amended to change the Federal Register incorporation by reference statement. This has no State equivalent. Incorporations by reference are in Section 611.103.

SUBPART N: INORGANIC MONITORING

This Subpart specifies the monitoring and analytical requirements for inorganic chemicals. Most of the Subpart is drawn from 40 CFR 141.23, which was amended at 56 Fed. Reg. 3578, January 30, 1991. The amendments involve virtually a complete replacement of the text of Section 141.23. Because of the size of the new text, it is necessary to move other Sections out of the way.

For some of the parameters involved in this Subpart, the Board may have existing monitoring requirements which are arguably "more stringent" than the USEPA requirements, for example, in the sense of requiring more frequent sampling. As is discussed in general above, the Board makes the stringency comparison with respect to the MCLs, and then adopts the monitoring requirements associated with the more stringent MCL.

Section 611.591 and 611.592

The contents of Section 611.602 and 611.603 have been moved here to accommodate the larger text corresponding to 40 CFR 141.23, which will occupy Section 611.600 et seq. These are "additional State requirements".

Section 611.600 Applicability

This new Section is drawn from the introduction to 40 CFR 141.23, which reads as follows:

> Community water systems shall conduct monitoring to determine compliance with the maximum contaminant levels specified in §141.62 in accordance with this section. Non-transient, non-community water systems shall conduct monitoring to determine compliance with the maximum contaminant levels in §141.62 in accordance with this section. Transient, non-community water systems shall conduct monitoring to determine compliance with the nitrate and nitrite maximum contaminant levels in §141.11 and §141.62 (as appropriate) in accordance with this section.

The USEPA applicability statement is amazingly complex. The Board has proposed to simplify this provision by deferring to the MCLs as to their respective applicability, and by blocking repeated language together. This is easier set out in full than explained:

Section 611.600 Applicability

The following types of CWS suppliers shall conduct

monitoring to determine compliance with the MCLs in Section 611.300 and 611.301, as appropriate, in accordance with this Subpart:

a) CWS suppliers.

b) NTNCWS suppliers.

c) Transient, non-CWS suppliers to determine compliance with the nitrate and nitrite MCLs.

Definitions [611.600]

40 CFR 141.23(a)(1) and (2), et seq., use the terms "groundwater systems" and "surface water systems", which are implicitly defined in a note following the subsections. As is discussed in general above, the Board has proposed, in Section 611.600(d), definitions which are consistent with the notes, and with the actual usage of the terms in this Subpart. The definitions are as follows:

"GWS" means "groundwater system", a PWS which uses only groundwater sources.

"Mixed system" means a PWS which uses both groundwater and surface water sources.

"SWS" means "surface water system", a PWS which uses only surface water sources, including "groundwater under the direct influence of surface water", as defined in Section 611.102.

The averaging rule, Section 611.608, includes a reference to "detection limits". The Board believes that this is defined by implication in 40 CFR 141.23(a)(4)(i), an optional provision dealing with composite samples, which the Board is not proposing to adopt. The Board has proposed the table of detection limits as a definition in this Section. The Board **solicits comment.**

In Section 611.101 above, the Board has proposed a definition for "MFL", the units of measure for asbestos (millions of fibers per liter larger than 10 micrometers).

Several of the following Sections use the term "reliably and consistently" in connection with "waivers" of monitoring provisions. The Board has proposed a definition, which is discussed in general above, for use in this Subpart:

"Reliably and consistently" below a specified level for a contaminant means that:

Levels are below the specified level;

The distribution of data is such that it is unlikely that future individual measurements will exceed the specified level unless the long term average increases;

The data does not show an upward trend toward the specified level; and

There are no factors which show that the source is vulnerable to the contaminant.

Section 611.601 Sampling Points

This Section is drawn from 40 CFR 141.23(a), which was replaced at 56 Fed. Reg. 3578, January 30, 1991. This specifies sampling locations and the date of the initial sampling. The essential provisions read as follows:

1) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point) beginning in the compliance period starting January 1, 1993. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

2) Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point) beginning in the compliance period beginning January 1, 1993. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.[1]

3) If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

There are quite a few difficulties with this language, which are discussed in general above. The Board has proposed the

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[1]Following 40 CFR 141.23(a)(2) is a note which defines "SWS" and "GWS" by implication. This appears by way of the definitions of these terms discussed above in Section 611.600(d).

following language as Section 611.601(a) - (c):

a) Definitions. As used in this Section:

"Distribution system" includes all points downstream of an "entry point".

"Entry point" means a point just downstream of the final treatment operation, but upstream of the first user and upstream of any mixing with other water. If raw water is used without treatment, the "entry point" is the raw water source. If a PWS receives treated water from another PWS, the "entry point" is a point just downstream of the other PWS, but upstream of the first user on the PWS, and upstream of any mixing with other water.

"GWS" is as defined in Section 611.600.

"Mixed system" is as defined in Section 611.600.

"Representative" means that a sample is expected to reflect the properties of water averaged over the period of time and portion of the PWS to be sampled. To be representative, a sample must be taken under normal seasonal operating conditions.

"Source" means a well, reservoir or other source of raw water.

"SWS" is as defined in Section 611.600.

"Treatment" means any process: which changes the physical or chemical properties of water; which is under the control of the supplier; and, which is not a "point of use" or "point of entry treatment device" as defined in Section 611.101. "Treatment" includes, but is not limited to: aeration, coagulation, sedimentation, filtration, activated carbon, chlorination and fluoridation.

b) Required sampling. Each supplier shall take a minimum of one sample at each sampling point at the times required in Section 611.610. Each sampling point must be "representative." The total number of sampling points must be representative of the water delivered to users

throughout the system.

c) Sampling points.

1) Sampling points for GWSs. Unless otherwise provided by SEP, the following are the sampling points for GWSs: Each entry point.

2) Sampling points for SWSs and mixed systems. Unless otherwise provided by SEP, the following are sampling points for SWSs and mixed systems:

A) Each entry point; or

B) Points in the distribution system.

3) Additional sampling points. The Agency shall, by SEP, designate additional sampling points in the distribution system or at the consumer's tap if it determines that such samples are necessary to more accurately determine consumer exposure.

4) Alternative sampling points. The Agency shall, by SEP, approve alternate sampling points if the supplier demonstrates that the points are more representative than the generally required point.

The proposed rules on sampling points are very similar to Section 611.646(a) - (c), below. A discussion of the rules appears below.

Compositing [611.601(d)]

40 CFR 141.23(a)(4) is a complex, optional provision which allows the State to allow compositing of samples. As is discussed in general above, the Board is not proposing to adopt an equivalent.[2]

40 CFR 141.23(a)(4)(i) includes a definition of "detection level" which appears to apply outside the compositing provisions. The Board has proposed this definition in Section 611.600, above.

Index [611.601(e)]

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[2]The Board has marked the hole, in Section 611.601(d), with a do-nothing cross reference to Section 611.100(e), which explains that some subsection labels are omitted to preserve correspondence with federal numbering.

40 CFR 141.23(a)(5) serves as an index to the ensuing subsections. It reads as follows:

> 5) The frequency of monitoring for asbestos shall be in accordance with paragraph (b) of this section; the frequency of monitoring for barium, cadmium, chromium, fluoride, mercury, and selenium shall be in accordance with paragraph (c) of this section; the frequency of monitoring for nitrate shall be in accordance with paragraph (d) of this section; and the frequency of monitoring for nitrite shall be in accordance with paragraph (e) of this section.

This subsection would be totally unnecessary if this Section were organized differently. However, the Board has attempted to retain as much of the USEPA structure as possible. In Section 611.601(e), the Board has consolidated repeated language into the introduction, and separated the variables into subsections:

> e) The frequency of monitoring for the following contaminants must be in accordance with the indicated Sections:
>
> 1) Asbestos, Section 611.602;
>
> 2) Barium, cadmium, chromium, fluoride, mercury and selenium, Section 611.603;
>
> 3) Nitrate, Section 611.604; and
>
> 4) Nitrite, Section 611.605.

Section 611.602 Asbestos Monitoring Frequency

This new Section is drawn from 40 CFR 141.23(b), which was amended at 56 Fed. Reg. 3578, January 30, 1991. This Section deals with frequency of monitoring for asbestos.[3]

Introduction [611.602]

The introduction to 40 CFR 141.23(b) reads as follows:

> The frequency of monitoring **conducted** to determine compliance with the maximum contaminant level for asbestos specified in §141.62(b) **shall be conducted** as follows:

The Board has proposed to correct this typo by deleting the second "conducted". This would make Section 611.602 consistent

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[3]Old Section 611.602 has been renumbered to Section 611.591.

with the ensuing Sections.

> The frequency of monitoring conducted to determine compliance with the MCL for asbestos in Section 611.301 is as follows:...

Compliance Cycle Monitoring [611.602(a)]

> This subsection is drawn from 40 CFR 141.23(b)(1):
>
> (1) Each community and non-transient, non-community water system is required to monitor for asbestos during the first three-year compliance period of each nine-year compliance cycle beginning in the compliance period starting January 1, 1993.

Asbestos monitoring is required during the first (three year) "compliance period" of each (nine year) "compliance cycle". As is discussed in general above, the Board has substituted the terms defined in Section 611.101. As is discussed in general above, the Board assumes that all of the monitoring and related "waivers" are to fit into the cycles and periods set forth in the definitions.

There is perhaps a deeper problem with this provision: it requires not just a single sample every nine years, but also that the sample be taken during the first compliance period of the nine year cycle. The Board has proposed to follow this language However, it may pose two types of problems. First, it may be inefficient for laboratories to deal with asbestos samples in a large batch every nine years. Second, when linked with the language governing the term of "waivers", discussed below, it creates an ambiguity as to whether "waivers" are for three or nine years. The Board **solicits comment.**

The Board has proposed the following language as equivalent to 40 CFR 141.23(b)(1) [611.602(a)]:

> Unless the Agency has determined under subsection (c) that the PWS is not vulnerable, each CWS and NTNCWS supplier shall monitor for asbestos during the first compliance period of each compliance cycle, beginning January 1, 1993.

"Adjustments" of Asbestos Monitoring [611.602(b) - (d)]
Editorial Problems

40 CFR 141.23(b)(2)-(4) deal with "waivers" of the asbestos monitoring requirement, which read as follows:

> (2) If the system believes it is not vulnerable to either asbestos contamination in its source water or

> due to corrosion of asbestos-cement pipe, or both, it may apply to the State for a waiver of the monitoring requirement in paragraph (b)(1) of this section. If the State grants the waiver, the system is not required to monitor.
>
> (3) The State may grant a waiver based on a consideration of the following factors:
>
> (i) Potential asbestos contamination of the water source, and
>
> (ii) The use of asbestos-cement pipe for finished water distribution and the corrosive nature of the water.
>
> (4) A waiver remains in effect until the completion of the three-year compliance period. Systems not receiving a waiver must monitor in accordance with the provisions of paragraph (b)(1) of this section.

There are a large number of editorial problems with these provisions, which are discussed below.

Application for Asbestos Adjustment [611.602(b)]

The first problem is that 40 CFR 141.23(b)(2) is written as a subjective precondition to the filing of the request for the adjustment, rather than as an objective standard for State action on the request. For the reasons discussed in general above, the Board has proposed this as an open authorization to apply, and an objective standard for State action. Section 611.602(b) contains the authorization to apply:

> CWS suppliers may apply to the Agency, by way of an application for a SEP under Section 611.110, for a determination that the CWS is not vulnerable.

Standard for Grant of Asbestos Adjustment [611.602(c)]

The standard for the grant of the asbestos "waiver" is in 40 CFR 141.23(b)(2) and (3). As discussed above, the Board is combining the standards in these two paragraphs into a single, objective standard for State action.

It is usually easy to convert a subjective precondition to filing into an objective standard for State action on the request. However, this leads us to two more editorial problems: the wording of the standard, and how to fit it in with the standard in 40 CFR 141.23(b)(3).

The standard if subsection (b)(2) is worded as follows:

> "If the system ... is not vulnerable **to either** asbestos contamination in its source water **or** due to corrosion of asbestos-cement pipe, or both..."

The first wording problem is the placement of "either". This makes the second condition read "not vulnerable to ... due to corrosion", depriving "to" of its object. This can be represented as: "not vulnerable due to A or B, **or both**". This suggests that there are three types of showings the supply could make: "not A", "not B" or "not A and not B". In other words, a supply with asbestos pipe could obtain a "waiver" by demonstrating that there is no potential for contamination in its source water. This is clearly an error by USEPA. The Board has therefore proposed to delete the "or both".

As proposed by the Board, the standard for approval [611.602(c)] is as follows:

> The Agency shall determine that the CWS is "not vulnerable" if the CWS is not vulnerable to contamination either from asbestos in its source water or from corrosion of asbestos-cement pipe...

This now leads us to the next editorial problem: where to put the standard. The next subsection, 40 CFR 141.23(b)(3), reads as follows:

> (3) The State may grant a waiver based on a consideration of the following factors:
>
> (i) Potential asbestos contamination of the water source, and
>
> (ii) The use of asbestos-cement pipe for finished water distribution and the corrosive nature of the water.

This is worded as a grant based on a "consideration" of factors. This type of USEPA rule is discussed in general above. The Board has combined the "considerations" with the standard, discussed above.

The next editorial problem is the form of the "considerations". As written these are stated as [A and (B and C)]. Normally this would be equivalent to [A and B and C]:

> 1) Potential asbestos contamination of the water source; and
>
> 2) The use of asbestos-cement pipe for finished water distribution; and

3) The corrosive nature of the water.

However, corrosivity and the use of asbestos pipe are linked factors, in that asbestos pipe is a problem only if water is corrosive. The Board has therefore proposed the following language, linking these factors:

> The State may grant an adjustment based on of the following factors:
>
> 1) Potential asbestos contamination of the water source; and
>
> 2) If the water is corrosive, the use of asbestos-cement pipe for finished water distribution.

The Board **solicits comment** as to whether the USEPA rule intends this type of linkage.

Effect and Conditions of the Asbestos Adjustment [611.602(d)]

40 CFR 141.23(b)(4) reads as follows:

> (4) A waiver remains in effect until the completion of the three-year compliance period. Systems not receiving a waiver must monitor in accordance with the provisions of paragraph (b)(1) of this section.

The next editorial problem is the repetition of the monitoring requirement and the effect of the grant of a "waiver". 40 CFR 141.23(b)(1) provides: "Each [CWS]... is required to monitor..." Subsection (b)(2) then says: "If the State grants the waiver, the system is not required to monitor." Subsection (b)(4) then states: "Systems not receiving a waiver must monitor..." The Board has proposed to state the effect of the "waiver" just once, and has placed it in Section 611.602(a) (discussed above).

The next problem is the provision that a "waiver" remains in effect until the completion of the three-year "compliance period". As written, this means that the "waiver" is essentially until the end of the (nine year) "compliance cycle". In other words, if a "waiver" is granted for the first period, no additional "waiver", or monitoring would be required until the first period of the next cycle, nine years later.[4] [5] The Board

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[4]Alternatively, it would be possible to read the specific three-year limitation as imposing the asbestos monitoring in the second period, unless another waiver is granted.

has proposed to allow adjustments for nine years, but **solicits comment** as to whether the other reading might be correct.

Procedures for Asbestos "Adjustments" [611.602(b) - (d)]

This brings to a conclusion the discussion of editorial problems with 40 CFR 141.23(b)(2) - (4). The next problems concern how to translate the USEPA language into State law. 40 CFR 141.23(b)(3) provides that: "The State may grant a waiver..." A general discussion of the factors the Board considers in deciding how the State makes this type of decision is presented in the introduction to this Opinion.

The Board has determined that the USEPA provision does not amount to a waiver for which Board action would be required. The "waiver" does not release the supply from the permit requirement, or from the MCL. Rather, the supply makes an alternative demonstration which shows that compliance with the asbestos standard is likely, so that routine monitoring need not be conducted. This is strictly a technical showing of a type the Agency typically makes in the context of permit issuance. Furthermore, the "SEP" of Section 611.110 provides an appropriate procedural vehicle for this type of Agency decision. The Board **solicits comment.**

Proposed Language Concerning Asbestos Adjustments [611.602(a) - (d)]

The language proposed by the Board is set forth as follows:

> The frequency of monitoring conducted to determine compliance with the MCL for asbestos in Section 611.301 is as follows:
>
> a) Unless the Agency has determined under subsection (c) that the system is not vulnerable, each CWS and NTNCWS supplier shall monitor for asbestos during the first compliance period of each compliance cycle, beginning January 1, 1993.
>
> b) CWS suppliers may apply to the Agency, by way of an application for a SEP under Section 611.110, for a determination that the CWS is not vulnerable.
>
> c) The Agency shall determine that the CWS is "not vulnerable" if the CWS is not vulnerable to contamination either from asbestos in its source

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[5]As is discussed above, the Board is substituting the defined terms "compliance period" and "compliance cycle".

water or from corrosion of asbestos-cement pipe, based on a consideration of the following factors:

1) Potential asbestos contamination of the water source; and

2) If the water is corrosive, the use of asbestos-cement pipe for finished water distribution.

d) A determination that a CWS is not vulnerable expires at the end of the compliance cycle for which it was issued.

Monitoring Locations for Asbestos [611.602(e) - (f)]

40 CFR 141.23(b)(5) - (7) [Section 611.602(e) - (g)] specify the monitoring locations for systems which are vulnerable because of pipe, source water or both. Subsection (b)(6) [(f)] requires systems vulnerable solely because of source water to monitor in accordance with "paragraph (a)", which corresponds with Section 611.601.[6] The proposed language is as follows:

e) A supplier of a PWS vulnerable to asbestos contamination due solely to corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

f) A supplier of a PWS vulnerable to asbestos contamination due solely to source water shall monitor in accordance with Section 611.601.

g) A supplier of a PWS vulnerable to asbestos contamination due both to its source water supply and corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

Monitoring Following MCL Violation [611.602(h)]
Quarterly Monitoring

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[6]This appears to make sense. However, it raises a question as to the overall structure of the rule. Paragraph (a) appears to apply to monitoring for all contaminants anyway. Is this reference mere surplusage, or are the systems with pipe problems supposed to comply with the alternatives instead of paragraph (a)? Where does it say this? The Board solicits comment.

40 CFR 141.23(b)(8) [Section 611.602(h)] requires quarterly monitoring beginning the next quarter after a violation of the asbestos MCL is found pursuant to compliance cycle monitoring:

> 8) A system which exceeds the maximum contaminant levels as determined in §141.23(i) of this section shall monitor quarterly beginning in the next quarter after the violation occurred.

As written, this requires a violation of all the MCLs before quarterly monitoring. In addition to the problems discussed in general above, this subsection is really addressing a single parameter: asbestos.

The USEPA rule cites to the averaging rule. At first sight this appears to be an example of a "trigger" provision which relies on the averaging rule, contrary to the general rule discussed above. However, since most suppliers are on annual or less frequent monitoring, and since there is no averaging for such samples, a single sample is still sufficient to trigger quarterly monitoring.

The USEPA rule is written as a self-implementing provision which automatically requires the supplier to take quarterly samples after exceeding the MCL. The Board has followed the USEPA text and proposed to adopt this without referencing a procedure [611.602(h)]:

> A supplier which exceeds the MCL, as determined in Section 611.609, shall monitor quarterly beginning in the next quarter after the violation occurred.

Reduction In Quarterly Monitoring [611.602(i)]

40 CFR 141.23(b)(9) [Section 611.602(i)] allows the State to reduce monitoring frequency to less than quarterly, as follows:

> 9) The State may decrease the quarterly monitoring requirement to the frequency specified in paragraph (b)(1) of this section provided the State has determined that the system is reliably and consistently below the maximum contaminant level. In no case can a State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface (or combined surface/ground) water system takes a minimum of four quarterly samples. [40 CFR 141.23(b)(9)]

Board or Agency? [611.602(i)]

The first question is: which agency, the Board or Agency, is empowered to make this decision? The general factors which

the Board considers are discussed above.

The frequency of monitoring is generally specified by the Agency in comprehensive permits, acting pursuant to Board regulations, such as 35 Ill. Adm. Code 309.146 and 724.197. In such systems it is common for the Agency to specify increased monitoring following a violation, and to allow decreased monitoring after the permittee has come into compliance again. Although the PWS program lacks a comprehensive permit, it includes the "SEP". The Board has therefore determined that the decrease in monitoring frequency is within the Agency's authority, and that the reduction should be by SEP. The Board **solicits comment.**

Standard for Agency Action [611.602(i)]

40 CFR 141.23(b)(9) has the "reliably and consistently" language which is discussed in general above. The Board has defined the term in Section 611.600, for use in this Subpart. The proposed language below depends on that definition.

40 CFR 141.23(b)(9) does not have the "Catch-22" problem discussed in general above, because the provision is triggered by an MCL violation. However, the Board has proposed that the Agency should establish, by SEP, when making the "reliably and consistently" determination, a specific trigger which would require a return to quarterly monitoring.

Proposed Rule on Adjustments of Quarterly Monitoring Following Violation [611.602(i)]

The Board has proposed the following equivalent for 40 CFR 141.23(b)(9) [611.602(i)]:

i) Reduction of quarterly monitoring.

1) A supplier may request that the Agency reduce the monitoring frequency to annual. The request must be by way of a SEP application pursuant to Section 611.110.

2) The request must include the following minimal information:

A) For a GWS, two quarterly samples.

B) For an SWS or mixed system, four quarterly samples.

3) The Agency shall, by SEP, allow annual monitoring at a sampling point, if it determines that the sampling point is

reliably and consistently below the MCL.

4) In issuing the SEP, the Agency shall specify:

A) The level of the contaminant upon which the "reliably and consistently" determination was based; and

B) The level of the contaminant which, if exceeded in any one sample, would cause the supplier to reinitiate quarterly monitoring.

Use of Previous Data [611.602(j)]

40 CFR 141.23(b)(10) allows the use of past data for the first compliance period:

> 10) If monitoring data collected after January 1, 1990 are generally consistent with the requirements of Section 141.23(b), then the State may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

This Section allows the State to authorize the use of past data. As is discussed in general above, the Board has proposed to allow only data which has been collected pursuant to Agency sample requests since the USEPA rules were published. The proposed rule is as follows [611.602(j)]:

> Data collected after January 30, 1991, but prior to the effective date of this Section, pursuant to Agency sample request letters, are deemed to meet the requirements of this Section, if the data are consistent with 40 CFR 141.23.

