

Regulatory Analysis Form

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(1) Agency

Department of Environmental Protection

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(2) I.D. Number (Governor's Office Use)

7-421

INDEPENDENT REGULATORY
EVALUATION

IRRC Number: #

2659.

(3) Short Title

Water Quality Standards – Triennial Review

(4) PA Code Cite

25 PA Code, Chapter 93 and
Chapter 16

(5) Agency Contacts & Telephone Numbers

Primary Contact: Michele Tate 783 -1303
Secondary Contact: Kelly Heffner 783-1303

(6) Type of Rulemaking (Check One)

- Proposed Rulemaking
 Final Order Adopting Regulation
 Final Order, Proposed Rulemaking Omitted

(7) Is a 120-Day Emergency Certification Attached?

- No
 Yes: By the Attorney General
 Yes: By the Governor

(8) Briefly explain the regulation in clear and nontechnical language.

Section 303(c)(1) of The Clean Water Act requires that states periodically, but at least once every 3 years, review and revise as necessary, their water quality standards. This rulemaking constitutes Pennsylvania's current triennial review of its water quality standards. The final regulation being considered will update the water quality criteria; merge sections of Chapter 16 (Water Quality Toxics Management Strategy – Statement of Policy) into Chapter 93 (Water Quality Standards). add a definition in § 93.1 to clarify the term "conventional treatment" for potable water supply (PWS) that is used in § 93.3, Table 1, clarify in the footnote to Table 3 in § 93.7 that other sensitive "critical uses" may apply; verify current exceptions to fishable/swimmable waters; and make corrections and changes to drainage lists and other typographic and grammatical errors. In § 93.9a-93.9z, several changes to the drainage lists are proposed to clarify stream names, segment boundaries and to add MF use designations for the presence of migratory fish within the Mid-Atlantic slope basins of the Delaware, Susquehanna and Potomac Rivers.

(9) State the statutory authority for the regulation and any relevant state or federal court decisions.

These final amendments are made under authority of the following acts:
The Pennsylvania Clean Streams Law, Act of June 22, 1937 (P L. 1987, No. 394) as amended,
35 P.S. § 691.1 et seq.

Section 1920-A of The Administrative Code of 1929, as amended, 71 P.S. § 510-20.

Section 303 of the federal Clean Water Act, 33 U S C. §1313.

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(10) Is the regulation mandated by any federal or state law or court order, or federal regulation? If yes, cite the specific law, case or regulation, and any deadlines for action.

Although this regulation is not specifically mandated by Federal or state law or regulations, the federal Clean Water Act and 40 CFR 131.20 requires that states review their water quality standards and modify them, as appropriate, at least once every three years. This regulation is intended to meet that three-year deadline.

(11) Explain the compelling public interest that justifies the regulation. What is the problem it addresses?

Water quality standards are an important element of the Commonwealth's water quality management program in that they set general and specific goals for the quality of Pennsylvania's surface waters. The water quality standards can affect all sources of wastewater discharge since the Department must regulate these sources to ensure that the instream water quality standards are met. The standards are used as program objectives in the control of both point and non-point sources of pollution. Section 303(c)(1) of the Clean Water Act requires that states periodically, but at least once every 3 years, review and revise as necessary, their water quality standards. This regulation constitutes Pennsylvania's current triennial review of its water quality standards

(12) State the public health, safety, environmental or general welfare risks associated with non-regulation.

Section 303(c)(1) of The Clean Water Act requires that states periodically, but at least once every 3 years, review and revise as necessary, their water quality standards. Without this regulation, the discharge of pollutants to waters of the Commonwealth will cause environmental degradation and public health hazards. Without the amendments, the program may be administered in a manner more stringent than federal regulations, without a compelling reason, and there may be unclear or obsolete provisions in the regulations. This may have an indirect impact on public health or the environment because of the associated non-compliance stimulated by overly stringent or unclear regulations.

(13) Describe who will benefit from the regulation. (Quantify the benefits as completely as possible and approximate the number of people who will benefit.)

Overall, the citizens of the Commonwealth will benefit from the regulation since it will provide the appropriate level of water quality protection for the surface waters in Pennsylvania. The revised regulation helps to assure that pollution control actions are as cost-effective as possible and that pollution control costs are equitably distributed. The new language makes it easier for citizens to understand how water quality standards are implemented. It also assures that Pennsylvania's water quality program more closely mirrors federal requirements.

Persons required to renew an existing or obtain a new National Pollutant Discharge Elimination System (NPDES) permit may benefit because of the clarification provided in the amendments as well as increased consistency with federal regulations. This may include municipalities, municipal authorities and industries impacted by the NPDES permitting program.

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(14) Describe who will be adversely affected by the regulation. (Quantify the adverse effect as completely as possible and approximate the number of people who will be adversely affected.)

Persons proposing new or expanded activities or projects which result in discharges to waters of the Commonwealth may be adversely affected by the proposed regulations since they are required to provide waste water treatment according to the water quality criteria and designated water use. This regulation, is intended to update the water quality standards for the Commonwealth, and may result in higher design engineering, construction, and treatment costs to meet the more stringent criteria for selected parameters. This regulation will be implemented through the NPDES permitting program since the stream use designation and water quality criteria are the major bases for determining allowable stream discharge effluent limitations.

(15) List the persons, groups or entities that will be required to comply with the regulation. (Approximate the number of people who will be required to comply.)

See Question #14. Persons with proposed or existing discharges into surface waters of the Commonwealth must comply with the regulation.

(16) Describe the communications with and inputs from the public in the development and drafting of the regulation. List the persons and/or groups who were involved, if applicable.

The Department's Water Resources Advisory Committee (WRAC), provided input on the proposed regulation at its May 10, 2006, October 13, 2006, and May 9, 2007 meetings. In addition, the Department presented this rulemaking package to the Agricultural Advisory Board on August 22, 2007. This regulation was adopted by the EQB as proposed rulemaking at its October 16, 2007 meeting. The proposed rulemaking was published in the *Pennsylvania Bulletin* on January 12, 2008 (38 Pa.B. 236) with provision for a 45-day public comment period. The public comment period was extended an additional 30 days and closed on March 27, 2008, as published in the *Pennsylvania Bulletin* on February 23, 2008 (38 Pa.B. 976). The Board received public comments from 10 commentators. The EQB has considered all public comments received in developing this final regulation. The draft final regulation was also discussed with WRAC on July 22, 2008, where the committee deliberated on aspects of the rulemaking, including the adoption of state-wide criteria for molybdenum and the proposed definition "conventional treatment". Although WRAC approved the draft final rulemaking for consideration by the EQB, some members of the committee expressed their concerns with the molybdenum criteria and the health data used to create the particular criterion. WRAC also provided recommendations to further clarify the proposed definition for "conventional treatment", as it relates to the protection of the Potable Water Supply (PWS) use.

(17) Provide a specific estimate of the costs and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required.

Costs and savings cannot be determined because of site-specific considerations and because there is no historical accounting of costs that would enable a comparative cost analysis to be conducted.

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(18) Provide a specific estimate of the costs and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required.

No costs will be imposed directly upon state or local governments by this regulation.

(19) Provide a specific estimate of the costs and/or savings to state government associated with the implementation of the regulation, including any legal, accounting or consulting procedures which may be required.

This regulation is based on and will be implemented through existing Department programs, procedures and policies. There is no additional implementation costs associated with this regulation.

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(20) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

Year	Current FY 2008-2009	FY +1 2009-10	FY +2 2010-11	FY +3 2011-12	FY +4 2012-13	FY +5 2013-14
SAVINGS:	\$	\$	\$	\$	\$	\$
Regulated Community	Not Measurable					
Local Government	“					
State Governments	“					
Total Savings	“					
COSTS:						
Regulated Community	Not Measurable					
Local Government	“					
State Governments	“					
Total Costs	“					
REVENUE LOSSES:						
Regulated Community	Not Measurable					
Local Government	“					
State Governments	“					
Total Revenue Losses	“					

(20a) Explain how the cost estimates listed above were derived.

Not Applicable.

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(20b) Provide the past three year expenditure history for programs affected by the regulation.

Program Year	FY-3 2005-2006	FY-2 2006-2007	FY-1 2007-2008	Current FY 2008-2009
Env. Prot. Operations (160)	\$87,897,000	\$89,847,000	\$98,582,000	\$102,149,000
Env. Program Mgmt. (161)	\$37,049,000	\$36,868,000	\$39,909,000	\$41,800,000

(21) Using the cost-benefit information provided above, explain how the benefits of the regulation outweigh the adverse effects and costs.

The benefits to the citizens of the Commonwealth will accrue from protecting the surface waters of the Commonwealth at the appropriate level in accordance with the designated and existing water uses.

(22) Describe the nonregulatory alternatives considered and the costs associated with those alternatives. Provide the reasons for their dismissal.

There were no non-regulatory alternatives available to consider in this case.

(23) Describe alternative regulatory schemes considered and the costs associated with those schemes. Provide the reasons for their dismissal.

There were no alternative regulatory schemes to consider in achieving the correct level of protection for the waters of the Commonwealth.

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(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

No. This regulation is not more stringent than the companion federal standards.

(25) How does the regulation compare with those of other states? Will the regulation put Pennsylvania at a competitive disadvantage with other states?

Other states are also required to maintain water quality standards with similar requirements. Therefore, Pennsylvania will not be placed at a competitive disadvantage when comparing this regulation to those of other states.

(26) Will the regulation affect existing or proposed regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

No other regulations or state agencies are affected by this proposal.

(27) Will any public hearings or informational meetings be scheduled? Please provide the dates, times, and locations, if available.

See Question 16. The Environmental Quality Board held two public hearings and meetings in Harrisburg, for the purpose of accepting testimony and comments on the proposed regulation. Both meetings/hearings were held on February 14, 2008, at the Southcentral Regional Office in Harrisburg, PA.

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(28) Will the regulation change existing reporting, record keeping, or other paperwork requirements? Describe the changes and attach copies of forms or reports which will be required as a result of implementation, if available.

No additional reporting, record keeping, or other paperwork will be required.

(29) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

There are no such provisions in this regulation.

(30) What is the anticipated effective date of the regulation; the date by which compliance with the regulation will be required; and the date by which any required permits, licenses or other approvals must be obtained?

The regulation will become final after review and approval by the Environmental Quality Board and publication in the *Pennsylvania Bulletin* as final-form rulemaking. New or renewed NPDES permits reflected by these regulatory changes will be issued according to current timelines that apply to permit applications.

(31) Provide the schedule for continual review of the regulation.

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended

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INDEPENDENT REGULATORY
REVIEW COMMISSION
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Copy below is hereby approved as to form and legality
Attorney General

By _____
(Deputy Attorney General)

DATE OF APPROVAL _____

Check if applicable
Copy not approved Objections attached

Copy below is hereby certified to be true and
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promulgated by

DEPARTMENT OF ENVIRONMENTAL
PROTECTION
ENVIRONMENTAL QUALITY BOARD

(AGENCY)

DOCUMENT/FISCAL NOTE NO 7-421

DATE OF ADOPTION September 16, 2008

BY John Hanger

TITLE JOHN HANGER
ACTING CHAIRMAN

EXECUTIVE OFFICER CHAIRMAN OR SECRETARY

Copy below is hereby approved as to form and legality
Executive or Independent Agencies

BY Andrew C. Clark

DATE OF APPROVAL OCT 6 2008

(Deputy General Counsel)
(~~Chief Counsel - Independent Agency~~)
(~~Strike inapplicable title~~)

Check if applicable No Attorney General Approval
or objection within 30 days after submission

NOTICE OF FINAL RULEMAKING

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD**

Triennial Review of Water Quality Standards

25 Pa. Code, Chapter 93

1001 2 1

**NOTICE OF FINAL RULEMAKING
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD
[25 PA. Code, Chapter 93]**

Triennial Review of Water Quality Standards

Order

The Environmental Quality Board (Board) is amending *25 Pa. Code* Chapter 93 (relating to water quality standards) as set forth in Annex A.

This order was adopted by the Board at its meeting of September 16, 2008.

A. Effective Date

These amendments will be effective upon publication in the *Pennsylvania Bulletin* as final-form rulemaking.

B. Contact Persons

For further information contact Richard H. Shertzer, Chief, Division of Water Quality Standards, Bureau of Water Standards and Facility Regulation, 11th Floor, Rachel Carson State Office Building, P.O. Box 8467, (717) 787-9637 or Michelle Moses, Assistant Counsel, Bureau of Regulatory Counsel, 9th Floor, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the AT&T Relay Service by calling (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This proposal is available electronically through the Department of Environmental Protection's (Department) website (<http://www.depweb.state.pa.us>).

C. Statutory Authority

The final rulemaking is being made under the authority of Sections 5(b)(1) and 402 of The Clean Streams Law (35 P.S. §§ 691.5(b)(1) and 691.402), which authorize the Board to develop and adopt rules and regulations to implement provisions of The Clean Streams Law and Section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20), which grants to the Board the power and duty to formulate, adopt and promulgate rules and regulations for the proper performance of the work of the Department. In addition, Section 303 of the Federal Clean Water Act (33 U.S.C.A. § 1313) sets forth requirements for water quality standards and the Federal regulations in 40 CFR 131.32 (relating to Pennsylvania) set forth certain requirements for portions of the Commonwealth's antidegradation program and the Federal regulation in 40 CFR 131.41 (relating to Bacteriological criteria for those states not complying with Clean Water Act section 303(i)(1)(A)) sets forth bacteria criteria for coastal recreation waters in the Commonwealth.

D. Background and Summary

Section 303(c)(1) of The Clean Water Act requires that states periodically, but at least once every three years, review and revise as necessary, their water quality standards. This regulation constitutes Pennsylvania's current triennial review of its water quality standards.

Pennsylvania's water quality standards, which are codified in Chapter 93 and portions of Chapter 92, are designed to implement the requirements of Section 5 and 402 of The Clean Streams Law and Section 303 of the Federal Clean Water Act (33 U.S.C.A. § 1313). The water quality standards consist of the designated and existing uses of the surface waters of this Commonwealth, along with the specific numeric and narrative criteria necessary to achieve and maintain those uses and an antidegradation policy. Thus, water quality standards are in-stream water quality goals that are implemented by imposing specific regulatory requirements, such as treatment requirements and effluent limitations, on individual sources of pollution.

This final rule will revise the Chapter 93 (Water Quality Standards) regulation. These regulatory revisions will clarify requirements, and update the regulation to be consistent with federal regulatory changes where indicated, and preserve Pennsylvania-specific requirements to serve the citizens of the Commonwealth. This regulation may affect persons who discharge wastewater into surface waters of the Commonwealth or otherwise conduct activities, which may impact such waters.

Part of the triennial review requires that states reexamine water body segments that do not meet the fishable or swimmable uses specified in Section 101(a)(2) of the Federal Clean Water Act. The Department evaluated the two Pennsylvania water bodies where the uses are not currently met: (1) the Harbor Basin and entrance channel to Outer Erie Harbor/Presque Isle Bay (Drainage List X, § 93.9x) and (2) several zones in the Delaware Estuary (Drainage Lists E and G, §§ 93.9e and 93.9g).

The swimmable use designation was deleted from the Harbor Basin and entrance channel demarcated by U.S. Coast Guard buoys and channel markers on Outer Erie Harbor/ Presque Isle Bay because pleasure boating and commercial shipping traffic pose a serious safety hazard in this area. This decision was further supported by a Use Attainability (UAA) study conducted by the Department in 1985. Because the same conditions and hazards exist today, no change to the designated use for Outer Erie Harbor/Presque Isle Bay is proposed.

In April 1989 the Department cooperated with the Delaware River Basin Commission (DRBC), EPA and other DRBC signatory states on a comprehensive UAA study in the lower Delaware River and Delaware Estuary. This study resulted in appropriate recommendations relating to the swimmable use, which DRBC included in water use classifications and water quality criteria for portions of the tidal Delaware River in May 1991. The appropriate DRBC standards were referenced in Sections 93.9e and 93.9g (Drainage Lists E and G) in 1994. The primary water contact use remains excluded from the designated uses for river miles 108.4 to 81.8 because of continuing significant impacts from combined sewer overflows, and hazards associated with commercial shipping and navigation.

The Department's Water Resources Advisory Committee (WRAC), provided input on the proposed regulation at its May 10, 2006, October 13, 2006, and May 9, 2007. In addition, the Department presented the proposed rulemaking package to the Agricultural Advisory Board on August 22, 2007.

