Ohio Environmental Protection Agency

Division of Surface Water

Response to Comments

December 2011

Rule: OAC 3745-1 (Water quality standards rules)

Agency Contact for this Package

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Ohio EPA made available for review and comment draft changes to 18 water quality standards rules in OAC 3745-1 in August 2008. The comment period ended on June 6, 2011. This document identifies all the comments and questions received during this comment period on topics included in the proposed rulemaking. All comments regarding draft revisions that are currently on hold are included in a separate comment summary. These comments will be addressed in future rulemakings.

Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health.

In an effort to help you review this document, the comments and questions are grouped by topic and organized in a consistent format. The name of the commenter follows the comment in parentheses.

Note: This document contains the comments and responses for the subset of rule revisions moving forward at this time. The following draft rule changes are on hold until a future rulemaking. The comments received during this interested party review, organized in a separate document, will be responded to at that time.

- Drainage beneficial use
- Navigation beneficial use
- Nutrient criteria for lakes
- Update of special high quality waters listing
- Update of human health criteria for Ohio River and Lake Erie basins
- Stream mitigation

General Comments

Need for Rulemaking

Comment 1: These interrelated rule packages are crucial to the protection of Ohio's water quality and our state's human and environmental health. The proposed rules are far reaching but necessary to fully protect Ohio's water resources. These rules are well tailored to create the consistency and reliability that the regulated community desires and has requested from this agency for years. Therefore, as a whole, the OEC is supportive of the rule packages and urge their swift enactment. Nevertheless, there are provisions of these rules that are of great concern to us as we feel they are contradictory to other provisions in the rules and jeopardize water quality in our most sensitive waters in violation of the Clean Water Act. (Ohio Environmental Council)

Response 1: Comment acknowledged.

Comment 2: The Comprehensive Water Rules represent a significant expansion of the already complex regulatory programs which cumulatively limit the beneficial use of Ohio's water resources to the detriment of all Ohioans. What is striking is that Ohio EPA has not effectively communicated any justification for them. In fact, the only justification advanced by Ohio EPA for these expansive proposed rules is the need to conduct a routine five year rule review and a generalized statement that "rules will ensure that water quality is maintained at a level that is protective of public health and the environment." See Ohio EPA Fact Sheet - Draft Rules - Surface Water Quality Fact Sheet 1 of 3: Questions & Answers OAC Chapters 3745-1 and 3745-32. What Ohio EPA has never articulated is why the current rules, if properly and consistently applied, are insufficient to meet all the legal requirements imposed by State and Federal law. It is inconsistent with the express policy of Ohio, as articulated by the Governor and the General Assembly, to increase the regulatory burdens facing all Ohioans when there is no legal requirement to do so. We are not aware of any mandate or deficiency in the current rules that would requires such a complex, burdensome and vague expansion of Ohio EPA's regulatory programs. Unless and until Ohio EPA has adequately explained why these proposed rule changes are necessary, Ohio EPA should not pursue the adoption of these rule packages.

The failure of Ohio EPA to articulate any specific justification for the proposed rules is attributable in part to the fact that there is no pressing need, from a water quality standpoint, to change the current program in such a comprehensive way. Ohio EPA originally proposed prior versions of three of the four rule packages in the Comprehensive Water Rules in the fall of 2008. At that time, Ohio EPA acknowledged that Ohio's existing water quality rules were the structure by which Ohio was able to meet

water quality goals for 80% of Ohio's large rivers years ahead of the schedules mandated by State and Federal law. To the best of our ability to determine, Ohio's water quality has not significantly changed since 2008, and any such change is increased improvement. As such, the question remains-why does Ohio EPA feel the need to propose significant new and complex rules? The fact that the Ohio EPA has been working on these rules for almost a decade does not outweigh the fundamental fact that there is no need for such a sweeping change in the rules because Ohio's current rules are sufficient to meet any Federal or State requirements related to water quality. (Trade Association Coalition)

Response 2: As outlined in the factsheet Ohio EPA Division of Surface Water prepared for this rulemaking referenced above in the comment, Ohio EPA's water quality standards served the Agency well when addressing the point source pollution problems of the '80s and '90s. Ohio's 23 largest rivers, many of them grossly polluted and devoid of fish only 30 years ago, have been restored to the point that 93% of their combined lengths now meet aquatic life standards. However, many smaller streams and rivers are adversely impacted by complex nonpoint source pollution problems. Today's water pollution problems are different in nature and require updated approaches and improved regulations. Revisions are necessary to the current rules to make the structure of the standards and permit programs fit the types of projects and water quality impacts that are occurring today. The following is a brief outline for each rule package which contains justifications for the rulemakings.