The Board **solicits comment** as to whether there might be other types of prior data which should be allowed.

Section 611.603 Inorganic Monitoring Frequency

This new Section is drawn from 40 CFR 141.23(c), which was adopted at 56 Fed. Reg. 3578, January 30, 1991. It specifies the monitoring frequency for barium, cadmium, chromium, fluoride, mercury and selenium.[7] The issues concerning this Section are similar to those concerning Section 611.602, above.

Introduction [611.603]

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[7]Old Section 611.603 has been moved to Section 611.592.

This Section specifies monitoring frequencies for barium, cadmium, chromium, fluoride, mercury and selenium, which have revised[8] MCLs in Section 611.301.

Number of Samples [Section 611.603(a)]

This subsection is drawn from 40 CFR 141.23(c)(1):

> (1) Groundwater systems shall take one sample at each sampling point during each compliance period beginning in the compliance period starting January 1, 1993. Surface water systems (or combined surface/ground) shall take one sample annually at each sampling point beginning January 1, 1993.

The terms "SWS" and "GWS", etc. are defined above. This is more simply stated, using defined terms. The proposed language appears below.

The comparable provision discussed above, concerning asbestos, is careful to specify that the monitoring applies only to CWSs and NTNCWSs. 40 CFR 141.23(c) is stated as applying to all "systems", which the Board takes to mean "PWSs". The Board has above substituted the defined term "supplier", meaning the owner or operator of a "PWS". However, the MCLs for these contaminants in 40 CFR 141.62 [611.301] apply only to CWSs.[9] The Board has therefore specified "CWS supplier" in connection with these monitoring requirements. After the initial statement of applicability, the Board has proposed to simply use "supplier". The Board **solicits comment.**

The proposed language on number of samples is as follows [611.603(a)]:

> CWS suppliers shall take, at each sampling point beginning January 1, 1993, as follows:
>
> 1) For GWSs, one sample during each compliance period;
>
> 2) For SWSs and mixed systems, one sample each year.

"Adjustment" Provisions [Section 611.603(b) et seq]

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[8]As is discussed above, "revised MCL" is a term of art in the USEPA rules. It does not necessarily mean that the numerical value of the MCL has changed.

[9]Although the Board assumes that the scope of monitoring is equivalent to the scope of the MCLs, there appears to be no general rule so stating.

40 CFR 141.23(c)(2) - (6) allow States to grant "waivers" of the monitoring requirements for the MCLs for barium, cadmium, chromium, fluoride, mercury and selenium. The USEPA provisions are as follows:

> (2) The system may apply to the State for a waiver from the monitoring frequencies specified in paragraph (c)(1) of this section.
>
> (3) A condition of the waiver shall require that a system shall take a minimum of one sample while the waiver is effective. The term during which the waiver is effective shall not exceed one compliance cycle (i.e., nine years).
>
> (4) The State may grant a waiver provided surface water systems have monitored annually for at least three years and groundwater systems have conducted a minimum of three rounds of monitoring. (At least one sample shall have been taken since January 1, 1990.) Both surface and groundwater systems shall demonstrate that all previous analytical results were less than the maximum contaminant level. Systems that use a new water source are not eligible for a waiver until three rounds of monitoring from the new source have been completed.
>
> (5) In determining the appropriate reduced monitoring frequency, the State shall consider:
>
> (i) Reported concentrations from all previous monitoring;
>
> (ii) The degree of variation in reported concentrations; and
>
> (iii) Other factors which may affect contaminant concentrations such as changes in groundwater pumping rates, changes in the system's configuration, changes in the system's operating procedures, or changes in stream flows or characteristics.
>
> (6) A decision by the State to grant a waiver shall be made in writing and shall set forth the basis for the determination. The determination may be initiated by the State or upon an application by the public water system. The public water system shall specify the basis for its request. The State shall review and, where appropriate, revise its determination of the appropriate monitoring frequency when the system submits new monitoring data or when other data relevant to the system's appropriate monitoring frequency become

available.

Board or Agency Action?

The general factors which the Board considers in deciding which agency is to make decisions are discussed above. Decisions specifying monitoring frequencies are traditional Agency permit actions. The Board has proposed to have the Agency make these decisions pursuant to a "SEP" under Section 611.110. The Board **solicits comment.**

Editorial Problems [611.603(b) et seq.]

These USEPA provisions lack the gross editorial errors discussed above in connection with asbestos monitoring. Rather, most of the changes are just to eliminate redundancies and use defined terms.

The main editorial problem with 40 CFR 141.23(c)(2) - (6) is its scrambled order.[10] This would be much easier to use if it were in the chronological order in which the provisions would ordinarily arise in a proceeding: Application, Procedures, Standard for action, Standard for conditions, Conditions, and Revision. The Board has proposed to rearrange[11] these provisions. The proposed language appears below.

40 CFR 141.23(c)(2) and (6) specify application requirements. These have been consolidated into Section 611.603(b).

40 CFR 141.23(c)(6) allows the State to initiate the "waiver" process. As is discussed above in connection with SEPs, the Agency can sometimes reopen a SEP.

40 CFR 141.23(c)(6) requires State determinations on "waivers" to be in writing with a statement of basis. In Section 611.603(c), the Board has proposed to replace these detailed requirements with a reference to the SEP procedures. Section 39(a) of the Act, together with Section 611.110, require SEPs to be in writing, with a statement of basis.

40 CFR 141.23(c)(4) sets forth the standard for the grant of a "waiver". This has been rearranged in Section 611.603(d). The

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[10]The order of the USEPA rule is: Application, Conditions, Standard for action, Standard for conditions, Procedures, Application and Revision.

[11]This destroys the simple correspondence between the Board and USEPA rules. The Board has inserted "Board Notes" to alert readers as to the source of each subsection.

basic standard is the demonstration "that all previous analytical results were less than the MCL." The Board has moved this to the front. The remainder of the text appears to be specifying minimal data requirements for various types of CWS. These are set forth as subsections (d)(1) - (3). There are some general editorial problems which are discussed above. The Board has tried to restate these, using the terms defined above.[12]

There are also some new editorial problems with 40 CFR 141.23(c)(4). SWSs must have annual monitoring "for at least three years". This correlates with the annual monitoring requirement in 40 CFR 141.23(c)(1). On the other hand, the data requirement for GWSs and "new" sources is "three rounds of monitoring". This latter term is not defined, and does not correlate with subsection (c)(1), which requires only one sample in each three year compliance period, such that at least seven years would be required to accumulate the data under required monitoring.[13] The Board **solicits comment** as to the meaning of "rounds of monitoring".

As is discussed in general above, the special rule on "new sources" appears to be surplusage, stating the result of the general rule as applied in a special case.[14] The Board has

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[12]The Board assumes that "groundwater system" means, as above, a supplier using only groundwater.

[13]Alternatively, "rounds of monitoring" may include more frequent monitoring aimed solely at establishing a basis for the "waiver". However, there appears to be no limitation on taking, for example, samples on three consecutive days. Such closely spaced samples would be much less representative of long-term quality.

[14]The term "new water source" is not defined, although it evidently means a source which comes into use after the beginning of the initial compliance period. However, there may be no need for this term. The provision on new sources requires "three rounds of monitoring". The new source is either strictly a groundwater or an "other source". If it's a groundwater source, the rule is "three rounds of monitoring" anyway, whatever that means. If it's an "other source", the general rule would be "annual monitoring for at least three years". The only conceivable purpose of this provision would be to relax the data rule for the "other sources" so as to treat them as GWSs, possibly allowing them to take samples on consecutive days, as discussed below. However, this would be extremely unreliable for a SWS, which is apt to be subject to seasonal fluctuations. More likely, this provision is just an afterthought to establish a "minimal minimum" for the new sources. The possible relaxation of the general rule for SWSs is probably an editorial error by

proposed to delete the special rule. The alternative would be to move it to an explanatory note. The Board **solicits comment.**

40 CFR 141.23(c)(3) and (5) contain the standards by which the State is to decide how often the supplier must monitor if a "waiver" is granted. These are consolidated into Section 611.603(e). The minimum is one sample during the life of the adjustment, which can be no more than nine years, as discussed below. However, the Agency can require more frequent monitoring, based on factors set out in Section 611.603(e)(1) - (3).

40 CFR 141.23(c)(3) [Section 611.603(f)(1)] limits the term of a "waiver" to "one compliance cycle (i.e., nine years)". As is discussed in general above, this is ambiguous.[15] As proposed by the Board in Section 611.603(f)(1), this reads:

> The SEP will expire at the end of the compliance cycle for which it was issued.

40 CFR 141.23(c)(4) requires that "at least one sample have been taken since January 1, 1990". This is discussed in general above, under "previous data". This subsection differs from the asbestos, and most other provisions, in that there is no general prior data provision. For these contaminants, the only limitation is that, to get a "waiver", at least one sample must have been taken prior to 1990. This is apparently because most of these revised MCLs had standards subject to USEPA monitoring requirements prior this rulemaking: USEPA seems to be mandating that the states accept this type of previous data. The previous data term therefore differs from that discussed in general.

40 CFR 141.23(c)(6) includes a zipper clause which allows the State to revise the monitoring frequency specified in a "waiver" based on new monitoring data or other relevant information. The Board has proposed to place this in Section

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USEPA.

[15]For example, could a CWS apply in year seven of a compliance cycle for a waiver which would be issued in year eight, but would apply during years one through nine of the next cycle? In such a case the "waiver" would expire more than 9 years after issuance. Alternatively, could a CWS apply for a "waiver" in year five, which would last through year four of the next cycle? The latter alternative would appear to disrupt the "compliance cycle" monitoring scheme set up by USEPA. The alternative, in which "waivers" are keyed to the compliance cycles, is more consistent with that scheme. It is also more consistent with the wording of 40 CFR 141.23(b)(4), concerning asbestos, discussed above, which is clearly keyed to the end of the next compliance period.

611.603(f)(2), and to word it as a required condition of the SEP. In this way the Agency will notify each CWS of the possibility of reopening.

Proposed Language on "Adjustments" [611.603(b) - (f)]

The proposed language on "adjustments", drawn from 40 CFR 141.23(c)(2) - (6), is as follows:

b) Application. The supplier may apply to the Agency for a reduction from the monitoring frequencies specified in subsection (a) by way of an application for a SEP under Section 611.110.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(2) and (6), as amended at 56 Fed. Reg. 3578, January 30, 1991.

c) Procedures. The Agency shall review the request pursuant to the SEP procedures of Section 611.110.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(6), as amended at 56 Fed. Reg. 3578, January 30, 1991.

d) Standard for reduction in monitoring. The Agency shall reduce the monitoring frequency if the supplier demonstrates that all previous analytical results were less than the MCL, provided the supplier meets the following minimum data requirements:

1) For GWS suppliers, a minimum of three rounds of monitoring.

2) For SWS and mixed system suppliers, annual monitoring for at least three years.

3) At least one sample must have been taken since January 1, 1990.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(4), as amended at 56 Fed. Reg. 3578, January 30, 1991.

e) Standard for monitoring conditions. As a condition of any SEP, the Agency shall require that the supplier take a minimum of one sample. In determining the appropriate reduced monitoring frequency, the Agency shall consider:

1) Reported concentrations from all previous monitoring;

2) The degree of variation in reported concentrations; and

3) Other factors which may affect contaminant concentrations such as: changes in groundwater pumping rates; changes in the CWSs configuration; the CWS's operating procedures; or, stream flows or characteristics.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(3) and (5), as amended at 56 Fed. Reg. 3578, January 30, 1991.

f) Conditions and Revision.

1) The SEP will expire at the end of the compliance cycle for which it was issued.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(3), as amended at 56 Fed. Reg. 3578, January 30, 1991.

2) The SEP must provide that the Agency will review and, where appropriate, revise its determination of the appropriate monitoring frequency when the supplier submits new monitoring data or when other data relevant to the supplier's appropriate monitoring frequency become available.

BOARD NOTE: Drawn from 40 CFR 141.23(c)(6), as amended at 56 Fed. Reg. 3578, January 30, 1991.

Quarterly Monitoring [Section 611.603(g)]

40 CFR 141.23(c)(7) reads:

Systems which exceed the maximum contaminant levels as calculated in § 141.23(i) of this section shall monitor quarterly beginning in the next quarter after the violation occurred.

As is discussed in the general introduction above, the Board assumes that this means that if a sample exceeds an MCL at a sampling point, the supplier goes to quarterly sampling for just the contaminant in question. The Board's proposed language is as follows:

A supplier which exceeds the MCL for barium, cadmium, chromium, fluoride, mercury or selenium, as determined

in Section 611.609, shall monitor quarterly for that contaminant, beginning in the next quarter after the violation occurred.

Reduction to Normal Monitoring [611.603(h)]

40 CFR 141.23(c)(8) reads as follows:

(8) The State may decrease the quarterly monitoring requirement to the frequencies specified in paragraphs (c)(1) and (c)(2) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case can a State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

The USEPA rule references "paragraphs (c)(1) and (c)(2)" as the normal monitoring requirement. This appears to be a typo, since the general monitoring requirement is found only in subsection (c)(1) [611.603(a)].

This rule depends on the "reliably and consistently" language which is discussed above in general, and in connection with asbestos. Although this does not have the "Catch-22" problem associated with it, the Board has proposed to require the Agency to specify a trigger for a resumption of quarterly monitoring.

Proposed Rule on Reduction from Monitoring [611.603(h)]

The Board has proposed the following equivalent for 40 CFR 141.23(c)(8) [611.603(h)]:

h) Reduction of quarterly monitoring.

1) A supplier may request that the Agency reduce the monitoring frequency to annual. The request must be by way of a SEP application pursuant to Section 611.110.

2) The request must include the following minimal information:

A) For a GWS, two quarterly samples.

B) For an SWS or mixed system, four quarterly samples.

3) The Agency shall, by SEP, allow annual monitoring at a sampling point, if it

determines that the sampling point is reliably and consistently below the MCL.

4) In issuing the SEP, the Agency shall specify:

A) The level of the contaminant upon which the "reliably and consistently" determination was based; and

B) The level of the contaminant which, if exceeded in any one sample, would cause the supplier to reinitiate quarterly monitoring.

Section 611.604 Nitrate Monitoring

This new Section is drawn from 40 CFR 141.23(d), which was adopted at 56 Fed. Reg. 3578, January 30, 1991. It governs nitrate monitoring at all PWSs. Nitrite monitoring is in Section 611.605.

Applicability [611.604]

The introduction to 40 CFR 141.23(d) reads as follows:

(d) All public water systems (community; non-transient, non-community; and transient, non-community systems) shall monitor to determine compliance with the maximum contaminant level for nitrate in §141.62.

Nitrate monitoring applies to all PWSs, which include CWSs, NTNCWSs and transient, non-CWSs.

The Board has proposed the following equivalent for the introduction to 40 CFR 141.23(d) [611.604]:

Each supplier shall monitor to determine compliance with the MCL for nitrate in Section 611.301.

Monitoring Frequency [611.604(a)]

40 CFR 141.23(d)(1) and (4) state the monitoring frequencies for various types of PWS:

1) Community and non-transient, non-community water systems served by groundwater systems[16] shall monitor

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[16]This provision is using the undefined term "groundwater system". As is discussed above, the Board assumes that this means systems using only a groundwater source. The Board has

annually beginning January 1, 1993; systems served by surface water shall monitor quarterly beginning January 1, 1993...

4) Each transient non-community water system shall monitor annually beginning January 1, 1993. [40 CFR 141.23(d)(1) and (4)]

Editorial Problems with Monitoring Frequencies

The monitoring frequencies are apparently stated separately in subsection (d)(4) because subsections (d)(2) and (3) deal with adjustments to the monitoring frequencies for the CWSs and NTNCWSs. However (d)(5) goes back to the former subject matter. The Board has proposed to consolidate these, since this appears to cause more problems than it solves. This arrangement also allows the provisions to be grouped, eliminating duplication of blocks of text.[17]

The second clause of 40 CFR 141.23(d)(1) requires "systems" served by surface water to monitor quarterly. USEPA usually uses "system" as an abbreviation of "PWS". However, this would contradict subsection (d)(4), which imposes annual monitoring on all transient non-CWSs. Evidently "systems" here refers to the types of PWS previously mentioned in the sentence. The Board has fixed this by grouping the provisions. The Board **solicits comment.**

Proposed language on Monitoring Frequency [611.604(a)]

The Board has proposed the following language concerning monitoring frequency as Section 611.604(a):

a) Suppliers shall monitor at the following frequencies, beginning January 1, 1993:

1) CWSs and NTNCWSs:

A) GWSs, annually;

B) SWSs, quarterly.

2) Transient non-CWSs, annually.

Adjustment Procedures for Nitrate Monitoring Frequencies [611.604(b) et seq.]

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reformulated this provision, using the terms defined above.

[17]However, this upsets the simple relationship of Board to USEPA Section numbers, requiring more frequent "Board Notes".

40 CFR 141.23(d)(2) and (3) deal with adjustments to monitoring frequencies after elevated levels of nitrate are found:

> 2) For community and non-transient, non-community water systems, the repeat monitoring frequency for ground water systems shall be quarterly for at least one year following any one sample in which the concentration is ≥50 percent of the MCL. The State may allow a groundwater system to reduce the sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than the MCL.
>
> 3) For community and non-transient, non-community water systems, the State may allow a surface water system to reduce the sampling frequency to annually if all analytical results from four consecutive quarters are <50 percent of the MCL. A surface water system shall return to quarterly monitoring if any one sample is ≥50 percent of the MCL.

Undefined Terms [611.604(b), (c) and (e)]

In addition to the usual, such as "groundwater system", these provisions introduce several new undefined terms. These include "repeat monitoring frequency" and "round of quarterly sampling". The Board has attempted to rewrite these provisions using terms which are defined.[18]

Baseline Requirements for GWSs and SWSs [611.604(b) et seq.]

As discussed above, under 40 CFR 141.23(d)(1) [611.604(a)], the baseline monitoring is annual for a GWS and quarterly for an SWS (or mixed system). This causes the adjustment provisions for GWSs and SWSs to have some basic differences. For the GWS the adjustment is from annual to quarterly based on bad samples, with a possible return to annual. For the SWS (or mixed system) the adjustment is from quarterly to annual, based on good samples, with a possible return to quarterly.

Adjusted Nitrate Monitoring for GWSs [611.604(b)]

40 CFR 141.23(d)(2) governs adjusted nitrate monitoring for

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[18]Some of the undefined terms appear to be defined by the provisions in which they appear. The Board has used some of these terms in subsection headings. The result of this is an implied definition of the term. This should be helpful to readers, since it preserves what may be USEPA's pet term for the provision.

nitrate:

> 2) For [CWS and NTNCWSs], the repeat monitoring frequency for [GWSs] shall be quarterly for at least one year following any one sample in which the concentration is ≥50 percent of the MCL. The State may allow a [GWS] to reduce the sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than the MCL.

The baseline monitoring for GWSs is annual. If any one sample is 50% or more of the MCL, quarterly samples are required "for at least one year". The State is allowed to reduce this back to annual monitoring after "four consecutive quarterly samples" are "reliably and consistently" less than the MCL.

The USEPA rule requires quarterly monitoring "for at least one year", and then establishes a procedure which allows annual monitoring again only after at least four quarters with good results. The repetition of the four sample requirement without the "good sample" language could be construed as allowing a return to annual monitoring after bad samples. The Board has therefore proposed to combine these into a single standard. This will assure that the only way to return to annual monitoring is with four good samples. The Board **solicits comment.**

40 CFR 141.23(d)(2) depends on the "reliably and consistently" language, which is discussed in the general introduction to this Opinion, and which is defined in Section 611.600.

40 CFR 141.23(d)(2) also has the "Catch-22" problem, which is discussed above. As the USEPA rule is written, the supplier with, for example, 60% of the MCL is caught in an infinite loop, oscillating between annual and quarterly monitoring. The Board has proposed language addressing both the "reliably and consistently" and the "Catch-22" problems.

GWS Adjustments: Appropriate State Agency [611.604(b)]

40 CFR 141.23(d)(2) starts with a quarterly monitoring requirement for GWSs if any sample is 50% of the MCL (or more). The USEPA rule is worded as a self-implementing rule. The Board has proposed to follow this format in Section 611.604(b)(1).

40 CFR 141.23(d)(2) then allows the State to allow a GWS supplier to return to annual monitoring under certain conditions. As is discussed in general in the introduction to this Opinion, and in the foregoing discussions concerning similar conditions above, these adjustments to monitoring frequency are decisions which the Agency should make, by SEP. The Board **solicits comment.**

Proposed Language on Adjustments for GWSs [611.604(b)]

The Board has proposed the following as equivalent to 40 CFR 141.23(d)(2) [611.604(b)]:

b) Quarterly monitoring for GWSs.

1) A CWS or NTNCWS supplier which has any one sample in which the concentration is equal to or greater than 50 percent of the MCL shall initiate quarterly monitoring during the next quarter.

2) The supplier may request that the Agency reduce the monitoring frequency to annual. The request must be by way of a SEP application pursuant to Section 611.110.

A) The request must include the following minimal information: four quarterly samples.

B) The Agency shall, by SEP, allow annual monitoring at a sampling point, if it determines that the sampling point is reliably and consistently below the MCL.

C) In issuing the SEP, the Agency shall specify:

i) The level of the contaminant upon which the "reliably and consistently" determination was based; and

ii) The level of the contaminant which, if exceeded in any one sample, would cause the supplier to reinitiate quarterly monitoring.

Adjusted Nitrate Monitoring for SWSs [611.604(c)]

SWSs start with quarterly monitoring. 40 CFR 141.23(d)(3) provides:

> 3) For [CWSs and NTNCWSs], the State may allow a [SWS] to reduce the sampling frequency to annually if all analytical results from four consecutive quarters are <50 percent of the MCL. A [SWS] shall return to quarterly monitoring if any one sample is ≥50 percent of the MCL.

This allows the State to reduce the (baseline) quarterly monitoring to annual after four consecutive quarters at less than 50% of the MCL. Thereafter, if the system takes a single sample greater than or equal to[19] 50% of the MCL, it goes back to quarterly sampling.

