UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	VARIANCE UNDER
	)	SECTION 1415(A)(3)
THE CITY OF COLUMBUS, OHIO	)	

INTRODUCTION

1. Statutory and Regulatory Background

Under the Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j-26, U.S. EPA promulgates national primary drinking water regulations (NPDWRs) which specifies for certain drinking water contaminants either a maximum level or treatment technique with which public water systems must comply. U.S. EPA has promulgated a NPDWR for lead and copper that consists of a treatment technique requiring public water systems to take various steps to ensure that users of public water systems are not exposed to levels of lead and copper in drinking water that would result in adverse health effects (40 C.F.R. Part 141, Subpart I). This regulation requires all large public water systems to optimize corrosion control and to conduct tap water monitoring to determine the levels of lead and copper being delivered to users. If tap water levels exceed certain "action levels" for these contaminants, public water systems are required to take other steps, including delivering public education materials to users about the health risks of lead in drinking water, creating ways to reduce exposure, sampling at least seven percent of lead service lines in the system per year and replacing those lines that contribute to elevated lead levels at the tap.

The State of Ohio has primary enforcement responsibility for administering the lead and copper rule (LCR) because it has adopted regulations that are at least as stringent as the federal regulation (See Ohio Administrative Code 3745-81). The State

regulation currently applies to the City of Columbus public water system. The federal government however has the authority to grant a variance.

Section 1415(a)(3) of the SDWA, 42 U.S.C. §300g-4 provides

> "The Administrator may grant a variance from any treatment technique requirement of a national primary drinking water regulation upon a showing by any person that an alternative treatment technique not included in such requirement is at least as efficient in lowering the level of the contaminant with respect to which such requirement was prescribed. A variance under this paragraph shall be conditioned on the use of the alternative treatment technique which is the basis for the variance."

See also 40 C.F.R. § 142.46.

2. Factual Background

The City of Columbus operates a public water system which must comply with applicable requirements of the LCR. The City has a good history of compliance with the LCR. The City is also currently maintaining optimal corrosion control treatment for lead, as required by the LCR.

In the past, Columbus made certain changes to its water treatment process, and inadvertently caused an increase in the lead levels in the water. Columbus is concerned that it may need to make certain water treatment changes in the future to comply with other Federal or State SDWA requirements that may likewise affect lead levels.

Under the Federal and State drinking water regulations, if the City exceeds the "Action Level" (AL) of 15 µg/L of lead in more than 10 percent of drinking water tap samples (i.e., exceeds the AL as a 90^{th} percentile value), the City must sample Lead Service Lines (LSLs) at a rate of 7 percent of the system's total number of lines each year and replace those LSLs where the lead level is greater than 15 µg/L of lead. The City has a total of approximately 29,000 LSLs.

The City does not believe that the sampling and replacement of LSLs will significantly reduce lead levels at consumers taps, and has submitted a 'Project XLC' Proposal to U.S. EPA, requesting a temporary suspension of LSL sampling and replacement requirements for a period of time while the City makes adjustments to its water treatment processes.

Project XL, which stands for "e**X**cellence and **L**eadership," is a national pilot program that allows state and local governments, businesses and federal facilities to develop innovative strategies to test better or more cost-effective ways of achieving environmental and public health protection. In exchange, U.S. EPA and the States issue regulatory, program, policy, or procedural flexibility to conduct the experiment.

Project XLC, *e**X**cellence and **L**eadership for **C**ommunities*, was developed to place special emphasis on communities and local governmental or regional organizations that are interested in creating an XL project. Project XLC encourages potential sponsors to come forward with new approaches to demonstrate community-designed and directed strategies for achieving greater environmental quality consistent with community economic goals. Under Project XLC, U.S. EPA provides an opportunity to test flexible and innovative strategies for advancing our nation's environmental goals more effectively and efficiently than current regulatory and policy tools or procedures.

U.S. EPA has determined that the Columbus XLC Project has merit, and has identified a SDWA variance as the appropriate legal mechanism for providing the City of Columbus the regulatory flexibility the City has requested.

This Order, which will become effective only if Columbus actually experiences a lead AL exceedance, will provide the City with a temporary suspension of the LSL sampling and replacement requirements while it makes water treatment modifications.