Water Quality Standards rulemaking

- Need to address physical impacts to smaller streams
- Incorporate lake criteria to support the Inland Lakes program
- Incorporate primary headwater habitat criteria to support the 401 program
- Address conflict with Ohio's Ditch law
- Update chemical criteria based on revised U.S. EPA, ORSANCO standards
- Five year rule review required by state law
- Three year rule review required by federal law

Antidegradation rulemaking

- Break out requirements for dredge & fill projects to simplify rule
- Incorporate "loss of use" concept for streams to support the 401 program
- Nutrient design criteria for wastewater treatment plants
- Five year rule review required by state law

401 Water Quality Certification rulemaking

- Address recent court decisions which have left the state without a permanent permitting mechanism for "isolated streams"
- Include antidegradation rule requirements for dredge & fill projects
- Address permitting procedural ambiguities
- Rescind outdated fee rule
- Five year rule review required by state law

Stream Mitigation rulemaking

- Although not moving forward at this time, the stream mitigation rule was intended to establish consistent and appropriate mitigation for impacts to streams and more timely review of dredge & fill projects

Comment 3: The fact that the current rules are sufficient to meet State and Federal water quality related mandates suggests that the Comprehensive Water Rules are, in fact, unlawful under both current and prospective statutes governing administrative agency rulemaking. As discussed in more detail below, Governor Kasich, working closely with the General Assembly, has restructured Ohio's administrative procedure statutes to require administrative agencies to more fully review their proposed rules to ensure that all regulations are necessary and that they do not present unreasonable or unnecessary obstacles to economic growth. Further, it was the expressed intent of the Governor and the General Assembly that administrative agencies adopt rules that are fair, effective, necessary and written to impose the lowest cost on Ohioans necessary to achieve any applicable legal mandates. Although these new requirements are not technically effective for administrative agencies until the beginning of 2012, it is inconsistent with the Governor's attempts to revitalize Ohio's economy to force through the most comprehensive set of changes to Ohio EPA's water regulatory programs since their initial adoption in the 1970s without applying these new legal standards for agency rulemaking. (Trade Association Coalition)

Response 3: The current rules are not sufficient to meet State and Federal rule review and update requirements. The state would not be undertaking rulemaking that were not necessary for program function.

We are aware of Governor Kasich's Executive Order 2011-01K and the 129th General Assembly's Senate Bill 2 which creates the Common Sense Initiative (CSI) Office. We have been operating in accordance with Governor Strickland's Executive Order 2008-04S in accordance with Governor Kasich's order. The first step of which is to post a notice of the rulemaking through the established electronic notification process. Ohio EPA performed the e-notification for all four rulemaking packages in December 2010. Ohio EPA performs this step during our Interested Party Review step, which is the step we are currently at. When Ohio EPA reaches the Proposed rule step (when rules are officially filed with the Joint

Committee on Agency Rule Review(JCARR)), the Common Sense Business Reform (CSBR) checklists will be completed and posted online at: http://business.ohio.gov/reform/. Please note that the CSBR checklists contain similar considerations as required by Governor Kasich's order and S.B. 2 as do the forms required by JCARR. In order to prepare for the implementation of S.B. 2, we will also be posting the Business Regulation Impact Analysis form on our website upon filing of the proposed rules with JCARR for review and comment.

Comment 4: First, the Utilities question the purpose, need, and timing of these rules. With the exception of the stream mitigation rules, Ohio EPA released these rules in 2008 and has waited over two years and after the election of a new Governor to issue the final rulemaking package. During that period, the Agency - through separate comment periods - has already revised and promulgated those portions of the Water Quality Rules revisions that were mandated by U.S. EPA. The fact that the Agency moved forward with those revisions while waiting to release the final rule package demonstrates that these revisions were not the Agency's highest priority. Further, these rules include major revisions that the Utilities believe will result in the expenditure of resources for both the regulated economy and the Agency. Given the current state of the economy, the Utilities believe that implementation of these rules will put Ohio at a competitive disadvantage at retaining industry and attracting new business.

While the Utilities would like to thank Ohio EPA for meeting with the regulated community on May 2nd and 3rd to discuss the rulemaking packages, the Utilities were disappointed by the lack of Agency answers to many of the substantive questions raised by the regulated community. Further, the Agency has not articulated the purpose and need for implementation of these rules at this time. Thus, the Utilities believe that before moving forward with these revisions, Ohio EPA must provide informed answers to the questions raised by the regulated community. These answers should be supported by sound technical and scientific data regarding why the Agency is proposing the actions that it is. Without these answers, the regulated community cannot provide substantive comments regarding the Agency's proposed actions.

The Utilities do not believe that Ohio EPA should move forward with the rules as they are currently written. Instead, the Utilities recommend that Ohio EPA meet with the regulated community in some fashion and attempt to revise the rules to minimize the regulatory impact and burden on the regulated community.

However, if Ohio EPA intends to move forward with these rules, the draft rules raise a number of issues, which the Utilities wish to see clarified or revised prior to issuing proposed rules. As such, the Utilities submit these technical initial comments. With these comments, the Utilities hope that

Ohio EPA will improve the rules by providing clarity, certainty, and flexibility for regulated parties. (Ohio Utility Group)

Response 4: The Agency released the water quality standards rulemaking for interested party review in August 2008. At that time the Agency provided fact sheets and other materials outlining the connection of the rule package to three forthcoming rule packages (401 water quality certification, antidegradation and stream mitigation). During this initial interested party review comment period, Ohio EPA received comments from several interested parties, including the Water Task Force of the Ohio Utility Group, requesting closure of the comment period 60 days after the release of the final rule package for interested party review. Ohio EPA agreed to this request and therefore did not move forward on a majority of the rulemakings. Two very small rule makings did occur between August 2008 and now that included the revision of Ohio's recreation criteria from using fecal coliform as the indicator bacteria to E. coli, elimination of mandatory public hearings for dredge & fill projects on Lake Erie, and revisions to the antidegradation rule to settle the appeal of the 2003 rulemaking.