Again, this is appropriate as an Agency decision. For the SWSs, the initial adjustment is a relaxation of the baseline monitoring requirement. This is appropriate as an Agency decision by way of SEP. The Board **solicits comment.**

The USEPA rule then reimposes quarterly monitoring based on a bad sample. It might be appropriate to write this as a self-implementing provision, like the rule for GWSs. However, in this case the Agency has issued a SEP which originally allowed annual monitoring. The Board has written this as a condition of the original SEP, so that the supplier will automatically go back to quarterly monitoring under the SEP.

The SWS rule differs from the GWS rule in that the "reliably and consistently" language is missing from the SWS rule. The SWS is allowed to move to annual monitoring after it has four consecutive samples at less than 50% MCL, regardless of the "reliably and consistently" factors. The Board **solicits comment** as to whether this might be an editorial error by USEPA.

The "Catch-22" problem is also absent from the SWS provisions, since the return to quarterly monitoring is triggered by the same threshold as the original adjustment, a single sample greater than or equal to 50% of the MCL. It is possible that a supplier right at 50% of the MCL could oscillate between quarterly and annual sampling, depending on random variation. However, this would be much less of a problem than the "Catch-22" situation, in which anyone between 50% and 100% of the MCL would oscillate.

Proposed Rule on Adjustments to SWS Nitrate Monitoring [611.604(d)]

The Board has proposed the following equivalent for 40 CFR 141.23(d)(3) [611.604(c)]:

> c) Reduction of monitoring frequency for SWSs and mixed systems.
>
> 1) CWS and NTNCWS suppliers, which are SWSs or mixed systems, may apply to the Agency for a

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[19]The Federal Register text used by the Board has a typo (or misprint) which appears to require a return to annual sampling only if a value is strictly greater than 50% of the MCL.

reduction in monitoring frequency by way of a SEP application pursuant to Section 611.110.

2) The Agency shall allow the supplier to reduce the sampling frequency to annually if all analytical results from four consecutive quarters are less than 50 percent of the MCL.

3) As a condition of the SEP, the Agency shall require the supplier to initiate quarterly monitoring, beginning the next quarter, if any one sample is greater than or equal to 50 percent of the MCL.

The equivalent of 40 CFR 141.23(d)(4) is addressed above with Section 611.604(a).

Monitoring during the Highest Quarter [611.604(e)]

40 CFR 141.23(d)(5) provides:

5) After the initial round of quarterly sampling is completed, each community and non-transient non-community system which is monitoring annually shall take subsequent samples during the quarter(s) which previously resulted in the highest analytical result. [40 CFR 141.23(d)(2), (3) and (5)]

This requires that after the initial round of quarterly sampling is completed, each system which is monitoring annually shall take subsequent samples during the "quarter(s)" which previously resulted in the highest analytical result. This recognizes the seasonal nature of nitrate, which may be associated with field application of fertilizer, or runoff from such fields. (56 Fed. Reg. 3564)

This provision is triggered after "the initial round of quarterly sampling". As is discussed above, this is an undefined term. The use of "the" implies that it is referring to something which has already been identified, i.e. the quarterly sampling described in the foregoing subsections[20]. The Board has

[20]This reading of the subsection leaves no requirement that a GWS undertake quarterly monitoring to establish the maximum nitrate quarter, unless one sample exceeds 50% of the MCL. Under the USEPA rule, a GWS could choose to monitor annually in the quarter it thought was the minimum, so as to stay safely away from quarterly monitoring. It might be possible to ignore the "the" in 40 CFR 141.23(d)(5), and require "an" initial round of quarterly monitoring for everybody to establish the maximum quarter. The Board solicits comment on this.

redrafted this so as to state it without using undefined terms.

After quarterly monitoring, the PWS must take "subsequent" samples during the "quarter(s)" which previously resulted in the highest result. The Board has proposed to delete "subsequent" as redundant after "after".

"[Q]uarter(s)" poses another problem, which is discussed in general above. The Board has used "quarter", with the understanding that, if two quarters are equal highs, the Agency picks the one for monitoring. Moreover, the Board assumes that all of these rules are referring to single sampling points, each of which might have its own highest quarter.

Proposed Language on Adjustments to Nitrate Monitoring [611.604(e)]

The Board has proposed the following language as equivalent to 40 CFR 141.23(d)(5) [611.604(e)]:

> e) After it has completed monitoring in four consecutive quarters, each CWS or NTNCWS supplier which is monitoring annually shall take samples during the quarter which resulted in the highest analytical result.

Section 611.605 Nitrite Monitoring

This new Section is drawn from 40 CFR 141.23(e), which was adopted at 56 Fed. Reg. 3578, January 30, 1991. It governs nitrite[21] monitoring.

Applicability [611.605]

The introduction to 40 CFR 141.23(e) reads as follows:

> All public water systems (community; non-transient, non-community; and transient, non-community systems) shall monitor to determine compliance with the maximum contaminant level for nitrite in §141.62(b).

Nitrite monitoring is required of all types of PWS. As is discussed above, the owner or operator of a "PWS" is a "supplier". The Board has proposed to use the defined term "supplier", without the parenthetical redefinition.

The Board has proposed the following language as equivalent to the introduction to 40 CFR 141.23(e) [611.605]:

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[21]Nitrate monitoring is in Section 611.604.

Each supplier shall monitor to determine compliance with the MCL for nitrite in Section 611.301.

Monitoring for Nitrite [611.605(a) - (d)]

40 CFR 141.23(e)(1) - (4) specify the monitoring frequency for nitrite:

1) All public water systems shall take one sample at each sampling point in the compliance period beginning January 1, 1993 and ending December 31, 1995.

2) After the initial sample, systems where an analytical result for nitrite is <50 percent of the MCL shall monitor at the frequency specified by the State.

3) For community, non-transient, non-community, and transient non-community water systems, the repeat monitoring frequency for any water system shall be quarterly for at least one year following any one sample in which the concentration is ≥50 percent of the MCL. The State may allow a system to reduce the sampling frequency to annually after determining the system is reliably and consistently less than the MCL.

4) Systems which are monitoring annually shall take each subsequent sample during the quarter(s) which previously resulted in the highest analytical result.

Monitoring Frequency for Systems with Low Nitrite [611.605(d)]

40 CFR 141.23(e)(2) provides that: "After the initial sample, systems where an analytical result for nitrite is <50 percent of the MCL shall monitor at the frequency specified by the State." USEPA clearly intends to allow the States to continue to require periodic monitoring following an initial sample below 50% of the MCL.[22] [23]

Illinois has no "additional State requirement" dealing with nitrite. However, the default monitoring rule for State parameters is in existing Section 611.602 (renumbered above to 611.591). This requires an annual sample for SWSs, and once every three years for GWSs. This is essentially the same as the rule for nitrate monitoring discussed above. The Board has proposed to exercise the discretion in 40 CFR 141.23(e) by requiring annual and triennial monitoring, but **solicits comment.**

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[22]This is discussed in the Preamble at 56 Fed. Reg. 3566.

[23]Systems with higher levels are subject to quarterly monitoring, as is discussed below.

The structure of the proposed rule is discussed below.

The USEPA rule allows "the State" to specify this monitoring frequency. As is discussed in general above, this is appropriate as a programmatic decision, which the Board will make by adopting this rule.

Annual or Triennial Monitoring for Nitrite [611.605(b)]

40 CFR 141.23(e) is structured differently from the other portions of 40 CFR 141.23. Subsection (e)(1) requires only a single sample. As discussed above, subsection (e)(2) allows the State to set frequencies thereafter for low nitrite systems. Subsection (e)(3) requires quarterly monitoring for systems at 50% of the MCL or higher, and allows the State to reduce this to annually if it determines that the system is "reliably and consistently" below the MCL, based on at least one year's monitoring. This differs from the other subsections in that there is no statement of the basic obligation to monitor. Rather, this is inferred from the reduction in monitoring to annually. The Board has proposed to structure this like the nitrate provisions, but **solicits comment.**

Quarterly Monitoring for Nitrite [611.605(c)]

40 CFR 141.23(e)(3) requires quarterly monitoring "for at least one year" following a sample which is in greater than or equal to[24] 50% of the MCL for nitrite. The Board has proposed to omit the "for at least one year" language, replacing it with the more specific requirement, borrowed from the nitrate provisions, of a least four consecutive quarters of data prior to State action. The Board **solicits comment.**

The quarterly monitoring requirement of 40 CFR 141.23(e)(3) is self-implementing. The Board has proposed to follow the USEPA format.

The USEPA subsection then allows the State to decrease the "sampling frequency to annually after determining the system is reliably and consistently less than the MCL." For an SWS, this is a return to the baseline monitoring frequency which could be handled by sample request. (PC 2) However, for the GWS, this appears to impose an annual monitoring requirement for the first time. The Board has required an SEP for this reduction in monitoring. The Board **solicits comment.**

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[24]The Federal Register text of this subsection appears to trigger quarterly monitoring only if nitrite is strictly greater than 50% of the MCL. As is discussed in general above, the Board has proposed to correct this apparent error.

40 CFR 141.23(e)(3) depends on the "reliably and consistently" language discussed above, and is subject to the "Catch 22" problem. The proposed language is closely akin to the nitrate monitoring for GWSs, which had the same problems.

Nitrite Monitoring During Highest Quarter [611.605(c)]

40 CFR 141.23(e)(4) requires systems which are monitoring annually to take each subsequent sample during the "quarter(s)" which previously resulted in the highest analytical result. This suffers from similar problems to those discussed above in general and in connection with the comparable nitrate provision.

Proposed Language on Monitoring Frequency and Adjustments [611.605]

For the reasons discussed above, the proposed language on nitrite monitoring winds up following the provisions on nitrate monitoring more closely than 40 CFR 141.23(e). The Board has proposed the following language as Section 611.605:

Each supplier shall monitor to determine compliance with the MCL for nitrite in Section 611.301.

a) Suppliers shall monitor at the following frequencies, beginning January 1, 1993:

A) GWS suppliers, once each compliance period;

B) SWS and mixed system suppliers, once each year.

BOARD NOTE: Drawn from 40 CFR 141.23(e)(1) and (2), adopted at 56 Fed. Reg. 3578, January 30, 1991.

b) See Section 611.100(e).

c) Repeat monitoring frequency.

1) A supplier which has any one sample in which the concentration is equal to or greater than 50 percent of the MCL shall initiate quarterly monitoring during the next quarter.

2) The supplier may request that the Agency reduce the monitoring frequency to annual. The request must be by way of a SEP application pursuant to Section 611.110.

A) The request must include the following minimal information: four quarterly

samples.

B) The Agency shall, by SEP, allow annual monitoring at a sampling point, if it determines that the sampling point is reliably and consistently below the MCL.

C) In issuing the SEP, the Agency shall specify:

i) The level of the contaminant upon which the "reliably and consistently" determination was based; and

ii) The level of the contaminant which, if exceeded in any one sample, would cause the supplier to reinitiate quarterly monitoring.

BOARD NOTE: Drawn from 40 CFR 141.23(e)(3), adopted at 56 Fed. Reg. 3578, January 30, 1991.

d) After it has completed monitoring in four consecutive quarters, each supplier which is monitoring annually shall take samples during the quarter which resulted in the highest analytical result.

BOARD NOTE: Drawn from 40 CFR 141.23(e)(4), adopted at 56 Fed. Reg. 3578, January 30, 1991.

Combined Nitrate/Nitrite Monitoring

40 CFR 141.62 includes an MCL for combined nitrate/nitrite. The Preamble makes reference to such monitoring (56 Fed Reg. 3566). However, no monitoring requirement appears in the USEPA rules. The Board **solicits comment** on this.

Section 611.606 Confirmation Samples

This Section is drawn from 40 CFR 141.23(f), which was added at 56 Fed. Reg. 3578, January 30, 1991. The new Section deals with "confirmation samples" which are taken after regular monitoring indicates levels in excess of the MCL.[25]

USEPA Text

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[25]The existing text of Section 611.606 deals with analytical methods. It has been renumbered to Section 611.611.

The text of 40 CFR 141.23(f) is as follows:

f) Confirmation samples:

1) Where the results of sampling for asbestos, barium, cadmium, chromium, fluoride, mercury, or selenium indicate an exceedance of the maximum contaminant level, the State may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point.

2) Where nitrate or nitrite sampling results indicate an exceedance of the maximum contaminant level, the system shall take a confirmation sample within 24 hours of the system's receipt of notification of the analytical results of the first sample. Systems unable to comply with the 24-hour sampling requirement must immediately notify the consumers served by the area served by the public water system in accordance with Section 141.32. Systems exercising this option must take and analyze a confirmation sample within two weeks of notification of the analytical results of the first sample.

3) If a State-required confirmation sample is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to determine the system's compliance in accordance with paragraph (i) of this section. States have the discretion to delete results of obvious sampling errors.

40 CFR 141.23(f) gives the States the discretion to require "confirmation samples". As is discussed in general above, the Board is proposing to exercise this discretion by adopting a rule requiring confirmation samples.

The confirmation sample requirement for "additional State" MACs is three additional samples [611.591(a)], versus the single sample in the USEPA rule. The State requirement is arguably "more stringent". However, as discussed in general above, the Board determines stringency with respect to the MCLs, and adopts the associated monitoring requirements, without further consideration of stringency.

As is discussed in general above, the Board has proposed to trigger confirmation samples on receipt of the analytical result by the supplier.

Immediate Notification [611.606(b)]

40 CFR 141.23(f)(2) requires a nitrate/nitrite confirmation sample within 24 hours, subject to an option of giving public notice and taking a confirmation sample within two weeks. This has editorial problems, which the Board has addressed in Section 611.606(b)(1) and (2).

The system is required to "immediately" notify[26] the public in accordance with 40 CFR 141.32. This apparently corresponds with Section 611.851, which specifies definite time frames. As the Board reads "immediately", it means that the supplier is supposed to start the notification process based on the initial sample, without waiting for the confirmation sample. The Board does not read this as overriding the specific time frames, and establishing a schedule, which would be impossible to meet anyway. The Board has proposed to require the supplier to notify, "based on the initial sample". The Board **solicits comment.**

Averaging for State-Required Confirmation Samples [611.606(c)]

40 CFR 141.23(f)(3) provides that:

> If a State-required confirmation sample is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to determine the system's compliance in accordance with paragraph (i).

However, 40 CFR 141.23(i) goes ahead and repeats this rule, not only for all samples, but also specifically for State-required confirmation samples. The Board has therefore proposed to replace this with a cross reference (to Section 611.609).

The USEPA rule is ambiguous in that it is unclear whether "State-required" confirmation sample refers only to the confirmation samples for asbestos, etc., or also to nitrate/nitrite. In 40 CFR 141.23(i) it is clear that it refers to both. The cross-reference eliminates this ambiguity.

Deletion of "Obvious Sampling Errors" [611.606(c)]

40 CFR 141.23(f)(3) includes the "deletion of obvious sampling errors" language discussed in general above. The Board construes this as authorizing the Agency to substitute the confirmation sample for the original sample if it determines that

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[26]40 CFR 141.23(f)(2) also requires the system to "notify the consumers served by the area served by the public water system". The Board has proposed to word this like Section 611.851, as follows: "notify the persons served", followed by a reference to Section 611.851.

a sampling error has occurred. Otherwise, the confirmation sample is averaged with the original sample, as discussed below.

Proposed Language on Confirmation Samples [611.606]

In Section 611.606, the Board has proposed the following as an equivalent of 40 CFR 141.23(f):

Section 611.606 Confirmation Samples

a) Where the results of sampling for asbestos, barium, cadmium, chromium, fluoride, mercury or selenium indicate a level in excess of the MCL, the supplier shall collect one additional sample as soon as possible after the supplier receives notification of the analytical result (but not to exceed two weeks) at the same sampling point.

b) Where nitrate or nitrite sampling results indicate level in excess of the MCL, the supplier shall take a confirmation sample within 24 hours after the supplier's receipt of notification of the analytical results of the first sample.

1) Suppliers unable to comply with the 24-hour sampling requirement must, based on the initial sample, notify the persons served in accordance with Section 611.851.

2) Suppliers exercising this option must take and analyze a confirmation sample within two weeks of notification of the analytical results of the first sample.

c) Averaging rules are specified in Section 611.609. The Agency shall delete the original sample if it determines that a sampling error occurred, in which case the confirmation sample will replace the original sample.

Section 611.607 (Renumbered)

This Section should correspond with 40 CFR 141.23(g), which was adopted at 56 Fed. Reg. 3578, January 30, 1991, which deals with more frequent monitoring required by the State.[27]

40 CFR 141.23(g) provides as follows:

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[27]Old Section 611.607 dealt with fluoride monitoring, which is now in Section 611.603, above.

> The State may require more frequent monitoring than specified in paragraphs (b), (c), (d) and (e) of this section or may require confirmation samples for positive and negative results at its discretion. [40 CFR 141.23(g)]

This subsection authorizes the State to do two things: require more frequent monitoring or to require confirmation samples. The USEPA rule authorizes the State to make these decisions. The Board construes these as programmatic directives, as discussed above in general. This is based on the complete absence of any criterion which could be applied to make these decisions on a case-by-case basis.

The Board does not see any need to require more frequent monitoring than is specified in the USEPA rules (except to the extent discussed above in connection with each parameter). Nor does it see any need for confirmation samples beyond those required above. The Board **solicits comment.**

The Board has proposed no equivalent for 40 CFR 141.23(g). However, since there was a Section here prior to renumbering, a "renumbered" heading will remain.

Section 611.608 Additional Monitoring

This Section is drawn from 40 CFR 141.23(h), which was adopted at 56 Fed. Reg. 3578, January 30, 1991. It reads as follows:

> Systems may apply to the State to conduct more frequent monitoring than the minimum monitoring frequencies specified in this section. [40 CFR 141.23(g)]

As is discussed in general above, the Board sees no reason why prior approval should be needed before suppliers conduct additional monitoring, so long as all results are reported. The proposed language on optional samples is as follows:

> Section 608.608 Additional Optional Monitoring
>
> Suppliers may conduct additional, more frequent monitoring than the minimum frequencies specified in this Subpart, without prior approval from the Agency. The supplier must report the results of all such monitoring to the Agency.

Section 611.609 Averaging

This Section is drawn from 40 CFR 141.23(i), which was adopted at 56 Fed. Reg. 3578, January 30, 1991.

40 CFR 141.23(i)(1) - (3) deal with averaging. They read as follows:

> i) Compliance with Sections 141.11 or 141.62(b) (as appropriate) shall be determined based on the analytical result(s) obtained at each sampling point.
>
> 1) For systems which are conducting monitoring at a frequency greater than annual, compliance with the maximum contaminant levels for asbestos, barium, cadmium, chromium, fluoride, mercury, and selenium is determined by a running annual average at each sampling point. If the average at any sampling point is greater than the MCL, then the system is out of compliance. If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately. Any sample below the detection limit shall be calculated at zero for the purpose of determining the annual average.
>
> 2) For systems which are monitoring annually, or less frequently, the system is out of compliance with the maximum contaminant levels for asbestos, barium, cadmium, chromium, fluoride, mercury and selenium if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is required by the State, the determination of compliance will be based on the average of the two samples.
>
> 3) Compliance with the maximum contaminant levels for nitrate and nitrite is determined based on one sample if the levels of these contaminants is below the MCLs. If the levels of nitrate and/or nitrite exceed the MCLs in the initial sample, a confirmation sample is required in accordance with paragraph (f)(2) of this section, and compliance shall be determined based on the average of the initial and confirmation samples.

There are a few minor editorial problems with this subsection. First, 40 CFR 141.23(i)(1) and (2) are not worded in parallel. One result of this is that the "and" in the list in (2) should be "or". However, instead of fixing this by making this change, the Board has reworded these related subsections so they read in parallel.

The USEPA rule is also worded based on the contingency that the State may require confirmation samples. As is discussed above in connection with Section 611.606, the Board has proposed to require these. This Section has therefore been edited to remove the contingency.

The averaging rule includes a reference to detection limits.

As is discussed above, the Board believes that "detection limit" is defined by implication in 40 CFR 141.23(a)(4), a rule on composite samples which the Board has not proposed to adopt. However, the Board has adopted a definition in Section 611.600, discussed above.

The Board has proposed the following in Section 611.609, as the equivalent of 40 CFR 141.23(i):

Section 611.609 Averaging

Compliance with the MCLs of Sections 611.300 or 611.301 (as appropriate) must be determined based on the analytical result(s) obtained at each sampling point.

a) For suppliers which are conducting monitoring at a frequency greater than annual, compliance with the MCLs for asbestos, barium, cadmium, chromium, fluoride, mercury and selenium is determined by a running annual average at each sampling point.

1) If the average at any sampling point is greater than the MCL, then the supplier is out of compliance.

2) If any one sample would cause the annual average to be exceeded, then the supplier is out of compliance immediately.

3) Any sample below the detection limit must be calculated at zero for the purpose of determining the annual average.

b) For suppliers which are monitoring annually, or less frequently, compliance with the MCLs for asbestos, barium, cadmium, chromium, fluoride, mercury and selenium is determined by the level of the contaminant at any sampling point. If a confirmation sample is taken, the determination of compliance will be based on the average of the two samples.

c) Compliance with the MCLs for nitrate and nitrite is determined based on one sample if the levels of these contaminants are below the MCLs. If the levels of nitrate or nitrite exceed the MCLs in the initial sample, compliance is determined based on the average of the initial and confirmation samples.

Notification of Portions of Distribution System [611.609(d)]

40 CFR 141.23(i)(4) appears to be totally unrelated to the remainder of this subsection. It reads as follows:

> If a public water system has a distribution system separable from other parts of the distribution system with no interconnections, the State may allow the system to give public notice to only the area served by that portion of the system which is out of compliance. [40 CFR 141.23(i)(4)]

Public notice is governed by 40 CFR 141.32 which is equivalent to Section 611.851 et seq. The Board has proposed to adopt a cross reference to Section 611.Subpart T, which includes Section 611.851.

This Section could be read as either allowing a case-by-case decision limiting notice, or as allowing the State to adopt a rule generally specifying a limited notice. The Board construes this Section in the latter sense[28], and has proposed a rule. The Board **solicits comment.**

The Agency has suggested language which is appropriate for adoption. (PC 2) The proposed language, with minor editing, is as follows [611.609]:

> When a portion of the distribution system which is separable from other parts of the distribution system is out of compliance, the CWS supplier shall, at a minimum, give public notice pursuant to Subpart T to the portion not in compliance.