The regulation was adopted by the EQB as proposed rulemaking at its October 16, 2007 meeting. The proposed rulemaking was published in the *Pennsylvania Bulletin* on January 12, 2008 (38 Pa.B. 236, 248) with provision for a 45-day public comment period, including two public meetings and hearings that were held at the Department's Southcentral Regional Office in Harrisburg, PA on February 14, 2008. A correction was published in the *Pennsylvania Bulletin* on February 2, 2008 (38 Pa.B. 612) to correct the criteria for two chemicals found in the proposed Table 5, § 93.8c (relating to criteria for toxic substances). Based on a request received, the public comment period was extended an additional 30 days and closed on March 27, 2008, as published in the *Pennsylvania Bulletin* on February 23, 2008 (38 Pa.B. 976). The Board received public comments from 10 commentators including oral testimony from three witnesses at the February 14 public hearings. The comments received on the proposed regulation are summarized in Section E below.

The EQB has considered all of the public comments received on its proposed rulemaking in preparing this final regulation. The draft final regulation was discussed with WRAC on July 22, 2008 where the committee deliberated on aspects of the rulemaking including the adoption of state-wide criteria for molybdenum (Mo) and the proposed definition of "conventional treatment". Although WRAC approved the draft final rulemaking for consideration by the EQB, some members of the committee expressed their concerns with the Mo criteria and the health data used to create the particular criterion. WRAC also provided recommendations to further clarify the proposed definition for "conventional treatment", as it relates to the protection of the Potable Water Supply (PWS) use. The valuable input from the public and the collective knowledge and experience drawn from advisory committees and others on this proposal has been utilized to develop this regulation.

E. Summary of Responses to Comments and Changes to the Proposed Rulemaking

Comments were received from 10 commentators including the Independent Regulatory Review Commission (IRRC) and the U.S. Environmental Protection Agency (EPA Region 3) as a result of the public hearings and public comment period. The comments received covered four major topics: 1) the proposed statewide Mo criterion; 2) clarification of language being added to § 93.7(a) concerning intervening critical uses; 3) moving the toxics criteria from Chapter 16 to Chapter 93; and 4) clarification on how the site-specific criteria in Chapter 16, Appendix A Table 1 will be used.

Most of the comments received involved requests for the Board to justify the proposed statewide criterion for Mo. The decision to proceed with a statewide water quality criterion for Mo in the final-form rulemaking was based on the Department's need to establish a consistent statewide instream criterion for use in developing National Pollutant Discharge Elimination System (NPDES) effluent discharge limits by regional and central office staff. Pennsylvania has at least four active major NPDES permits that require Mo monitoring, and at least 2 additional facilities

that discharge Mo. The biological and chemical conditions of the receiving waters are not unique for those facilities currently known to discharge Mo from the conditions for other waters within the Commonwealth. Therefore, it is more effective to establish consistent, statewide protection from the toxic effects of Mo.

Mo is shown to cause gout-like symptoms, which is characterized by pain, swelling, inflammation and deformities of the joints, and in all cases an increase in the uric acid content of the blood. This condition was also accompanied by disorders of the gastrointestinal tract, liver and kidneys. Mo is considered to be a toxic metal and has also been labeled a teratogen because it can cause developmental deformities, as described in the Toxicity Profile - Toxicity Summary for Molybdenum prepared by the Oak Ridge National Laboratory and available at the on-line *Risk Assessment Information System (RAIS)*. In Chapter 93 a “toxic substance”, is defined as, “a chemical or compound in sufficient quantity or concentration which is, or may become, harmful to human, animal or plant life.”

Comments were received during the public comment period, and discussed during the July 22, 2008 WRAC meeting, which suggested the Department used inappropriate data and methods to develop the proposed water quality criterion for Mo. The commentators contend that the Department did not consider the most recent and technically justifiable toxicological data in establishing the proposed Mo standard, nor did it properly calculate the standard. Commentators suggested that the Department base their determinations on another study (Pandey and Singh, 2002), which was thought to contain better data. Commentators also suggested the Department use the Benchmark Dose Method (BDM) as an improved way to estimate the point of departure for deriving toxicity factors. Commentators believed BDM is recommended by the US EPA and provides an improved method in comparison to NOAEL/LOAEL (no observed adverse effects level/lowest observed adverse effects level), which is an approach used by the Department.

The Department develops requested criteria in accordance with policies found in 25 Pa Code Chapter 16 (Water Quality Toxics management Strategy – Statement of Policy), and more specifically in the case for Mo, in accordance with § 16.32 (relating to guidelines for developing human health criteria for threshold level toxic effects).

Based on provisions in § 16.32(c)(2) “If EPA criteria have been evaluated, and have been determined to be inadequate to protect designated uses, or when no criteria have been developed for a substance identified or expected in a discharge, the Department will develop criteria following EPA’s standard toxicological procedures outlined in Exhibit 3-1 of the *Water Quality Standards Handbook, Second Edition, EPA 823-0-94-005A, August, 1994*, as amended and updated.” EPA’s toxicological procedures have been updated and are reflected in the *EPA Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000*.

The Department used information from the *US EPA Integrated Risk Information System (IRIS)* to obtain supporting studies in developing a criterion for Mo. IRIS, is an electronic database containing information on human health effects that may result from exposure to various substances in the environment. IRIS is prepared and maintained by the EPA’s National Center for Environmental Assessment (NCEA) within the Office of Research and Development (ORD).

The Department originally developed a criterion for Mo using only toxicity data available in the IRIS data base. At the request of Langeloth Metallurgical Company, US EPA headquarters approved supplementing the IRIS database with additional sources of toxicity information obtained from a peer-reviewed toxicity report from Institute of Medicine (IOM), which was published by the National Academy Press. This updated combined dataset was then used to develop the best available scientifically calculated Mo criterion. The report by Pandey and Singh submitted by the commentator presents a single study based on the evaluation of selective male reproductive endpoints. This does not represent the most sensitive study population or response to Mo toxicity when compared to the IRIS and IOM studies.

The Department sought additional guidance from US EPA, Office of Science and Technology on the use of the BDM. While US EPA has approved the use of the BDM, it cannot be based on a single study, as suggested by the commentator. Data input to the BDM must be derived from several critical studies designed to establish the most sensitive toxic response.

U.S. EPA Headquarters and EPA Region 3 staff reviewed and concurred that the Department used the appropriate data and methodologies to develop the recommended statewide human health criterion for Mo.

Although no public comments were received regarding the proposed definition for “conventional treatment,” further refinements were made to the definition on final rulemaking based on discussion and recommendations by WRAC. Conventional treatment, for the purpose of surface water protection of the Potable Water Supply (PWS) use, should reflect the treatment processes required to filter and disinfect water. The water supply treatment scheme will not have to bear the burden of removing non-conventional pollutants that should otherwise be controlled by those discharging the pollutants.

A comment received expressed concern that there may be confusion if the entire section 40 CFR § 131.41 is adopted by reference at 25 Pa. Code § 93.9x (relating to Lake Erie). The commentator recommended the adoption of only paragraph (c) of the federal regulation. Upon further evaluation, 40 CFR §131.41(a) – (e) is incorporated into the state regulations on final rulemaking. Only paragraph (f) is excluded since it identifies a scheme for compliance schedules which is already addressed in 25 Pa. Code Chapter 92.

Based on comments received, revisions to the “Critical Use” footnote in § 93.7(a) regarding “other intervening, more sensitive uses.” were made. Protected and statewide water uses, identified in §§ 93.3 and 93.4, will be protected using criteria in §§ 93.6, 93.7, and 93.8c and site-specific criteria developed under 93.8d. Based on activities in the watershed that require the protection of intervening uses, site-specific criteria will be developed on a case-by-case basis.

Other commenters requested clarification on why the Board was moving selected criteria from Chapter 16 back into Chapter 93. Moving the criteria for toxic substances into Chapter 93 will give these criteria the full effect and advantage of regulation. This is appropriate since these criteria are not being changed or supplemented as frequently as originally anticipated. The original incentive for listing criteria in the Statement of Policy was to allow for flexibility in the timing of criteria development and revision.

EPA supports the movement of criteria into regulation but requested clarification in § 93.8d(e) on how the site specific criteria in Chapter 16, Appendix A Table 1 will be used. Background or natural conditions are site-specific by nature, so EPA is unsure how such criteria will be incorporated into Table 5, which appears to include only statewide criteria. A new criterion placed in Chapter 16, Appendix A Table 1 will remain a site-specific criterion as originally developed and be incorporated into the appropriate portion of §§ 93.9a – 93.3z that relates to “Exceptions to Specific Criteria” unless, during rulemaking, it is determined that the same criterion has general statewide applicability.

A detailed description of the revisions to the Chapter 93 proposal follows:

§ 93.1. Definitions.

The proposed definition for “Conventional Treatment” is revised. The definition will reflect the treatment processes required to filter and disinfect water.

Conventional treatment – for the purpose of surface water protection of the Potable Water Supply (PWS) use, conventional treatment is coagulation, followed by filtration for the removal of solids, and disinfection for the control of pathogens to produce water for drinking and other human consumption.

§ 93.7. Specific water quality criteria.

The footnote for “Critical Use” in Table 3 is revised to clarify that intervening uses on a waterbody may be protected.

* *Critical Use*: The designated or existing use the criteria are designed to protect. More stringent site-specific criteria may be developed to protect other more sensitive, intervening uses.

In paragraph (d) of § 93.7, the reference to Chapter 16, Appendix A Table 1 will not be added, as proposed, because it is not applicable to a natural quality determination.

§ 93.8d. Development of site-specific water quality criteria.

§ 93.8d is restructured to further clarify how site-specific water quality criteria will be developed, reviewed, and promulgated. The Department will consider a request for site-specific criteria when: (1) there exist site-specific biological or chemical conditions of receiving waters which differ from conditions upon which the water quality criteria were based; (2) more stringent criteria are needed for a parameter listed in § 93.7 to protect more sensitive, intervening uses; or (3) there exists a need for a site-specific criterion for a substance not listed in Chapter 93, Table 5.

All scientific studies shall be performed in accordance with the procedures and guidance in Chapter 16 and the Water Quality Standards Handbook (EPA 1994), as amended and updated, including: "Guidance on the Determination and Use of Water-Effect Ratios for Metals" (EPA-823-B-94-001, February 1994); and the "Methodology for Deriving Ambient Water Quality

Criteria for the Protection of Human Health" (2000). Other guidance approved by the Department, which is based on other EPA approved or scientifically defensible methodologies, may be used. A proposed plan of study shall be submitted to the Department for review, consideration and approval prior to conducting these studies.

If the Department determines that site-specific criteria are appropriate according to one of the three conditions indicated above, and the studies were conducted according to appropriate scientific methodologies, the Department will: (1) publish the site-specific criterion in the *Pennsylvania Bulletin*, along with other special conditions under § 92.61(a)(5) (relating to public notice of permit application and public hearing) and provide for public participation and public hearing in accordance with §§ 92.61, 92.63 and 92.65; (2) maintain publicly available lists of site-specific criteria; (3) submit the methodologies used for site-specific criteria development to U.S. Environmental Protection Agency's Regional Administrator for review and approval, within 30 days of Department's final action; and (4) prepare a recommendation to the EQB in the form of proposed rulemaking, incorporating that criterion for the waterbody segment.

If the Department determines that new statewide criteria or modifications to statewide criteria are appropriate, the Department will prepare a recommendation to the EQB in the form of proposed rulemaking, incorporating the criteria into Chapter 93. The new criteria and changes to the criteria will become effective following adoption by the EQB as final rulemaking and publication in the *Pennsylvania Bulletin*.

F. Benefits, Costs and Compliance

1. *Benefits* - Overall, the Commonwealth, its citizens and natural resources will benefit from these recommended changes because they provide the appropriate level of protection in order to preserve the integrity of existing and designated uses of surface waters in this Commonwealth. Protecting water quality provides economic values to present and future generations in the form of clean water, recreational opportunities, and aquatic life protection. It is important that the citizens of the Commonwealth realize all of these benefits, and also to ensure that activities that depend on surface water or that may affect its chemical, biological and physical integrity can continue in a manner that is environmentally, socially and economically sound. Maintenance of water quality ensures its future availability for all uses.

2. *Compliance Costs* - These final-form amendments to Chapter 93 may impose additional compliance costs on the regulated community. These regulatory changes are necessary to improve total pollution control. The expenditures necessary to meet new compliance requirements may exceed that which is required under existing regulations.

Persons conducting or proposing activities or projects must comply with the regulatory requirements relating to designated and existing uses. Persons expanding a discharge or adding a new discharge point to a stream could be adversely affected if they need to provide a higher level of treatment to meet the more stringent criteria for selected parameters or there are changes in designated and existing uses of the stream. These increased costs may take the form of higher engineering, construction or operating cost for wastewater treatment facilities. Treatment costs are site-specific and depend upon the size of the discharge in relation to the size of the stream

and many other factors. Therefore, it is not possible to precisely predict the actual change in costs. Economic impacts would primarily involve the potential for higher treatment costs for new or expanded discharges to streams that are redesignated. The initial costs from technologically improved treatments may be offset over time by potential savings from and increased value of improved water quality through these improved and possibly more effective or efficient treatments.

3. *Compliance Assistance Plan*—The final-form rulemaking has been developed as part of an established program that has been implemented by the Department since the early 1980s. The revisions are consistent with, and based on existing Department regulations.

This final-form rulemaking will be implemented, in part, through the NPDES permitting program. No additional compliance actions are anticipated. Staff is available to assist regulated entities in complying with the regulatory requirements if questions arise.

4. *Paperwork Requirements*—The regulatory revisions should have no significant paperwork impact on the Commonwealth, its political subdivisions, or the private sector.

G. Pollution Prevention

Water quality standards are a major pollution prevention tool because they protect water quality and designated and existing uses. The final-form rulemaking will be implemented through the Department's permit and approval actions. For example, the NPDES bases effluent limitations on the designated use of the stream and the water quality criteria necessary to achieve designated and existing uses.

H. Sunset Review

This final-form rulemaking will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

I. Regulatory Review

Under Section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on December 21, 2007, the Department submitted a copy of the proposed rulemaking published at 38 Pa.B. 236, to the Independent Regulatory Review Commission (IRRC) and to the Chairpersons of the Senate and House Environmental Resources and Energy Committees (Standing Committees) for review and comment.

Under Section 5(c) of the Regulatory Review Act (71 P.S. § 745.5(c)), the Department provided IRRC and the Standing Committees with copies of the comments received on the proposed regulation, as well as other documentation. The Department and Board have considered all public comments in preparing this final-form rulemaking.

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on _____, the final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act (71 P.S. § 745.5a(e)), IRRC met on _____, 2008, and approved the final-form rulemaking.

J. Findings of the Board

The Board finds that:

- (1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder at 1 Pa. Code §§ 7.1 and 7.2.
- (2) A public comment period was provided as required by law. In addition, Board hearings were held, and the public comment period was extended. All comments were considered.
- (3) This final-form rulemaking does not enlarge the purpose of the proposal published at 38 Pa.B. 236, or the correction published at 38 Pa.B. 612.
- (4) This final-form rulemaking is necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this order.

K. Order of the Board

The Board, acting under the authorizing statutes, orders that:

- (a) The regulations of the Department, 25 PA Code Chapter 93, are amended by amending §§ 93.1, 93.3, 93.7, 93.8, 93.8a, 93.8b, 93.8c, 93.8d, 93.8e, 93.9, 93.9a – 93.9o, 93.9q, 93.9v, 93.9x, 93.9z to read as set forth in Annex A, with ellipses referring to the existing text of the regulation.
- (b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for approval and review as to legality and form, as required by law.
- (c) The Chairperson shall submit this order and Annex A to the Independent Regulatory Review Commission and the Senate and House Environmental Resources and Energy Committees as required by the Regulatory Review Act.
- (d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau, as required by law.
- (e) This order shall take effect immediately upon publication in the *Pennsylvania Bulletin*.

JOHN HANGER
Acting Chairman
Environmental Quality Board



ANNEX A

TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION
Subpart C. PROTECTION OF NATURAL RESOURCES
ARTICLE II. WATER RESOURCES

CHAPTER 93. WATER QUALITY STANDARDS

GENERAL PROVISIONS

- Sec.
93.1. Definitions.
93.2. Scope.
93.3. Protected water uses.
93.4. Statewide water uses.

ANTIDegradation REQUIREMENTS

- 93.4a. Antidegradation.
93.4b. Qualifying as High Quality or Exceptional Value Waters.
93.4c. Implementation of antidegradation requirements.
93.4d. Processing of petitions, evaluations and assessments to change a designated use.
93.5. [Reserved].

WATER QUALITY CRITERIA

- 93.6. General water quality criteria.
93.7. Specific water quality criteria.
93.8. **[Development of site-specific water quality criteria for the protection of aquatic life.] [Reserved].**
93.8a. Water Quality Criteria for Toxic substances.
93.8b. Metals criteria.
93.8c. Human health and aquatic life criteria for toxic substances
93.8d. Development of site-specific water quality criteria.
93.8e. Special criteria for the Great Lakes System

* * * * *

§ 93.1. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

Clean Water Act—The Federal Water Pollution Control Act (33 U.S.C.A. §§ 1251-1376).