Please see response to Comment 2 for justification for the rulemakings.

Comment 5: The four rulemaking packages contain numerous changes, and the addition of a new permit program, that will impose greater burdens on the regulated community. FirstEnergy questions the need for the additional permitting, fees, modeling, reviews, etc. under the Draft WQS Rules given the existing OEPA programs to address water quality standards. (First Energy)

Response 5: Please note Ohio EPA is not changing what impacts to waters of the state need a permit. We are trying to fill a gap that was left by U.S. Supreme Court decisions in regards to dredge and fill type projects to "isolated streams and lakes". Previously, 401 water quality certifications were issued to impacts to these waters. Since the court decisions, 401 water quality certifications cannot be issued, therefore the state is left with no permanent permitting process in place to approve impacts to these waters. The state water quality permit would establish a permanent, predictable permitting program for impacts to these waters and is necessary to provide for business and economic growth.

Comment 6: The Conservancy is providing comments both in support and with recommendations for changes, in some cases significant changes. We agree that smaller streams are at significant risk of degradation in Ohio. We recognize that stream channelization and drainage practices are significant threats to stream health and downstream uses and water quality. We recognize that the present system of stream mitigation negotiations has resulted in inadequate mitigation and inconsistent treatment of damages and results. Establishment of primary headwater habitat (3745-1-07(F)(9))

could help to protect a habitat type that is too often overlooked and lost, as well as helping to protect some ecological functions and downstream uses.

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We strongly support:

- the proposal to establish a new use designation "Primary Headwater Habitat"(PHWH) in 3745-1-07;
- the establishment of a Section 401 Certification and a state water quality permit for "isolated" streams in 3745-32-02; and
- improvements to stream mitigation in Ohio through a new review protocol and standards to ensure higher mitigation quality in 3745-1-56. (The Nature Conservancy)

Response 6: Comment acknowledged.

Comment 7: The Ohio Chamber would like to take this opportunity to express our opposition and concern with the proposed four inter-related water quality rule packages released by the Ohio Environmental Protection Agency (Ohio EPA). The Ohio Chamber of Commerce is the state's largest and most diverse statewide business association. Our nearly 4,500 members come from every major industry sector, every county of our state, and range in size from one employee to thousands of employees. The proposed rules would have a significant impact on Ohio's economy and the ability of Ohio businesses to remain competitive with other states.

Ohio EPA has indicated that the four rulemaking packages represent the most extensive revisions to the water quality rule in 30 years. Ohio EPA has previously indicated Ohio has been able to meet water quality goals for 80 percent of the state's large rivers years ahead of schedule. So, the Ohio Chamber questions the need for such a major rule rewrite, especially in light of Ohio's economic challenges. Furthermore, the first rule package was released almost three years ago, so we once again question the need for these rules. Ohio EPA should not adopt these rules without a significantly more detailed analysis of the costs associated with these rules, and also the science and policy decisions underlying them.

Our comments are broad in nature and very briefly summarize our concern that the proposed rules are overly cumbersome, go beyond federal requirements in many circumstances and are unnecessary. Additionally, it has taken many of our members countless hours and tens of thousands of dollars just to prepare comments for these rules let alone begin complying with them. I have prepared a couple of examples to show where the rules go beyond federal requirements or are unnecessary. (Ohio Chamber of Commerce)

Response 7: Please see the response to comment 2 above regarding the need for these rulemakings.

Rulemaking Process and Moving Forward With Rulemaking

Comment 8: While these rules are interrelated and some provisions are interdependent, the OEC advises the Agency to separate portions of these rules to enact in this current rulemaking effort while holding off on other portions to allow time for further review. As detailed above, the development of the Primary Headwater Habitat Use Designations, Stream Mitigation Protocol and the State Water Quality Permit are positive, well over-due changes to Ohio's regulations, and these proposed rules should be finalized in this rulemaking with the few suggested changes and clarifications. The proposed Drainage Use Designations and Base Aquatic Life Use should be thoroughly analyzed and rewritten in a future rulemaking due to the great practical, technical and legal deficiencies in these rules. (Ohio Environmental Council)

Response 8: Comment acknowledged. Upon review of the comments submitted, the agency has decided to hold back a few of the draft rule revisions for further discussion, analysis and dialogue with stakeholders.

Comment 9: The comments above have briefly outlined a couple of the problems we see with the draft revisions and believe they will simply add unnecessary burdens to the regulated community. On behalf of Ohio's business community the Chamber urges Ohio EPA to reconsider its decision to rewrite its water quality rules. If the agency feels compelled to move forward with changes to the water quality standards, the Ohio Chamber requests that it not use these rules as a template but instead facilitates discussions with the regulated community to identify the areas of concerns and possible ways to address those concerns.