Section 611.610 Time for Inorganic Monitoring

This Section is drawn from 40 CFR 141.23(j), which was adopted at 56 Fed. Reg. 3578, January 30, 1991. The new Section deals with time for monitoring.[29] The USEPA language reads as follows:

> Each public water system shall monitor at the time designated by the State during[30] each compliance

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[28]If the USEPA rule were interpreted as authorizing a case-by-case decision, there would need to be a standard by which the Agency could make the decision.

[29]Old Section 611.610, which dealt with special monitoring for sodium, has been renumbered to Section 611.630.

[30]As a preliminary note, this subsection probably has a misplaced modifier. It should read: "shall monitor during each compliance period at the time designated by the State." In other

period. [40 CFR 141.23(j)]

Time v. Frequency of Monitoring [611.610]

The Sections discussed above generally specify monitoring "frequencies", including quarterly, annual, 3-year and 9-year monitoring frequencies. This Section addresses the "time" of monitoring, i.e. the day, month and year on which samples are to be taken at the specified frequency. The time of monitoring is discussed above in general.

Directive for State Action [611.610]

This subsection is a USEPA directive which gives the Board very little direction as to the contents of the State rule. Section 7.2(a)(3) of the Act requires the Board to adopt a regulation as prescribed, consistent with other USEPA regulations and existing State law.

As is discussed in general above, the Agency is to specify the time for monitoring by SEP.

Proposed Language [611.610]

The Board has proposed the following language concerning scheduling:

> Each supplier shall monitor, within each compliance period, at the time designated by the Agency by SEP.

Section 611.611 Inorganic Analysis

This Section is derived from 40 CFR 141.23(k), as adopted at 56 Fed. Reg. 3578, January 30, 1991. It specifies analytical methods for inorganic parameters.[31]

Incorporations by Reference

40 CFR 141.23(k) includes many incorporations by reference of analytical methods. The Board has placed the references in

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words, the State doesn't have to redesignate the times during each compliance period.

[31]The text of this Section was formerly located at Section 611.606. This Section is very similar to that Section. However, direct comparison is difficult because of format changes which are discussed below.

Section 611.102, which is cross referenced in this Section.[32] Section 611.102 includes a list of abbreviated names for many incorporated documents. In this Section, the Board has generally used these abbreviated names.

As is discussed in connection with Section 611.102, and in R88-26, USEPA is continuing to reference proprietary methods and documents which are out of print.

All of the new references given by USEPA are incomplete, incorrect, or, in most cases, both. These types of problems are discussed above in connection with Section 611.102. The Board has generally corrected these errors above. Some of the more substantive errors are discussed here also.

40 CFR 141.23(k)(1) cites to "ASTM D3223-80" for mercury. There is no such Edition. The Board has proposed to use ASTM D3223-79 instead.[33]

Footnote 10 cites Millipore Method B-1011. However, the Table also cites B-1001. Millipore has indicated that "B-1011" is correct.

40 CFR 141.23(k)(2) cites to the 16th Edition of Standard Methods. However, the numbers given are 14th Edition numbers. The Board has corrected this to give the 16th Edition numbers.

Footnote 4 cites to the "1985" Edition of "USGS Methods". There is no such Edition. The Board has instead cited to the current 1989 Edition.

Format [611.611]

USEPA has shifted to a format which relies more heavily on tables, but still uses many footnotes. This is easier to read than the former text with footnotes. However, the Illinois Administrative Code places margin restrictions on tables which

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[32]As was discussed in the R88-26 Opinion, at p. 41-48, the incorporation by reference Section allows the Board to more efficiently comply with APA requirements concerning incorporations by reference.

[33]The ASTM standards are updated on roughly a 5-year cycle. Therefore, there should be a 1989 Edition of this Method. Another possibility is that USEPA intended to reference the 1989 Edition, and that this is a typo.

appear in rules, and does not allow the use of footnotes.[34] The Board has therefore converted the tables to a narrative format.[35]

611.611(a): Asbestos, etc.

This subsection is drawn from 40 CFR 141.23(k)(1). It specifies analytical methods for eight contaminants: asbestos, barium, cadmium, chromium, mercury, nitrate, nitrite and selenium.

Editorial Problems [611.611(a)]

As noted above, the table has been reformatted to a text to comply with Administrative Code requirements. The Board has noted several other apparent editorial problems.

The USEPA Table includes several references to "EPA Method 200.7". As was discussed on page 46 of the R88-26 Opinion, the Board had difficulty locating this document. The Board eventually cited to the floating "Appendix" to 40 CFR 141, which apparently sets forth this Method. The amendments add to this confusion. Each reference to this Method cites to "Inorganic Methods", as though this were a Chapter of that document. However, each also bears a footnote (6) citing to what may be a separate document with a Method "200.7A". The Board **solicits comment** as to what is intended.

Along the same line, although only one of the three references is to "200.7A", all three bear the footnote to 200.7A. Is this an error?

Most of the footnotes contain reference information which has been moved to Section 611.102. Footnotes 7, 8 and 11 actually modify the text of the Table.

Footnotes 7 and 8 require the addition of hydrogen peroxide to certain samples. The text has been inserted next to the appropriate analytical technique. Footnote 7 has a typographical error (or misprint) in the Federal Register: "H_2O^{T2}" should read

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[34]The Board would have to move much of this Section to a Table or Appendix to present it in the USEPA format. This make the table hard to find, and less convenient to use.

[35]The proposed format is very similar to old Section 611.606. However, USEPA has made a subtle format shift, which is reflected in the Proposal. Whereas the former USEPA rule and Section 611.606 were grouped contaminant\reference\method, the new version is grouped contaminant\method\reference. This produces a shuffling of the text which makes direct comparison difficult.

"H_2O_2". This has been corrected in the disks provided by USEPA. The Board has spelled this out as "hydrogen peroxide" to avoid this type of problem.

Footnote 11 provides that: "For approved analytical procedures for metals, the technique applicable to total metals must be used". This is a footnote to the heading "Methodology" in the USEPA table, and hence appears to apply to all parameters. Asbestos, nitrate and nitrite are clearly not metals. Selenium is a sulfur analogue, and is strictly a nonmetal. However, the analytical techniques appear to be unable to distinguish the various forms of selenium, such as selenate and selenous. USEPA probably intends that this note apply also to selenium. The Board has so proposed in the introduction to Section 611.611(a), but **solicits comment.**

611.611(b): Arsenic

This subsection is drawn from 40 CFR 141.23(k)(2). It has been moved from old 40 CFR 141.23(f)(1), with only one apparent substantive change: the deletion of the "Inductively Coupled Plasma Technique". This is referred to as "Method 200.7" above.

While USEPA has updated many of the incorporations by reference in 40 CFR 141.23(k), it continues to cite to older documents for arsenic. USEPA has gone to great lengths to do this, even renumbering the footnotes. In particular, for this parameter, the PWS must follow the 1979 Edition of Inorganic Methods and USGS Methods, which are otherwise updated to the 1983 and 1985 Editions. For this reason it is now necessary to specify Editions in all references to these documents.

The USEPA rule specifies Standard Methods, 16th Edition for arsenic. However, the numbers cited are to the 14th Edition. The Board has proposed to cite to the correct 16th Edition Method number (303E or 307B).

611.611(c): Fluoride

This subsection specifies analytical methods for fluoride. This is very similar to old 40 CFR 141.23(f)(10), but with the reference to Inorganic Methods updated.

USEPA has continued the typographical error referencing Standard Methods, 16th Edition, Methods "43 A and C". This should be "413 A and C".

Footnotes 1, 2 and 3 are in the wrong place. Footnote 1 belongs on the heading "EPA", instead of "Reference (Method No.)". Footnotes 2 and 3 are "reserved", and probably don't belong in the table.

611.611(d): Preservation, Containers and Holding Time

This subsection is drawn from 40 CFR 141.23(k)(4). It specifies methods of sample preservation, sample containers and sample holding times.

This is a table in the USEPA rule. It would not be possible to meet Code Division margin and format requirements with this table in the body of Board regulations. There would be a major problem[36] in presenting this Table without footnotes, as required by the Code Division. The Board has therefore presented this a text.

The main ambiguity with this table concerns Footnote 1. This establishes an alternative sample handling procedure if nitric acid cannot be used because of shipping restrictions. This is placed as a footnote to the heading "Preservative", implying that it applies to all preservation techniques. However, the techniques for asbestos, fluoride, nitrate and nitrite do not involve nitric acid in the first place. Moreover, the nitrate and nitrite samples would obviously be destroyed by nitric acid added at the lab under the alternative procedure. The Board therefore construes the footnote as applying only to those contaminants normally to be preserved with nitric acid.

Nitrite is to preserved with sulfuric acid. Whatever shipping restrictions apply to nitric acid probably apply equally to samples preserved with sulfuric acid, necessitating an alternative.[37] It would be possible to replace nitric with sulfuric acid and follow the same alternative procedure. However, there is no way to so construe the language of the USEPA rule. The Board **solicits comment** as to whether it ought to correct this apparent error.

611.611(e): Laboratory Approval Standards

This subsection is drawn from 40 CFR 141.23(k)(5). It limits analyses to labs approved by USEPA or the State, and sets standards for lab approval. The laboratory approval rules are subject to fundamental questions of interpretation, which are discussed in general above. The Board has added a cross reference to the Agency's lab certification rules, and has provided that "performance evaluation samples" must contain levels which are expected in drinking water.

Format Problems [611.611(e)]

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[36]The alternative would be to place the table at the end of the Part as a Table or Appendix.

[37]See 40 CFR 136.3, Table 2, Footnote 3.

The Board has proposed to adopt the USEPA table as a narrative rule. It would be difficult to comply with Code Division requirements with this Table in the rule. The main problem would be the length of text in the table if "≥" were written out. The alternative would be to place the Table into a Table or Appendix at the back, where margin and format rules would not apply.

USEPA Approved Labs [611.611(e)]

As proposed, the rule would allow USEPA-approved labs to analyze samples for compliance purposes in Illinois. This is consistent with the Agency's final position in R88-26 (Opinion, p. 81).

Additional State Contaminants [611.611(f) et seq.]

Old Section 611.606(k) et seq. specified analytical techniques for the "additional State requirements". These have been moved to Section 611.611(f) et seq.

The Board has proposed to update the references to "Inorganic Methods" to the 1983 Edition.

Section 611.630 Special Monitoring for Sodium

The Board has proposed to move this existing Section from 611.610 to 611.630, to make room for the equivalent of the new 40 CFR 141.23, discussed above.

Section 611.631 Special Monitoring for Inorganics

This new Section is drawn from the portions of 40 CFR 141.40(n) which concern "special monitoring" for inorganic chemicals. These provisions establish monitoring requirements for the following inorganic contaminants for which there is, as yet, no MCL:

Antimony
Beryllium
Nickel
Sulfate
Thallium
Cyanide

This USEPA subsection addresses both inorganic and organic contaminants. The Board has split this into two pieces, one dealing with inorganics, the other with organics. Although this involves some duplication of text, it allows the Board to place these provisions into the existing Subparts, without creating a new Subpart for "miscellaneous monitoring".

Some subsections of the USEPA rule, including 40 CFR 141.40(n)(1), deal only with organics. The Board has inserted a do nothing reference to Section 611.600(e), to maintain consistency with the USEPA numbering.

Sampling Points [611.631(e) et seq.]

40 CFR 141.40(n)(5) - (7) [611.631(e) - (g)] govern sampling points. These have all the problems discussed in general above. The Board has proposed to adopt the same text as Section 611.603(a) - (c), which governs monitoring for most of the inorganics. An option would be just to require samples at the same points as required in Section 611.603. The Board **solicits comment** as to whether this cross-reference would be more appropriate.

Confirmation Samples [611.631(h)]

40 CFR 141.40(n)(8) [611.631(h)] allows the State to require confirmation samples. As is discussed in general above, the Board has generally required confirmation samples for positive results. However, the Board has not proposed to require confirmation samples for these contaminants, but **solicits comment**, which should address the following problems.

The usual purpose of a confirmation sample appears to be to protect the supplier from being found in violation of an MCL because of a spurious sample. This consideration would be absent for this monitoring. Rather, the purpose of the monitoring is simply to provide data for future rulemaking. The confirmation sample would appear to protect only against inaccurate data.

There are two possible models for confirmation samples. While 40 CFR 141.23(f) [611.606] requires a confirmation sample if a level exceeds the inorganic MCL, 40 CFR 141.24(f)(13) [611.646(m)] requires a confirmation sample if the organic contaminant is "detected". There is a preference for using the inorganic rule as a model for this inorganic special monitoring. But, this won't work, since there are no MCLs for these contaminants.

An alternative would be to require a confirmation sample if one of the contaminants are "detected". The problem with this is that there is no definition of "detected" for purposes of these contaminants.

Confirmation samples are generally averaged with the original sample. This would have to be provided directly in the confirmation sample rule, since these contaminants have no averaging rule associated with them.

As discussed generally above, the confirmation sample rules

appear to allow the confirmation sample to be substituted for the original sample in the event of sampling error. This would appear appropriate in a confirmation sample rule for these unregulated parameters.

Composite Samples [611.631(i)]

40 CFR 141.40(n)(9) allows composite samples. For the reasons discussed in general above, the Board is not proposing to allow these.

Offer to Sample [611.631(j)]

40 CFR 141.40(n)(10) allows suppliers with fewer than 150 connections to avoid sampling by simply sending a letter to the State stating that the system is available for sampling.

The Board has proposed an equivalent for this subsection, but **solicits comment** as to how the Agency would implement it. If the Agency intends to require samples from the small supplies, it would be more honest to omit this Section, making a programmatic decision to require the samples. On the other hand, if the Agency does not want these samples, the Board could make a programmatic decision to simply exclude these suppliers in the rule.

List of Contaminants [611.631(l)]

This subsection includes the list of contaminants subject to this monitoring. It is drawn from 40 CFR 141.40(n)(12).

This table has a heading "EPA analytical method". The Board construes this as a reference to "Inorganic Methods", incorporated by reference in Section 611.102. This is the USEPA "in house" publication for analytical methods.

The analytical methods are described in general terms, such as "Graphite Furnace Atomic Absorption". There are ASTM and Standard Methods which could be used for these analyses. The Board **solicits comment** as to whether it ought to reference these also.

SUBPART O: ORGANIC MONITORING

This Subpart regulates monitoring for organic contaminants. It is primarily drawn from 40 CFR 141.24, which was amended at 56 Fed. Reg. 3578, January 30, 1991. The organic MCLs are in Section 611.310 and 611.311, discussed above.

Section 611.640 Definitions

The organic monitoring requirements have become extremely confusing for reasons discussed above in connection with the MCLs, as well as below. The Board has proposed the definitions in this Section in an attempt to make sense out of these provisions.

Dramatis Personae

As was discussed above in connection with the MCLs, USEPA has adopted revised MCLs for some 32 organic contaminants in 40 CFR 141.61(a) and (c). Each contaminant is given a subsection number. USEPA refers to these by subsection numbers in the monitoring rules. As was discussed above, the Board has presented the MCLs as unnumbered, alphabetical lists. This necessitates an alternative method of referencing the MCLs. The Board has defined the following terms, which group the organic contaminants the same way USEPA addresses them in connection with the monitoring requirements. This winds up making the monitoring rules a lot shorter and clearer. The definitions are as follows:

"Eight organic contaminants" means:

Benzene
Carbon tetrachloride
p-Dichlorobenzene
1,2-Dichloroethane
1,1-Dichloroethylene
1,1,1-Trichloroethane
Trichloroethylene
Vinyl chloride

"Eleven Pesticides and PCBs" means:

Alachlor
Atrazine
Carbofuran
Chlordane
Dibromochloropropane
Ethylene dibromide
Lindane
Methoxychlor
Polychlorinated biphenyls
Toxaphene

2,4,5-TP

"Ten organic contaminants" means:

o-Dichlorobenzene
cis-1,2-Dichloroethylene
trans-1,2-Dichloroethylene
1,2-Dichloropropane
Ethylbenzene
Monochlorobenzene
Styrene
Tetrachloroethylene
Toluene
Xylene.

Eight Organic Contaminants [611.640]

These are the organic contaminants regulated at 40 CFR 141.61(a)(1) - (8), as amended at 56 Fed. Reg. 3578, January 30, 1991. These MCLs are located at Section 611.311(a). These are the original "revised" organic MCLs. They are sometimes referred to as "VOCs".

Ten Organic Contaminants [611.640]

These are the organic contaminants regulated at 40 CFR 141.61(a)(9) - (18), amended at 56 Fed. Reg. 3578, January 30, 1991. The MCLs are at Section 611.311(a). As is discussed above, these are sometimes referred to as "VOCs" or "SOCs".

Eleven Pesticides and PCBs [611.640]

These are organic contaminants regulated at 40 CFR 141.61(c)(1) - (18)[1], as amended at 56 Fed. Reg. 3578, January 30, 1991, excluding 2,4-D, heptachlor and heptachlor epoxide, which are excluded because they are regulated by "more stringent" MACs ("additional State requirements") under Section 611.310.[2] [3]

"Old MCLs" and "Revised MCLs"

The Board has proposed to define "Old MCL" to provide an easy way to reference the MCLs in Section 611.310, as

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[1]The pesticide and PCB MCLs are located at Section 611.311(c).

[2]As is discussed below, the exclusion of the "MACs" causes a problem vis-a-vis the structure of the monitoring rules.

[3]USEPA also has four "reserved" numbers for contaminants for which there are no MCLs. The "reserved" entries are also excluded from this definition.

distinguished from the "revised MCLs" in Section 611.311.

As is discussed above, within the USEPA rules, a "revised MCL" is an MCL adopted with a BAT and MCLG, pursuant to the 1986 SDWA amendments.[4] As used in this Subpart, "revised MCL" will mean the organic MCLs in Section 611.311. In other words, it will include the USEPA revised MCLs, minus those retained in Section 611.310.

As defined, "old MCL" includes the "MACs" in Section 611.310.[5] These are MCLs adopted pursuant to State authority which are either more stringent than the MCL or revised MCL, or for which there is no federally-derived standard.[6]

As defined, "old MCL" excludes the 40 CFR 141.12 MCLs which are being replaced by revised MCLs with a delayed effective date.[7] Although it might make sense to retain the old monitoring requirements for these parameters pending the delayed effective date, the Board has not proposed to do so. Retaining these old monitoring requirements would introduce a lot of confusion to this Subpart. And, the revisions to the monitoring requirements are mainly an updating of analytical methods, without any apparent substantive change. To the extent this winds up requiring monitoring for certain contaminants during the federal hiatus, this is a consequence which flows from the Board's correction of the USEPA error vis-a-vis the MCLs.

The definitions proposed by the Board in Section 611.640 are as follows:

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[4]As is also discussed above, "revised MCL" is a USEPA term of art which does not necessarily imply that the numerical value of the MCL has been changed.

[5]TTHM (total trihalomethanes) is excluded from the definition of "old MCL". Although it is an "organic contaminant" regulated under Section 611.310, monitoring is under Subpart P. It is excluded from the definition of "old MCL" to avoid imposing a duplicative monitoring requirement.

[6]The "old MCLs" are: Aldrin, 2,4-D, DDT, Dieldrin, Endrin, Heptachlor and Heptachlor epoxide.

[7]As discussed above, USEPA has failed to leave the 141.12 MCLs in place pending the delayed effective date of 141.61. Consistent with this, USEPA has also failed to leave the old monitoring requirements in place. The Board has corrected this apparent error above by leaving these MCLs in place, marked by a "T" (for "temporary"). The question in this Section is whether monitoring for these parameters ought to be by the old or new methods during the federal hiatus.

"Old MCL" means an MCL in Section 611.310, including the MCLs which are "additional State requirements" and the MCLs which are derived from 40 CFR 141.12, but excluding those marked with a "T", and excluding TTHM. "Old MCLs" includes the following:

Aldrin
2,4-D
DDT
Dieldrin
Endrin
Heptachlor
Heptachlor epoxide

"Revised MCL" means an MCL in Section 611.311. This term includes "eight organic contaminants", "ten organic contaminants" and "eleven pesticides and PCBs".

"Reliably and Consistently"

As is discussed above in general, the USEPA rules include several provisions which require a determination that levels be "reliably and consistently" below certain levels. One of these is in 40 CFR 141.24(f)(11) [611.646(k)], below. The Board has proposed to add a definition to this Section for use in this Part.

"Groundwater Systems" [611.640]

40 CFR 141.24 makes frequent reference to "ground water systems" and "surface water systems". These terms are defined by implication from the note following 40 CFR 141.24(f)(2):

[Note: For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.] [40 CFR 141.24(f)(2)]

As is discussed in general above, Board has proposed to adopt the following definitions, based on this note:

"GWS" means "groundwater system", a PWS which uses only groundwater sources.

"Mixed system" means a PWS which uses both groundwater and surface water sources.

"SWS" means "surface water system", a PWS which uses only surface water sources, including "groundwater under the direct influence of surface water", as defined in Section 611.102.

These definitions are primarily used in the sampling point

provisions in Section 611.646(a) - (c), and 611.648(a) - (c), below. One possibility would be to define them just in those subsections. However, the Board has made them Subpart definitions, since the concepts appear to apply to the entire Subpart.

Section 611.641 Monitoring for Old MCLs

This Section is drawn from 40 CFR 141.24(a) - (d). Subsection (a) was amended at 56 Fed. Reg. 3578, January 30, 1991. The USEPA subsection specifies analytical techniques for the contaminants in 40 CFR 141.12. As amended at the USEPA level, this is just Endrin. However, as is discussed above, the Board equivalent of 40 CFR 141.12 includes many more contaminants, namely the "Old MCLs" as defined above. These are: Aldrin, 2,4-D, DDT, Dieldrin, Endrin, Heptachlor and Heptachlor epoxide.

Section 611.645 Analytical Methods for Old MCLs

This Section was drawn from 40 CFR 141.24(e) and (f). The latter has now become so large that it merits a separate Section number. It has been assigned to new Section 611.646, below. At the federal level, 40 CFR 141.24(e) now specifies analytical techniques only for endrin. As proposed by the Board, the equivalent will include the analytical methods for all the "old MCLs".

USEPA has replaced all the analytical methods cited with a single reference to the new 1988 Edition of "Organic Methods", which was incorporated by reference in R88-26 in Section 611.102.

The Board has proposed to require the new analytical methods for these contaminants. The Board has done this by cross referencing to the new analytical requirements in Section 611.648(l).