Conventional treatment – FOR THE PURPOSE OF SURFACE WATER PROTECTION OF THE POTABLE WATER SUPPLY (PWS) USE, [C] Conventional TREATMENT IS COAGULATION, FOLLOWED BY filtration [in a treatment process that uses separate, sequential units for coagulation/flocculation, clarification, and granular media filtration] FOR THE REMOVAL OF SOLIDS, AND DISINFECTION FOR THE CONTROL OF PATHOGENS to produce [finished] water for drinking AND OTHER HUMAN CONSUMPTION.

* * * * *

Toxic substance - A chemical or compound in sufficient quantity or concentration which is, or may become, harmful to human, animal or plant life. The term includes, but is not limited to, priority pollutants and those substances, which are identified in **Tables 5 and 6 of this chapter.** **Additional toxic substances are also described in Chapter 16 Appendix A, Table 1** (relating to **site-specific water quality criteria for toxic [management] substances [strategy - statement of policy]**).

WER - Water Effect Ratio - A factor that expresses the difference between the measures of the toxicity of a substance in laboratory water and the toxicity in site water. The WER provides a mechanism to account for that portion of a metal that is toxic under certain physical, chemical or biological conditions.

Water quality criteria - Numeric concentrations, levels or surface water conditions that need to be maintained or attained to protect existing and designated uses.

* * * * *

§ 93.3. Protected water uses.

Water uses which shall be protected, and upon which the development of water quality criteria shall be based, are set forth, accompanied by their identifying symbols, in Table 1:

TABLE 1

Symbol *Protected Use*

Aquatic Life

* * * * *

MF *Migratory Fishes*—Passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which **[ascend] move to or from** flowing waters to complete their life cycle **in other waters.**

* * * * *

Water Supply

* * * * *

IRS

Irrigation—Used to supplement precipitation for [growing crops] crop production, maintenance of golf courses and athletic fields, and other commercial horticultural activities.

* * * * *

§ 93.7. Specific water quality criteria.

(a) Table 3 displays specific water quality criteria and associated critical uses. The criteria associated with the Statewide water uses listed in § 93.4, Table 2 apply to all surface waters, unless a specific exception is indicated in §§ 93.9a—93.9z. Other specific water quality criteria apply to surface waters as specified in §§ 93.9a—93.9z. All applicable criteria shall be applied in accordance with this chapter, Chapter 96 (relating to water quality standards implementation) and other applicable State and Federal laws and regulations.

TABLE 3

<i>Parameter</i>	<i>Symbol</i>	<i>Criteria</i>	<i>Critical Use*</i>
		* * * * *	
Ammonia Nitrogen	Am	The maximum total ammonia nitrogen concentration (in mg/L) at all times shall be the numerical value given by: un-ionized ammonia nitrogen (NH ₃ -N) x (log ⁻¹ [pK _T -pH] + 1), where:	[1] <u>CWF,</u> <u>WWF,</u> <u>TSE,</u> <u>MF</u>
		* * * * *	

*Critical [use]Use: The [most sensitive] designated or existing use the criteria are designed to protect. ~~[Other intervening, more sensitive uses may apply at a given location on the waterbody.]~~ MORE STRINGENT SITE-SPECIFIC CRITERIA MAY BE DEVELOPED TO PROTECT OTHER MORE SENSITIVE, INTERVENING USES.

(b) Table 4 contains specific water quality criteria that apply to the water uses to be protected. When the symbols listed in Table 4 appear in the Water Uses Protected column in [§ 93.9] §§ 93.9a – 93.9z, they have the meaning listed in the second column of Table 4. Exceptions to these standardized groupings will be indicated on a stream-by-stream or segment-by-segment basis by the words “Add” or “Delete” followed by the appropriate symbols described elsewhere in this chapter.

* * * * *

(d) If the Department determines that natural quality of a surface water segment is of lower quality than the applicable aquatic life criteria in Table 3[; ~~OR 5 [or Chapter 16, Appendix A Table 1]~~], the natural quality shall constitute the aquatic life criteria for that segment. All draft natural quality determinations shall be published in the *Pennsylvania Bulletin* and be subject to a minimum 30-day comment period. The Department will maintain a publicly available list of

surface waters and parameters where this subsection applies, and **[shall] will**, from time to time, submit appropriate amendments to §§ 93.9a—93.9z.

* * * * *

§ 93.8. **[Development of site-specific water quality criteria] (Reserved).**

[(a) The Department will consider a request for site-specific criteria for protection of aquatic life, human health or wildlife when a person demonstrates that there exist site-specific biological or chemical conditions of receiving waters which differ from conditions upon which the water quality criteria were based. Site-specific criteria may be developed for use only in place of current Statewide or regional (such as the Great Lakes systems) criteria. The request for site-specific criteria shall include the results of scientific studies for the purpose of:

(1) Defining the areal boundaries for application of the site-specific criteria which will include the potentially affected wastewater dischargers identified by the Department, through various means, including, but not limited to, the total maximum daily load (TMDL) process described in Chapter 96 (relating to water quality standards implementation) or biological assessments.

(2) Developing site-specific criteria which protect its existing use and designated use.

(b) Scientific studies shall be performed in accordance with the procedures and guidance in the Water Quality Standards Handbook (EPA 1994), as amended and updated, guidance provided by the Department or other scientifically defensible methodologies approved by the Department.

(c) Prior to conducting studies specified in subsections (a) and (b), a proposed plan of study shall be submitted to and approved by the Department.

(d) Signed copies of all reports including toxicity test data shall be submitted to the Department within 30 days of completion of the tests.

(e) If as a result of its review of the report submitted, the Department determines that a site-specific criterion is appropriate, the Department will, for site-specific changes to criteria in § 93.7 (relating to specific water quality criteria), prepare a recommendation to the EQB in the form of proposed rulemaking, incorporating that criterion for the water body segment. The site-specific changes to the criteria will become effective for the water body segment following adoption by the EQB as final rulemaking and publication in the *Pennsylvania Bulletin*.

(f) A person challenging a Department action under this section shall have the burden of proof to demonstrate that the Department's action does not meet the requirements of this section.]

§ 93.8a. **[Toxic] Water quality criteria for toxic substances.**

* * * * *

(b) Water quality criteria for toxic [management] substances shall be established as described under Chapter 16 (relating to water quality toxics management strategy—statement of policy) [wherein the criteria and]. The Department will develop water quality criteria for toxic[s] SUBSTANCES not listed in Chapter 93, Table 5 in accordance with § 93.8d (relating to development of site-specific water quality criteria) and Chapter 16, Appendix A, Table 1 in Chapter 16 lists site-specific human health and aquatic life criteria that have been recently developed or adopted by the Department based on approved methodologies and the best scientific information currently available. The approved [EPA] analytical procedures and detection limits for these substances will also be listed in Chapter 16. Chapter 16, along with changes made to it, is hereby specifically incorporated by reference.

* * * * *

(h) [At intervals not exceeding 1 year, the]The Department will periodically, but at least once every 3 years, review, revise as necessary, and publish [a] new or revised water quality criteria for toxic substances, and revised procedures for criteria development in the *Pennsylvania Bulletin*.

* * * * *

(j) The requirements for discharges to and antidegradation requirements for the Great Lakes System are as follows:

* * * * *

(3) Statewide antidegradation requirements in this chapter and Chapter [95(relating to water quality standards; and wastewater treatment requirements)] 96 (relating to water quality standards implementation) and in the Federal regulation in 40 CFR 131.32(a) (relating to Pennsylvania) as applicable, apply to all surface waters of the Great Lakes System.

* * * * *

§ 93.8b. Metals criteria.

Dissolved criteria are footnoted in Table 5, and have been developed by applying the most current EPA conversion factors to the total recoverable criteria. The EPA factors are listed in the following Conversion Factors Table.

Conversion Factors Table

	<u>Chronic</u>	<u>Acute</u>	<u>Source</u>
<u>Arsenic</u>	<u>1.000 (As3+)</u>	<u>1.000 (As3+)</u>	<u>1,2</u>
<u>Cadmium</u>	<u>1.101672- (ln[H]x0.041838)</u>	<u>1.136672- (ln[H]x0.041838)</u>	<u>2</u>
<u>Chromium VI</u>	<u>0.962</u>	<u>0.982</u>	<u>1,2</u>
<u>Copper</u>	<u>0.960</u>	<u>0.960</u>	<u>1,2</u>
<u>Lead*</u>		<u>1.46203-(ln[H]x0.145712)</u>	
<u>Mercury</u>	<u>0.85</u>	<u>0.85</u>	<u>1,2</u>
<u>Nickel</u>	<u>0.997</u>	<u>0.998</u>	<u>1,2</u>

<u>Selenium</u>	<u>0.922</u>	<u>0.922</u>	<u>1</u>
<u>Silver</u>	<u>NA</u>	<u>0.85</u>	<u>2</u>
<u>Zinc</u>	<u>0.986</u>	<u>0.978</u>	<u>1,2</u>

*Conversion factor applies to both acute and chronic criteria.

Source 1—Final Water Quality Guidance for the Great Lakes System (60 FR 15366, March 23, 1995)

Source 2—Establishment of Numeric Criteria for Priority Pollutants; Revision of Metals Criteria-Interim Final Rule (60 FR 22229, May 4, 1995)

§ 93.8c. Human health and aquatic life criteria for toxic substances.

(a) Table 5 and Chapter 16, Appendix A, Table 1 (relating to site-specific water quality criteria for toxic substances) list the aquatic life and human health criteria for toxic substances which the Department uses in development of effluent limitations in NPDES Permits and for other purposes. The human health criteria, which include probable modes of exposure (such as, but not limited to ingestion from drinking water and fish consumption, inhalation, and dermal absorption), are further defined as to the specific effect (that is, cancer or threshold health effects). For those aquatic life criteria which are hardness related and specified as a formula, such as several of the heavy metals, the Department will use the specific hardness of the receiving stream after mixing with the waste discharge in calculating criteria on a case-by-case basis. The priority pollutant numbers (PP NO) used by the EPA to identify priority pollutants are included in Table 5 for reference purposes. The toxics without a PP NO are non-priority pollutants and State-derived criteria.

(b) Some of these criteria may be superseded for the Delaware Estuary, Ohio River Basin, Lake Erie Basin, and Genesee River Basin under interstate and international compact agreements with the Delaware River Basin Commission, Ohio River Valley Sanitation Commission and International Joint Commission, respectively. The criteria in Table 5 do not apply to the Great Lakes System. Water quality criteria for the Great Lakes System are contained in § 93.8e (relating to special criteria for the Great Lakes System) and Table 6 (relating to Great Lakes Aquatic Life and Human health Criteria). Criteria may be developed for the Great Lakes System for substances other than those listed in § 93.8e under the methodologies in §16.61 (relating to special provisions for the Great Lakes system).

TABLE 5

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

<u>PP</u>	<u>Chemical Name</u>	<u>CAS</u>	<u>Fish and Aquatic Life Criteria</u>		<u>Human</u>
<u>NO</u>		<u>Number</u>	<u>Criteria Continuous</u>	<u>Criteria Maximum</u>	<u>Health</u>

		<u>Concentrations (ug/L)</u>	<u>Concentration (ug/L)</u>	<u>Criteria (ug/L)</u>		
<u>1M</u>	<u>ANTIMONY</u>	<u>07440360</u>	<u>220</u>	<u>1100</u>	<u>5.6</u>	<u>H</u>
<u>2M</u>	<u>ARSENIC</u>	<u>07440382</u>	<u>150 (As3+)</u>	<u>340 (As3+)</u>	<u>10</u>	<u>H</u>
<u>3M</u>	<u>BERYLLIUM</u>	<u>07440417</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>-</u>
<u>4M</u>	<u>CADMIUM</u>	<u>07440439</u>	<u>*{1.101672-(ln H x0.041838)}x</u> <u>Exp(0.7409xln H -4.719)</u> <u>(ex: @H=100, CCC=0.25)</u>	<u>*{1.136672-(ln H x0.041838)}x</u> <u>Exp(1.0166xln H -3.924)</u> <u>(ex: @H=100, CMC=2.0)</u>	<u>N/A</u>	<u>-</u>
<u>5M</u>	<u>CHROMIUM III</u>	<u>16065831}}</u>	<u>*0.860xExp(0.819xln H +0.6848)</u> <u>(ex: @H=100, CCC=74)</u>	<u>*0.316Exp(0.819xln H +3.7256)</u> <u>(ex: @H=100, CMC=570)</u>	<u>N/A</u>	<u>-</u>
<u>5M</u>	<u>CHROMIUM VI</u>	<u>18540299</u>	<u>*10</u>	<u>*16</u>	<u>N/A</u>	<u>-</u>
<u>6M</u>	<u>COPPER</u>	<u>07440508</u>	<u>*0.960xExp(0.8545xln H -1.702)</u> <u>(ex: @H=100, CCC=9.0)</u>	<u>*0.960xExp(0.9422xln H -1.700)</u> <u>(ex: @H=100, CMC=13)</u>	<u>N/A</u>	<u>-</u>
<u>7M</u>	<u>LEAD</u>	<u>07439921</u>	<u>*{1.46203-(ln H x0.145712)}x</u> <u>Exp(1.273xln H -4.705)</u> <u>(ex: @H=100, CCC=2.5)</u>	<u>*{1.46203-(ln H x0.145712)}x</u> <u>Exp(1.273xln H -1.460)</u> <u>(ex: @H=100, CMC=65)</u>	<u>N/A</u>	<u>-</u>
<u>8M</u>	<u>MERCURY</u>	<u>07439976</u>	<u>*0.77 (Hg2+)</u>	<u>*1.4 (Hg2+)</u>	<u>0.05</u>	<u>H</u>
<u>9M</u>	<u>NICKEL</u>	<u>07440020</u>	<u>*0.997xExp(0.846xln H +0.0584)</u> <u>(ex: @H=100, CCC=52)</u>	<u>*0.998xExp(0.846xln H +2.255)</u> <u>(ex: @H=100, CMC=470)</u>	<u>610</u>	<u>H</u>
<u>10M</u>	<u>SELENIUM</u>	<u>07782492</u>	<u>*4.6</u>	<u>N/A</u>	<u>N/A</u>	<u>-</u>
<u>11M</u>	<u>SILVER</u>	<u>07440224</u>	<u>N/A</u>	<u>*0.850xExp(1.72xln H -6.590)</u> <u>(ex: @H=100, CMC=3.2)</u>	<u>N/A</u>	<u>-</u>
<u>12M</u>	<u>THALLIUM</u>	<u>07440280</u>	<u>13</u>	<u>65</u>	<u>0.24</u>	<u>H</u>
<u>13M</u>	<u>ZINC</u>	<u>07440666</u>	<u>*0.986xExp(0.8473xln H +0.884)</u> <u>(ex: @H=100, CCC=120)</u>	<u>*0.978xExp(0.8473xln H +0.884)</u> <u>(ex: @H=100, CMC=120)</u>	<u>N/A</u>	
<u>14M</u>	<u>CYANIDE, FREE</u>	<u>00057125</u>	<u>5.2</u>	<u>22</u>	<u>140</u>	<u>H</u>
<u>1A</u>	<u>2-CHLOROPHENOL</u>	<u>00095578</u>	<u>110</u>	<u>560</u>	<u>81</u>	<u>H</u>
<u>2A</u>	<u>2,4-DICHLORO-PHENOL</u>	<u>00120832</u>	<u>340</u>	<u>1700</u>	<u>77</u>	<u>H</u>
<u>3A</u>	<u>2,4-DIMETHYL-PHENOL</u>	<u>00105679</u>	<u>130</u>	<u>660</u>	<u>380</u>	<u>H</u>
<u>4A</u>	<u>4,6-DINITRO-o-CRESOL</u>	<u>00534521</u>	<u>16</u>	<u>80</u>	<u>13</u>	<u>H</u>
<u>5A</u>	<u>2,4-DINITRO-PHENOL</u>	<u>00051285</u>	<u>130</u>	<u>660</u>	<u>69</u>	<u>H</u>
<u>6A</u>	<u>2-NITROPHENOL</u>	<u>00088755</u>	<u>1600</u>	<u>8000</u>	<u>N/A</u>	<u>-</u>
<u>7A</u>	<u>4-NITROPHENOL</u>	<u>00100027</u>	<u>470</u>	<u>2300</u>	<u>N/A</u>	<u>-</u>
<u>8A</u>	<u>P-CHLORO-m-CRESOL</u>	<u>00059507</u>	<u>30</u>	<u>160</u>	<u>N/A</u>	<u>-</u>
<u>9A</u>	<u>PENTACHLORO-PHENOL</u>	<u>00087865</u>	<u>Exp(1.005x pH -5.134)</u> <u>@pH= 6.5 7.8 9.0</u> <u>Crit= 4.1 15 50</u>	<u>Exp(1.005x pH -4.869)</u> <u>@pH= 6.5 7.8 9.0</u> <u>Crit= 5.3 19 65</u>	<u>0.27</u>	<u>CRL</u>
<u>10A</u>	<u>PHENOL</u>	<u>00108952</u>	<u>N/A</u>	<u>N/A</u>	<u>21000</u>	<u>H</u>