As Ohio's leading business group, it is the Chamber's duty to protect and represent the interests of its member companies. These complex, burdensome and costly rules are not necessarily required by federal regulations or Ohio Revised Code, so adoption of them without further consideration of the economic costs and the validity of the science underlying them is not in the best interest of Ohio. Our comments are in no way exhaustive and we reserve the right to provide further comments as we continue to review the many documents associated with these rules. Furthermore, the Ohio Chamber requests that Ohio EPA provide an additional comment period should they choose to move forward with the rules with changes. (Ohio Chamber of Commerce)

Response 9: Please note that we are only at the Interested Party Review stage in the rulemaking process. When the rules are proposed with JCARR, there will be another public comment period and at least one public hearing. Please

see the following Ohio EPA factsheet for details on our rulemaking process: http://www.epa.ohio.gov/portals/33/rules/guide.pdf.

Comment 10: As noted above, AOMWA believes our dialogue on this matter has been productive and it is committed to continuing these discussions with Ohio EPA as it moves forward. We also are supportive of Ohio EPA's plan to move forward with portions of this package in smaller increments. It will allow for more focused consideration of these key revisions. (AOMWA)

Response 10: Comment acknowledged.

Comment 11: The willingness of Ohio EPA to propose comprehensive changes to the water quality rules governing all waters of the State without conducting more public hearings and greater public outreach, not to mention a more comprehensive assessment of the costs of these changes, runs counter to both Ohio and Federal law. The actions of the Agency also have the practical effect of limiting the ability of impacted members of the public to comment on the Comprehensive Water Rules by essentially burying interested parties in hundreds of pages of complex rules and supporting documentation. The changes proposed by Ohio EPA in the Comprehensive Water Rules will have an impact on every single landowner in Ohio that has any surface water rights, however limited. That said, the Comprehensive Water Rules are so dense, complicated and devoid of supporting documentation that gives reasonable notice of the changes to the public, that only the most sophisticated landowners with significant resources have even a chance of ascertaining the actual impacts of these rules on their particular interests. The dictates of due process and fair notice, not to mention the specific requirements of applicable Federal law, require Ohio EPA to conduct significantly more effective public outreach before imposing increased regulatory burdens on every single landowner in Ohio. (Trade Association Coalition)

Response 11: Please note that we are only at the Interested Party Review stage in the rulemaking process. Several of the items noted by the commenter that Ohio EPA did not yet prepare for the public will be available when the rules are proposed with JCARR in accordance with standard rulemaking protocol (please see the fact sheet link referenced in the response to comment 9 above for more information on Ohio EPA's rulemaking process). It should also be noted that Ohio EPA has conducted extensive public outreach on these rulemakings including participation in the Stream Mitigation Rule Workgroup, Ohio DNR Rural Drainage Advisory Committee, presentations at water/wastewater association meetings, meetings with at least 11 interest groups, news releases and notification of the rulemakings available for interested party review and comment through the DSW rulemaking interested party mailing list. DSW also prepared several fact sheets outlining and explaining the draft revisions to the rules to assist interested

parties in focusing their comments on portions of the rulemakings of interest to them.

Comment 12: The Comprehensive Water Rules are not necessary, introduce additional complexity into Ohio's regulatory processes, contain many overlapping provisions which will make compliance difficult and represent a significant attempted expansion of Ohio EPA's regulatory reach. The complexity of the Comprehensive Water Rules, coupled with numerous vague standards, raise serious concerns about Ohio EPA's ability to fairly and efficiently implement the rules. Rules should be transparent and clearly apprise the public of what standards apply to activities. In stark contrast, the Comprehensive Water Rules are replete with vague standards that leave far too many unanswered questions, or which rely too heavily on the discretion of the Director. These Comprehensive Water Rules will create crippling regulatory uncertainty, greatly increase the cost of economic development and reduce Ohio's ability to encourage development in every business sector in Ohio. It is also unclear where Ohio EPA will secure the necessary resources to implement these rules, review the extensive data and technical documentation required, monitor the mitigation projects and issue timely decisions.

Without question, the Comprehensive Water Rules are exactly the type of rule package that the Governor and the General Assembly want to subject to significantly increased scrutiny. We are not aware of any compelling reason why Ohio EPA should adopt these rules without, at an absolute minimum, subjecting them to the review that will be required of all administrative rules beginning in 2012. It bears repeating that Ohio EPA has not articulated any pressing need for these Comprehensive Water Rules, nor is the agency under any legal mandate to adopt them. Discretion and good government policy strongly weigh in favor of withdrawing these rules at the very least until they can be reviewed under the new standards adopted into Ohio law this year.

Despite our concerns with the regulatory actions taken by Ohio EPA to date and questions regarding the need for, and legality of, the Comprehensive Water Rules, the Trade Association Coalition has committed significant resources to reviewing the Comprehensive Water Rules and developing the specific comments below. That said, these comments should not be viewed as acquiescence by our group that the Comprehensive Water Rules as currently written or structured are acceptable or that these comments identify the only legal or practical defects in the Comprehensive Water Rules. The Trade Association Coalition remains steadfast in its position that these Comprehensive Water Rules should be withdrawn, and to the extent Ohio EPA can justify the need for any changes to the current regulations, the Agency should work cooperatively with all interested parties to craft logical, common sense rules and limited rules that protect Ohio's waters while protecting Ohio's economy. The two concepts are not

mutually exclusive but they are not served by proposed regulations that are so complex as to effectively prevent anyone from understanding, let alone quantifying, the costs of the Comprehensive Water Rules. (Trade Association Coalition)

Response 12: See responses to several comments above.