As is discussed above, the Board has excluded from the definition of "old MCLs" the contaminants which are temporarily retained in Section 611.310, pending the compliance date for the revised MCLs. The result of this is that monitoring for these contaminants will be immediately shifted to the methods for the revised MCLs, even though compliance is not yet required for the revised MCLs. The main change is simply the updating of the analytical method.

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[8]These have been retained in Section 611.310, because they are more stringent "additional State requirements", along with the MCL derived from 40 CFR 141.12, but excluding the temporary MCLs, and excluding TTHM.

Section 611.646 Monitoring for Ten Organics

This new Section is drawn from 40 CFR 141.24(f), which was completely rewritten at 56 Fed. Reg. 3578, January 30, 1991.

Applicability [611.646]

This Section now governs monitoring for the "ten organic contaminants" which have been added to the revised MCLs in Section 611.311(a).[9]

Because the "ten organics" are all newly regulated contaminants, there is no problem involving linking the compliance dates for monitoring to the compliance dates for the revised MCLs.

Definition of "Detection"

Parentheticals in 40 CFR 141.24(f)(7) and (20) give the following definition, which the Board has proposed to move to this Section:

> For purposes of this section, detection is defined as >0.0005 mg/1.

There are two minor typos in this provision. First, although in the Federal Register this appears as ">", it is clearly "≥" on the disk provided by USEPA. Second, "mg/1" should read "mg/l", or, better, "mg/L", avoiding this subtle problem altogether.[10] The Board has proposed this definition as follows:

> "Detection" means greater than or equal to 0.0005 mg/L.

This definition is included with the sampling point definitions in Section 611.646(a), discussed below.

Sampling Point [611.646(a) - (c)]

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[9]As defined above, the "ten" are: o-Dichlorobenzene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, 1,2-Dichloropropane, Ethylbenzene, Monochlorobenzene, Styrene, Tetrachloroethylene, Toluene and Xylene. These have been added to the USEPA MCLs as 40 CFR 141.61(a)(9) - (18).

[10]There is a deeper problem with this definition. Although in the Federal Register this is clearly a definition "for purposes of this section" [141.24], USEPA must have actually intended this to apply only to the subsection [141.24(f)] in which the definition appears, because a conflicting definition appears in §141.24(g)(18) [611.648(r)]. The Board has therefore proposed this as a Section definition.

The USEPA rules concerning organic sampling points are in 40 CFR 141.24(f)(1) - (3). The problems with this language are discussed in detail in the general discussion above. We request comment on the following draft, which implements 40 CFR 141.24(f)(1) - (3) in a manner which seeks to address the problems discussed above:

Section 611.646:

a) Definitions. As used in this Section:

"Detection" means greater than or equal to 0.0005 mg/L.

"Distribution system" includes all points downstream of an "entry point".

"Entry point" means a point just downstream of the final treatment operation, but upstream of the first user and upstream of any mixing with other water. If raw water is used without treatment, the "entry point" is the raw water source. If a PWS receives treated water from another PWS, the "entry point" is a point just downstream of the other PWS, but upstream of the first user on the PWS, and upstream of any mixing with other water.

"GWS" is as defined in Section 611.640.

"Mixed system" is as defined in Section 611.640.

"Representative" means that a sample is expected to reflect the properties of water averaged over the period of time and portion of the PWS to be sampled. To be representative, a sample must be taken under normal seasonal operating conditions.

"Source" means a well, reservoir or other source of raw water.

"SWS" is as defined in Section 611.640.

"Treatment" means any process: which changes the physical or chemical properties of water; which is under the control of the supplier; and, which is not a "point of use" or "point of entry treatment device" as defined in Section 611.101. "Treatment" includes, but

is not limited to: aeration, coagulation, sedimentation, filtration, activated carbon, chlorination and fluoridation.

b) Required sampling. Each supplier shall take a minimum of one sample at each sampling point at the times required in subsection (u). Each sampling point must be "representative." The total number of sampling points must be representative of the water delivered to users throughout the system.

c) Sampling points.

1) Sampling points for GWSs. Unless otherwise provided by SEP, the following are the sampling points for GWSs: Each entry point.

2) Sampling points for SWSs and mixed systems. Unless otherwise provided by SEP, the following are sampling points for SWSs and mixed systems:

A) Each entry point; or

B) Points in the distribution system.

3) Additional sampling points. The Agency shall, by SEP, designate additional sampling points in the distribution system or at the consumer's tap if it determines that such samples are necessary to more accurately determine consumer exposure.

4) Alternative sampling points. The Agency shall, by SEP, approve alternate sampling points if the supplier demonstrates that the points are more representative than the generally required point.

DISCUSSION OF SAMPLING POINT RULES

Subsection (a) includes definitions. Several of these are terms which are not defined in the USEPA rules, but which we believe require definition to make the rule workable. This includes definitions of "distribution system" and "entry point", which are set out above. The Board has set forth definitions of these terms as it understands them.

These definitions depend on the definition of "treatment", which again is drawn from the Board's own experience. The Board has proposed to include a non-inclusive list of common treatment

operations, which is set out in full above.

The definition of "entry point" is subject to two possible complexities. The first is when a supplier is using untreated water. The Board has provided that the "entry point" is the source if no treatment is provided.

The second complexity is when a PWS draws treated water from another PWS, and distributes it without further treatment. The Board has added a sentence to provide that the "entry point" is the point where such water enters the downstream PWS.

The USEPA rules also use the terms "groundwater system" and "surface water system" without definition. These definitions appear above, in Section 611.640. The Board has proposed to define "GWS" and "SWS" as a PWS using only groundwater or surface water sources.

The USEPA rule includes a "note" to the effect that mixed systems are regulated as SWSs. This is potentially confusing in that the proposed USEPA radium rules would regulate mixed systems as GWSs. To avoid this problem, the Board has proposed a definition of "mixed system". The operative rules will specify whether they apply to mixed systems.

The definition of "representative" is drawn from (f)(3), which the Board has construed as a definition. The proposed definition is set out above.

The implied USEPA definition appears to be stating only a portion of the needed definition, the "normal operating conditions" requirement. The Board has inserted the more general requirement that the sample reflect the properties of the water over the time and space to be sampled.

Subsection (b) requires that the supplier take a minimum of one sample at each sampling point. Sampling frequencies and times are specified below.

The requirement that samples be "representative" has been stated in subsection (b). Generally, this means that all samples have to reflect the properties of the water in the portion of the system to be sampled, as averaged over the sampling period. Specifically, samples have to be taken under "normal seasonal operating conditions".

The USEPA rule appears to lack any requirement that the total number of sampling points must be representative of the water delivered to users. The Board has proposed to add this requirement as a general guideline to the total number of samples required.

Subsection (c)(1) specifies sampling points for GWSs. This is drawn from the first sentence of (f)(1). The Board has proposed to require samples at each "entry point". The concept that the samples must be representative of the tributary wells appears as a general requirement above.

Subsection (c)(2) species sampling points for SWSs and mixed systems. They have an option to either sample at each entry point, or to sample in the distribution system. Again, the requirement that the samples be representative appears as a general requirement above.

Subsection (c)(3) allows the Agency to specify additional points is necessary to "more accurately determine consumer exposure." Subsection (c)(4) allows alternative points that are "more representative than the generally required point".

Quarterly Monitoring [611.646(d)]

This subsection is drawn from 40 CFR 141.24(f)(4), which requires that each CWS and NTNCWS take, once each (three-year) compliance period, four consecutive quarterly samples for the ten organic contaminants.[11] The Board has proposed the following as Section 611.646(d):

> Each CWS and NTNCWS supplier shall take four consecutive quarterly samples for each of the ten organic contaminants during each compliance period beginning in the compliance period starting January 1, 1993.

On its face, this rule clearly requires quarterly monitoring each compliance period. However, 40 CFR 141.24(f)(7) refers to this as the "initial round of monitoring", which would be consistent with a single round of samples. Moreover, guidance from USEPA indicates that only a single round of quarterly monitoring is expected at the beginning of the program. The Board has proposed this as a continuing requirement, but **solicits comment** as to whether the "initial round of monitoring" is repeated each compliance period, or occurs just once. The proposed text for Section 611.646(d) is as follows:

> Each CWS and NTNCWS supplier shall take four consecutive quarterly samples for each of the ten organic contaminants during each compliance period beginning in the compliance period starting January 1, 1993.

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[11]These rules are concerned with monitoring frequency. The time (day, month and year) for monitoring is discussed below.

Annual Sampling [611.646(e)]

40 CFR 141.24(f)(5) allows GWSs which do not detect any of the ten organic contaminants in the initial round of quarterly monitoring to automatically move to annual sampling. The text is as follows:

> Groundwater systems which do not detect one of the contaminants listed in §141.61(a)(9) through (18) after conducting the initial round of monitoring required in paragraph (f)(4) of this section shall take one sample annually.

As worded, the USEPA rule applies only to GWSs. However 40 CFR 141.24(f)(9) requires SWSs to perform this annual monitoring after a "waiver" is withdrawn.[12] Furthermore, USEPA guidance indicates that the baseline monitoring requirement for SWSs is annual, a requirement which is totally missing from the rules.[13] [14] The simplest explanation is that this subsection is supposed to apply to both to "SWSs" and "GWSs". The Board has therefore proposed to make this subsection applicable to both. The Board **solicits comment** as to whether the limitation of this subsection to GWSs is an error by USEPA.[15]

The Board has proposed the following language as Section 611.646(e):

> Suppliers which do not detect one of the ten organic contaminants after conducting the initial round of monitoring required in subsection (d) shall take one sample annually.

Use of Prior Data and Reduction to Three-year Sampling [611.646(f)]

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[12]However, as is discussed below, the Board has construed 40 CFR 141.24(f)(9) as being applicable only to GWSs.

[13]40 CFR 141.24(f)(6), discussed below, requires annual monitoring only for SWSs which conduct the initial round of monitoring prior to the effective date of the rules.

[14]On the other hand, the guidance indicates that the baseline for GWSs is 3-year monitoring, contradicting this rule as written. The Board believes this is clearly an error in the USEPA guidance. The baseline monitoring for both GWSs and SWSs ought to be an annual sample, subject to the modifications discussed below.

[15]Quarterly monitoring following a detection is discussed below in connection with Section 611.646(k)(2).

40 CFR 141.24(f)(6) appears to have two unrelated sentences allowing reductions in monitoring frequencies. It reads as follows:

> If the initial monitoring for contaminants listed in §141.61(a)(9) through (18) as allowed in paragraph (f)(18) of this section has been completed by December 31, 1992 and the system did not detect any contaminant listed in §141.61(a)(1) through (18) then the system shall take one sample annually beginning January 1, 1993. After a minimum of three years of annual sampling, the State may allow groundwater systems which have no previous detection of any contaminant listed in §141.61(a) to take one sample during each compliance period.

The first sentence appears to actually belong in 40 CFR 141.24(f)(5). It allows a reduction to annual monitoring based on sampling completed prior to the effective date of these rules.[16] This is done by way of a cross reference to 40 CFR 141.24(f)(18), which corresponds with Section 611.646(r), discussed below.

The second sentence of 40 CFR 141.24(f)(6) allows the State to allow GWSs which have not detected any of the eight or ten organic contaminants after three years of annual sampling to move to (three-year) compliance period sampling.[17]

The reduction to three-year sampling is not automatic under the USEPA rules, which provide that "the State may allow" the reduction. It is not clear whether USEPA contemplates that this option should be exercised in adopting the program, or by way of a case-by-case decision. The Agency has indicated that the Board should exercise this option by way of adopting a self-implementing rule providing that GWSs which have no detections after three years automatically go to 3-year monitoring. (PC 2) One factor in deciding whether to follow this approach is whether there is any real possibility of a dispute as to whether the

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[16]This subsection may be unnecessary, given that, as discussed above, the Board has construed 40 CFR 141.24(f)(5) as requiring annual monitoring for SWS which do not detect any of the ten contaminants. The Board solicits comment as to whether the inclusion of this subsection might not be another editorial error by USEPA.

[17]This is rather similar to (f)(5). Under that subsection, a GWS (and maybe a SWS) which detects none of the ten contaminants during the initial quarterly monitoring moves to annual sampling. If there are no detects of the eighteen after three annual samples, the system moves to 3-year sampling.

condition has been met. In this case the condition is "no previous detection", which appears unlikely to result in a dispute.[18] The Board has therefore followed the Agency's suggestion, and made this a self-implementing provision.

The Board has proposed the following equivalent to 40 CFR 141.24(f)(6) as Section 611.646(f):

> Reduction of monitoring frequency.
>
> 1) Results of prior monitoring. If the initial monitoring for the ten organic contaminants as allowed in subsection (r) has been completed by December 31, 1992, and the supplier did not detect any of the eight or ten organic contaminants, then the supplier shall take one sample annually beginning January 1, 1993.
>
> 2) Reduction to 3-year monitoring. After a minimum of three years of annual sampling, GWS suppliers which have no previous detection of any of the eight or ten organic contaminants shall take one sample during each compliance period.

Six-Year Adjustment [Section 611.646(g) -(j)]

40 CFR 141.24(f)(7) - (10) allows States to grant "waivers" for up to six years from the monitoring requirements for the ten organics to supplies which detect none on the eight or ten contaminants after completing the initial monitoring. These provisions read as follows:

> (7) Each community and non-transient water system which does not detect a contaminant listed in §141.61(a)(1) through (18) may apply to the State for a waiver from the requirement of paragraph (f)(4) and (f)(5) of this section after completing the initial monitoring. (For the purposes of this section, detection is defined as ≥0.0005 mg/l.) A waiver shall be effective for no more than six years (two compliance periods).
>
> (8) A State may grant a waiver after evaluating the following factor(s):
>
> (i) Knowledge of previous use (including transport, storage, or disposal) of the contaminant within the

[18]A dispute could arise as to whether to reject samples based on contamination. The Agency could use an sample request letter to make an appealable determination in such an event.

watershed or zone of influence of the system. If a determination by the State reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted.

(ii) If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

(A) Previous analytical results.

(B) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities.

(C) The environmental persistence and transport of the contaminants.

(D) The number of persons served by the public water system and the proximity of a smaller system to a larger system.

(E) How well the water source is protected against contamination such as whether it is a surface or groundwater system. Groundwater systems must consider factors such as depth of the well, the type of soil, and wellhead protection. Surface water systems must consider watershed protection.

(9) As a condition of the waiver a system must take one sample at each sampling point during the time the waiver is effective (i.e., one sample during two compliance periods or six years) and update its vulnerability assessment considering the factors listed in paragraph (f)(8) of this section. Based on this vulnerability assessment the State must confirm that the system is non-vulnerable. If the State does not make this reconfirmation within three years of the initial determination, then the waiver is invalidated and the system is required to sample annually as specified in paragraph (f)(5) of this section.

(10) A surface water system which does not detect a contaminant listed in §141.61(a)(1) through (18) and is determined by the State to be non-vulnerable using the criteria in paragraph (f)(8) of this section shall monitor at the frequency specified by the State (if any). Systems meeting this criteria must be determined

> by the State to be non-vulnerable based on a vulnerability assessment during each compliance period.

Six-Year Adjustments: Overall Structure [Section 611.646(g)(i)

40 CFR 141.24(f)(7) - (10) comprise four subsections. There are several organizational problems with these subsections, which the Board assumes are a group dealing with "waivers".

First, 40 CFR 141.24(f)(7) is worded as a precondition to application for the "waiver". For the reasons discussed above in general, the Board has reworded this as a standard for State action.

Second, 40 CFR 141.24(f)(8) contains a set of "factor(s)" the State is to consider in granting the "waiver". If the preconditions of (f)(7) are also part of the standard for State action, how do they relate to the "factor(s)"? The Board has proposed to add a reference to the "factor(s)" to subsection (f)(7), so it is clear that the factors are also a part of the standard.

Third, the final sentence of 40 CFR 141.24(f)(7) limits "waivers" to no more than six years. This is more closely related to the subject matter of (f)(9) and (10), which deals with conditions for reopening the "waiver". The Board has therefore proposed to move this down in the text.

Within each subsection there are additional editorial problems which are discussed below in connection with each subsection.

Six Year Adjustment: Application [Section 611.646(g)]

40 CFR 141.24(f)(7) provides in part:

> Each community and non-transient water system which does not detect a contaminant listed in §141.61(a)(1) through (18) may apply to the State for a waiver from the requirement of paragraph (f)(4) and (f)(5) of this section after completing the initial monitoring.[19] [20]

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[19]40 CFR 141.24(f)(7) includes a parenthetical definition of "detection". As is discussed above, the Board has consolidated these and moved them Section 611.640.

[20]The final sentence of 40 CFR 141.24(f)(7) governs the term of a waiver. This has been moved to Section 611.646(i), discussed below.

As is discussed above, this is worded as a precondition to filing the application. The Board has proposed to construe most of this as a standard for State action on the application, rather than a condition. Any supplier can apply, but the State grants the adjustment only to those who qualify.

There are two conditions which become standards for State action: that the supplier has completed the "initial monitoring", and that it did not detect any of the eight or ten organics. These become Section 611.646(g)(1) and (2). In addition, the factors of 40 CFR 141.24(f)(8) [Section 611.646(h)] need to be referenced into the standard for State action.

40 CFR 141.24(f)(7) authorizes the supplier to apply "to the State". Section 7.2(a)(5) requires the Board to specify which State agency is to grant the "waiver". A discussion of the factors the Board considers in deciding these questions appears in the general introduction to this Opinion. This "waiver" involves a temporary reduction in monitoring frequency based on prior results and on a "vulnerability assessment". For the reasons discussed in the general introduction, and above in connection with other provisions adjusting monitoring conditions, the Board has proposed that the Agency grant these "waivers" by SEP. This follows the Agency's recommendation (PC 2).

The Board has proposed the following language as an equivalent to 40 CFR 141.24(f)(7), as Section 611.646(g):

> A CWS or NTNCWS supplier may apply for an adjustment from the requirements of subsection (d) and (e). The Agency shall, after considering the factors in subsection (h), by SEP pursuant to Section 611.110, grant the adjustment if:
>
> 1) The supplier has completed the initial monitoring; and
>
> 2) The supplier did not detect any one of the eight or ten organic contaminants.

Six-Year Adjustment: Vulnerability Assessment [Section 611.646(h)]

The standard for State action is contained in Section 611.646(g). However, the State is supposed to consider "factors" in granting the "waiver". These are contained in this subsection, which is derived from 40 CFR 141.24(f)(8). These factors are referred to as the "vulnerability assessment" ("VA") in 40 CFR 141.24(f)(9). The Board has proposed to add this term to this subsection, to make it easier to find.

This subsection has two cases, represented by 40 CFR

141.24(f)(8)(i) and (ii). The former deals with a situation in which no use has been made of the organic contaminants in the watershed or zone of influence. The latter deals with situations in which the contaminants are known to have been used, or in which the use is unknown.[21]

40 CFR 141.24(f)(8)(i) starts with a long sentence fragment: "Knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system." As is set forth below, the Board has combined this with the remainder of the subsection to make a sentence.

40 CFR 141.24(f)(8)(i) goes on to say: "If a determination by the State reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted." This is written as though the State is to undertake an independent investigation to issue this "waiver". However, this would contradict the 40 CFR 141.24(f)(7), which appears to place the burden on the supplier to make the application. The Board has therefore proposed this as a demonstration which each supplier makes to the Agency. The proposed language is as follows, in Section 611.646(h)(1):

> The Agency shall grant the adjustment if the supplier demonstrates that there has been no previous use (including transport, storage or disposal) of the contaminant within the watershed or zone of influence.

The second case is 40 CFR 141.24(f)(8)(ii), which lists additional factors to be considered where "use" is either known or assumed. This reads as follows: "If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used..." This is not parallel, and "it" has no antecedent. The Board has proposed the following as Section 611.646(h)(2):

> If the contaminant has been used, or if previous use of the contaminant is unknown, the Agency shall use the following factors to determine whether an adjustment is granted:

The additional factors are in 40 CFR 141.24(f)(8)(ii)(A)

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[21]The difference between 40 CFR 141.24(f)(8)(i) and (ii) is subtle. Under (i), the supplier must make an affirmative demonstration that the contaminants have not been used. If the supplier's information on use is inadequate, the supplier must provide the additional information under (ii), as though the contaminants had been used. The Board will refer to case (ii) as prior use "known or assumed".

(E). These are relatively understandable.[22] The factors for consideration where contaminants have been used include: previous analytical results; proximity to potential contamination; persistence and transport of contaminants; persons served; and, protective measures.

One of the factors, 40 CFR 141.24(f)(8)(ii)(D) [611.646(h)(2)(D)] requires the State to consider: "The number of persons served by the public water system and the proximity of a smaller system to a larger system." This suggests that the Agency could refuse to waive the monitoring requirement based in part on its belief that the PWS ought to shut down its water source and obtain water from another source. The Agency would clearly lack authority to directly order a PWS to do this. However, in this context, the PWS would have the option of continuing to use its old source and conducting the monitoring generally required of all suppliers. The Board therefore sees no statutory problem with this, but **solicits comment.**

40 CFR 141.24(f)(8)(ii)(E) requires the State to consider the following:

> How well the water source is protected against contamination such as whether it is a surface or groundwater system. Groundwater systems must consider factors such as depth of the well, the type of soil, and wellhead protection. Surface water systems must consider watershed protection.

The Agency recommended language defining "wellhead protection" and "watershed protection".[23] This was drawn from Section 611.232(b), concerning related provisions for microbiological contamination. The proposed text of Section 611.646(h)(2)(E) is as follows, with the portions drawn from Section 611.232(b) underlined:

> How well the water source is protected against contamination such as whether it is a SWS, mixed system or GWS. GWSs shall consider factors such as depth of the well, the type of soil, and wellhead protection.

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[22]The USEPA rule appears above in the introduction on six-year waivers. The Proposed language is very similar, and appears below.

[23]The Agency comment was addressed to 40 CFR 141.24(f)(10), which back-references this subsection. The Board believes that this language is more appropriately placed with the other factors in this subsection.

The "wellhead protection program"[24] may be used, if appropriate, to meet these requirements. SWSs and mixed systems shall consider watershed protection. The Agency shall determine whether watershed protection is adequate, based on the following factors:

i) The comprehensiveness of the watershed review;

ii) The effectiveness of the PWS's program to monitor and control detrimental activities occurring in the watershed; and

iii) The extent to which the PWS has maximized land ownership or controlled land use within the watershed. At a minimum, the watershed control program must: characterize the watershed hydrology and land ownership; identify watershed characteristics and activities which may have an adverse effect on source water quality; and monitor the occurrence of activities which may have an adverse effect on source water quality.

iv) The supplier shall demonstrate through ownership or written agreements with landowners within the watershed that it can control all human activities which may have an adverse impact on the quality of the source water. With each renewal application, the supplier shall submit a report to the Agency that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in the future and describes how the supplier expects to address them.