Under this variance, the Columbus Division of Water (CDW) will consult with the Ohio Environmental Protection Agency (OEPA) and U.S. EPA Region 5, and other treatment experts, prior to making any treatment changes. For the purposes of this variance, "a treatment change" means "any change made by the Columbus Water Division which may affect the optimal water quality parameters

established by the OEPA, or which may cause the alkalinity to drop below 20 mg/L, or the chloride to sulfate ratio to increase above 0.58."

The Columbus XLC Project, of which this Order is a part, will be implemented under limited and carefully monitored conditions to ensure that the CDW devotes the necessary resources and efforts to study the effects that any proposed treatment adjustments may have on lead levels at consumer's taps. At the same time, the Order, by providing certainty to the City as to its regulatory obligations in the case of an AL exceedance, will permit the City to apply its resources to address other routes of lead exposure, such as lead paint and dust in the highest risk areas of the City, through its Lead Safe Columbus Program (LSCP).

The variance issued pursuant to this Order, should it become effective, will require the City of Columbus, in case of a lead AL exceedance, to implement an alternative treatment technique that will be at least as efficient in lowering the level of lead as LSL sampling and replacement. The alternative treatment technique involves allowing Columbus to adjust its existing drinking water treatment, to establish the most effective level of lead treatment in light of other treatment needs of the system.

To ensure that the alternative treatment technique is as effective as possible, and provides at least an equivalent level of protection as the existing regulations, extra measures will be taken to ensure its effectiveness. The City will consult with experts in the field of corrosion control treatment, as well as the OEPA, and the U.S. EPA Region 5. Consultations will involve optimizing the City's current treatment, based upon the best technical judgment of the relevant experts. Columbus will implement treatment changes only with the concurrence of the State. Moreover, Columbus will report to OEPA and U.S. EPA Region 5 on an ongoing basis regarding its treatment, and the effects on lead levels. Finally, Columbus will carefully monitor levels of lead in the system, and ensure that any trends toward higher lead levels are corrected as quickly as possible. Columbus will report monitoring results to OEPA and U.S. EPA Region 5 on a negotiated schedule for 15 years.

U.S. EPA Region 5 has determined that this alternative treatment technique will be at least as efficient as the existing requirements under the rule in lowering the level of lead in drinking water should an AL exceedance occur. The alternative treatment technique will ensure that drinking water lead levels are minimized system-wide as Columbus implements potential treatment changes. Through this alternative approach, drinking water benefits will be provided to all users, including those users whose LSLs would have been monitored and/or replaced under the existing rule.

FINDING OF FACTS

1. This matter comes before the Regional Administrator of the U.S. EPA Region 5 on application of the City of Columbus, Ohio (the City) for an Order granting a variance pursuant to Section 1415(a)(3) of the Act, 42 U.S.C. Section 300g-4(a)(3), that would only become effective if Columbus initiates a treatment change which causes the lead levels at consumer's homes to rise above the AL.

2. Pursuant to Section 1401(4)(A)of the Act, 42 U.S.C. Section 300f(4)(a),a Public Water System is a system that provides drinking water to the public for human consumption through pipes or other constructed conveyances that have at least fifteen service connections or regularly serves at least twenty-five individuals at least 60 days out of the year.

3. The City's water system provides drinking water to the public for human consumption through pipes or other constructed conveyances that have at least fifteen service connections and regularly serves at least twenty-five individuals at least 60 days out of the year, and therefore is a Public Water System.

4. A large Public Water System is defined at 40 C.F.R. Section 141.2 as a public water system that serves greater than 50,000 people.

5. The City's Public Water System serves greater than 50,000 people and is therefore a Large Public Water System as is found in the regulations.

6. Pursuant to Section 1401(1)(A) of the Act, 42 U.S.C. Section 300f, because the City's water system is a Public Water System that is also a large Public System, certain National Primary Drinking Water Regulations apply to the facility.

7. 40 C.F.R. Section 141.81(a)(1) and Section 141.81(d), requires that all Large Public Water Systems optimize corrosion control for lead by January 1, 1997.

8. In compliance with this regulation the City of Columbus installed optimal corrosion control treatment for lead on August 24, 1995.