Comment 13: The CSI program requires administrative agencies to analyze and justify regulations which have an adverse impact to businesses. As part of this, agency rulemakings will be analyzed based on several characteristics: understandability, effectiveness, efficiency, reduction of adverse impacts on businesses, costs of compliance, consistency, predictability, transparency, flexibility, and alternative means of compliance. Where a regulation deals with environmental protection, CSI requires Ohio EPA to: (i) consider documentation relevant to the need and technological feasibility of the rulemaking, (ii) identify whether the rulemaking is needed to maintain approval to administer/enforce a Federal environmental law or to participate in a Federal environmental program, (iii) identify whether the rulemaking is being adopted to enable the State to obtain approval under a Federal environmental law or program, and (iv) identify whether the rulemaking is more stringent than its federal counterpart, and, if so, the rationale for not incorporating its Federal counterpart. We do not believe that the Comprehensive Water Rules will be able to withstand this type of review. Ohio EPA has offered no evidence of the failure or ineffectiveness of Ohio's current water quality rules, and, in fact, has acknowledged their success in achieving Ohio's water quality goals ahead of schedule. Under the circumstances, there does not appear to be any need for these proposed rules.

Additionally, the Comprehensive Water Rules are so burdensome, costly, and inflexible that they will have a significant and adverse impact on Ohio's businesses, including the ability to plan, develop and make investments for Ohio's future. Given the slowdown in Ohio's economic and business climate and the current efforts of the Governor and the General Assembly to improve the regulatory environment in Ohio, unless Ohio EPA can identify a specific legal mandate that requires such comprehensive changes to Ohio regulations that have met every measurable legal goal for more than 30 years, there is no reason to pursue this rulemaking.

The CSI program requires that any final rules filed with JCARR after January 1, 2012 be subject to an enhanced review to determine if the rules have an adverse impact on business. In light of the significance of the Comprehensive Water Rules to Ohio and the lack of any compelling reason to adopt these rules this year, the Trade Association Coalition requests that to the extent these rules are not withdrawn in their entirety, that the General Assembly be given a chance to review these rules in accordance with

these new requirements for agency rulemaking. (Trade Association Coalition)

Response 13: Please see response to comment 3 above.

Comment 14: The Northeast Ohio Regional Sewer District (NEORSD) appreciates the opportunity to be a part of this rule-making process for the four inter-related water quality rule packages currently available for interested party review. Given the magnitude of this rule-making, we are supportive of Ohio EPA's plan to move forward with smaller, discreet rule-makings to address these rules individually. We would like to offer the following comments for your consideration during the interested party review process and will likely have further comments as the rule-making process continues. (NEORSD)

Response 14: Comment acknowledged.

Comparison With Federal Regulations

Comment 15: Ohio EPA's proposed WQ Rules comprehensively revise Ohio's water quality standards, including water quality standards for 135 different chemicals. Under the WQ Rules, permitted dischargers are required to monitor new parameters and meet stricter effluent levels. As an overarching comment, the Trade Association Coalition objects to Ohio EPA's decision to go beyond the requirements of Federal law without any compelling legal or technical justification for doing so. More concerning, Ohio EPA appears to package the rules such that the rules appear consistent with Federal requirements; however, upon closer review, they are not. For example, with respect to water supply use designations, Ohio EPA asserts that the new, more restrictive limits are consistent with Federal requirements. See proposed O.A.C. 3745-1-40. However, in order to make such a statement, Ohio EPA has inappropriately applied contaminant limits applicable to drinking water under the Safe Drinking Water Act to surface waters. To the extent the proposed rules do not identify and justify those instances where the proposed rules are more stringent than the applicable Federal standards, Ohio EPA's proposed WQ Rules are inappropriately more stringent than Federal regulation. (Trade Association Coalition)

Response 15: Please see the Federal Register at http://www.epa.gov/fedrgstr/EPA-WATER/2009/September/Day-30/w23631.htm. The notice under Part II, states: “The 2000 Human Methodology, along with the Technical Support Documents, provides States and authorized Tribes with guidance to adjust water quality criteria developed by [U.S.] EPA under section 304 to reflect local conditions or to develop their own water quality criteria using scientifically defensible methods. [U.S.] EPA believes that ambient water quality criteria inherently require several risk management decisions that are, in many cases, better made at the State, tribal, or regional level. [U.S.]

EPA encourages States and authorized Tribes to use the final Methodology and Technical Support Documents to develop site-specific water quality criteria to appropriately reflect local conditions." In regard to MCLs, they were applied to surface waters used near drinking water intakes only, which is protective of water systems irrespective of the treatment systems being used. Technical justification of the human health water quality criteria methodology is available at http://water.epa.gov/scitech/swguidance/standards/upload/2005_05_06_criteria_humanhealth_method_complete.pdf, and the individual inputs for each of the 135 chemicals are available upon request.