Six-Year Adjustment: Conditions [611.646(i) and (j)]

40 CFR 141.24(f)(9) and (10) appear to state conditions which must be attached to the six-year "waiver". As was discussed above, 40 CFR 141.24(f)(7) also includes a closely related condition concerning the term of the "waiver", which the Board has proposed to address with these subsections. The text of these provisions is as follows:

7) ... A waiver shall be effective for no more than

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[24]The term "wellhead protection program" is defined in Section 611.101. As was discussed on page 41 in the R88-26 Opinion, the USEPA rules are referencing an SDWA program which will eventually be approved for Illinois.

six years (two compliance periods)...[25]

9) As a condition of the waiver a system must take one sample at each sampling point during the time the waiver is effective (i.e., one sample during two compliance periods or six years) and update its vulnerability assessment considering the factors listed in paragraph (f)(8) of this section. Based on this vulnerability assessment the State must confirm that the system is non-vulnerable.[26] If the State does not make this reconfirmation within three years of the initial determination, then the waiver is invalidated and the system is required to sample annually as specified in paragraph (f)(5) of this section.[27]

10) A surface water system which does not detect a contaminant listed in §141.61(a)(1) through (18) and is determined by the State to be non-vulnerable using the criteria in paragraph (f)(8) of this section shall monitor at the frequency specified by the State (if any). Systems meeting this criteria must be determined by the State to be non-vulnerable based on a vulnerability assessment during each compliance period.[28]

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[25]As is discussed above in general this is ambiguous as to whether it means "six years from the date of issuance" or "two compliance periods". The Board assumes the latter. However, this condition has deeper problems, discussed below, which require a more fundamental revision to this language.

[26]As worded, this requires the State to "confirm that the system is non-vulnerable". Why bother looking at the factors if the outcome is preordained? The Board assumes this means that the State is to either confirm or reimpose annual monitoring, whichever is appropriate.

[27]As was discussed above in connection with Section 611.646(e), 40 CFR 141.24(f)(5) applies only to GWSs. On its face, this subsection applies to all sources. One could take this as another reason for believing that this subsection applies only to GWSs. However, the Board has above construed (f)(5) as applying to all sources, eliminating this potential problem.

[28]One might well ask whether 40 CFR 141.24(f)(10) is a portion of the six-year waiver provisions, or something else. The subsection applies to suppliers which do not detect any of the eight or ten organic contaminants, and which are found to be non-vulnerable. The former condition is the basic criterion for the six-year waiver in 40 CFR 141.24(f)(7), and the latter is a portion of the waiver determination in subsection (f)(8). Therefore, this

As worded, 40 CFR 141.24(f)(9) applies to all systems, and (10) applies just to SWS. The most obvious interpretation would be that while (9) set general conditions applicable both to GWS and SWSs, (10) required additional conditions of SWSs. However, from reading the conditions, it is clear that (10) is totally incompatible with (9).[29] The Board has therefore concluded that, while (10) is intended to apply only to SWSs, (9) applies only to GWSs.

What then are the conditions for the "waiver"? For a GWS, under 40 CFR 141.24(f)(9), the "waiver" is for 6 years. The supplier must take one sample during the first three years, and update the VA. The "waiver" is subject to termination after three years.[30]

For an SWS, under 40 CFR 141.24(f)(10), the "waiver" is for 3 years. Whether to require samples is at the discretion of the State. However, the supplier must repeat the VA during each "waiver".[31]

As the Board has construed the USEPA rules, although the GWS may be able to get a longer "waiver", the sampling requirements for the GWS are more intensive than for the SWS. While the GWS must sample at least once every 6 years, the SWS may not have to

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subsection applies only to suppliers who have been granted a six-year waiver. It is therefore another type of condition on the six-year waiver. It would be nice if the USEPA rule would state this.

[29]While 40 CFR 141.24(f)(9) requires one sample and a VA once in 6 years, (10) requires a VA only, every 3 years. It might be possible to read these together, so that the sample requirement in (9) applied to the SWS in (10). But, why would USEPA have repeated the VA requirement in both (9) and (10), but not the sample requirement? Moreover, any attempt to reconcile these subsections would founder in attempting to explain how the automatic withdrawal provisions in (9) are supposed to work with the 3-year waiver in (10). The only conclusion possible is that (9) applies only to GWSs.

[30]The USEPA guidance on these waivers is at odds both with the text of the USEPA rule, and with the interpretation the Board is giving the USEPA rules. For one thing, while the chart shows a sample taken in year 1 of the waiver, the sample ought to be taken in year 2 or 3 under the rule. Moreover, the chart fails to show the VA.

[31]The USEPA guidance on waivers for SWSs shows a sample once every 3 years. However, the rules leave the sampling frequency entirely up to the State. And, the USEPA chart should show a VA once every 3 years.

sample at all. However, the SWS must repeat the VA at least once every 3 years. Apparently this reflects a decision by USEPA that while the VA is a sufficient indicator for the SWS, sampling is needed for the GWS.[32] [33]

40 CFR 141.24(f)(7)[34] provides that "waivers" are effective for no more than two compliance periods. However, (10) goes on to say that "waivers" are for no more than 3 years for SWSs. Subsection (f)(7) is apparently stating an upper limit on "waivers", which is, at best, confusing. The Board has therefore proposed to state the actual term of the respective adjustments in (f)(9) and (10).

The USEPA rule requires that "the State" make certain decisions as to the extension of these "waivers". Section 7.2(a)(5) requires the Board to specify which State agency is to make decisions. This decision represents a modification of the SEP which granted the adjustment in the first place. It is therefore appropriate for the Agency to make this decision also by way of SEP.

Although GWSs potentially get a 6-year "waiver"[35], the "waiver" is subject to a complex termination provision. 40 CFR 141.24(f)(9) provides as follows:

> [A] system must take one sample ... during the time the waiver is effective ... and update its vulnerability assessment... If the State does not make this

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[32]As discussed above, all suppliers have to take 4 quarterly samples, followed by two more annual samples. They get the waiver only if they have no detectable organic contaminants in any of these samples. The waiver allows less frequent sampling, but subject to the VA requirement.

[33]One might question whether this waiver provision would ever actually be used. To get the waiver, one has to repeat the VA every 3 to 6 years, and may have to sample. This is potentially much more expensive than just taking an annual sample.

[34]Most of 40 CFR 141.24(f)(7) is discussed above in connection with Section 611.646(g). The Board has moved this discussion down so it is next to the related provisions on conditions.

[35]The GWS waiver requires a sample and a VA near the midpoint of the 6-year waiver. Apparently this functions not only to "reconfirm" the waiver for the remainder of the period, but also to renew it for the next 6-year period. If a reapplication were required at the end of the first 6-year period, the "6-year waiver" would really only be for 3-years, since the supplier would wind up having to sample twice during the 6-year period.

> reconfirmation within three years of the initial determination, then the waiver is invalidated and the system is required to sample annually...

In other words, there is an automatic termination of the "waiver" if the State fails to act on the application. This potentially conflicts with Section 39(a) of the Act, which allows the applicant to deem a permit issued if the Agency takes no action within 90 days, and with Section 16(b) of the APA, which provides that "existing licenses shall continue in full force and effect until a final agency decision..."

The timeline for the USEPA rule is driven by the requirement that the State act within 36 months. In order to effectuate this directive within the Illinois statutory framework,[36] the Board has proposed to require the supplier to take the samples and file the application within 30 months after the beginning of the original adjustment[37]. This should give adequate time for the Agency to act on the application, even allowing for additional information requests.

The Agency is required to act on the application within 36 months after the beginning of the adjustment. It must either terminate the adjustment and require annual monitoring, or "reconfirm" the adjustment, and issue a new adjustment for the next cycle.[38]

Under 40 CFR 141.24(f)(9), a GWS must take samples and

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[36]See Section 7.2(a) of the Act.

[37]The USEPA rule is actually keyed to the "date of issuance" of the waiver, rather than the beginning of the waiver period. If this were taken literally, it would force monitoring cycles out of line with the USEPA compliance cycle schedule, unless the Agency was careful to issue waivers in mass on the first day of the compliance cycle. Worse, as noted above, the rules use the application for "reconfirmation" as the application for the waiver for the second cycle. This would put the "issue date" for the second cycle waiver in year 3, forcing a reapplication in year 6, and an expiration in year 9. This would effectively prohibit the State from issuing a 6-year waiver for the second cycle (years 7 through 12). As is discussed in general above, USEPA probably means to allow the State to issue waivers at an earlier date, to take effect on the first day of the cycle. The Board has proposed to reword this along the lines of USEPA's apparent intent.

[38]As is discussed in the preceding notes, the Board is construing the USEPA rules as keyed to the beginning of the waiver, and the reconfirmation application as the application for the next waiver.

repeat the VA. One might ask how the samples fit into the renewal decision. For a system where prior use is known or assumed, the samples become a part of the VA by way of 40 CFR 141.24(f)(8)(ii)(A). However, under (f)(8)(i), where there is no prior use, sampling does not enter the picture. This raises a potential problem in (f)(9), which appears to set standards for renewal based only on the VA. As the USEPA rule is worded, the State would have to renew a "waiver" for a system where there was no prior use even if samples showed detection of VOCs. The Board has therefore proposed to add a reference to the "no detection" standard to renewal provisions.

The Board has proposed the following equivalent for 40 CFR 141.24(f)(9), as Section 611.646(i):

> Adjustments for GWSs are for a maximum of six years. As a condition of the adjustment a supplier shall, within 30 months after the beginning of the period for which the adjustment was issued, take one sample at each sampling point and file a new application for a SEP under subsection (g). Based on this application, the Agency shall either:
>
> A) If it determines that the PWS meets the standard of subsection (g), issue a SEP granting an adjustment for the next two compliance periods; or,
>
> B) Issue a new SEP requiring the supplier to sample annually.

This brings us to 40 CFR 141.24(f)(10), which governs "waivers" for SWSs. The USEPA text reads as follows:

> [An SWS] which does not detect a contaminant ... and is determined by the State to be non-vulnerable ... shall monitor at the frequency specified by the State (if any). Systems meeting this criteria must be determined by the State to be non-vulnerable based on a [VA] during each compliance period

The Board has made several determinations about this language, which are discussed above. These include the following: (f)(10) is a part of the "six-year waiver"; (f)(10) stands alone, and is not governed by (f)(9); and, the "VA" is specified in 40 CFR 141.24(f)(8) [611.464(h)].

40 CFR 141.24(f)(10) starts out with the phrase "[An SWS] which does not detect a contaminant ... and is determined by the State to be non-vulnerable ..." What USEPA apparently means is "an SWS which has been granted a waiver". The Board has proposed [in 611.646(j)] to follow this formulation, rather than repeating

the conditions under which the adjustment is granted.[39]

40 CFR 141.24(f)(10) requires a VA during each compliance period (every 3 years). This effectively limits the "6-year" "waiver" to 3 years.

This provision gives the State an open-ended authorization as to monitoring frequency. This poses three potential questions. First, which State agency should determine the monitoring frequency? Second, what should be the procedural context for the decision? Third, what should be the required monitoring frequency?

Section 7.2(a)(5) requires the Board to specify which State agency is to make decisions. A general discussion of this appears in the introduction to this Opinion. In this situation, options include having the Board make the decision by way of adopting a general rule, or having the Agency make the decision by SEP. As is discussed above at numerous points, monitoring conditions are traditionally set by the Agency in writing a permit pursuant to Board regulations. In this situation, the question only arises in the context of a supplier already before the Agency with a relevant SEP application. The Board has therefore proposed to have the Agency specify the monitoring frequency on a case-by-case basis in the SEP. (PC 2)

This still leaves open the question as to what the appropriate monitoring level ought to be. The Board has proposed to have the Agency specify an appropriate level, based on the "VA" factors in Section 611.646(h)(2). (PC 2) This would allow the Agency to specify annual, 3-year or no monitoring, as is appropriate in the case.

The Board has proposed the following in Section 611.646(j) as equivalent to 40 CFR 141.24(f)(10):

> Adjustments issued to SWS or mixed system suppliers pursuant to subsection (g) are for a maximum of one compliance period. The Agency shall require as a condition that, if the supplier wants the adjustment extended:

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[39]By repeating the standard for approval in (f)(10), USEPA may be addressing the problem, discussed above, as to whether, on renewal, the State can consider the results of sampling for those suppliers who do a short-form VA under 40 CFR 141.24(f)(8)(i). However, it is unclear why this provision should apply only to SWSs, who don't even have to sample under the USEPA rules. The Board has addressed this by making a clear reference back to the general standard for approval in subsection (g).

1) The supplier take such samples for the eight and ten organic contaminants which the Agency determines are necessary, based on the vulnerability assessment; and

2) The supplier file a SEP application with a new vulnerability assessment within 30 months after the beginning of the adjustment period.

3) The Agency shall act on the application pursuant to subsection (g).

Quarterly Monitoring on Detection of Ten Organic Contaminants [611.646(k)]

This subsection is drawn from 40 CFR 141.24(f)(11). It provides for stepped-up monitoring if one of the ten organic contaminants is detected. It also allows a reduction to annual or less frequent monitoring following additional sampling.

Defined Terms [611.646(k)]

This subsection applies to the "ten organic contaminants" which are defined above in Section 611.640. These are the organic contaminants listed in 40 CFR 141.61(a)(9) - (18).

"Detection" is defined in Section 611.646(a). As used in this Section, "detected" means greater than 0.0005 mg/L.

Quarterly Monitoring [611.646(k)(1)]

40 CFR 141.24(f)(11)(i) requires a system to move to quarterly monitoring if any of the ten organic contaminants are detected. As discussed in general above, the Board takes this to mean monitoring for just the one contaminant which was detected.

Limitation to a Sample Point [611.646(k)]

40 CFR 141.24(f)(11) provides that a detection at a sampling point triggers additional monitoring only at that sampling point, not throughout the system. 40 CFR 141.24(f)(11)(i) is very clear on this. However, the subsequent subsections, which deal with reductions in monitoring, are less clear. They could be read as saying that monitoring levels can be reduced at those sampling points only if the supplier demonstrates that the entire system is "reliably and consistently" below the MCL. The Agency has stated that USEPA has provided clarification that this is not the intent. (PC 2) These provisions apply only at individual sampling points.

Reduction in Monitoring Frequency [611.646(k)(2) and (3)]

40 CFR 141.24(f)(11)(ii) and (iii) allow the State to reduce the monitoring frequency once systems are "reliably and consistently" below the MCL. These subsections read as follows:

> ii) The State may decrease the quarterly monitoring requirement specified in paragraph (f)(11)(i) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case shall the State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.
>
> iii) If the State determines that the system is reliably and consistently below the MCL, the State may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter(s) which previously yielded the highest analytical result.

An initial question is whether (ii) and (iii) are a part of the same or procedure, or a different procedure[40]. The Board believes they are a part of the same procedure, and has reworded them to make this clear.

With the subsections read together, they may be summarized as follows: any supplier can apply for the reduction in monitoring frequency. GWSs must have at least 2 quarterly samples, and SWSs 4. The State may reduce the frequency to annual at a sampling point if it determines that the sampling point is "reliably and consistently" below the MCL. Thereafter, the supplier has to take samples during the quarter which resulted in the highest results.

One area of concern is as to what "reliably and consistently" means. This is discussed above in the general introduction to this Opinion. The Board has inserted a definition of "reliably and consistently" into Section 611.640,

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[40]An alternative reading of these is that they represent alternative procedures for reduction in monitoring frequencies. Under (ii), if the supplier had the requisite number of samples, the State could reduce the level to any frequency it chose. Under (iii), the State could reduce the frequency only to annual monitoring, potentially based on fewer samples. The Board rejects this interpretation, since it would appear to allow the State to make a more drastic reduction in monitoring based on less certain evidence. Also, the final sentence, requiring subsequent monitoring during the highest quarter, would be inapplicable to the subsection (ii) waivers. The Board has therefore determined that these subsections should be read together, with (iii) specifying the conditions of the waiver granted under (ii).

for use throughout this Subpart.

40 CFR 141.24(f)(11)(ii) is subject to the "Catch 22" problem also discussed above in the general introduction.[41] The Board construes this language as consistent with that discussion. In other words, the supplier moves to annual monitoring once it is "reliably and consistently" below the MCL. The supplier stays with annual monitoring, unless the samples exceed a modified baseline specified, by SEP, with the "reliably and consistently" determination. The Board has proposed languages which says this.

40 CFR 141.24(f)(11)(ii) provides that "the State may decrease the quarterly monitoring requirement..." This is worded as a directive for setting up the program with a "requirement" for less than quarterly monitoring. However, the standard which follows clearly would be applicable to case-by-case reductions after the program is set up. The Board has therefore worded this as "the Agency may reduce the monitoring..."

Proposed Language [611.646(k)]

The Board has proposed the following as equivalent to 40 CFR 141.24(f)(11), in Section 611.646(k):

k) If one of the ten organic contaminants is detected in any sample, then:

1) The supplier shall monitor quarterly for the contaminant at each sampling point which resulted in a detection.

BOARD NOTE: Derived from 40 CFR 141.24(f)(11)(i), as amended at 56 Fed. Reg. 3578, January 30, 1991.

2) Annual monitoring.

A) A supplier may request that the Agency reduce the monitoring frequency to annual. The request must be by way of a SEP application pursuant to Section 611.110.

B) The request must include the following

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[41]The supplier "detects" a contaminant and moves to quarterly monitoring, which establishes that the contaminant is "reliably and consistently" below the MCL. The supplier then moves to annual monitoring, which again "detects" the contaminant. As the USEPA rule is written, the supplier would have to go back to quarterly monitoring.

minimal information:

i) For a GWS, two quarterly samples.

ii) For an SWS or mixed system, four quarterly samples.

C) The Agency shall, by SEP, allow annual monitoring at a sampling point, if it determines that the sampling point is reliably and consistently below the MCL.

D) In issuing the SEP, the Agency shall specify:

i) The level of the contaminant upon which the "reliably and consistently" determination was based; and

ii) The level of the contaminant which, if exceeded in any one sample, would cause the supplier to reinitiate quarterly monitoring.

BOARD NOTE: Derived from 40 CFR 141.24(f)(11)(ii) and (iii), as amended at 56 Fed. Reg. 3578, January 30, 1991.

3) Suppliers which monitor annually shall monitor during the quarter which previously yielded the highest analytical result.

BOARD NOTE: Derived from 40 CFR 141.24(f)(11)(iii), as amended at 56 Fed. Reg. 3578, January 30, 1991.

4) Suppliers which have three consecutive annual samples with no detection of a contaminant at a sampling point may apply to the Agency for an adjustment with respect to that point, as specified in subsection (g).

BOARD NOTE: Derived from 40 CFR 141.24(f)(11)(iv), as amended at 56 Fed. Reg. 3578, January 30, 1991.

Quarterly Monitoring following MCL Violation [611.646(l)]

40 CFR 141.24(f)(12) requires quarterly monitoring following an MCL violation with respect to the Ten Organic Contaminants.

It reads as follows:

> Systems which violate the requirements of §141.61(a)(9) through (18) as determined by paragraph (f)(16) of this section must monitor quarterly. After a minimum of four quarterly samples shows the system is in compliance as specified in paragraph (f)(16) of this section, and the State determines that the system is reliably and consistently below the maximum contaminant level, the system may monitor at the frequency and time specified in paragraph (f)(11)(iii) of this section.

Incorrect Cross Reference [611.646(l)]

40 CFR 141.24(f)(12) has two citations to "(f)(16)". This is to the prescribed analytical methods. It is possible that this reference is correct with respect to the first occurrence: i.e. "violation as determined by the correct analytical methods". However, this would be surplusage, since all levels have to be measured by the correct analytical techniques. Moreover, the second citation is nonsensical. The Board believes that both of these cross references are typos, and should read "(f)(15)". This would be the averaging rule [611.646(o)]. This makes sense in both places, and would not be surplusage, since, as discussed in general above, some of the other additional monitoring provisions are triggered a single sample in excess of the MCL, regardless of averaging. Indeed, this is probably the difference between (f)(11) and (12): while the former is triggered on "detection", the latter is triggered only on an actual violation.

How Many MCLs must be Violated? [611.646(l)]

As the first sentence of 40 CFR 141.24(f)(12) is worded, the supplier would have to violate all ten MCLs before quarterly monitoring was triggered. As is discussed in general above, this is probably an error by USEPA. The Board has proposed that a single violation triggers monitoring for just the one parameter.

When Does Quarterly Monitoring Start? [611.646(l)]

40 CFR 141.24(f)(12) is also silent as to when the quarterly monitoring must start. Following the example of other similar provisions, the Board has proposed that it should start during the next quarter.

Return to Annual Monitoring [611.646(l)]

The second sentence of 40 CFR 141.24(f)(12) reads as follows:

> After a minimum of four quarterly samples shows the system is in compliance as specified in [subsection

(f)(15)], and the State determines that the system is reliably and consistently below the [MCL], the system may monitor at the frequency and time specified in paragraph **(f)(11)(iii)** of this section.

This allows a return to annual monitoring by way of a cross-reference to 40 CFR 141.24(f)(11)(iii) [611.646(k)(3)], which requires annual monitoring during the highest quarter.

The USEPA cross reference is fundamentally ambiguous. Does it mean to refer to the repetition of the "reliably and consistently" standard in subsection (f)(11)(iii), or to the requirement to monitor during the "highest quarter(s)"? As is discussed below, rather than make the ambiguous cross reference, the Board has repeated the entire "reliably and consistently" language, tailored to this determination.

The return to annual monitoring has two conditions. The State must act "After a minimum of four quarterly samples shows the system is in compliance". And, it must determine that the system is "reliably and consistently below the [MCL]". Really, these two break into three conditions: A minimum data requirement, and requirements that the system be both "in compliance", and "reliably and consistently below the [MCL]". One might ask how the system could have samples which are "reliably and consistently below the MCL", and not be "in compliance"? The Board has therefore dropped the second, less stringent, condition as surplusage. The proposed language appears below.