11A	<u>2,4,6-TRICHLORO-PHENOL</u>	<u>00088062</u>	<u>91</u>	<u>460</u>	<u>1.4</u>	<u>CRL</u>
1V	<u>ACROLEIN</u>	<u>00107028</u>	<u>1</u>	<u>5</u>	<u>190</u>	<u>H</u>
2V	<u>ACRYLONITRILE</u>	<u>00107131</u>	<u>130</u>	<u>650</u>	<u>0.051</u>	<u>CRL</u>
3V	<u>BENZENE</u>	<u>00071432</u>	<u>130</u>	<u>640</u>	<u>1.2</u>	<u>CRL</u>
5V	<u>BROMOFORM</u>	<u>00075252</u>	<u>370</u>	<u>1800</u>	<u>4.3</u>	<u>CRL</u>
6V	<u>CARBON TETRACHLORIDE</u>	<u>00056235</u>	<u>560</u>	<u>2800</u>	<u>0.23</u>	<u>CRL</u>
7V	<u>CHLORO-BENZENE</u>	<u>00108907</u>	<u>240</u>	<u>1200</u>	<u>130</u>	<u>H</u>
8V	<u>CHLORODIBROMO-METHANE</u>	<u>00124481</u>	<u>N/A</u>	<u>N/A</u>	<u>0.40</u>	<u>CRL</u>
9V	<u>CHLOROETHANE</u>	<u>00075003</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
10V	<u>2-CHLOROETHYL VINYL ETHER</u>	<u>00110758</u>	<u>3500</u>	<u>18000</u>	<u>N/A</u>	<u>:</u>
11V	<u>CHLOROFORM</u>	<u>00067663</u>	<u>390</u>	<u>1900</u>	<u>5.7</u>	<u>CRL</u>
12V	<u>DICHLOROBROMO-METHANE</u>	<u>00075274</u>	<u>N/A</u>	<u>N/A</u>	<u>0.55</u>	<u>CRL</u>
14V	<u>1,1-DICHLOROETHANE</u>	<u>00075343</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
15V	<u>1,2-DICHLOROETHANE</u>	<u>00107062</u>	<u>3100</u>	<u>15000</u>	<u>0.38</u>	<u>CRL</u>
16V	<u>1,1-DICHLOROETHYLENE</u>	<u>00075354</u>	<u>1500</u>	<u>7500</u>	<u>33.0</u>	<u>H</u>
17V	<u>1,2-DICHLOROPROPANE</u>	<u>00078875</u>	<u>2200</u>	<u>11000</u>	<u>N/A</u>	<u>:</u>
18V	<u>1,3-DICHLOROPROPYLENE</u>	<u>00542756</u>	<u>61</u>	<u>310</u>	<u>0.34</u>	<u>CRL</u>
19V	<u>ETHYLBENZENE</u>	<u>00100414</u>	<u>580</u>	<u>2900</u>	<u>530</u>	<u>H</u>
20V	<u>METHYL BROMIDE</u>	<u>00074839</u>	<u>110</u>	<u>550</u>	<u>47</u>	<u>H</u>
21V	<u>METHYL CHLORIDE</u>	<u>0074873</u>	<u>5500</u>	<u>28000</u>	<u>N/A</u>	<u>:</u>
22V	<u>METHYLENE CHLORIDE</u>	<u>00075092</u>	<u>2400</u>	<u>12000</u>	<u>4.6</u>	<u>CRL</u>
23V	<u>1,1,2,2-TETRACHLOROETHANE</u>	<u>00079345</u>	<u>210</u>	<u>1000</u>	<u>0.17</u>	<u>CRL</u>
24V	<u>TETRACHLOROETHYLENE</u>	<u>00127184</u>	<u>140</u>	<u>700</u>	<u>0.69</u>	<u>CRL</u>
25V	<u>TOLUENE</u>	<u>00108883</u>	<u>330</u>	<u>1700</u>	<u>1300</u>	<u>H</u>
26V	<u>1,2-trans-DICHLOROETHYLENE</u>	<u>00156605</u>	<u>1400</u>	<u>6800</u>	<u>140</u>	<u>H</u>
27V	<u>1,1,1-TRICHLOROETHANE</u>	<u>00071556</u>	<u>610</u>	<u>3000</u>	<u>N/A</u>	
28V	<u>1,1,2-TRICHLOROETHANE</u>	<u>00079005</u>	<u>680</u>	<u>3400</u>	<u>0.59</u>	<u>CRL</u>
29V	<u>TRICHLOROETHYLENE</u>	<u>00079016</u>	<u>450</u>	<u>2300</u>	<u>2.5</u>	<u>CRL</u>
31V	<u>VINYL CHLORIDE</u>	<u>00075014</u>	<u>N/A</u>	<u>N/A</u>	<u>0.025</u>	<u>CRL</u>

<u>1B</u>	<u>ACENAPHTHENE</u>	<u>00083329</u>	<u>17</u>	<u>83</u>	<u>670</u>	<u>H</u>
<u>2B</u>	<u>ACENAPHTHYLENE</u>	<u>00208968</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>-</u>
<u>3B</u>	<u>ANTHRACENE</u>	<u>00120127</u>	<u>N/A</u>	<u>N/A</u>	<u>8300</u>	<u>H</u>
<u>4B</u>	<u>BENZIDINE</u>	<u>00092875</u>	<u>59</u>	<u>300</u>	<u>0.000086</u>	<u>CRL</u>
<u>5B</u>	<u>BENZO(a)- ANTHRACENE</u>	<u>00056553</u>	<u>0.1</u>	<u>0.5</u>	<u>0.0038</u>	<u>CRL</u>
<u>6B</u>	<u>BENZO(a)PYRENE</u>	<u>00050328</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0038</u>	<u>CRL</u>
<u>7B</u>	<u>3,4-BENZO- FLUORANTHENE</u>	<u>00205992</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0038</u>	<u>CRL</u>
<u>8B</u>	<u>BENZO(ghi)- PERYLENE</u>	<u>00191242</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>-</u>
<u>9B</u>	<u>BENZO(k)- FLUORANTHENE</u>	<u>00207089</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0038</u>	<u>CRL</u>
<u>10B</u>	<u>BIS(2-CHLORO- ETHOXY)METHANE</u>	<u>00111911</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>-</u>
<u>11B</u>	<u>BIS(2-CHLORO- ETHYL)ETHER</u>	<u>00111444</u>	<u>6000</u>	<u>30000</u>	<u>0.030</u>	<u>CRL</u>
<u>12B</u>	<u>BIS(2-CHLORO- ISOPROPYL)ETHER</u>	<u>00108601</u>	<u>N/A</u>	<u>N/A</u>	<u>1400</u>	<u>H</u>
<u>13B</u>	<u>BIS(2-ETHYL- HEXYL)PHTHALATE</u>	<u>00117817</u>	<u>910</u>	<u>4500</u>	<u>1.2</u>	<u>CRL</u>
<u>14B</u>	<u>4-BROMOPHENYL PHENYL ETHER</u>	<u>00101553</u>	<u>54</u>	<u>270</u>	<u>N/A</u>	<u>-</u>
<u>15B</u>	<u>BUTYLBENZYL PHTHALATE</u>	<u>00085687</u>	<u>35</u>	<u>140</u>	<u>150</u>	<u>H</u>
<u>16B</u>	<u>2-CHLORO- NAPHTHALENE</u>	<u>00091587</u>	<u>N/A</u>	<u>N/A</u>	<u>1000</u>	<u>H</u>
<u>17B</u>	<u>4-CHLORO- PHENYL PHENYL ETHER</u>	<u>07005723</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>-</u>
<u>18B</u>	<u>CHRYSENE</u>	<u>00218019</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0038</u>	<u>CRL</u>
<u>19B</u>	<u>DIBENZO(a,h)- ANTHRACENE</u>	<u>00053703</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0038</u>	<u>CRL</u>
<u>20B</u>	<u>1,2-DICHLORO- BENZENE</u>	<u>00095501</u>	<u>160</u>	<u>820</u>	<u>420 for dichloro- benzene</u>	<u>H</u>
<u>21B</u>	<u>1,3-DICHLORO- BENZENE</u>	<u>00541731</u>	<u>69</u>	<u>350</u>	<u>See 20B</u>	<u>H</u>
<u>22B</u>	<u>1,4-DICHLORO- BENZENE</u>	<u>00106467</u>	<u>150</u>	<u>730</u>	<u>See 20B</u>	<u>H</u>
<u>23B</u>	<u>3,3-DICHLORO- BENZIDINE</u>	<u>00091941</u>	<u>N/A</u>	<u>N/A</u>	<u>0.021</u>	<u>CRL</u>
<u>24B</u>	<u>DIETHYL PHTHALATE</u>	<u>00084662</u>	<u>800</u>	<u>4000</u>	<u>17000</u>	<u>H</u>
<u>25B</u>	<u>DIMETHYL PHTHALATE</u>	<u>00131113</u>	<u>500</u>	<u>2500</u>	<u>270000</u>	<u>H</u>
<u>26B</u>	<u>DI-N-BUTYL PHTHALATE</u>	<u>00084742</u>	<u>21</u>	<u>110</u>	<u>2000</u>	<u>H</u>
<u>27B</u>	<u>2,4-DINITRO-</u>	<u>00121142</u>	<u>320</u>	<u>1600</u>	<u>0.05 for</u>	<u>CRL</u>

<u>TOLUENE</u>					<u>dinitro-</u> <u>toluene</u>	
<u>28B</u>	<u>2,6-DINITRO-</u> <u>TOLUENE</u>	<u>00606202</u>	<u>200</u>	<u>990</u>	<u>See 27B</u>	<u>CRL</u>
<u>29B</u>	<u>DI-N-OCTYL</u> <u>PTHALATE</u>	<u>00117840</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
<u>30B</u>	<u>1,2-DIPHENYL-</u> <u>HYDRAZINE</u>	<u>00122667</u>	<u>3</u>	<u>15</u>	<u>0.036</u>	<u>CRL</u>
<u>31B</u>	<u>FLUORANTHENE</u>	<u>00206440</u>	<u>40</u>	<u>200</u>	<u>130</u>	<u>H</u>
<u>32B</u>	<u>FLUORENE</u>	<u>00086737</u>	<u>N/A</u>	<u>N/A</u>	<u>1100</u>	<u>H</u>
<u>33B</u>	<u>HEXACHLORO-</u> <u>BENZENE</u>	<u>00118741</u>	<u>N/A</u>	<u>N/A</u>	<u>0.00028</u>	<u>CRL</u>
<u>34B</u>	<u>HEXACHLORO-</u> <u>BUTADIENE</u>	<u>00087683</u>	<u>2</u>	<u>10</u>	<u>0.44</u>	<u>CRL</u>
<u>35B</u>	<u>HEXACHLORO-</u> <u>CYCLOPENTADIENE</u>	<u>00077474</u>	<u>1</u>	<u>5</u>	<u>40</u>	<u>H</u>
<u>36B</u>	<u>HEXACHLORO-</u> <u>ETHANE</u>	<u>00067721</u>	<u>12</u>	<u>60</u>	<u>1.4</u>	<u>CRL</u>
<u>37B</u>	<u>INDENO(1,2,3-</u> <u>cd)PYRENE</u>	<u>00193395</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0038</u>	<u>CRL</u>
<u>38B</u>	<u>ISOPHORONE</u>	<u>00078591</u>	<u>2100</u>	<u>10000</u>	<u>35</u>	<u>H</u>
<u>39B</u>	<u>NAPHTHALENE</u>	<u>00091203</u>	<u>43</u>	<u>140</u>	<u>N/A</u>	<u>:</u>
<u>40B</u>	<u>NITROBENZENE</u>	<u>00098953</u>	<u>810</u>	<u>4000</u>	<u>17</u>	<u>H</u>
<u>41B</u>	<u>N-NITROSO-</u> <u>DIMETHYLAMINE</u>	<u>00062759</u>	<u>3400</u>	<u>17000</u>	<u>0.00069</u>	<u>CRL</u>
<u>42B</u>	<u>N-NITROSODI-N-</u> <u>PROPYLAMINE</u>	<u>00621647</u>	<u>N/A</u>	<u>N/A</u>	<u>0.005</u>	<u>CRL</u>
<u>43B</u>	<u>N-NITROSO-</u> <u>DIPHENYLAMINE</u>	<u>00086306</u>	<u>59</u>	<u>300</u>	<u>3.3</u>	<u>CRL</u>
<u>44B</u>	<u>PHENANTHRENE</u>	<u>00085018</u>	<u>1</u>	<u>5</u>	<u>N/A</u>	<u>:</u>
<u>45B</u>	<u>PYRENE</u>	<u>00129000</u>	<u>N/A</u>	<u>N/A</u>	<u>830</u>	<u>H</u>
<u>46B</u>	<u>1,2,4-TRICHLORO-</u> <u>BENZENE</u>	<u>00120821</u>	<u>26</u>	<u>130</u>	<u>35</u>	<u>H</u>
<u>1P</u>	<u>ALDRIN</u>	<u>00309002</u>	<u>0.1</u>	<u>3</u>	<u>0.000049</u>	<u>CRL</u>
<u>2P</u>	<u>alpha-BHC</u>	<u>00319846</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0026</u>	<u>CRL</u>
<u>3P</u>	<u>beta-BHC</u>	<u>00319857</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0091</u>	<u>CRL</u>
<u>4P</u>	<u>gamma-BHC</u> <u>(LINDANE)</u>	<u>00058899</u>	<u>N/A</u>	<u>0.95</u>	<u>0.098</u>	<u>H</u>
<u>5P</u>	<u>delta-BHC</u>	<u>00319868</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
<u>6P</u>	<u>CHLORDANE</u>	<u>00057749</u>	<u>0.0043</u>	<u>2.4</u>	<u>0.00080</u>	<u>CRL</u>
<u>7P</u>	<u>4,4-DDT</u>	<u>00050293</u>	<u>0.001</u>	<u>1.1</u>	<u>0.00022</u>	<u>CRL</u>
<u>8P</u>	<u>4,4-DDE</u>	<u>00072559</u>	<u>0.001</u>	<u>1.1</u>	<u>0.00022</u>	<u>CRL</u>
<u>9P</u>	<u>4,4-DDD</u>	<u>00072548</u>	<u>0.001</u>	<u>1.1</u>	<u>0.00031</u>	<u>CRL</u>
<u>10P</u>	<u>DIELDRIN</u>	<u>00060571</u>	<u>0.056</u>	<u>0.24</u>	<u>0.000052</u>	<u>CRL</u>
<u>11P</u>	<u>alpha-ENDOSUL-</u> <u>FAN</u>	<u>00959988</u>	<u>0.056</u>	<u>0.22</u>	<u>62 for</u> <u>endosulfan</u>	<u>H</u>
<u>12P</u>	<u>beta-ENDOSULFAN</u>	<u>33213659</u>	<u>0.056</u>	<u>0.22</u>	<u>See 11P</u>	<u>H</u>