Comment 16: One of the touchstones of the changes to agency rulemaking authority is the requirement that agencies charged with implementing Federal programs highlight and justify where Ohio regulations, as proposed by that agency, are more stringent than Federal requirements. Ohio EPA has failed to meet this requirement and it has not identified whether the Comprehensive Water Rules are more stringent than their Federal counterparts, and if so, what State purpose is served by making the requirements more stringent. This practical and mandated requirement of the new requirements for administrative rulemaking is critical to making Ohio more competitive as well as making Ohio regulations more transparent. To highlight this deficiency, we have compiled a chart containing some of the proposed rules and identifying their corresponding Federal counterparts, if any. See Attachment A. It appears from this analysis that Ohio EPA has incorporated into this comprehensive action rules that are not present in Federal law or which are more stringent than Federal law and unnecessary to implement a permitting program under the Federal Water Pollution Control Act. It is inconsistent with the intent of the General Assembly to propose rules that are significantly more stringent than Federal requirements and then fail to specifically identify and justify these more stringent proposals in a rulemaking package, particularly one of this magnitude. (Trade Association Coalition)

Response 16: Again, the Agency prepares and releases this information on the forms required by JCARR when rules are filed. We are not yet at the stage in the rulemaking. It should be noted that in several of the cases where the commenter highlighted the Agency is being more stringent than the federal requirements, it is because there are also state laws, rule appeal settlements and court decisions the Agency rules must also be in compliance with. As we have described several times, DSW cannot simply adopt federal requirements for implementing the CWA in all cases. For example, federal regulations require states to have designated uses for all waters but do not specifically list required use designation categories since water resources and uses of them vary across the country.

Comment 17: We also believe that the lack of any justification for adopting the Comprehensive Water Rules runs counter to the existing requirements

found in R.C. Chapter 119 for agency rulemaking. In particular, the authority of the Director to adopt rules under R.C. Chapter 6111 is limited to "governing procedure of hearings, the filing of reports, the issuance of permits, the issuance of water pollution control certificates, and all other matters related to procedure." R.C. 6111.03(G). When read in conjunction with the authority to implement the permitting and other programs of the Federal Water Pollution Control Act, 33 U.S.C. 1251, et. seq., the authority of the Director to adopt rules related to water quality is limited to only those rules necessary to meet Federal requirements. R.C. 6111.03(J). This is consistent with R.C. 6111.041 which requires the Director to adopt water quality standards in accordance with Section 303 of the Federal Water Pollution Control Act, 33 U.S.C. 1313 and conduct hearings following public notice that "specifies the waters to which the standards relate ... " before the adoption or amendment of water quality standards. One of the principle mandates of 33 U.S.C. 1313(c)(2) is that any proposed changes by a State to water quality standards advance the purposes of the Federal Water Pollution Control Act. At a bare minimum, therefore, Ohio EPA is legally required to conduct public hearings that specifically address the changes in water quality standards and how such changes impact specific waters of the State and to justify how the changes in the Comprehensive Water Rules advance the purposes of the Federal Water Pollution Control Act. [1] (Trade Association Coalition)

Response 17: Ohio EPA believes we have the requisite authority to adopt these rules. The Agency will hold at least one public hearing as part of the standard rulemaking process when the rules are proposed with JCARR.

Project Delay

Comment 18: The many changes to the existing rules appear to add layers of requirements that will likely result in projects being delayed and result in contentious interpretations during implementation of projects. The broad language of the Draft WQS Rules in opponents delaying and holding up projects that could aid Ohio's struggling economy. In a constrained economy, this could result in the State of Ohio being challenged in adding jobs and attracting development due to cumbersome and subjective water quality requirements.

OEPA permitting can often require considerable lead time prior to a project. The Draft WQS Rules would make many revisions and add many new requirements that could extend project lead times even further (field evaluations of small streams, for example). OEPA should not expand its water quality programs without determining the adequacy of staffing to handle implementation in a timely fashion. (First Energy Corp.)

Response 18: Ohio EPA was attempting to adopt in rule current permitting requirements and provide for a predictable process for mitigating impacts to streams, which would shorten project review times since the application requirements and mitigation expectations would be clear upfront to the applicant.

Need for Nutrient Criteria

Comment 19: The Nature Conservancy has reviewed the Agency's proposed Water Quality Standards of December 8, 2010. With four separate packages of rules, these are among the most extensive and far-reaching rules proposed in recent years. As you know, this is one of the most comprehensive, fundamental set of changes the Agency ever has proposed, and we support parts of the proposal but not others. We appreciate the Agency's extensive efforts and time taken to explain them, as well as the comment period extension.

At this point, Ohio has not adopted water quality standards for nutrients in streams. If enacted without nutrient standards for streams, because of the removal of biological standards, these rules would lead to a decline in water quality protection in Ohio in a way that would harm biological diversity (such as walleye and small mouth bass), increase harmful algal blooms, degrade drinking water quality, and result in negative economic impacts, particularly to recreation and tourism-related businesses in Ohio. (The Nature Conservancy)

Response 19: The proposed rules do not remove biological criteria (see responses to comments on the Base aquatic life use). Ohio EPA is continuing to pursue the adoption of nutrient standards as a component of an overall nutrient reduction strategy for the State of Ohio.