"Catch 22"

40 CFR 141.24(f)(12) does not, on its face, have the "Catch 22" problem discussed above in general, and in connection with the preceding subsection. This is because the condition for entering quarterly monitoring is an MCL violation, rather than mere "detection". However, as is discussed in general above, the Board is proposing essentially the same language as above, in order to give a consistent meaning to "reliably and consistently". The Board **solicits comment.**

Proposed Language on Quarterly Monitoring [611.646(l)]

The Board has proposed the following as equivalent to 40 CFR 141.24(f)(12):

l) Quarterly monitoring following MCL violations.

1) Suppliers which violate an MCL for one of the ten organic contaminants, as determined by subsection (o), shall monitor quarterly for that contaminant, at the sampling point where

the violation occurred, beginning the next quarter after the violation.

2) Annual monitoring.

A) A supplier may request that the Agency reduce the monitoring frequency to annual. The request must be by way of a SEP application pursuant to Section 611.110.

B) The request must include the following minimal information: four quarterly samples.

C) The Agency shall, by SEP, allow annual monitoring at a sampling point, if it determines that the sampling point is reliably and consistently below the MCL.

D) In issuing the SEP, the Agency shall specify:

i) The level of the contaminant upon which the "reliably and consistently" determination was based; and

ii) The level of the contaminant which, if exceeded in any one sample, would cause the supplier to reinitiate quarterly monitoring.

E) The supplier shall monitor during the quarter which previously yielded the highest analytical result.

BOARD NOTE: Derived from 40 CFR 141.24(f)(12), amended at 56 Fed. Reg. 3578, January 30, 1991.

Confirmation Samples [611.646(m)]

This subsection is drawn from 40 CFR 141.24(f)(13), which reads as follows:

The State may require a confirmation sample for positive or negative results. If a confirmation sample is required by the State, the result must be averaged with the first sampling result and the average is used for the compliance determination as specified by paragraph (f)(16) of this section. States have

discretion to delete results of obvious sampling errors from this calculation.

This provision is similar to several provisions on confirmation samples, which are discussed above, in general.

Confirmation of Positive Results

This provision refers to confirmation samples for both "positive and negative results". As is discussed in general above, the Board has not proposed to require confirmation samples for negative results. (PC 2)

Many of the above provisions are triggered by a "detection". Accordingly, the Board has proposed to require confirmation samples with any "detection" of the ten organics.

Procedure for Requiring Confirmation Sample

Pursuant to the Agency's suggestion, the Board has worded this as a self-implementing provision. (PC 2) However, in most instances, the Agency would have analyzed the sample, and would request the confirmation sample by way of sample request letter.

The Agency has also requested that the Board require the confirmation sample "as soon as possible, but no later than 14 days following the initial sample".[42] The Board has proposed a rule along these lines. However, in that samples are usually analyzed by the Agency, the Board has triggered the confirmation sample on notice to the supplier.

Deletion of Sampling Errors

40 CFR 141.24(f)(13) includes a sentence allowing deletion of "obvious sampling errors". This is discussed in the general introduction to this Opinion. The Board believes that this is authorizing deletion of the original sample, based on the confirmation sample. If the State determines that the original sample was in error, it is supposed to "delete" the original sample, rather than averaging it with the confirmation sample. The Board has proposed to modify the language to state this, but **solicits comment.**

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[42]The USEPA rule is a directive to the State which the Board is meeting by adopting a regulation. In that the regulation is to be a self-implementing sampling requirement, it is necessary to set the requirement forth fully in the rule. The USEPA rule just says "the State may require" without providing details. Section 7.2(a)(3) of the Act allows the Board to adopt a regulation as prescribed.

The Board has proposed the following language on confirmation samples, as Section 611.646(m):

m) Confirmation samples.

1) If any of the ten organic contaminants are detected in a sample, the supplier shall take a confirmation sample as soon as possible, but no later than 14 days after the supplier receives notice of the detection.

2) Averaging is as specified in subsection (o).

3) The Agency shall delete the original sample if it determines that a sampling error occurred, in which case the confirmation sample will replace the original sample.

Composite Samples [611.646(n)]

40 CFR 141.24(f)(14) allows the State to require composite samples for the ten organics. As is discussed in general above, the Board has proposed no equivalent to subsection (f)(14). (PC 2) The Board has, however, inserted a do-nothing cross reference to mark the hole.

Averaging [611.646(o)]

40 CFR 141.24(f)(15) specifies averaging. It reads as follows:

(15) Compliance with §141.61(a)(9) through (18) shall be determined based on the analytical results obtained at each sampling point.

(i) For systems which are conducting monitoring at a frequency greater than annual, compliance is determined by a running annual average of all samples taken at each sampling point. If the annual average of any sampling point is greater than the MCL, then the system is out of compliance. If the initial sample or a subsequent sample would cause the annual average to be exceeded, then the system is out of compliance immediately. Any samples below the detection limit shall be calculated as zero for purposes of determining the annual average.

(ii) If monitoring is conducted annually, or less frequently, the system is out of compliance if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is required by the State, the determination of compliance will be

based on the average of two samples.

(iii) If a public water system has a distribution system separable from other parts of the distribution system with no interconnections, the State may allow the system to give public notice to only that area served by that portion of the system which is out of compliance.

There are relatively few problems with this language.

Below Detection

40 CFR 141.24(f)(15)(i) provides that any samples which are below detection are counted as zeros "for purposes of determining the annual average". There is no comparable provision governing persons on annual sampling, for whom compliance is determined by a single sample. There appears to be no need for one, since there is no averaging for such persons. However, the rule would be simpler (and would reach the same result) if this were stated so as to deem all samples below the detection limit as "zeros". The way it is worded, it seems to mandate that, for persons on quarterly sampling, a "below detection" has to be entered into the data base as the "detection level". If that person then moved to annual monitoring, the prior measurement would have to be changed to "zeros" in the data base. The Board **solicits comment** as to whether this ought to be reworded.

Confirmation Sample Averaging

The text corresponding to 40 CFR 141.24(f)(15)(ii) has been worded to be consistent with the above discussion concerning confirmation samples.

The specific language requiring averaging of the original and confirmation sample is subject to the above discussion on "deleting" sampling errors. If the original sample is "deleted", the confirmation sample is substituted for the original.

Notice to Separable Systems

40 CFR 141.24(f)(15)(iii) allows notice to only a portion of a "separable system". This is provided in general in Subpart T. As is discussed in general above, the Board has proposed to cross reference that Subpart, rather than repeating the provision here.

Proposed Language [611.646(o)]

The Board has proposed the following as equivalent to 40 CFR 141.24(f)(15):

o) Compliance with the MCLs for the ten organic

contaminants must be determined based on the analytical results obtained at each sampling point.

1) For suppliers which are conducting monitoring at a frequency greater than annual, compliance is determined by a running annual average of all samples taken at each sampling point.

   A) If the annual average of any sampling point is greater than the MCL, then the supplier is out of compliance.

   B) If the initial sample or a subsequent sample would cause the annual average to be exceeded, then the supplier is out of compliance immediately.

   C) Any samples below the detection limit must be calculated as zero for purposes of determining the annual average.

2) If monitoring is conducted annually, or less frequently, the supplier is out of compliance if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is taken, the determination of compliance is based on the average of two samples.

3) Public notice is governed by Subpart T.

Analytical Methods [611.646(p)]

This subsection corresponds with 40 CFR 141.24(f)(16). It prescribes analytical methods for the ten organic contaminants.

The Board has moved the bibliographical information to the incorporations by reference Section [611.102]. That Section is cross referenced into this Section, which actually specifies the analytical techniques.

Laboratory Approval [611.646(q)]

This subsection corresponds with 40 CFR 141.24(f)(17). It specifies laboratory approval standards for the eight and ten organics.

As is discussed in general above, Sections 4(n) and (o) of the Act authorize the Agency to establish minimum laboratory standards and issue certificates of competency. The Agency could

adopt the contents of this subsection pursuant to that authority. However, Section 17.5 of the Act requires the Board to adopt an equivalent provision. As was discussed in R88-26, the Agency's laboratory approval standards are in 35 Ill. Adm. Code 183.125(c)(3).

There are several minor typographical errors in the text of the USEPA rule. Three references to subsections "(f)(18)" probably should be to "(f)(17)" (which is the subsection under discussion). The Board has proposed to correct these errors.

As is discussed in general above, there may be a fundamental problem with the laboratory approval rules. The Board has added to Section 611.646(q)(1)(C) a limitation that samples should be not in excess of amounts expected to be present in drinking water samples.

Use of Previous Data [611.646(r)]

This Section is drawn from 40 CFR 141.24(f)(18), which reads:

> States may allow the use of monitoring data collected after January 1, 1988 required under section 1445 of the Act for purposes of monitoring compliance. If the data are generally consistent with the other requirements in this section, the State may use those data (i.e., a single sample rather than four quarterly samples) to satisfy the initial monitoring requirement of paragraph (f)(4) of this section.

The Board construes this as a programmatic directive. In other words, the Board is supposed to decide what prior data to allow at the time it sets up the program.

Several problems related to previous data are discussed in the general introduction to this Opinion. For one thing, the Board does not construe this as authorizing data which are collected after the effective date of the federal rules. Board does not see this as a mechanism to allow the use of "generally consistent" data which are collected after the USEPA regulations were adopted.

As the Board understands it, the Agency has already begun to request samples to meet these new requirements. The Board has proposed to allow only data which are fully consistent with the new requirements, and which were collected pursuant to such data requests. The Board **solicits comment** as to whether there is a need to allow the use of additional types of previous data.

The Board has proposed the following equivalent for 40 CFR 141.24(f)(18) [611.646(r)]:

> Data collected after January 30, 1991, but prior to the effective date of this Section, pursuant to Agency sample request letters, are deemed to meet the requirements of this Section, if the data are consistent with 40 CFR 141.24(f).

Increased Monitoring. [611.646(s)]

This subsection corresponds with 40 CFR 141.24(f)(19), which reads as follows:

> States may increase required monitoring where necessary to detect variations within the system.

The first question is whether this is a programmatic decision, or whether it calls for a case-by-case decision. The Board believes it is the latter, since it includes a criterion ("necessary to detect variations in the system") which could be applied on a case-by-case basis. Furthermore, this decision adjusting monitoring frequencies, which is based on site-specific factors, for an entity with a permit, is appropriate as an Agency permit decision. The Board has therefore proposed to allow the Agency to do this by SEP.

The USEPA language is ambiguous as to whether it is authorizing additional sampling points, or increased frequency of monitoring at the existing sampling points. The Board suggests that, since this provision is located apart from both the sampling point and frequency of monitoring provisions, it must govern both. The Board has therefore worded the provision to specifically authorize both, but **solicits comment.**

The Board has proposed to adopt the following equivalent for 40 CFR 141.24(f)(19) [611.646(s)]:

> The Agency shall, by SEP, increase the number of sampling points or the frequency of monitoring if it determines that it is necessary to detect variations within the PWS.

Method Detection Limit [611.646(t)]

This subsection is drawn from 40 CFR 141.24(f)(20), which reads as follows:

> Each approved laboratory must determine the method detection limit (MDL), as defined in Appendix B to Part 136 of this chapter, at which it is capable of detecting VOCs. The acceptable MDL is 0.0005 mg/l. This concentration is the detection concentration for purposes of this section.

This provision belongs with 40 CFR 141.24(f)(17) [611.646(q)], discussed above. Indeed, the final subsections of 40 CFR 141.24(f) appear to just be a grab-bag of afterthoughts, further compounding the structural problems with this rule. However, as is discussed in general above, the Board is attempting to maintain as much of the structure of the USEPA rule as possible, mainly to make future comparison easier.

The final sentence appears to be another repetition of the definition of "detection", which appears Section 611.646(a), above. The Board has proposed to drop this sentence as mere surplusage.

As worded, this provision appears to have two main requirements. Each "approved laboratory" must determine its MDL. And, the "acceptable" MDL is 0.0005 mg/L.[43] Probably this means that, to be approved , a laboratory must achieve an MDL of 0.0005 mg/L. The Board has proposed to so word the provision.

As worded, the USEPA rule appears to require a MDL of exactly 0.0005 mg/L. However, equipment which is capable of detecting the organics at a lower level should be acceptable. As defined in 40 CFR 136, Appendix B, such equipment would have a lower MDL, and would not meet the USEPA requirement as worded. The Board has therefore proposed to require approval of labs which achieve an MDL "less than or equal to" 0.0005 mg/L. However, it is possible that this wording would interfere with the definition of "detected"[44]. The Board **solicits comment.**

The USEPA rule refers to the MDL for "VOCs". This term is not defined. As noted above, USEPA appears in other places to use this to refer to the "eight organic contaminants". However, most of this subsection is referring to the "ten organic contaminants". The Board has proposed to make this applicable to the "ten" organics, but **solicits comment.**

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[43]As worded, even labs that seek to do only inorganic or microbial analysis have to determine their MDL for "VOCs". 0.0005 mg/L is "acceptable", but they don't get authorized to analyze for the "VOCs".

[44]What if a lab has equipment which could "detect" a contaminant at 0.0001 mg/L, but could not quantify it. The USEPA rule, as construed, would seem to require approval of this lab, even though the result would not indicate whether there was or was not a "detection" as defined in the rules. It may be that the USEPA rules are structured so as to depend on equipment with an MDL of exactly 0.0005 mg/L, and that the USEPA rule is worded correctly. In this case, the Board solicits comment as to whether there really is equipment with an MDL of exactly 0.0005 mg/L.

The Board has proposed the following language as equivalent to 40 CFR 141.24(f)(20) [611.646(t)]:

> To be approved for the ten organic contaminants, a laboratory shall:
>
> 1) Determine the method detection limit (MDL), as defined in 40 CFR 136, Appendix B, incorporated by reference in Section 611.102, at which it is capable of detecting the ten organic contaminants; and,
>
> 2) Achieve an MDL for each which is less than or equal to 0.0005 mg/L.

Time for Monitoring [611.646(u)]

This Section is drawn from 40 CFR 141.24(f)(21), which reads as follows:

> Each public water system shall monitor at the time designated by the State within each compliance period.

This language is discussed in general above. Consistent with that discussion, the Board has proposed the following language:

> Each supplier shall monitor, within each compliance period, at the time designated by the Agency by SEP.

Section 611.647 Monitoring for Eight Organic Contaminants

This Section is drawn from 40 CFR 141.24(g). It was formerly numbered as 611.648. It has been renumbered to make room for the equivalent of 40 CFR 141.24(h), which is discussed below.

The "eight organic contaminants" are defined in Section 611.640, above. They are:

Benzene
Carbon tetrachloride
p-Dichlorobenzene.
1,2-Dichloroethane
1,1-Dichloroethylene
1,1,1-Trichloroethane
Trichloroethylene
Vinyl chloride

The "eight" were called "VOCs" in the rules adopted in R88-26. However, this terminology has become unworkable in light of these amendments. Most of the amendments to this Section result from

this change in terminology.

The only substantive amendment to this Section is to Section 611.647(h). The January 30, 1991, are set out in the 1991 Edition of the CFR. That edition indicates that 40 CFR 141.24(g)(8) has been amended to allow that procedure only until January 1, 1993. The Board has proposed to so limit this adjustment provision, although the Board has been unable to locate this amendment in the Federal Register.

Section 611.648 Monitoring for Eleven Pesticides and PCBs

This Section corresponds with 40 CFR 141.24(h). It governs monitoring for the "eleven pesticides and PCBs", which is defined above. These are the contaminants regulated by Section 611.310(c) [40 CFR 141.61(c)], namely:

Alachlor
Atrazine
Carbofuran
Chlordane
Dibromochloropropane
Ethylene dibromide
Lindane
Methoxychlor
Polychlorinated biphenyls
Toxaphene
2,4,5-TP

As discussed above in connection with Section 611.640, the "eleven pesticides" are not the same set of contaminants listed in the USEPA rule. USEPA has specified analytical techniques for come contaminants for which it has not adopted an MCL. And, the Board is not proposing to adopt some MCLs because of a more stringent MAC.

This subsection tracks 40 CFR 141.24(f) [611.646] rather closely. It contains most of the same problems discussed in connection with that Section. In many cases, the Board will import the language from that Section, without further discussion.

Sampling Points [611.648(a) - (c)]

These subsections correspond with 40 CFR 141.24(h)(1) - (3), which are nearly identical to 141.24(f)(1) - (3). They govern sampling points. The Board has proposed to use the exact same language, which is set out above in connection with Section 611.646(a) - (c).

The definition of "detected" is not the same in this Section as in Section 611.646. Various detection levels are specified in

Section 611.646(m) and (r) below. These are cross referenced in the definition in this Section.

Monitoring Frequency [611.648(d)]

This subsection corresponds with 40 CFR 141.24(h)(4), which specifies monitoring frequency. It reads as follows:

> (4) Monitoring frequency:
>
> (i) Each community and non-transient non-community water system shall take four consecutive quarterly samples for each contaminant listed in §141.61(c) during each compliance period beginning with the compliance period starting January 1, 1993.
>
> (ii) Systems serving more than 3,300 persons which do not detect a contaminant in the initial compliance period, may reduce the sampling frequency to a minimum of two quarterly samples in one year during each repeat compliance period.
>
> (iii) Systems serving less than or equal to 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.

This provision corresponds with Section 611.646(d) and (e), above, taken together. The Board has proposed the following language, as Section 611.648(d):

> d) Monitoring frequency:
>
> 1) Each CWS and NTNCWS supplier shall take four consecutive quarterly samples for each of the eleven pesticides and PCBs during each compliance period, starting January 1, 1993.
>
> 2) Suppliers serving more than 3,300 persons, which do not detect a contaminant in the initial compliance period, shall take a minimum of two quarterly samples in one year of each compliance period.
>
> 3) Suppliers serving less than or equal to 3,300 persons, which do not detect a contaminant in the initial compliance period, shall take a minimum of one sample during each compliance period.

Reduction of Monitoring Frequency [611.648(e) - (f)]

These subsections are derived from 40 CFR 141.24(h)(5) - (6), which read as follows:

(5) Each community and non-transient water system may apply to the State for a waiver from the requirement of paragraph (h)(4) of this section. A system must reapply for a waiver for each compliance period.

(6) A State may grant a waiver after evaluating the following factor(s): Knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If a determination by the State reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted. If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

(i) Previous analytical results.

(ii) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities. Non-point sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, home and gardens, and other land application uses.

(iii) The environmental persistence and transport of the pesticide or PCBs.

(iv) How well the water source is protected against contamination due to such factors as depth of the well and the type of soil and the integrity of the well casing.

(v) Elevated nitrate levels at the water supply source.

(vi) Use of PCBs in equipment used in the production, storage, or distribution of water (i.e., PCBs used in pumps, transformers, etc.).

These provisions appear to correspond with Section 611.646(g) and (h), discussed above. The Board has proposed to pattern the rule after those provisions, modified as appropriate. Only the modifications are discussed here. (PC 2)

The adjustment in Section 611.646(g) may be granted only after the initial round of monitoring, and only if none of the "ten organics" are detected. The "waiver" under 40 CFR 141.24(h)(5) [611.648(e)] does not include comparable conditions. The State could thus grant the adjustment with respect to the pesticides and PCBs prior to the initial round of monitoring, and, afterwards, even if the contaminants were detected. The Board **solicits comment** as to whether this might be a USEPA error, which the Board ought to fix.

40 CFR 141.24(h)(5) includes an additional condition, which may be present, in a more complex form, as Section 611.646(i): the supplier must reapply for the adjustment each compliance period. The Board has inserted a comparable requirement as Section 611.648(e)(2). However, the Board has worded this so as to limit "waivers" to one compliance period.

It is possible that the rule needs to specifically require the supplier to reapply for the adjustment at some specified time prior to the expiration of a compliance period, in order to allow the Agency sufficient time to act on the application. The Board **solicits comment** on this.

40 CFR 141.24(h)(6) [611.648(f)] includes an erroneous subsection label: the second "(ii)" should be "(iv)" ["D"].

The "factors" for the vulnerability assessment for the adjustment are rather similar to those in Section 611.646(h), as applied to pesticides and PCBs.

One possible weakness in the USEPA rule is that, while some of these factors are appropriate for pesticides, others are appropriate for PCBs. The rule itself doesn't tell which. This is probably acceptable in a "consideration of factors" rule. However, there might be some confusion about the relevance of "nitrate levels", which the Board believes are taken as indicative of possible pesticide contamination.

The Board has proposed the following equivalent for 40 CFR 141.24(h)(5) and (6) [611.648(e) and (f)]:

e) A CWS or NTNCWS supplier may apply for an adjustment from the requirements of subsection (d).

1) The Agency shall, by SEP pursuant to Section 611.110, grant the adjustment as provided in subsection (f).

2) An adjustment lasts for only a single compliance period.

f) Vulnerability Assessment. The Agency shall grant an adjustment under subsection (e) as follows:

1) The Agency shall grant the adjustment if the supplier demonstrates that there has been no previous use (including transport, storage or disposal) of the contaminant within the watershed or zone of influence.

2) If the contaminant has been used, or if previous use of the contaminant is unknown, the Agency shall use the following factors to determine whether an adjustment is granted:

A) Previous analytical results.

B) The proximity of the PWS to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities. Non-point sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, homes and gardens, and other land application uses

C) The environmental persistence and transport of the pesticide or PCBs.

D) How well the water source is protected against contamination due to such factors as depth of the well, the type of soil, and the integrity of the well casing.

E) Elevated nitrate levels in the water supply source.

F) Use of PCBs in equipment used in the production, storage or distribution of water (i.e. PCBs used in pumps, transformers, etc.)

Quarterly Monitoring Following Detection [611.648(g)]

This subsection is drawn from 40 CFR 141.24(h)(7), which requires quarterly monitoring following a "detection" (as defined

in this Section). It reads as follows:

> (7) If an organic contaminant listed in §141.61(c) is detected (as defined by paragraph (h)(18) of this section) in any sample, then:
>
> (i) Each system must monitor quarterly at each sampling point which resulted in a detection.
>
> (ii) The State may decrease the quarterly monitoring requirement specified in paragraph (h)(7)(i) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case shall the State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.
>
> (iii) After the State determines the system is reliably and consistently below the maximum contaminant level the State may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter that previously yielded the highest analytical result.
>
> (iv) Systems which have 3 consecutive annual samples with no detection of a contaminant may apply to the State for a waiver as specified in paragraph (h)(6) of this section.
>
> (v) If monitoring results in detection of one or more of certain related contaminants (aldicarb, aldicarb sulfone, aldicarb sulfoxide and heptachlor, heptachlor epoxide), then subsequent monitoring shall analyze for all related contaminants.