13P	<u>ENDOSULFAN</u> <u>SULFATE</u>	<u>01031078</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
14P	<u>ENDRIN</u>	<u>00072208</u>	<u>0.036</u>	<u>0.086</u>	<u>0.059</u>	<u>H</u>
15P	<u>ENDRIN ALDEHYDE</u>	<u>07421934</u>	<u>N/A</u>	<u>N/A</u>	<u>0.29</u>	<u>:</u>
16P	<u>HEPTACHLOR</u>	<u>00076448</u>	<u>0.0038</u>	<u>0.52</u>	<u>0.000079</u>	<u>CRL</u>
17P	<u>HEPTACHLOR</u> <u>EPOXIDE</u>	<u>01024573</u>	<u>0.0038</u>	<u>0.5</u>	<u>0.000039</u>	<u>CRL</u>
18P	<u>PCB</u>		<u>0.014</u>	<u>N/A</u>	<u>0.000064 for</u> <u>PCBs</u>	<u>CRL</u>
25P	<u>TOXAPHENE</u>	<u>08001352</u>	<u>0.0002</u>	<u>0.73</u>	<u>0.00028</u>	<u>CRL</u>
PP	<u>2,3,7,8-TCDD</u>	<u>01746016</u>	<u>N/A</u>	<u>N/A</u>	<u>5.0 E-9</u>	<u>CRL</u>
=	<u>ACETONE</u>	<u>00067641</u>	<u>86000</u>	<u>450000</u>	<u>3500</u>	<u>H</u>
=	<u>ALUMINUM</u>	<u>07429905</u>	<u>N/A</u>	<u>750</u>	<u>N/A</u>	<u>:</u>
=	<u>BARIUM</u>	<u>07440393</u>	<u>4100</u>	<u>21000</u>	<u>2400</u>	<u>H</u>
=	<u>BORON</u>	<u>07440428</u>	<u>1600</u>	<u>8100</u>	<u>3100</u>	<u>H</u>
=	<u>COBALT</u>	<u>07440484</u>	<u>19</u>	<u>95</u>	<u>N/A</u>	<u>:</u>
=	<u>p-CRESOL</u>	<u>00106445</u>	<u>160</u>	<u>800</u>	<u>N/A</u>	<u>:</u>
=	<u>DIAZINON</u>	<u>333415</u>	<u>0.17</u>	<u>0.17</u>	<u>N/A</u>	<u>:</u>
=	<u>FORMALDEHYDE</u>	<u>00050000</u>	<u>440</u>	<u>2200</u>	<u>700</u>	<u>H</u>
=	<u>2-HEXANONE</u>	<u>00591786</u>	<u>4300</u>	<u>21000</u>	<u>N/A</u>	<u>:</u>
=	<u>LITHIUM</u>	<u>07439932</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
=	<u>METHYLETHYL</u> <u>KETONE</u>	<u>00078933</u>	<u>32000</u>	<u>230000</u>	<u>21000</u>	<u>H</u>
=	<u>METHYLISO-BUTYL</u> <u>KETONE</u>	<u>00108101</u>	<u>5000</u>	<u>26000</u>	<u>N/A</u>	<u>:</u>
=	<u>METOLACHLOR</u>	<u>51218452</u>	<u>NA</u>	<u>NA</u>	<u>69</u>	<u>H</u>
=	<u>MOLYBDENUM</u>	<u>07439987</u>	<u>NA</u>	<u>NA</u>	<u>210</u>	<u>H</u>
=	<u>1-PROPANOL</u>	<u>00071238</u>	<u>46000</u>	<u>230000</u>	<u>N/A</u>	<u>:</u>
=	<u>2-PROPANOL</u>	<u>00067630</u>	<u>89000</u>	<u>440000</u>	<u>N/A</u>	<u>:</u>
=	<u>1,2,3-TRICHLORO-</u> <u>PROPANE</u>	<u>00096184</u>	<u>N/A</u>	<u>N/A</u>	<u>210</u>	<u>H</u>
=	<u>VANADIUM</u>	<u>07440622</u>	<u>100</u>	<u>510</u>	<u>N/A</u>	<u>:</u>
=	<u>XYLENE</u>	<u>01330207</u>	<u>210</u>	<u>1100</u>	<u>70000</u>	<u>H</u>

Acronyms and Footnotes to Table 5

* Indicates dissolved metal criterion; others are total recoverable metals. Each listed dissolved criterion in Table 5 is equal to the corresponding total recoverable criterion before rounding (from the EPA National Ambient Water Quality Criteria Documents) multiplied by the conversion factor (from the Conversions Factors Table); a criterion that is expressed as a hardness (H)-based equation is shown in Table 5 as the conversion factor (listed) multiplied by the hardness criterion equation; an example criterion at hardness=100mg/L is included.

CAS – Chemical Abstract Service number

CRL – Cancer risk level at 1×10^{-6}

H—Threshold effect human health criterion; incorporates additional uncertainty factor for some Group C carcinogens.

ln [H]—Natural Logarithm of the Hardness of stream as mg/l CaCO_3

ug/L – Micrograms per liter

N/A—criterion not developed

PP NO – Priority Pollutant Number

§ 93.8d. Development of site-specific water quality criteria.

~~[(a) The Department will consider a request for site-specific criteria for protection of aquatic life, human health or wildlife when a person demonstrates that there exist site-specific biological or chemical conditions of receiving waters which differ from conditions upon which the water quality criteria were based. Site-specific criteria may be developed for use only in place of current Statewide or regional (such as the Great Lakes systems) criteria. The request for site-specific criteria must include the results of scientific studies for the purpose of:]~~

(A) THE DEPARTMENT WILL CONSIDER A REQUEST FOR SITE-SPECIFIC CRITERIA WHEN:

(1) THERE EXIST SITE-SPECIFIC BIOLOGICAL OR CHEMICAL CONDITIONS OF RECEIVING WATERS WHICH DIFFER FROM CONDITIONS UPON WHICH THE WATER QUALITY CRITERIA WERE BASED

(2) MORE STRINGENT CRITERIA ARE NEEDED FOR A PARAMETER LISTED IN § 93.7 TO PROTECT MORE SENSITIVE, INTERVENING USES; OR

(3) THERE EXISTS A NEED FOR A SITE-SPECIFIC CRITERION FOR A SUBSTANCE NOT LISTED IN CHAPTER 93, TABLE 5.

(B) THE REQUEST FOR SITE-SPECIFIC CRITERIA MUST INCLUDE THE RESULTS OF SCIENTIFIC STUDIES FOR THE PURPOSE OF:

(1) Defining the areal boundaries for application of the site-specific criteria which will include the potentially affected wastewater dischargers identified by the Department, through various means, including, but not limited to, the total maximum daily load (TMDL) process described in Chapter 96 (relating to water quality standards implementation) or biological assessments.

(2) Developing site-specific criteria which protect the surface water's existing and designated uses.

~~[(b)]~~ (C) Scientific studies shall be performed in accordance with the procedures and guidance in the Water Quality Standards Handbook (EPA 1994), as amended and updated, including: "Guidance on the Determination and Use of Water-Effect Ratios for Metals" (February 1994); and [with] the "Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health" (2000), [as amended and updated]. Other guidance approved by the Department, which is based on other EPA approved or scientifically defensible methodologies, may be used. [The WER study may be conducted, based on either total recoverable or dissolved criteria, depending on the form of the criterion.]

~~[(e)]~~ (D) Prior to conducting studies specified in subsections [(a) and] (b) AND (C), a proposed plan of study shall be submitted to [and approved by] the Department for review, consideration and approval.

~~[(d)]~~ (E) Signed copies of all reports including toxicity test data shall be submitted to the Department within [30] 60 days of completion of the tests.

~~[(e) If, as a result of its review of the report submitted to satisfy a request, the Department determines that a site-specific criterion for a toxic substance is appropriate, the Department will publish the site-specific criterion in the *Pennsylvania Bulletin*, along with other special conditions under § 92.61(a)(5) (relating to public notice of permit application and public hearing), and in Chapter 16 Appendix A, Table 1 (relating to site-specific water quality criteria for toxic substances). Changes listed in Appendix A, Table 1 will be promulgated through a formal rulemaking process as part of a triennial review or other rulemaking. If, as a result of its review of the report submitted to satisfy a request, the Department determines that a site-specific criterion for a parameter listed in § 93.7 (relating to specific water quality criteria) is appropriate, the Department will prepare a recommendation to the EQB in the form of proposed rulemaking, incorporating that criterion for the water body segment. A change to the criterion for a parameter listed in § 93.7 will become effective following adoption by the EQB as final rulemaking and publication in the *Pennsylvania Bulletin*.]~~

(F) IF THE DEPARTMENT DETERMINES THAT SITE-SPECIFIC CRITERIA ARE APPROPRIATE IN ACCORDANCE WITH PARAGRAPH (a), THE DEPARTMENT WILL:

(1) PUBLISH THE SITE-SPECIFIC CRITERION IN THE PENNSYLVANIA BULLETIN, ALONG WITH OTHER SPECIAL CONDITIONS UNDER § 92.61(a)(5) (RELATING TO PUBLIC NOTICE OF PERMIT APPLICATION AND PUBLIC HEARING) AND PROVIDE FOR PUBLIC PARTICIPATION AND PUBLIC HEARING IN ACCORDANCE WITH §§92.61, 92.63 AND 92.65;

(2) MAINTAIN PUBLICLY AVAILABLE LISTS OF SITE-SPECIFIC CRITERIA;

(3) SUBMIT THE METHODOLOGIES USED FOR SITE-SPECIFIC CRITERIA DEVELOPMENT TO U.S. ENVIRONMENTAL PROTECTION AGENCY'S REGIONAL ADMINISTRATOR FOR REVIEW AND APPROVAL, WITHIN 30 DAYS OF DEPARTMENT'S FINAL ACTION; AND

(4) PREPARE A RECOMMENDATION TO THE EQB IN THE FORM OF PROPOSED RULEMAKING, INCORPORATING THAT CRITERION FOR THE WATER BODY SEGMENT.

(G) IF THE DEPARTMENT DETERMINES THAT NEW STATEWIDE CRITERIA OR MODIFICATIONS TO STATEWIDE CRITERIA ARE APPROPRIATE, THE DEPARTMENT WILL PREPARE A RECOMMENDATION TO THE EQB IN THE FORM OF PROPOSED RULEMAKING, INCORPORATING THE CRITERIA INTO THIS CHAPTER. THE NEW CRITERIA AND CHANGES TO THE CRITERIA WILL BECOME EFFECTIVE FOLLOWING ADOPTION BY THE EQB AS FINAL RULEMAKING AND PUBLICATION IN THE PENNSYLVANIA BULLETIN.

[(f)] (H) A person challenging a Department action under this section shall have the burden of proof to demonstrate that the Department's action does not meet the requirements of this section.

§ 93.8e. Special criteria for the Great Lakes System.

(a) *Special criteria.* The special provisions in this section apply for the Great Lakes System, which includes the streams, rivers, lakes and other bodies of surface water within the drainage basin of the Great Lakes in this Commonwealth:

(b) *Water quality criteria for the Great Lakes System.* Human health and aquatic life criteria for the Great Lakes System are contained in Table 6 (relating to Great Lakes aquatic life and human health criteria). For any pollutant not listed in the table, criteria to protect existing and designated uses will be developed by the Department, as needed in accordance with this chapter and [~~Chapter 16 (relating to water quality toxics management strategy—statement of policy)~~] § 16.61 (RELATING TO SPECIAL PROVISIONS FOR THE GREAT LAKES SYSTEM).

**TABLE 6
GREAT LAKES AQUATIC LIFE AND HUMAN HEALTH CRITERIA**

<i>PP</i> <i>NO</i>	<i>Chemical Name</i>	<i>CAS</i> <i>Number</i>	<i>Fish and Aquatic Life Criteria</i>		<i>Human</i> <i>Health</i> <i>Criteria</i> <i>(ug/L)</i>
			<i>Criteria Continuous</i> <i>Concentrations (ug/L)</i>	<i>Criteria Maximum</i> <i>Concentration (ug/L)</i>	
2M	Arsenic	07440382	*148 (As3+)	*340 (As3+)	N/A
4M	Cadmium	07440439	*{1.101672-(ln[H]x0.041838)}x Exp(0.7852xln[H]-2.715) (ex: @H=100, CCC=2.24)	*{1.136672-(ln[H]x0.041838)}x Exp(1.128xln[H]-3.6867) (ex: @H=100, CMC=4.26)	N/A

<u>5M</u>	<u>Chromium, III</u>	<u>16065831</u>	<u>*0.860xExp(0.819xln[H]+0.6848)</u> (ex: @H=100, CCC=74)	<u>*0.316xExp(0.819xln[H]+3.7256)</u> (ex: @H=100, CMC=570)	<u>N/A</u>	
<u>5M</u>	<u>Chromium, VI</u>	<u>18540299</u>	<u>*10.56</u>	<u>*15.73</u>	<u>N/A</u>	<u>:</u>
<u>6M</u>	<u>Copper</u>	<u>07440508</u>	<u>*0.960xExp(0.8545xln[H]-1.702)</u> (ex: @H=100, CCC=8.96)	<u>*(0.960xExp(0.9422xln[H]-1.700))</u> (ex: @H=100, CMC=13.44)	<u>N/A</u>	
<u>8M</u>	<u>Mercury</u>	<u>07439976</u>	<u>*0.77</u>	<u>*1.44</u>	<u>0.0031</u>	<u>H</u>
<u>9M</u>	<u>Nickel</u>	<u>07440020</u>	<u>*0.997xExp(0.846xln[H]+0.0584)</u> (ex: @H=100, CCC=52.01)	<u>*[0.998xExp(0.846xln[H]+2.255)]</u> (ex: @H=100, CMC=468.24)	<u>N/A</u>	<u>H</u>
<u>10M</u>	<u>Selenium</u>	<u>07782492</u>	<u>*4.61</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
<u>13M</u>	<u>Zinc</u>	<u>07440666</u>	<u>*0.986xExp(0.8473xln[H]+0.884)</u> (ex: @H=100, CCC=118.14)	<u>*0.978xExp(0.8473xln[H]+0.884)</u> (ex: @H=100, CMC=117.18)	<u>N/A</u>	
<u>14M</u>	<u>Cyanide, Free</u>	<u>00057125</u>	<u>5.2</u>	<u>22</u>	<u>600</u>	<u>H</u>
<u>3A</u>	<u>2,4-Dimethyl-phenol</u>	<u>00105679</u>	<u>N/A</u>	<u>N/A</u>	<u>450</u>	<u>H</u>
<u>5A</u>	<u>2,4-Dinitro-phenol</u>	<u>00051285</u>	<u>N/A</u>	<u>N/A</u>	<u>55</u>	<u>H</u>
<u>9A</u>	<u>Pentachlorophenol</u>	<u>00087865</u>	<u>Exp(1.005[pH]-5.134)</u> @pH= 6.5 7.8 9.0 Crit = 4.05 14.95 49.95	<u>Exp(1.005[pH]-4.869)</u> @pH= 6.5 7.8 9.0 Crit = 5.28 19.49 65.10	<u>N/A</u>	
<u>3V</u>	<u>Benzene</u>	<u>00071432</u>	<u>N/A</u>	<u>N/A</u>	<u>1.2</u>	<u>CRL</u>
<u>7V</u>	<u>Chloro-benzene</u>	<u>00108907</u>	<u>N/A</u>	<u>N/A</u>	<u>470</u>	<u>H</u>
<u>22V</u>	<u>Methylene Chloride</u>	<u>00075092</u>	<u>N/A</u>	<u>N/A</u>	<u>4.7</u>	<u>CRL</u>
<u>25V</u>	<u>Toluene</u>	<u>00108883</u>	<u>N/A</u>	<u>N/A</u>	<u>5600</u>	<u>H</u>
<u>29V</u>	<u>Trichloro-ethylene</u>	<u>00079016</u>	<u>N/A</u>	<u>N/A</u>	<u>2.9</u>	<u>CRL</u>
<u>33B</u>	<u>Hexachloro-benzene</u>	<u>00118741</u>	<u>N/A</u>	<u>N/A</u>	<u>0.000045</u>	<u>CRL</u>
<u>36B</u>	<u>Hexachloro-ethane</u>	<u>00067721</u>	<u>N/A</u>	<u>N/A</u>	<u>0.53</u>	<u>CRL</u>
<u>4P</u>	<u>gamma-BHC (Lindane)</u>	<u>00058899</u>	<u>N/A</u>	<u>0.95</u>	<u>0.47</u>	<u>H</u>
<u>6P</u>	<u>Chlordane</u>	<u>00057749</u>	<u>N/A</u>	<u>N/A</u>	<u>0.000025</u>	<u>CRL</u>
<u>7P</u>	<u>4,4-DDT</u>	<u>00050293</u>	<u>N/A</u>	<u>N/A</u>	<u>0.000015</u>	<u>CRL</u>
<u>10P</u>	<u>Dieldrin</u>	<u>00060571</u>	<u>0.056</u>	<u>0.24</u>	<u>0.00000065</u>	<u>CRL</u>
<u>14P</u>	<u>Endrin</u>	<u>00072208</u>	<u>0.036</u>	<u>0.086</u>	<u>N/A</u>	
<u>18P</u>	<u>PCBs</u>		<u>N/A</u>	<u>N/A</u>	<u>0.00000039</u>	<u>CRL</u>
<u>25P</u>	<u>Toxaphene</u>	<u>08001352</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0000068</u>	<u>CRL</u>
<u>PP</u>	<u>2,3,7,8-TCDD</u>	<u>01746016</u>	<u>N/A</u>	<u>N/A</u>	<u>8.6 E-10</u>	<u>CRL</u>

Acronyms and Footnotes to Table 6

* Indicates dissolved metal criterion; others are total recoverable metals. Each listed dissolved criterion in Table 6 is equal to the corresponding total recoverable criterion before rounding (from the EPA National Ambient Water Quality Criteria Documents) multiplied by the conversion factor (from the Conversions Factors); a criterion that is expressed as a hardness (H)-based equation is shown in Table 6 as the conversion factor (listed) multiplied by the hardness criterion equation; an example criterion at hardness=100mg/L is included.