Drinking Water Concerns

Comment 20: Greater Cincinnati Water Works is a public drinking water purveyor serving nearly 1.2 million people in the Greater Cincinnati Area. Thank you for the opportunity to comment on the WQS revisions. Our comments are prepared with an intended spirit of cooperation between the regulatory and regulated entities so that we can collectively meet our obligation of protecting public health, safety, and welfare. As a drinking water supplier we are concerned about the vulnerability of our source water (Ohio River) to contaminants of public health concerns such as:

1. Pathogenic microorganisms (e.g., Cryptosporidium, Giardia, viruses, etc.) including those that are resistant to chlorination.

2. Emerging contaminants such as Endocrine Disrupting Compounds (EDCs), Pharmaceuticals and personal care products (PPCPs).

In addition, several of these contaminants are regulated under the Safe Drinking Water Act (SDWA) through the National Primary Drinking Water Regulations (NPDWR). For the first time, in the history of the SDWA, the extent of water treatment for Cryptosporidium is dictated by the source water concentrations. Higher the source water concentration, the higher level of treatment required. This could be a very expensive ordeal and our customers will have to bear the burden of paying for such a treatment. Therefore, protecting our source water from such contaminants is one of our highest priorities. Source Water Protection is an integral part of the "Multi Barrier Treatment" concept.

We believe that there is a clear disconnect between the Safe Drinking Water Act and the Clean Water Act. Therefore when you consider the revisions to your Water Quality Standards, we strongly recommend you to consider the following:

1. Designated use for domestic water supply and their concerns.

2. Adequate distance, mixing, and dilution of the POTW and other discharges where there are downstream drinking water intakes. We strongly disagree with your 500 yard distance rule. It is rather impossible for water utilities to react and take necessary treatment actions to any unforeseen circumstances such as raw or partially treated wastewater bypasses, etc. due to such a short distance and travel time in water bodies such as the Ohio River.

3. Adequate numeric and narrative standards for the discharged contaminants, such that the downstream drinking water utilities will not have spend enormous money to treat for such contaminants. We believe this is a cost shifting approach.

4. Stringent and timely notification requirements to the downstream water utilities of any upsets, deviations from the NPDES permit requirements, etc.

Our specific comments are below. (Ramesh D. Kashinkunti, Greater Cincinnati Water Works)

Response 20: In this rulemaking, the Agency is expanding the application of human health water quality criteria based on drinking water maximum contaminant levels within 500 yards of a public drinking water intake statewide. As mentioned in the comment, this requires the discharger of the pollutant to provide treatment, not the drinking water treatment plant.

In regards to the 500 yard distance, this is not the reporting distance for spills. In the existing rule OAC 3745-33-08(F)(1), "Permits for facilities designated by the director as major discharges, in the following locations, shall require the permittee to notify the public water supply operator as soon as practicable after a discharge begins that results from a spill, separate sewer overflow, bypass, upset, or combined sewer overflow that reaches waters of the state: (a) Discharges within three thousand feet of a public water supply intake located in a lake; or (b) Discharges within ten stream miles upstream of a public water supply intake located in a reservoir or any other surface water of the state."

The Ohio River Valley Water Sanitation Commission (ORSANCO) implements an Emergency Response Program to detect spills and notify drinking water treatment plants in a timely manner. Please see the following web page for additional information: http://www.orsanco.org/emergency-response-program.

Request for Training

Comment 21: As Ohio EPA's Water Quality Standards continue to become more stringent over time, it becomes more difficult for permitted dischargers to monitor for new parameters and meet stricter effluent limits. To help dischargers achieve and maintain permit compliance, we respectfully encourage Ohio EPA to develop/strengthen training programs for the operation and maintenance of wastewater treatment plants and collection systems and for the management of wastewater analytical laboratories, and provide additional funding opportunities to help construct system upgrades that may be necessary to meet more stringent limits. (John McManus, Clermont County Water & Sewer District)

Response 21: The Division conducts numerous outreach and training presentations every year for wastewater treatment plant operators and consultants. We will provide updates on final rule revisions at these events in 2012. We also have staff dedicated to providing technical assistance to wastewater treatment plant operators. For additional information on the Compliance Assistance Unit, please see: http://www.epa.ohio.gov/dsw/compl_assist/compasst.aspx. In regards to funding, please see the programs available through the Division of Environmental and Financial Assistance at: http://www.epa.ohio.gov/defa.