As an initial question, the Board notes that the USEPA rule is ambiguous as to whether this is a condition of the above "waiver", or a general requirement applicable to suppliers without "waivers". The Board has construed the provision as a general requirement, but **solicits comment.**

40 CFR 141.24(h)(7) appears to be very similar to the provision from which Section 611.646(k), above, is drawn. The Board has proposed to use that text as a base for this subsection.

There appears to be a cross reference error in 40 CFR 141.24(h)(7)(iv). The citation to "(h)(6)" should be to "(h)(5)", ["(e)"].

40 CFR 141.24(h)(7)(v) includes a specific monitoring

provision for aldicarb, aldicarb sulfone, aldicarb sulfoxide and heptachlor, heptachlor epoxide. As is discussed above in connection with Section 611.640, these contaminants are not among the "eleven pesticides" which are the subject of this Section. The Board has inserted a "do nothing" cross reference to mark this hole.

The Board has proposed the following equivalent for 40 CFR 141.24(h)(7) [611.648(g)]:

g) If one of the "eleven pesticides and PCBs" is detected in any sample, then:

1) The supplier shall monitor quarterly for the contaminant at each sampling point which resulted in a detection.

BOARD NOTE: Derived from 40 CFR 141.24(h)(7)(i), as amended at 56 Fed. Reg. 3578, January 30, 1991.

2) Annual monitoring.

A) A supplier may request that the Agency reduce the monitoring frequency to annual. The request must be by way of a SEP application pursuant to Section 611.110.

B) The request must include the following minimal information:

i) For a GWS, two quarterly samples.

ii) For an SWS or mixed system, four quarterly samples.

C) The Agency shall, by SEP, allow annual monitoring at a sampling point, if it determines that the sampling point is reliably and consistently below the MCL.

D) In issuing the SEP, the Agency shall specify:

i) The level of the contaminant upon which the "reliably and consistently" determination was based; and

ii) The level of the contaminant which, if exceeded in any one sample,

would cause the supplier to reinitiate quarterly monitoring.

BOARD NOTE: Derived from 40 CFR 141.24(h)(7)(ii) and (iii), as amended at 56 Fed. Reg. 3578, January 30, 1991.

3) Suppliers which monitor annually shall monitor during the quarter which previously yielded the highest analytical result.

BOARD NOTE: Derived from 40 CFR 141.24(h)(7)(iii), as amended at 56 Fed. Reg. 3578, January 30, 1991.

4) Suppliers which have three consecutive annual samples with no detection of a contaminant at a sampling point may apply to the Agency for an adjustment with respect to that point, as specified in subsection (g).

BOARD NOTE: Derived from 40 CFR 141.24(h)(7)(iv), as amended at 56 Fed. Reg. 3578, January 30, 1991.

5) See Section 611.100(e).

BOARD NOTE: Derived from 40 CFR 141.24(h)(7)(v), as amended at 56 Fed. Reg. 3578, January 30, 1991.

Quarterly Monitoring Following MCL Violation [611.648(h)]

This subsection is derived from 40 CFR 141.24(h)(8), which reads as follows:

> Systems which violate the requirements of §141.61(c) as determined by paragraph (h)(12) of this section must monitor quarterly. After a minimum of four quarterly samples show the system is in compliance and the State determines the system is reliably and consistently below the MCL, as specified in paragraph (h)(11) of this section, the system shall monitor at the frequency specified in paragraph (h)(7)(iii) of this section.

This is similar to Section 611.646(l), which is discussed above. The Board has proposed to follow the same format as for that subsection.

As published in the Federal Register, 40 CFR 141.24(h)(8) requires a "maximum" of four quarterly samples. This has been

corrected to read "minimum" on the disks provided by USEPA.

40 CFR 141.24(h)(8) includes cross references to "(h)(12)" and "(h)(11)". These are the averaging rule and analytical methods, respectively. As is discussed above, the comparable provision in Section 611.646(l) contains two references to the same subsection, that being the analytical methods. The Board above proposed to change both of these to reference the averaging rule. Consistent with that interpretation, the Board has referenced the averaging rule in both places here [subsection (l)], but **solicits comment.**

The Board has proposed the following language as an equivalent to 40 CFR 141.24(h)(8) [611.648(h)]:

h) Quarterly monitoring following MCL violations.

1) Suppliers which violate an MCL for one of the eleven pesticides and PCBs, as determined by subsection (l), shall monitor quarterly for that contaminant, at the sampling point where the violation occurred, beginning the next quarter after the violation.

2) Annual monitoring.

A) A supplier may request that the Agency reduce the monitoring frequency to annual. The request must be by way of a SEP application pursuant to Section 611.110.

B) The request must include the following minimal information: four quarterly samples.

C) The Agency shall, by SEP, allow annual monitoring at a sampling point, if it determines that the sampling point is reliably and consistently below the MCL.

D) In issuing the SEP, the Agency shall specify:

i) The level of the contaminant upon which the "reliably and consistently" determination was based; and

ii) The level of the contaminant which, if exceeded in any one sample, would cause the supplier to

reinitiate quarterly monitoring.

E) The supplier shall monitor during the quarter which previously yielded the highest analytical result.

BOARD NOTE: Derived from 40 CFR 141.24(h)(8), as amended at 56 Fed. Reg. 3578, January 30, 1991.

Confirmation Samples [611.648(i)]

This subsection is drawn from 40 CFR 141.24(h)(9), which reads as follows:

> The State may require a confirmation sample for positive or negative results. If a confirmation sample is required by the State, the result must be averaged with the first sampling result and the average used for the compliance determination as specified by paragraph (h)(11) of this section. States have discretion to delete results of obvious sampling errors from this calculation.

This language is discussed in the general introduction to this Opinion, and is also similar to Section 611.646(m) above. For the reasons discussed above, the Board will not require confirmation samples for negative results. (PC 2) Also, the Board construes the final sentence as authorizing the State to substitute the confirmation sample for the original sample in the case of a sampling error.

The Board has proposed the following language as equivalent to 40 CFR 141.24(h)(9) [611.648(i)]:

i) Confirmation samples.

1) If any of the eleven pesticides and PCBs are detected in a sample, the supplier shall take a confirmation sample as soon as possible, but no later than 14 days after the supplier receives notice of the detection.

2) Averaging is as specified in subsection (k).

3) The Agency shall delete the original sample if it determines that a sampling error occurred, in which case the confirmation sample will replace the original sample.

Composite Samples [611.648(j)]

40 CFR 141.24(h)(10) authorizes the use of composite samples. For the reasons discussed in general above, the Board has not proposed to allow the use of composite samples. (PC 2) A do-nothing cross reference to Section 611.100(e) has been left to mark the hole.

Averaging [611.647(k)]

This subsection is drawn from 40 CFR 141.24(h)(11), which reads as follows:

> (11) Compliance with §141.61(c) shall be determined based on the analytical results obtained at each sampling point.
>
> (i) For systems which are conducting monitoring at a frequency greater than annual, compliance is determined by a running annual average of all samples taken at each sampling point. If the annual average of any sampling point is greater than the MCL, then the system is out of compliance. If the initial sample or a subsequent sample would cause the annual average to be exceeded, then the system is out of compliance immediately. Any samples below the detection limit shall be calculated as zero for purposes of determining the annual average.
>
> (ii) If monitoring is conducted annually, or less frequently, the system is out of compliance if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is required by the State, the determination of compliance will be based on the average of two samples.
>
> (iii) If a public water system has a distribution system separable from other parts of the distribution system with no interconnections, the State may allow the system to give public notice to only that portion of the system which is out of compliance.

This language appears to be identical to that discussed above in connection with Section 611.646(o), which the Board has proposed to use as a model. The proposed language for Section 611.646(k) is as follows:

> k) Compliance with the MCLs for the eleven pesticides and PCBs must be determined based on the analytical results obtained at each sampling point.
>
> 1) For suppliers which are conducting monitoring at a frequency greater than annual,

compliance is determined by a running annual average of all samples taken at each sampling point.

A) If the annual average of any sampling point is greater than the MCL, then the supplier is out of compliance.

B) If the initial sample or a subsequent sample would cause the annual average to be exceeded, then the supplier is out of compliance immediately.

C) Any samples below the detection limit must be calculated as zero for purposes of determining the annual average.

2) If monitoring is conducted annually, or less frequently, the supplier is out of compliance if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is taken, the determination of compliance is based on the average of two samples.

3) Public notice is governed by Subpart T.

Analytical Methods for Eleven Pesticides, PCBs [611.648(l) - (m)]

These subsections are drawn from 40 CFR 141.24(h)(12) and (13). They specify the analytical methods for the eleven pesticides and PCBs.

As is discussed in general above, the Board has proposed to move the bibliographical information to the incorporations by reference Section [611.102]. This Section just specifies analytical methods.

The USEPA rule includes methods for more than just the eleven pesticides and PCBs (defined above in Section 611.640). It includes contaminants which have apparently been omitted from the USEPA rule, and contaminants which the Board is omitting, based on a more stringent MAC.

The Board has proposed to leave the additional analytical methods in these rules. As is discussed above in connection with Section 611.645, the Board will cross reference to this Section for the analytical methods for the more stringent MACs.

With respect to the contaminants for which there is, as yet, no MCL, USEPA will presumably be adopting an MCL in the near future. Since the analytical methods are already in the USEPA

rules, USEPA may not revisit this Section in adopting the MCLs. This could cause confusion when the Board acts on the MCLs. The Board will therefore adopt these analytical methods at this time, even though they serve no present purpose in the rules. These provisions should not be read as requiring anyone to analyze for these contaminants, until such time as the Board adopts an MCL and monitoring requirement.

The Board has proposed to correct a cross reference error in 40 CFR 141.24(h)(13)(i). "(h)(13)" should read "(h)(12)" ["(l)"].

40 CFR 141.24(h)(13)(ii) includes a table of detection limits for seven PCB isomers. There is an ambiguity as to how this Table relates to the "detection" table in (h)(18) [611.648(r)], which includes a detection limit for "PCBs". The introduction to the former table reads as follows:

> If PCBs (as one of seven Aroclors) are detected (as designated in this paragraph) in any sample analyzed using Methods 505 or 508, the system shall reanalyze the sample using Method 508A to quantitate PCBs (as decachlorobiphenyl).

The Board suggests that the "as designated in this paragraph" should be construed to mean "as designated in paragraph (h)", rather than "as designated in paragraph (h)(13)(ii)" (which would be the obvious meaning). The portion of "paragraph (h)" which "designates" detection limits is (h)(18). The result is that "this paragraph" means "subsection (h)(18)" ["subsection (r)"].

With the above interpretation, the relationship between the tables in (h)(13) and (18) becomes understandable. Once "PCBs" are "detected" in gross, as defined in (h)(18), the sample has to be analyzed for the seven arochlors individually. The "detection" only counts as a "detection" if one (or more) of the individual detection limits of (h)(13)(ii) are exceeded. The Board has proposed language saying this. The Board has proposed the following as equivalent to the introductory language to 40 CFR 141.24(h)(13)(ii) [611.648(m)(B)]:

> If PCBs are detected (as defined in subsection (r)) in any sample analyzed using Methods 505 or 508, the supplier shall reanalyze the sample using Method 508A to quantitate the individual Aroclors (as decachlorobiphenyl). The Aroclors are "detected" if the level is greater than or equal to the following concentrations for each Aroclor: ...

<u>Use of Prior Data [611.648(n)]</u>

This subsection is drawn from 40 CFR 141.24(h)(14), which reads as follows:

> If monitoring data collected after January 1, 1990, are generally consistent with the requirements of §141.24(h), then the State may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

This language is discussed in general above, and in connection with Section 611.646(r), also above. (PC 2) The Board has proposed the following language, consistent with that discussion. In summary, the Board has proposed to allow prior data only in response to an Agency sample request, which came after the effective data of USEPA rule, and which was fully consistent with USEPA requirements. The proposed language is as follows [611.648(n)]:

> Data collected after January 30, 1991, but prior to the effective date of this Section, pursuant to Agency sample request letters, are deemed to meet the requirements of this Section, if the data are consistent with 40 CFR 141.24(h).

Additional Sampling Points [611.648(o)]

This subsection is drawn from 40 CFR 141.24(h)(15), which reads as follows:

> The State may increase the required monitoring frequency, where necessary, to detect variations within the system (e.g., fluctuations in concentration due to seasonal use, changes in water source).

This language is similar to Section 611.646(s), which is discussed above. (PC 2) The Board has proposed identical language, as follows [611.648(o)]:

> The Agency shall, by SEP, increase the number of sampling points or the frequency of monitoring if it determines that it is necessary to detect variations within the PWS.

Authority to Determine Compliance [611.648(p)]

40 CFR 141.24(h)(16) reads as follows:

> The State has the authority to determine compliance or initiate enforcement action based upon analytical results and other information compiled by their sanctioned representatives and agencies.

One might ask why this language needs to appear here, but not in 40 CFR 141.24(f) [611.646].

As was discussed in the R88-26 Opinion, no equivalent for this language needs to appear in the Board rules. The Agency always has the authority to "determine compliance and initiate enforcement" before the Board. Moreover, even if it didn't, adopting a Board rule wouldn't help. The Board has therefore proposed no equivalent, but has marked the hole with a do-nothing cross reference to Section 611.100(e).

Time for Monitoring [611.648(q)]

This subsection is drawn from 40 CFR 141.24(h)(17), which reads as follows:

> Each public water system shall monitor at the time designated by the State within each compliance period.

This Section governs the day, month and year for taking samples, as opposed to sampling frequency. This is discussed in general above, and in connection with Section 611.646(u), also discussed above. The Board has proposed the following language, as Section 611.648(q):

> q) Each supplier shall monitor, within each compliance period, at the time designated by the Agency by SEP.

Detection for the Eleven Pesticides [611.648(r)]

This subsection is drawn from 40 CFR 141.24(h)(18). This is the definition of "detected" for this Section. As discussed above, a cross reference was placed in the definitions of Section 611.648(a), to help people find this definition.

This subsection includes detection limits for more contaminants than are in the "eleven", as defined above. Although these serve no function, the Board has proposed to leave them in, since they don't seem to hurt anything.

There is an ambiguity as to how this table is supposed to relate to the detection limit table for PCBs in 40 CFR 141.24(h)(13)(ii) [611.648(m)]. As discussed above, the Board has construed this table as setting a "detection" limit for gross PCBs. If the supplier detects "PCB", he has to go on to quantify the individual Aroclors. There is a "detection" only if the level of one of the Aroclors exceeds the level specified in subsection (h)(13)(ii) [(m)(2)].

Section 611.650 Monitoring for 36 Organic Contaminants

This Section was drawn from 40 CFR 141.40(a) - (f). It requires "special monitoring" for 36 organic contaminants, for which, at the time it was adopted, there were no MCLs. Monitoring under this Section was to have been completed by January 1, 1992. Many of these contaminants now have MCLs, and monitoring requirements, pursuant to the January 30, 1991, "Phase II" amendments. Although the equivalent USEPA rule remains on the books, the Board has proposed to repeal this Section, to avoid possible conflicts with the Phase II requirements, and as a matter of general housekeeping.

Section 611.657 Analytical Methods for 36 Contaminants

This Section was drawn from 40 CFR 141.40(g) - (m). These are the analytical methods for Section 611.650, above. The Board has proposed to repeal these also.

Section 611.658 Special Monitoring for Organic Chemicals

This Section is drawn from 40 CFR 141.40(n). It establishes "special monitoring" for several organic chemicals for which there are, as yet, no MCLs. These contaminants are:

Aldrin
Benzo(a)pyrene
Butachlor
Carbaryl
Dalapon
Di(2-ethylhexyl)adipate
Di(2-ethylhexyl)phthalates
Dicamba
Dieldrin
Dinoseb
Diquat
Endothall
Glyphosate
Hexachlorobenzene
Hexachlorocyclopentadiene
3-Hydroxycarbofuran
Methomyl
Metolachlor
Metribuzin
Oxamyl (vydate)
Picloram
Propachlor
Simazine
2,3,7,8-TCDD (Dioxin)

The USEPA rule deals with special monitoring for both organic and inorganics. The portion concerning inorganic monitoring is discussed above as Section 611.611. The subsection labels corresponding with the inorganic provisions are marked

with a do nothing reference to Section 611.100(e).

Adjustments [611.658(c) and (d)]

For organic contaminants, 40 CFR 141.40(n)(4) [611.658(d)] allows "waivers" "based on the criteria specified in §141.24(h)(6)". This corresponds with Section 611.648(f), the "vulnerability assessment" for the eleven pesticides and PCBs.

Sampling Points [611.658(e) - (g)]

40 CFR 141.40(n)(5) - (7) governs sampling points. The Board has proposed to use the sampling point rules discussed above in connection with Section 611.648(a) - (c). These are repeated in full. However, the Board **solicits comment** as to whether it would be better to simply cross reference them. This may depend on whether the sampling points would be exactly the same as for the eleven pesticides and PCBs.

Confirmation Samples [611.658(h)]

40 CFR 141.40(n)(8) allows the State to require confirmation samples for this "special monitoring". This is subject to several problems, which are discussed at greater length in connection with Section 611.611(h). The Board **solicits comment** as to what the appropriate trigger for a confirmation sample should be. If this is to be a "detection", what is the definition? Is an averaging rule needed? Should original samples be discarded in favor of the confirmation sample in the event of a sampling error?

Composite Samples [611.658(i)]

40 CFR 141.40(n)(9) allows the State to require composite samples. For the reasons discussed in general above, the Board is not proposing to allow composites.

Offer to Sample [611.658(j)]

40 CFR 141.40(n)(10) allows suppliers with fewer than 150 connections to avoid sampling by simply sending a letter to the State stating that the system is available for sampling.

The Board has proposed an equivalent for this subsection, but **solicits comment** as to how the Agency would implement it. If the Agency intends to require samples from the small supplies, it would be more honest to omit this Section, making a programmatic decision to require the samples. On the other hand, if the Agency does not want these samples, the Board could make a programmatic decision to simply exclude these suppliers in the rule.

List of Contaminants [611.658(k)]

This subsection contains the list of "unregulated contaminants". It is drawn from 40 CFR 141.40(n)(11).

The USEPA rule refers to these as "unregulated contaminants", a term the Board has avoided, since they are indeed regulated by this Section.

The USEPA table includes a heading for "EPA analytical method". The Board construes this as a reference to "Organic Methods", USEPA's in-house analytical methods, which is incorporated by reference in Section 611.102.

SUBPART T: REPORTING, PUBLIC NOTIFICATION AND RECORDKEEPING

Section 611.851 Reporting MCL and other Violations

This Section is drawn from 40 CFR 141.32(a), which was amended at 56 Fed. Reg. 3578, January 30, 1991. Most of the text of this USEPA provision (and the amendments) are set forth in Appendix A, below.

The single USEPA amendment to this Section is 40 CFR 141.32(a)(1)(iii)(B) [611.851(a)(3)(B)]. This adds a nitrite violation to the list of "acute violations" requiring public notice within 72 hours.

The USEPA rule includes a specific reference to violations as determined by the averaging rule. However, this is already taken care of in Section 611.609(c).

Appendix A Mandatory Health Effects Information

This Appendix is drawn from 40 CFR 141.32(e). It specifies the contents of the notice which the supplier must give to the public following certain MCL violations. The amendments add paragraphs (13) through (52), with health effects information for the new contaminants discussed above.

The Board has followed the USEPA numbering for these contaminants. However, it would be easier to use this list if it were an alphabetical listing of contaminants. With 52 entries in arbitrary order, it's hard to find the one you want. The Board **solicits comment** as to whether it ought to alphabetize.

It may be worth noting that there are virtually no errors in the USEPA text of 40 CFR 141.32(e). The only error appears to be the spelling of "chrysolite" in the asbestos notice [(15)].

The text is setting forth the verbatim text which suppliers are supposed to use in public notices. Therefore, to the extent

acronyms are used, they are redefined in each paragraph, so that the definition will appear in the public notice.

These are worded with direct references to USEPA as the source of the regulation, rather than the Board or Agency. This follows the Board's action in R88-26.

Each of the notices previously adopted by USEPA (and the Board) ends with the following sentence:

> Drinking water which meets this standard is associated with little to none of this risk and should be considered safe.

USEPA has apparently recognized that, as worded, this may be an overstatement. In the new notices this is worded as:

> Drinking water that meets the USEPA standard is associated with little to none of this risk and is considered safe with respect to [the contaminant in question].

The Board **solicits comment** as to whether it ought to reword the older notices along this line.

Most of the notices are related to MCLs. However, the notices for acrylamide and epichlorohydrin [(23) and (37)] relate to the required treatment technique in Section 611.296. Since this requires only a certification as to the level of the contaminants in polymers used in water treatment, one might ask what event would trigger the notice. Does this mean that the supplier could fail to make the certification, and give public notice?

Several of the notices relate to MCLs which the Board is not adopting. These include 2,4-D [(36)], and heptachlor and its epoxide [(40) and (41)]. The Board is not adopting the USEPA revised MCLs, because, as discussed above, the "MAC" is more stringent. This poses a problem as to adopting the USEPA notice form.

As was discussed on p. 102 of the R88-26 Opinion, the Board determined that the general USEPA notice requirements said essentially the same thing as the Board's preexisting notice requirements for the MACs. The Board therefore adopted only the USEPA-derived notice requirement, so that a supplier violating a MAC would give the general federal notice under Subpart T.

One option would be to leave the USEPA notice form, but use it for violations of the MAC. This would not work, since the notice form is specific as to the source of the MCL, and its numerical value. To do this, it would be necessary to modify the

text of the notice to reflect the source and value of the MAC. The Board has not followed this alternative, but **solicits comment.**

The Board has proposed to delete the USEPA language specifying the notice for 2,4-D and the heptachlors. In their place will be the following statement:

> This contaminant is subject to a "additional State requirement". The supplier shall give a general notice under Section 611.854.

CONCLUSION

This Proposed Opinion supports the Board's Proposed Order of this same day. The Board will receive public comment for 45 days after the date of publication in the Illinois Register.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Proposed Opinion was adopted on the 11th day of March, 1992, by a vote of 7-0.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board