CAS – Chemical Abstract Service number

CRL – Cancer risk level at 1×10^{-6}

H—Threshold effect human health criterion; incorporates additional uncertainty factor for some Group C carcinogens.

ln [H]—Natural Logarithm of the Hardness of stream as mg/l CaCO₃

ug/L – Micrograms per liter

N/A—Criterion not developed

PPNO – Priority Pollutant Number

(c) *Wildlife criteria.* Wildlife criteria will be developed for the bioaccumulative chemicals of concern (BCCs) in the Great Lakes System using methodologies contained in the Great Lakes guidance in 40 CFR Part 132, Appendix D (relating to Great Lakes Water Quality Initiative methodology for the development of wildlife criteria). The wildlife criteria are contained in the following table:

GREAT LAKES WILDLIFE CRITERIA

TABLE 7

<u>PP</u>	<u>CHEMICAL</u>	<u>CRITERION</u>
<u>NO.</u>	<u>NAME</u>	<u>(ug/L)</u>
<u>7-9P</u>	<u>DDT & METABOLITES</u>	<u>0.000011</u>
<u>8M</u>	<u>MERCURY</u>	<u>0.0013</u>
<u>18-24P</u>	<u>PCBs (TOTAL)</u>	<u>0.00012</u>
<u>PP</u>	<u>2,3,7,8-TCDD</u>	<u>3.1 E-9</u>

DESIGNATED WATER USES AND WATER QUALITY CRITERIA

§ 93.9. Designated water uses and water quality criteria.

(a) The tables in §§ 93.9a—93.9z display designated water uses and water quality criteria in addition to the water uses and criteria specified in Tables 2 and 3. Designated uses shall be protected in accordance with Chapters 95 and 96 (relating to wastewater treatment requirements; and water quality standards implementation) and any other applicable State and Federal laws and regulations. The tables also indicate specific exceptions to Tables 2 and 3 on a stream-by-stream or segment-by-segment basis by the words “add” or “delete” followed by the appropriate symbols described elsewhere in this chapter. The county column in §§ 93.9a—93.9z indicates the county in which the mouth of the stream or the downstream limit of the zone described for that entry is located. Abbreviations used in the Stream and the “Zone” columns are as follows:

(b) When appropriate, “Exceptions to Specific Criteria” provide reference to the Delaware River Basin Commission (DRBC) water quality regulations, Orsanco (Ohio River Valley Water Sanitation Commission) pollution control standards and the Great Lakes Water Quality Agreement (GLWQA) which specify the criteria that apply if a water quality standard is more stringent than those in this title. The applicable criteria can be obtained from the following:

(Editor’s note: A basin-wide migratory fishes (MF) designation is being applied to Drainage Lists A – O and Z, unless there are specific exceptions already noted for certain waterbodies or stream segments within one of these drainage lists. These specific changes to the drainage lists, however, are not reflected in this Annex, but will be added to the regulations at final rulemaking. Drainage lists A –G are located within the Delaware River Basin. Drainage lists H – O are located within the Susquehanna River Basin. Drainage list Z is located within the Potomac River Basin.)

§93.9d. Drainage List D

**Delaware River Basin in Pennsylvania
*Lehigh River***

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria

3—Penn Springs	Basin	Carbon	HQ-CWF	None
3—Black Creek	[Basin, Source to Beaver Creek	Carbon	HQ-CWF	None]
<u>4—Hazle Creek</u>	<u>Basin</u>	<u>Carbon</u>	<u>HQ-CWF</u>	<u>None</u>

4—Beaver Creek	Basin	Carbon	CWF	None
3—Black Creek	Main Stem, <u>Confluence of Hazle Creek and</u> Beaver Creek to Mouth	Carbon	CWF	None
4—[<u>Unnamed Tributaries</u>] <u>UNT</u> s to Black Creek	Basins, <u>Confluence of Hazle Creek and</u> Beaver Creek to Mouth	Carbon	HQ-CWF	None
<u>4—Koons Creek</u>	<u>Basin</u>	<u>Carbon</u>	<u>HQ-CWF</u>	<u>None</u>
4—Quakake Creek	Basin, Source to Wetzel Creek	Carbon	HQ-CWF	None
5—Wetzel Creek	Basin	Carbon	CWF	None
4—Quakake Creek	Basin, Wetzel Creek to Mouth	Carbon	CWF	None
<u>4—Brushy Hollow Run</u>	<u>Basin</u>	<u>Carbon</u>	<u>HQ-CWF</u>	<u>None</u>
3—Maple Hollow	Basin	Carbon	HQ-CWF	None

* * * * *

§93.9f. Drainage List F

Delaware River Basin in Pennsylvania
Schuylkill River

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
	* * * * *			
3—Monocacy Creek	Basin	Berks	WWF	None
3—UNTs to Schuylkill River	Basins, <u>(all UNT's along Montgomery County shore)</u> , Berks-Chester- Montgomery County Border to Valley Creek [(except those in Spring City and Phoenixville)]	[Chester—] Montgomery	[HQ-TSF] WWF	None
<u>3—UNTs to Schuylkill River</u>	<u>Basins (all UNTs along Chester County shore except those in Spring City and Phoenixville), Berks-Chester- Montgomery County Border to Valley Creek</u>	<u>Chester</u>	<u>HQ-TSF</u>	<u>None</u>
3—UNTs to Schuylkill River	Basins, in Spring City and Phoenixville	Chester	WWF	None
	* * * * *			
3—Valley Creek	Basin	Montgomery- Chester	EV	None
3—[<u>Unnamed Tributaries</u>] <u>UNT</u> s to Schuylkill River	Basins, Valley Creek to <u>Head of Tide</u>	[Chester- Montgomery]	WWF	None

[3—Mellshamic Creek	Basin	<u>Philadelphia</u>	WWF	None]
3—Trout Creek	Basin	Montgomery	WWF	None
		Montgomery		

§93.9i. Drainage List I

Susquehanna River Basin in Pennsylvania
Susquehanna River

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria

2—Mehoopany Creek	Basin, Source to North [Fork] <u>Branch Mehoopany Creek</u>	Wyoming	HQ-CWF	None
3—North [Fork] <u>Branch</u> Mehoopany Creek	Basin	Wyoming	CWF	None
2—Mehoopany Creek	Basin, North [Fork] <u>Branch Mehoopany Creek</u> to Mouth	Wyoming	CWF	None
2—Taques Creek	Basin	Wyoming	CWF	None
2—Tunkhannock Creek	Main Stem, Source to Susquehanna-Wyoming County Border	Susquehanna-Wyoming	CWF	None
3—[<u>Unnamed Tributaries</u>] <u>UNT</u> s to Tunkhannock Creek	Basins, Source to Susquehanna-Wyoming County Border	Susquehanna	CWF	None
3—Bear Swamp Creek	Basin	Susquehanna	CWF	None
3—Bell Creek	Basin	Susquehanna	CWF	None
3—[<u>Leslie</u>] <u>Nine Partners</u> Creek	Basin	Susquehanna	CWF	None
3—Partners Creek	Basin	Susquehanna	CWF	None

§93.9i. Drainage List L

Susquehanna River Basin in Pennsylvania
West Branch Susquehanna River

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria

4—[<u>Unnamed Tributary</u>] <u>UNT</u> 21134	Basin, Source to Raughtown Creek	Lycoming	CWF	None
5—Raughtown Creek	[Basin, Source to Confluence of Rockey Run	Clinton	HQ-CWF	None]

<u>6—Rockey Run</u>	<u>Basin</u>	<u>Clinton</u>	<u>HQ-CWF</u>	<u>None</u>
<u>6—Gottshall Run</u>	<u>Basin</u>	<u>Clinton</u>	<u>HQ-CWF</u>	<u>None</u>
5—Rauchtown Creek	Basin, Confluence of Rockey Run and Gottshall Run to Mouth	Lycoming	CWF	None

§93.9m. Drainage List M

Susquehanna River Basin in Pennsylvania
Susquehanna River

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
3—Trout Run	Basin	Northumberland	CWF	None
3— [Buddys] Bennys Run	Basin	Northumberland	CWF	None
3—Millers Run	Basin	Northumberland	CWF	None

§93.9q. Drainage List Q

Ohio River Basin in Pennsylvania
Allegheny River

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
4—Marsh Run	Basin	Crawford	CWF	None
4—Thompson Creek	Basin, <u>Source to Shirley Run</u>	Crawford	CWF	None
<u>5—Shirley Run</u>	<u>Basin</u>	<u>Crawford</u>	<u>HQ-CWF</u>	<u>None</u>
<u>4—Thompson Creek</u>	<u>Basin, Shirley Run to Mouth</u>	<u>Crawford</u>	<u>CWF</u>	<u>None</u>
5—Caldwell Creek	Basin, Source to West Branch Caldwell Creek	Warren	HQ-CWF	None
6—West Branch Caldwell Creek	Basin	[Crawford] <u>Warren</u>	EV	None
5—Caldwell Creek	Basin, West Branch Caldwell Creek to Mouth	Crawford	EV	None

§93.9v. Drainage List V

Ohio River Basin in Pennsylvania
Monongahela River

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria

3—Bates Run	Basin	Fayette	WWF	None
3—Tenmile Creek	Basin, Source to South Fork Tenmile Creek	Greene- <u>Washington</u>	TSF	None
4—South Fork Tenmile Creek	Basin, Source to Browns Creek	Greene	HQ-WWF	None
5—Browns Creek	Basin	Greene	HQ-WWF	None
4—South Fork Tenmile Creek	Basin, Browns Creek to Mouth	Greene- <u>Washington</u>	WWF	None
3—Tenmile Creek	Basin, South Fork Tenmile Creek to Mouth	Greene- <u>Washington-Fayette</u>	WWF	None

§ 93.9x. Drainage List X.

Lake Erie

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
1—Lake Erie	All sections of lake in PA except Outer Erie Harbor and Presque Isle Bay	Erie	CWF	<i>Delete</i> Fe, [pH1,] DO1 and Bac1 See GLWQA <u>Add E. coli per 40 CFR 131.41 (EXCEPT (F)) and See 28 Pa. Code § 18.28(b)(2) and (3)</u>
1—Lake Erie (Outer Erie Harbor and Presque Isle Bay)	Portion of lake bordered by Presque Isle on west, longitude 80°10'18" on north, except harbor area and central channel dredged and maintained by United States Army Corps of Engineers.	Erie	WWF	<i>Delete</i> pH <i>Add</i> pH between 7 and 9 <u>Add E. coli per 40 CFR 131.41 (EXCEPT (F)) and See 28 Pa. Code §</u>

**18.28(b)(2) and
(3)**

1—Lake Erie (Outer Erie Harbor area and central channel
Harbor and Presque Isle dredged and maintained by United Erie
Bay) States Army Corps of Engineers

WWF, *Delete* pH and
WC Bac1 *Add* pH
between 7 and 9,
Bac2

**Comment and Response Document
Triennial Review of Water Quality Standards
Amendments to 25 Pa Code Chapters 93 and 16**

July 2008

General Comments and Support

Comment:

Commentator had no objections to the proposed rule. (1) Another commentator indicated they believed the changes generally improve 25 Pa Code Chapter 93 and will allow the Department staff to better protect and manage the Commonwealth's waters and their uses. (3)

US EPA fully supports Pennsylvania's proposal to merge sections of the Water Quality Toxics Management Strategy – Statement of Policy (Chapter 16) into Chapter 93, the Commonwealth's Water Quality Standard Regulation. EPA is also pleased that PA is proposing to modify many of the human health criteria based on EPA's 2000 *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health*. (6)

Response:

Thank you for your supportive comments.

Specific Comments by Section or Topic

Comments Concerning Critical Use & Intervening Uses:

Comment:

It does not make sense to extend a protected water use to activities that qualify as potential pollution sources as defined in section 402 of the Commonwealth's Clean Streams Law (CSL). Both State and federal case law (Oley Twp, et al. vs. DEP; Wissahickon Spring Water, Inc EHB Docket; and PUD No. 1 of Jefferson County v. Washington Department of Ecology, 114 S. Ct. 1900 (1994)) define water pollution to include diminishment of water quantity. Therefore it is not reasonable to extend a protected water use to a water withdrawal source that may potentially pollute. You should not add "maintenance of golf courses and athletic fields and other commercial horticultural activities" to the definition of irrigation as a protected water use in 25 Pa. Code § 93.3. The commentator suggests these other irrigation uses will be protected through the protection of all other critical uses including all aquatic life, water supply, recreation and special protection uses currently in Chapter 93. Therefore, there is no need to expand the definition of irrigation beyond the agricultural uses that it presently contains. (3)

Response:

The current description of “irrigation” as a protected water use contains the undefined phrase “for growing crops.” The Department interprets irrigation to include commercial watering of plants. Irrigation water, withdrawn from a stream may adversely affect these operations if elevated in-stream levels of pollutants such as chlorides and total dissolved solids (TDS) are present. Adverse impacts on the irrigation use could occur without affecting a downstream potable water supply (PWS) use at the point of intake or instream aquatic life uses.

Comment:

We disagree with the additional sentence for critical use in section 93.7(a). This sentence is vague and may lead to inconsistent interpretations across DEP regions. Who determines when “other intervening, more sensitive uses” should be applied to a waterbody? What process and criteria are used to make this determination? How will this process be uniformly applied? The term “location” is undefined. **(2, 4, 10)**

Response:

The Department incorporated further clarification of the intended concept into the final rule. Protected and statewide water uses, identified in §§ 93.3 and 93.4, will be protected using criteria in §§ 93.6, 93.7, and 93.8. Based on the activities in the watershed, these decisions will be made on a case-by-case basis. Where needed, site-specific criteria may be developed to protect these uses, and it will be these criteria that will determine the sensitive critical use.

Natural Conditions:

Comment:

PA is proposing modifications in § 93.7(d) to clarify that considerations of natural quality for aquatic life protection now apply to Table 5, which is being created in this proposal, and Chapter 16, Appendix A Table 1, which is being re-purposed during this triennial review. Such determinations must be based on a set procedure that is specific enough to establish natural background concentrations accurately and reproducibly. The “Protocol for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations” Technical Guidance 391-2000-022, which has been identified as the procedure to be used in the past by the Department, no longer appears to be available. Background conditions are site-specific by nature, so EPA is unsure how such criteria will be incorporated into Table 5, which appears to include only statewide criteria. **(6, 10)** The final-form regulation should include a clear explanation of the reasoning behind this amendment. **(10)**

Response:

The referenced “Protocol for the Determination and Use of Background/Ambient Water Quality in the Determination of Wasteload Allocations and NPDES Effluent Limitations” Technical Guidance, (DEP 391-2000-022) is still available, and the Department will continue to use this protocol to determine natural water quality conditions.

The Department recommends to the EQB that the reference to Chapter 16, Appendix A Table 1 not be added to § 93.7(d) because it is not applicable to a natural quality determination.

Moving Portions of Chapter 16 into Chapter 93:

Comment:

Why is the Department moving the criteria back to Chapter 93? The proposed rule fails to explain the history of this change, which the commentator interprets as a reversal of a change only recently effected in 2000 following the Regulatory Basics Initiative. Therefore, the Board should not approve the changes in Chapter 16 from policy to regulations in Chapter 93. Also do not change section 93.8a(h) which established that the Department will amend Chapter 16 at intervals not exceeding one year. (3)

Response:

The original incentive for listing criteria in the Statement of Policy was to allow for flexibility in the timing of criteria development and revision. The recommendation to move the criteria for toxic substances into Chapter 93 is intended to give these criteria the full force and effect of regulation. The Department believes this is appropriate since, these criteria are not being changed or supplemented as frequently as originally anticipated.

Comment:

The conversion factor table §16.24(b) is being relocated to § 93.9b. The table includes a change to the lead conversion factor. This modification is not mentioned in the summary of issues, but appears to be a corrective action. Please confirm the basis of this modification. (6)

Response:

This does represent a corrective action, as suggested by the commentator. This conversion factor was actually effective prior to publication of the current proposal. The Legislative Reference Bureau published a corrective amendment for §16.24 (relating to metals criteria), at 35 Pa.B. 1223 on February 12, 2005, but the Department failed to update the draft Chapter 93 Annex that was already under development.

Comment:

EPA would like clarification on how the criteria in Chapter 16, Appendix A Table 1 will be considered. The Chapter 16 proposal indicates that this table will be renamed "Site-specific Water Quality Criteria for Toxic Substance" and that site-specific criteria will be housed there until a time that there is an opportunity to incorporate the criteria into Chapter 93, Table 5. (6)

Response:

A criterion placed in Chapter 16, Appendix A Table 1 will remain a site-specific criterion as originally developed and be incorporated into the appropriate portion of §§ 93.9a –

93.9z that relates to “Exceptions to Specific Criteria” unless, during rulemaking, it is determined that the same standard has general statewide applicability.