9. Pursuant to 40 C.F.R. 141.86 the City is also required to maintain a monitoring program.

10. The National Primary Drinking Water Regulation found at 40 C.F.R. Section 141.84 provides that if, after having optimized corrosion control, the City exceeds the AL of 15 µg/L of lead in more than 10 percent of drinking water tap samples collected in a monitoring period, the City must immediately begin sampling lead service lines and replace those lines where sampling indicates a level more than 15 µg/L of the lead. The City has a total of approximately 29,000 LSLs.

11. The City is presently in compliance with all National Primary Drinking Water Regulations for lead.

12. In the future, Columbus may need to make water treatment changes which may cause a temporary rise in lead levels. By its request for a variance, the City is requesting a temporary suspension of the LSL sampling and replacement requirements found at 40 C.F.R. 141.84, if the change results in an increase in the lead levels above the AL.

13. The City asks for a variance of a three year duration that will allow the City a temporary suspension of the LSL sampling and replacement provisions found in 40 C.F.R. Section 141.84, in the event that the City exceeds the lead AL as a result of a treatment change.

14. The State of Ohio has been notified concerning the City's Request for variance.

CONCLUSION OF LAW

1. Section 1415 (a)(3) of the Act, 42 Section 300g-4, and 40 C.F.R Section 142.46, authorize the Administrator to grant a variance from a treatment technique when,

... "upon a showing by any person that an alternative treatment technique not included in such requirement is at least as efficient in lowering the level of the contaminant with respect to which such requirement was prescribed. A variance under this paragraph shall be conditioned on the use of the alternative treatment technique which is the basis for the variance."

The authority to issue SDWA variances for treatment technique requirements was delegated to the Regional Administrators on June 12, 2000, New Delegation, 9-69, *Issuance of Variances for Treatment Technique Requirements*.

2. The City proposes that it will do the following instead of complying with the LSL sampling and replacement provisions of the regulation:

(A) As a precautionary measure the City will consult with the OEPA and U.S. EPA Region 5 prior to making any treatment change.

(B) As a precautionary measure, at the time the City identifies a treatment change, the City will increase the frequency of tap monitoring for lead and copper and those optimal water quality parameters designated by the OEPA. If specified by the OEPA, additional monitoring may be required for other water parameters, beginning at the time the City identifies a treatment change.

(C)If the lead levels begin to rise the City will consult with U.S. EPA and OEPA, and take immediate steps to reverse that trend, and if necessary install the additional treatment technology to stop the elevation.

3. The City believes that these steps will minimize the likelihood of an AL exceedance and therefore provide better public health protection, and keep lead levels at consumer's taps

at least as low as the National Primary Drinking Water Regulations. U.S. EPA Region 5 agrees.

4. Under the current regulation, should the City exceed the lead AL, the City must initiate LSL sampling and, if necessary, LSL replacement at the rate of seven percent per year for as long as the City exceeds the AL. At the rate of seven percent per year, it would take the City 15 years to sample and replace all the LSLs. During the time it will take to perform the LSL sampling and make necessary replacements of the LSLs, a portion of the City residents could be exposed to lead above the AL in the drinking water during the allowed 15 year replacement period. The obligation to take immediate steps to reverse any increase will provide system wide benefits for all consumers, because it will assure that water delivered to users has minimal levels of lead.

5. Likewise, the increased monitoring and consultation provisions provide significant assurances that lead levels systematically will be minimized. The City's proposal to conduct increased monitoring provides significantly greater assurance that any elevation in lead levels will be detected, and corrective action taken more quickly than would occur under the current monitoring frequency required under applicable regulations. Moreover, the consultation commitments not required by current regulations, will also minimize the likelihood that treatment changes, installed by the system will not result in elevated lead levels.

6. The City also proposes to contribute $300,000 per year for a period of 15 years to the Lead Safe Columbus Program (LSCP) beginning January 1, 2001, if the variance is granted. The LSCP will use the $300,000 per year to provide free blood sampling, public education, medical intervention for lead-poisoned children, and up to $100,000 in grants per year for lead abatement to residents of Columbus in the high risk areas. In addition, the LSCP will work with the Department of Trade and Development to provide low interest loans for larger lead abatement projects.

7. The high risk area consists of twenty-five high risk census tracts within ten zip codes in older, predominantly low-income, minority neighborhoods in Columbus, where 84% of all elevated

blood lead levels in the City were found. The LSCP will also provide blood sampling for all children under six at all sites where lead levels at the tap exceed 15 μg/L.