Comments Concerning Proposed Criteria Revisions:

Arsenic (As) Criterion:

Comment:

US EPA Region 3 testified at the February 14, 2008 public hearing that they are pleased to see the Commonwealth intends to adopt the current National Primary Drinking Water Standard for arsenic as the criterion for the protection of human health. (6)

Response:

Thank you for your comment.

Nutrient Criteria:

Comment:

US EPA Region 3 also testified that they would like to take this opportunity to reiterate the importance of adopting protective nutrient criteria. They recognize that it is not reasonable to expect Pennsylvania to adopt such criteria during this triennial review, but they ask that once this triennial review is considered final the Commonwealth redouble its efforts to get these key protections in place. (6)

Response:

The Department is already aggressively taking steps to develop nutrient criteria through efforts that are independent of this triennial review, and intends to proceed with the necessary steps to develop the appropriate rulemaking to adopt the criteria as soon as the studies and data analysis are complete.

Molybdenum (Mo) Criterion:

Comment:

There is no need to develop a statewide water quality standard (WQS) for Mo to protect drinking water, nor has the State demonstrated any such need. There is no evidence that Mo is a substance that “Is expected to be found in discharges” nor is there any basis for concluding that, to the extent there is a need to address Mo in Langeloth Metallurgical Company’s discharge, it cannot be accomplished under the regulations as they now exist. (2, 7, 9, 10)

IRRC recommends that the Board clearly provide, in the final-form regulation, the justification for the inclusion of Mo in Table 5 of this section and the rationale behind the specific Human Health Criteria. (10)

Response:

The Department's recommendation for the Board to proceed with a statewide water quality criterion for Mo in ambient waters was based on a number of water quality criteria requests received from the Department's regional offices. Other program requests for Mo discharge limits are listed below. The biological or chemical conditions of the receiving waters for these multiple locations are not expected to differ in a way that would require development of site-specific criteria. Therefore, to maintain consistency, one statewide criterion, more effectively satisfies the needs of these issues than multiple site-specific efforts.

- SCRO 10/04, Molycorp (York Co., superfund cleanup site)
- SWRO 10/04, Molycorp (now Chevron Mining) Washington Co.
10/06, Langeloth Metallurgical Company (Washington Co.)
- NERO 2/08, Georgia Pacific, Dixie Consumer Products - as active ingredient within chemical additive (Northampton Co.),

At least four active major NPDES permits now require Mo monitoring:

- May Environmental Tech Inc. (Westmoreland Co.)
- OSRAM Sylvania (Bradford Co.)
- PPL – Brunner Island Steam Electric Station (York Co.)
- Molycorp - now Chevron Mining (Washington Co)

The Department has identified a number of additional facilities that discharge molybdenum; primarily coal mining, power generation and specialty steel manufacturing.

Comment:

Until the public is provided with an adequate, meaningful explanation as to why there exists a need for the proposals relating to Mo, the same should be tabled. Mo is not a "toxic" substance and science has clearly shown Mo to be an essential micronutrient in plants, animals and humans. There is an insufficient level of concern to human health to merit a Mo standard based on the limited available data. (2, 4, 5, 9, 10)

It would be completely unreasonable and an abuse of discretion to adopt the proposals relating to Mo even absent any explanation as to how DEP arrived at instream water quality criteria of 210 ug/L. (2, 5, 9, 10)

Response:

The Department considers Mo to be a toxic substance. A "toxic substance", as defined in Chapter 93 is, "a chemical or compound in sufficient quantity or concentration which is, or may become, harmful to human, animal or plant life." Based on health assessment information in the *US EPA Integrated Risk Information System (IRIS)*, the *Risk Assessment Information System (RAIS) Toxicity Profile - Toxicity Summary for Molybdenum* prepared by the Oak Ridge National Laboratory, and the Institute of Medicine's (IOM) review of the scientific literature regarding dietary micronutrients, high concentrations of Mo are shown to cause gout-like symptoms, characterized by pain,

swelling, inflammation and deformities of the joints, and in all cases, an increase in the uric acid content of the blood. This condition is often accompanied by disorders of the gastrointestinal tract, liver and kidneys. Additionally, according to the above scientific sources, Mo is considered a teratogen because it can cause various developmental deformities, which are also considered toxic responses.

Comment:

Mo is an essential micronutrient and EPA has chosen not to adopt National drinking water standards. The proposed Mo standard is far more stringent than those of EPA and the neighboring States, which do not have a Mo standard, and will place PA industry at a competitive disadvantage. (4, 5, 7, 9)

Response:

Although Mo is considered an essential micronutrient, as described earlier it can also be toxic at higher concentrations.

EPA has added Mo to the Drinking Water Contaminant Candidate List (CCL3), based on the contaminants potential to occur in public water systems and the potential for public health concern, (Federal Register: February 21, 2008 (Volume 73, Number 35))[Page 9627-9654]

Mo is proposed as a water quality based criterion to protect human health. Other states that have regional and statewide human health criteria for Mo include:

- Regional: - Ohio – 120 ug/L (for Lake Erie basin)
- Statewide: - Michigan – 120 ug/L
- North Carolina – 160 ug/L (provisional)
- Colorado – 35 ug/L (groundwater)

Comment:

There is no known method for sufficiently removing Mo to such levels as to achieve an instream criterion as low as 210 ug/L. (2, 5, 9, 10)

Response:

While the Department recognizes the difficulties and complexities associated with treating for Mo, below are three possible options for wastewater treatment:

- 1) Iron co-precipitation with sand filtration
- 2) Ion exchange
- 3) Reverse osmosis.

In addition, there are waste capture, reuse, recycle and disposal options available. The feasibility of these options depend on, among other factors, the chemical form of the targeted contaminant, the flow and quality of the receiving stream, and the volume and nature of the wastewater, especially regarding other contaminants and the interferences or synergisms they may cause. However, of the available options and on a preliminary basis, iron co-precipitation with sand filtration appears to be the most feasible. It has been employed successfully in at least one application, treating molybdenum-

contaminated tailings and waste rock drainage at a closed molybdenum mine.

Comment:

Mo is not a carcinogen, there is no peer-reviewed science to support classifying Mo as a “Toxic Substance” for humans, and there exists a clear on-going debate among scientists as to the acceptable levels of Mo intake in humans. The “science” on the effects of Mo intake on humans is not sufficient to justify the proposed rulemaking. (2, 5, 9, 10)

Response:

The Department bases toxicity on the application as found in The Pa Code, Chapter 16, Water Quality Toxics Management Strategy – Statement of Policy, at Section 16.31: - Traditional toxicology is developed upon a theory that the “dose determines the poison”. Micro nutrients in excess of recommended daily allowances can become toxic.

Mo is not a carcinogen, but, as discussed earlier, it is a teratogen based on the occurrence of developmental and skeletal deformities with exposures at higher levels, which is a toxic characteristic. DEP regulation defines ‘Toxic Substance’ as - A chemical or compound in sufficient quantity or concentration which is, or may become, harmful to human, animal or plant life.

Comment:

The methodology utilized by the Department to establish the uncertainty factor (UF) for calculating the health-based standard can be manipulated to achieve any desired outcome for a WQS and DEP’s use of the UF of 30 times in this instance is excessive and unjustifiable. (7)

Response:

The Department develops requested criteria in accordance with policies found in 25 Pa Code Chapter 16 (Water Quality Toxics management Strategy – Statement of Policy), and more specifically in the case for molybdenum, in accordance with § 16.32 (relating to guidelines for developing human health criteria for threshold level toxic effects).

Based on provisions in § 16.32(c)(2) “If EPA criteria have been evaluated, and have been determined to be inadequate to protect designated uses, or when no criteria have been developed for a substance identified or expected in a discharge, the Department will develop criteria following EPA’s standard toxicological procedures outlined in Exhibit 3-1 of the *Water Quality Standards Handbook, Second Edition, EPA 823-0-94-005A, August, 1994*, as amended and updated.” EPA’s toxicological procedures have been updated and are reflected in the *EPA Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health – 2000*.

The Department used information from IRIS to obtain supporting studies in developing a criterion for Mo. IRIS, is EPA’s electronic database, which is prepared and maintained by the EPA’s National Center for Environmental Assessment (NCEA) within the Office of Research and Development (ORD), containing information on human health effects that may result from exposure to various substances in the environment. Additional

sources of toxicity information were obtained from the IOM (Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc(2000) Food and Nutrition, National Academy of Press), at the request of Langeloth Metallurgical Co, and as recommended and approved by US EPA.

DEP's calculation of the Mo criterion is based on the peer-reviewed toxicity data and protocols listed in an earlier response. The uncertainty factor (UF) of 30 is recommended in the IRIS toxicity report, and the report published by the National Academies Press. The UF was also approved by a senior toxicologist in the US EPA Office of Water and by a water quality standards coordinator in US EPA Region 3.

US EPA Headquarters staff reviewed and concurred that the Department used the appropriate data, and methodologies to develop the proposed recommended criterion for molybdenum.

Comment:

The proposed Mo standard did not consider the most recent and technically justifiable toxicological data (Pandey and Singh, 2002), and was calculated improperly. (5, 7) It was also suggested the Department should use the Benchmark Dose Method (BDM), which the commentator believes EPA now recommends using as an improved way to estimate the point of departure for deriving toxicity factors. This was described as an improvement over using the NOAEL/LOAEL (no observed adverse effects level/lowest observed adverse effects level) approach used by the Department. (5)

Response:

The Department originally developed a criterion for Mo using only toxicity data available in the IRIS data base. At the request of LMC, US EPA headquarters approved supplementing the IRIS database with the peer-reviewed toxicity report from the IOM, published by the National Academies Press. This updated combined dataset was then used to develop the best available scientifically calculated Mo criterion. The report by Pandey and Singh submitted by the commentator presents a single study based on the evaluation of selected male reproductive endpoints. This does not represent the most sensitive study population or response to Mo toxicity when compared to the IRIS and IOM studies.

The Department sought additional guidance from US EPA Office of Science and Technology on the use of the BDM. While US EPA has approved the use of the BDM, it cannot be based on a single study, as suggested by the commentator. Data input to the BDM must be derived from several critical studies designed to establish the most sensitive toxic response.

Comment:

If adopted, the Mo standard should apply at the point of existing or planned surface potable water supply withdrawal, per 25 Pa. Code section 96.3(d) (5, 7)

Response:

The potable water supply use is protected statewide. Moving the point of regulation for Mo to the water supply intake will leave the intervening stream reach vulnerable to the human health toxic effects associated with this pollutant.

Site-Specific Criteria Development:

Comment:

Commentator recommended that section 93.8d(2) specify that, when the waters in question contain federally-listed, threatened or endangered species, the Department will coordinate with the US Fish and Wildlife Service from the study phase through to the final decision making process, to ensure the listed species are protected. (1)

Response:

The Department currently coordinates this consultation with the US Fish and Wildlife Service through the US Environmental Protection Agency and will continue to do so.

Comment:

PA is proposing to add language to the new § 93.8d(2)(b) to provide reference to various other procedures and guidances that may be considered when developing site-specific criteria. EPA is recommending that PA only refer generally to “PADEP and EPA procedures and guidances” in this section, and to refer the reader to Chapter 16, where a more inclusive list of acceptable methods, and an explanation of their intended applications, can be maintained. (6)

Response:

The references in § 93.8d(b) to specific US EPA and PADEP guidance or acceptable methods is not intended to be limiting. As such, this section also indicates that other guidance approved by the Department, which is based on other EPA approved or scientifically defensible methodologies, may be used. Section 93.8d(c) also indicates that a proposed plan of study is to be submitted to the Department prior to conducting these studies.

Section 93.9 and Stream Drainage Lists:

Comment:

In section 93.9(b) change the word “standard” to “criterion” in the amendment that indicates “if a water quality standard is more stringent than those in this title,” to insure use of comparative numeric criteria rather than qualitative or narrative standards. (2, 4)

Response:

In this context, the Department is referring specifically to the larger concept of the water quality standards, which includes the protected uses, the narrative and specific numeric criteria to protect the uses, and antidegradation provisions that apply to shared or downstream waters.

Comment:

US EPA noted in their comments that Newtown Creek, which is in Drairage List E (§ 93.9e), is spelled incorrectly, and is described as being in Berks rather than Bucks County. They note that corrections have not been proposed in this action, but they are bringing it to the Board's attention for consideration. (10)

Response:

Thank you for your comment. The Department has notified the Legislative Reference Bureau, which has agreed to publish a corrective amendment since the error was generated following codification of revisions to this portion of the Code that resulted during a previous rulemaking. Therefore, the Board is not required to take any further action on this correction.

Comment:

In § 93.9x, the Board is adopting by reference the Federal water quality standards regulation at 40 CFR 131.41, as applicable to the water contact use in Lake Erie. EPA understands that this will incorporate the criteria listed at 40 CFR 131.41(c). We recommend that the Board specifically reference 40 CFR 131.41(c). This would avoid confusion which could arise from seeming to adopt 40 CFR 131.41 (c) and 131.41(d). To include 40 CFR 131.4(d) would appear to contradict the effort of the State itself adopting the criteria and the language in 40 CFR 131.41 limiting the application of the Federal criteria upon EPA's approval of such adoption. (6)

Response:

The Department reviewed the concern that there may be confusion if the entire section 40 CFR 131.41 is adopted by reference. The recommendation to only adopt paragraph (c) of that section will add to confusion regarding implementation of the new standard and will not incorporate the definitions for the categories of use (high, moderate, light and infrequent). The regulation in paragraph (d) clearly articulates when state-adopted criteria apply and its incorporation does not appear to contradict any future state effort to develop criteria. On final rulemaking, the Department will recommend to the Board that section 40 CFR 131.41 (except paragraph (f)) be incorporated by reference. The requirements for schedules of compliance referenced in paragraph (f) are addressed in 25 Pa Code Chapter 92.

Comments Regarding Chapter 16

Comment:

In §§ 16.11(b), 16.32(c)(2) and 16.33(f)(2) the Board is proposing to add citations to clarify that EPA has added new methodologies for the development of human health criteria. This section mentions the *National Recommended Water Quality Criteria 2002*. EPA suggests that the structure of the sentence could imply that this document is guidance for developing criteria, whereas it actually housed EPA's specific criteria recommendations. Also note that this document has been updated by EPA to reflect published information issued in 2002 and 2003. EPA recommends the sentence be

modified to read: “The EPA has updated the criteria or issued new criteria since 1980 based on new data, and more recently, new methodologies for developing human health criteria as summarized in the *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health* (EPA-822-B-00-004, October 2000). EPA’s current criteria recommendations can be found in the National Recommended Water Quality Criteria (EPA-822-H-04-001, 2004), as amended and updated.” (6)

Response:

Thank you for your comment. This change will be incorporated in the final rulemaking.

Comment:

In § 16.32(b), Pennsylvania is proposing to replace “bioaccumulation” with “bioconcentration.” It should be noted that EPA now recommends the use of bioaccumulation factors (BAFs) in the 2000 *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health*, although until BAFs can be developed, EPA continues to accept the use of bioconcentration factors (BCFs). (6)

Response:

Thank you for your comment. The Department intends to follow EPA’s recommendations to use BAF’s, but if not available, will use BCF’s until the BAF is developed.

Comment:

The Department needs to clarify what will be included in Appendix A, Table 1. In § 16.51(a) it is stated that this Appendix will list site-specific human health and aquatic life criteria that have been developed or reviewed and approved by the Department. However, the Summary of Amendments for Chapter 16 indicates that “site-specific criteria that are developed or approved by the Department will be housed in Appendix A, Table 1 until a time that there is an opportunity for a final rulemaking by the Board that incorporates the criteria into Chapter 93, Table 5.” EPA would support the permanent placement of site-specific criteria in Appendix A, Table 1 of Chapter 16, but does not believe that Chapter 93, Table 5 is an appropriate location for site-specific criteria. Please provide clarification on how DEP intends to use Appendix A, Table 1. (6, 10)

Response:

The Department provided additional clarification in Chapter 16, as well as Chapter 93. Appendix A, Table 1 will be used as a temporary location for newly developed site-specific criteria. These new site-specific criteria will be incorporated, through rulemaking actions, into the appropriate portion of §§ 93.9a – 93.9z that relates to “Exceptions to Specific Criteria”.

Other Comments

Comments Regarding Chapter 96:

Comment:

Why are PWS water quality standards applied differently for different parameters with no explanation? Six of the 10 WQS (identified for PWS use) listed in Chapter 93 are listed in section 96.3. There is no explanation why color, iron, manganese and bacteria are not listed in section 96.3. Was it arbitrary for those selected, or are the non-listed parameters excluded in error? (4)

Response:

Since 1985 (15 Pa.B. 551), the Environmental Quality Board differentiated between the points of application for the criteria associated with TDS, nitrite-nitrate nitrogen, phenolics and fluoride. The points of application for these specific pollutants were identified as the point of withdrawal of potable water supply systems for protection of the statewide potable water use. The Board also indicated that the point of application for other uses (such as fish and aquatic life) is the point of wastewater discharge.