8. While the activities described in paragraph 7-8 do not relate to levels of lead in drinking water, and therefore are not being considered by the Agency in making the finding by Section 1415(a)(3) of the SDWA, U.S. EPA strongly encourages efforts to reduce exposure of the public to lead and concluded that the LSCP will provide significant public health benefits in addition to these that will be achieved by the City in its drinking water program.

U.S. EPA Region 5 therefore agrees with the City's assessment that their proposal provides an alternative that is at least as effective as complying strictly with the LSL sampling and replacement requirements of the LCR.

ORDER

It is therefore ordered:

That in consultation with the State of Ohio, the Regional Administrator finds that the City has made a showing for a variance under Section 1415(a)(3) of the SDWA. The City has requested a variance from the U.S. EPA's LSL sampling and replacement provisions that would become and remain effective only if there is an ongoing XLC project between the City of Columbus, the OEPA, the Ohio Department of Health (ODH) and the U.S. EPA. The City's request ishereby granted, subject to the following conditions:

1. The City consults with U.S. EPA Region 5, OEPA, and other treatment experts on any proposed treatment change prior to making the treatment change, and OEPA notifies the City in writing that it approves of the treatment change.

2. The City notifies the Regional Administrator in writing, within 10 days after making a treatment change, that a treatment change has been made, and begins monitoring as follows. Additional monitoring requirements other than those included in the table below may be designated by the OEPA.

Parameter	Location	Frequency
Alkalinity	EP[1] to DS[2]	Biweekly
Alkalinity	Distribution System	2 Samples from 25 sites, every 6 months
Calcium	EP to DS	Biweekly
Calcium	Distribution System	2 Samples from 25 sites, every 6 months
Copper	Distribution System	100 samples every six months
Lead	Distribution System	100 samples every six months
Orthophosphate	Distribution System	2 Samples from 25 sites, every 6 months
Orthophosphate	EP to DS	Biweekly
pH	EP to DS	Biweekly
pH	Distribution System	2 Samples from 25 sites, every 6 months

3. If lead sampling at consumer's taps indicates that lead levels are rising, the City takes immediate steps to reverse the trend.

4. If despite the City's best efforts, the lead levels rise above the AL in more than 10 percent of the samples collected in a monitoring period, the variance will become effective on the first day that the City receives sampling results indicating that it has exceeded the lead AL. The variance shall be effective for

[1] EP - Entry Point

[2] DS - Distribution System

a period of three years from that date, provided that the AL exceedance is:

a) within six years of the first treatment change notification given by the City under Paragraph 1., above;

or if the City does not exceed the lead AL within six years of this treatment change notification,

b) within six years of the first subsequent treatment change notification given by the City under Paragraph 1 and this subparagraph, if U.S. EPA Region 5 notifies the City in writing that this subparagraph is in effect, and the terms and conditions of the variance are otherwise satisfied.

In either case, as requested by the City, the variance will only become and remain effective if there is an ongoing XLC project between the City of Columbus, the OEPA, the ODH and the U.S. EPA.

5. For reporting purposes, the variance will not be reported to the Federal or State Drinking Water databases unless and until the variance becomes effective.

6. This variance automatically terminates:

a) 3 years after it becomes effective pursuant to Paragraph 4 a or b, above; or

b) if, during any 6-month monitoring period, the City's lead levels are above 30 ug/L as a 90^{th} percentile value.

In the event that the variance terminates, the City will be required to immediately implement the lead service line sampling and replacement in accordance with current applicable regulations.

7. The City will report all monitoring results to the Regional Administrator and OEPA within 10 days following the end of each monitoring period, except that if lead results exceed the AL as a 90^{th} percentile value, or exceed 30 ug/L as a 90^{th} percentile in any monitoring period, the City shall report this to U.S. EPA Region 5 and OEPA within 10 days of the exceedance.

8. The Regional Administrator shall retain jurisdiction and shall annually review the circumstance pertaining to the variance, and may modify or revoke the variance if any provisions or conditions are not met.

9. Nothing in this Order alters or otherwise affects any requirement applicable under State law.

Dated:_____

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Francis X. Lyons
Regional Administrator