In 2002 (32 Pa.B. 6101), the Board added sulfates and chlorides to this list because there are no adverse human health effects from these substances at the levels they are regulated. The Board further states that effluent limitations required for discharges of these substances are calculated using critical (or stringent) conditions that include a requirement that the criteria be met 99% of the time, even at the low-flow condition known as Q7-10 (that is, the lowest 7-day consecutive flow in a 10-year period), a condition that is seldom reached, even in drought conditions. This provides an additional margin of safety built into the effluent limitations to protect the potable water supplies, prior to withdrawal. In addition, other surface water uses will be protected by application of general criteria and other criteria listed in §§ 93.6 and 93.7 (relating to general water quality criteria; and specific water quality criteria).

The Department is currently evaluating this provision as part of a comprehensive review of 25 Pa Code Chapter 96.

**List of Commentators
Triennial Review of Water Quality Standards
May 2008**

ID	Name/Address	Submitted 1-Page Summary	Provided Testimony	Requested Final Rulemaking
1.	David Densmore US Department of the Interior Fish and Wildlife Service Pennsylvania Field Office State College, PA			
2.	Gene Barr, Vice President Government and Public Affairs Pennsylvania Chamber of Business and Industry Harrisburg, PA			
3.	Douglas J. Austen, Ph.D., Executive Director Pennsylvania Fish and Boat Commission Harrisburg, PA 17106	X		
4.	George Ellis, President Pennsylvania Coal Association Harrisburg, PA 17101			
5.	Carmen Venezia Manager, Safety and Environment Osram Sylvania Towanda, PA 18848	X		
6.	Denise P. Hakowski Water Quality Standards Specialist Office of Standards, Assessment & Information Mgmt Water Protection Division U.S. Environmental Protection Agency, Region III Philadelphia, PA 19103		X	
7.	Robert R. Dorfler Vice President and General Manager Langeloth Metallurgical Company Langeloth, PA 15054			
8.	Cheryl Hicks, Legislative Director (on behalf of) Senator J. Barry Stout 46 th Senatorial District Eighty Four, PA 15330		X	
9.	Thomas Ondrejko Metallurgical Engineer Langeloth Metallurgical Company Langeloth, PA 15054		X	
10.	Independent Regulatory Review Commission Harrisburg, PA 17101			



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October 7, 2008

Policy Office

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Kim Kaufman, Executive Director
Independent Regulatory Review Commission
333 Market Street, 14th Floor
Harrisburg, PA 17120

RE: Final – Form Rulemaking – Triennial Review of Water Quality Standards (#7-421)
Final – Form Rulemaking – Hazardous Waste Amendments (#7-409)
Final – Form Rulemaking – Diesel Vehicle Idling (#7-422)
Final – Form Rulemaking (with notice of proposed rulemaking omitted): Clean Air Interstate Rule – Repeal (#7-429)

Dear Mr. Kaufmann:

Pursuant to Section 5.1(a) of the Regulatory Review Act, please find enclosed copies of four final-form rulemakings for review and comment by the Independent Regulatory Review Commission. The Environmental Quality Board (EQB) approved these final-form rulemakings at its September 16, 2008, meeting. Summaries of each rulemaking are as follows:

Triennial Review of Water Quality Standards: The Triennial Review of Water Quality Standards final rulemaking constitutes Pennsylvania's current triennial review of its water quality standards. The Federal Clean Water Act requires that states periodically, but at least once every three years, review and revise as necessary, their water quality standards. Pennsylvania's water quality standards, which are codified in Chapter 93 and Chapter 92, are designed to implement the requirements of the Clean Streams Law and the Federal Clean Water Act. The final form rulemaking being considered will: update the water quality criteria; merge sections of Chapter 16 (Water Quality Toxics Management Strategy – Statement of Policy) into Chapter 93 (Water Quality Standards); add a definition in § 93.1 to clarify the term "conventional treatment" for potable water supply (PWS) that is used in § 93.3, Table 1; clarify in the footnote to Table 3 in § 93.7 that other sensitive "critical uses" may apply; verify current exceptions to fishable/swimmable waters; and correct and change drainage lists and other typographic and grammatical errors. Final amendments to the Triennial Review rulemaking, once approved by the Commonwealth, will be submitted to the U.S. EPA for approval.

The EQB approved the proposed rulemaking at its October 16, 2007, meeting. The proposed rulemaking was published in the *Pennsylvania Bulletin* on January 12, 2008, with a 45-day public comment period and two public meetings and hearings. The Legislative Reference Bureau (LRB) published a correction in the *Pennsylvania Bulletin* on February 2, 2008, to correct the criteria for two chemicals found in the proposed Table 5 of § 93.8c. In addition, in response to a public request, the

public comment period was extended an additional 30 days and closed on March 27, 2008, as published in the *Pennsylvania Bulletin* on February 23, 2008.

Comments on the proposed rulemaking were received from ten commentators including the Independent Regulatory Review Commission (IRRC). A majority of the comments received involved requests for the Board to justify the proposed statewide criterion for molybdenum (Mo), as most commentators felt that a statewide criterion, as opposed to a facility specific discharge limitation, is not appropriate. Other commentators questioned the Department's methodology in developing the statewide criterion for Mo and countered that the proposed discharge limitation could not be met by any current treatment technologies. Some commentators also questioned the toxicity of Mo and whether it is a threat to human health.

The Department discussed the final-form rulemaking with the Water Resources Advisory Committee (WRAC) on July 22, 2008. Although WRAC unanimously approved the final rulemaking for consideration by the EQB, the committee offered suggestions for the definition of "conventional treatment", as well as noted that some committee members' objected to the proposed statewide criterion for Mo. The committee's recommendations for the definition of "conventional treatment" are incorporated into the definition as it now appears in the Annex. In response to the comments over Mo, the Department maintains that a statewide criterion for Mo is needed as there are numerous major facilities across Pennsylvania that are discharging Mo and a statewide criterion would provide consistent protection limits. The U.S. EPA Headquarters and EPA Region 3 staff reviewed and determined that the Department used the appropriate data and methodologies to develop the recommended statewide human health criterion for Mo.

Hazardous Waste Amendments: Various amendments are contained in this final rulemaking, which will affect persons who generate, store, transport, dispose or treat hazardous waste in Pennsylvania. The rulemaking removes obsolete provisions and corrects inaccurate references currently in the regulations; deletes the outdated co-product transition scheme; and simplifies the reporting requirements for hazardous waste manifests and universal wastes to eliminate unnecessary reports and to reduce paperwork requirements. The rulemaking also proposes the addition of two new categories of universal wastes, including oil-based finishes (paint, varnishes, stains, etc.) and silver containing spent photographic solutions. Universal wastes are managed under reduced requirements in order to encourage recycling and proper management. The regulations also improve the current permitting process by incorporating the federal standardized permits provision, which provides a streamlined process for generators of hazardous waste to obtain a permit to store waste for greater than 90 days. A standardized permit process is also available to companies that generate hazardous waste at various locations but want to establish a single treatment facility at one of these locations to treat hazardous waste generated at all locations. The final-form rulemaking also includes a minor correction to the regulation for corrective action for solid waste management units. This correction will eliminate an impediment for Pennsylvania to receive federal authorization for the Resource Conservation and Recovery Act (RCRA) Corrective Action program, which would provide increased flexibility and further encourage brownfields redevelopment

The proposed rulemaking was published in the *Pennsylvania Bulletin* on July 14, 2007, commencing a 30-day public comment period. During the public comment period, the EQB received comments on the rulemaking from 11 commentators, including Senators Musto and White, Representative Hutchinson, and IRRC. The predominant issue raised in the majority of comments submitted on the proposed rulemaking was the Department's proposal to change the bonding

requirements for closure and post-closure care of a hazardous waste storage, treatment or disposal facility. Specifically, the Department proposed that the financial test and corporate guarantee for closure be eliminated from the regulations and replaced with a provision for closure insurance, as provided for in the federal regulations. This recommendation was based on the Department's experience with companies suddenly losing the ability to meet the requirements of the financial test with no means of replacing collateral available or entering bankruptcy. In the final-form rulemaking, the Department's proposal is eliminated, thereby retaining the financial test and corporate guarantee provisions as viable options to satisfy the bond requirement. The U.S. EPA is currently conducting a national comprehensive study to review financial assurance requirements, which may result in changes to the federal requirements including the financial test and corporate guarantee. The Department feels it is best to suspend changes to Pennsylvania's financial test requirements at this time, until the results of EPA's study can be thoroughly examined.

The Solid Waste Advisory Committee reviewed the final-form rulemaking on April 10, 2008. At that meeting, SWAC unanimously approved the final rulemaking for consideration by the EQB.

Diesel Vehicle Idling (25 Pa Code, Chapters 121 and 126): This final-form rulemaking, which was initiated through a petition to the EQB by the Clean Air Board of Central PA, adds a new Subchapter F to Chapter 126 to restrict any person from idling a diesel-powered motor vehicle with a gross vehicle weight rating of 10,001 pounds or more, or allowing such idling to occur on their property, for more than a total of five minutes in any continuous 60-minute period. A number of exemptions are included in the rulemaking to allow idling under certain circumstances, including a temporary exemption for driver comfort during hot and cold weather (expires May 1, 2010), and exemptions applying when idling is necessary for maintenance and safety considerations; loading and unloading activities; and for sampling, weighing, and for vehicles waiting to load or unload. In addition, vehicles displaying a California label indicating they are less polluting are also permitted to idle.

Through the implementation of this rulemaking, the Department estimates that 1,610 tons of NO_x will be reduced annually, as well as 45 tons of volatile organic compounds. Once the temperature exemption expires in 2010, the Department estimates that an additional 30 tons of particulate matter will also be reduced in the Commonwealth. These emission reductions are not only a part of the Commonwealth's efforts to achieve and maintain the health-based ozone and PM_{2.5} air quality standards, but will also reduce direct exposure to diesel particulate emissions, a likely carcinogen. Furthermore, the U.S. EPA estimates that idling heavy-duty vehicles can consume about one gallon of diesel fuel for every hour of idling time, resulting in more than 21 pounds of CO₂ emissions, a major greenhouse gas. Therefore, the idling restrictions contained in this rulemaking will not only reduce greenhouse gas emission, but fuel usage, which will be a cost savings to vehicle owners and operators. If adopted by the Board, the final-form rulemaking will be submitted to the EPA as a revision to the State Implementation Plan.

The proposed rulemaking was published in the January 12, 2008, edition of the *Pennsylvania Bulletin*, commencing the public comment period. During the 65-day public comment period on the proposed rulemaking, the EQB received 568 comments, including petitions with over 2,200 signatures in support. Testimony on the proposed rulemaking was also received at three public hearings that occurred in Allentown on February 12, 2008; Harrisburg on February 13, 2008; and Pittsburgh on February 15, 2008. A majority of the comments received were supportive of the rulemaking and its intended environmental and health benefits; however, some commentators expressed concerns with several aspects of the rulemaking. Specifically, concerns were raised by commentators regarding the regulatory provision that

would require the exhaust of auxiliary power systems (APS) on vehicles with MY 2007 or newer engines to be routed through the main engine's exhaust system. In lieu of this requirement, the regulations specify that an APS, labeled as being verified by CARB for having advanced particulate control, could be used. In reviewing comments on this provision, the Department concluded that since APS emission reduction and alternative technology fields are still developing, it would omit the requirement in the final-form rulemaking and would continue to monitor the technological developments until a more satisfactory approach can be identified. Commentators also expressed concern with the Department's proposal to allow idling of vehicles with MY 2007 and newer if the vehicle displayed a CARB label, and suggested that if such an idling exemption was provided, it should not be limited to vehicles of model year 2007 and newer because retrofits are being developed. The Department considered the comments and amended the rulemaking by removing any reference to a specific model year for this regulatory provision.

Several commentators, including IRRC, also provided substantive comments concerning their opposition to the proposal that would hold property owners responsible for the idling of vehicles on their property. The same concerns regarding the responsibility of property owners to uphold idling restrictions were deliberated by the Air Quality Technical Advisory Committee (AQTAC) when it reviewed the final-form rulemaking on May 23, 2008. While AQTAC voted to present the final-form rulemaking to the EQB, it did so on the condition that the words "or allow" would be removed from § 126.611 of the final rulemaking to limit the idling restriction responsibilities of property owners. Despite these collective concerns, the Department has retained the requirement in the final-form rulemaking, as it maintains that shared responsibility by owners and operators of facilities and owners and operators of vehicles is essential to reducing idling effectively. In the EQB's final-form regulation, requirements are also added to require certain locations to post signs about the idling prohibition regulations in order to aid the Department with public education about the rule.

Clean Air Interstate Rule – Repeal: This final rulemaking (with notice of proposed rulemaking omitted) repeals the Clean Air Interstate Rule (CAIR), which was previously adopted by the Board on December 18, 2007, and published in the Pennsylvania Bulletin on April 22, 2008. The rulemaking is being processed under procedures for final-omitted regulations as authorized under 45 P.S. §1204 (relating to omission of notice of proposed rulemaking). Omission of notice of proposed rulemaking is appropriate for these regulations because the notice of proposed rulemaking procedure specified in sections 201 and 202 of the Commonwealth Document Law (45 P.S. §§1201 and 1202) is, in this instance, impracticable, unnecessary and contrary to the public interest.

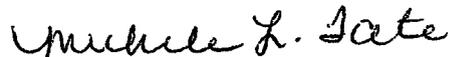
The U.S. Environmental Protection Agency (EPA) adopted the CAIR in 2005. CAIR included model rules for a 28-state and District of Columbia emission trading program to reduce the interstate transport of NO_x and sulfur dioxide. Following CAIR's adoption, numerous petitions for review were filed in the Court of Appeals for the District of Columbia Circuit; however, the Department did not file a petition. The Department adopted a Pennsylvania CAIR on April 12, 2008, incorporating by reference the Federal CAIR model rules and making related regulatory amendments. On July 11, 2008, the District of Columbia Circuit Court of Appeals ruled that CAIR was "fundamentally flawed," and vacated the regulation. The court stated that the NO_x SIP Call continues in CAIR's absence. The NO_x SIP Call is in the Commonwealth's federally-approved SIP.

This final rulemaking (with notice of proposed rulemaking omitted) is necessary to repeal the CAIR provisions to ensure continuity in implementing the NO_x SIP Call regulations and to avoid lost emission reductions, undue confusion, and conflict with the Federal court decision and the

Commonwealth's Federally-approved SIP. The rulemaking will enable the Department to continue the NO_x SIP Call emission allowances that the Commonwealth's CAIR regulations terminated (beginning January 1, 2009). The rulemaking will also repeal the transition provisions, including those applicable to non-EGUs, and reinstate requirements for small sources of NO_x (certain boilers, stationary combustion turbines and stationary internal combustion engines) in the five-county Philadelphia area, as well as enable Portland cement kilns and large stationary internal combustion engines to surrender NO_x Budget Trading Program allowances instead of CAIR allowances. The rulemaking will allow air pollution reductions to continue in accordance with the court ruling and the Commonwealth's approved SIP.

The Department will provide assistance as necessary to facilitate the Commission's review of the above final-form rulemakings under Section 5.1(e) of the Regulatory Review Act. Please contact me at 717-783-8727 if you have any questions or need additional information.

Sincerely,



Michele L. Tate
Regulatory Coordinator

Enclosures



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF POLICY

**TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO
THE REGULATORY REVIEW ACT**

I.D. NUMBER: 7-421

SUBJECT: Triennial Review of Water Quality Standards

AGENCY: DEPARTMENT OF ENVIRONMENTAL PROTECTION

TYPE OF REGULATION

- Proposed Regulation
- Final Regulation
- Final Regulation with Notice of Proposed Rulemaking Omitted
- 120-day Emergency Certification of the Attorney General
- 120-day Emergency Certification of the Governor
- Delivery of Tolled Regulation
 - a. With Revisions
 - b. Without Revisions

INDEPENDENT REGULATORY
REVIEW COMMISSION

2008 OCT -7 PM 2:37

RECEIVED

FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
10/7	<i>[Signature]</i>	Majority Chair, HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
10/7	<i>[Signature]</i>	Minority Chair, HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
10/7	<i>[Signature]</i>	Majority Chair, SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
10.7	<i>[Signature]</i>	Minority Chair, SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
10/7/08	<i>[Signature]</i>	INDEPENDENT REGULATORY REVIEW COMMISSION
_____	_____	ATTORNEY GENERAL (for Final Omitted only)
_____	_____	LEGISLATIVE REFERENCE BUREAU (for Proposed only)