Other

Comment 22: The Ohio Department of Transportation (ODOT) appreciates the opportunity to submit comments on the subject draft rule packages. Attached to this letter are comments on the proposed rules and discussions

of their impact on ODOT activities. The comments provided are detailed and extensive and are the result of careful review of the rules as they could be applied by the OEPA to ODOT's program. Our major concerns include:

- The new requirement for permitting of dredge and fill impacts in broadly defined "waters of the state" under the vaguely defined "state water quality permit" drastically expands OEPA jurisdiction and creates enormous regulatory uncertainty resulting in delays in infrastructure project development.
- The proposed regulations do not provide clarity on the regulation of roadside ditches. The assessment, impact, and mitigation of these areas are a reoccurring issue that has not been resolved with these rules. The resulting uncertainty will continue to delay infrastructure project development. To provide clarity, ODOT suggests a "roadside ditch" drainage use.
- The stream mitigation protocol prescribes a massive expansion of OEPA authority over upland areas under a surface water rule. Flexibility has been incorporated into the process however definitive prescriptions for stream mitigation and adjacent uplands is the overall intent and provides little guidance on alternative stream mitigation approaches such as AMD improvements. The rule will greatly limit (by right of way limitations or additional right of way purchases from willing sellers to meet stream mitigation requirements) or eliminate linear projects from mitigating onsite increasing right of way costs. The new stream mitigation rule and protocol demands more survey and data collection at increased cost and time for both impact and mitigation assessments. These rules will increase the cost of and delay infrastructure project development.
- The draft rule packages include numerous new terms such as State Water Quality Permit, water conveyance, and upland drainage, to name a few. Throughout these comments we have pointed out those terms that are not adequately defined in the draft rules, conflict with other existing definitions, and those of specific significance to all applicants. Additionally there is apparently no cross reference or commonality with like terms in USACE rules.
- Throughout the draft Antidegradation rules, as well as the Draft 401 Water Quality Certification and the Draft Water Quality Standards, issues related to public safety are not listed as a potential cause/reason for the lowering of water quality. The construction and continual maintenance of Ohio's transportation system, in light of maintaining and improving public safety, should be considered and afforded some flexibility and when allowing the possible degradation to waters of the State.

These rules decrease ODOT's ability to develop and complete roadway construction and maintenance projects in an efficient and timely manner. In

these times of scarce public funds, Ohio EPA could be implementing simplified and streamlined process changes that facilitate economic development while protecting the environment. Instead Ohio EPA appears to developing rules that increase regulatory burden on the regulated community with unproven benefits to water quality. (ODOT)

Response 22: Ohio EPA has made revisions to the draft rules to clarify requirements in regards to "isolated waters", coverage of the state water quality permit, and definitions of terms. Upon review of the submitted comments regarding the stream mitigation rule and protocol, Ohio EPA has determined that additional work on the mitigation requirements is warranted and will move forward with that rulemaking at a later time.

Rule 3745-1-01 Purpose and applicability.

Comment 23: 3745-1-01(A)(4) You cannot maintain the overall objectives of the Clean Water Act (to restore nation's waters) when you will allow upland drainage practices to be ditched without mandating 2 stage channel, over widening or self forming design. The OEPA fact sheet The Importance & Benefits of Primary Headwater Streams states that PHW streams make up over 80% of surface miles of streams and explains the benefits of protecting these streams. Yet the Rural Drainage Manual and drainage use designation allows these historically channelized upland water courses to be ditched with traditional trapezoidal or one side clean out methods. This will not allow your agency to restore the chemical, physical, and biological integrity of the nation's waters. By not holding them to any standards or criteria then how will your goals be met. (Brian Prunty, Stark Soil and Water Conservation District)

Response 23: Please see the response to Comment 24 below.

Comment 24: 3745-1-01(B) Allowing traditional ditching to occur without mandating 2 stage channel design will not provide for the protection of fish, shell fish and wildlife. Creating a new designated use "upland drainage" will promote traditional ditching practices and prevent recovery or restorations. Impact on small modified water courses will impact downstream and lead to nonattainment downstream. By writing off whether a water course is not attainable you are relieving the surrounding land uses to continue their environmental destruction without recourse of their actions. This is bias compared to watersheds such as the Cuyahoga that has seen major changes since the 1970's and it is continually seeing more stringent environmental stormwater rules within its watershed. As stated in the Ohio EPA NSP website "**Physical alterations** are changes made to a stream channel or stream banks and include activities such as the conversion of headwater streams into drainage ditches, constructing levees and dams, and straightening a stream to encourage improved drainage. **Physical**

alterations also include activities such as removing trees along a river bank or installing rock rip-rap on a river bank to prevent erosion.

The primary causes of nonpoint source impairment in Ohio streams are habitat alteration, hydro-modification to stream channels, sediment and excessive nutrients. Streams in agricultural areas of Ohio appear most frequently to be impaired by physical alterations, such as ditching, and impairments caused from excessive sediment and nutrients." Allowing such physical alterations to occur then the Ohio EPA is not performing their duty in addressing Nonpoint Source Pollution as acknowledged on their website. (Brian Prunty, Stark Soil and Water Conservation District)

Response 24: The Agency is not proposing the drainage use designations referenced in the comments. No further consideration of OAC 3745-1-01(A)(4) and (B) is necessary at this time.

Comment 25: Ohio Adm.Code 3745-1-01(B) Goals. The Utilities recommend that Ohio EPA revise this section to read:

> Consistent with national goals set forth in the Clean Water Act, all surface waters in Ohio shall provide for the protection and propagation of fish, shellfish, and wildlife and provide for recreation in and on the water unless the director determines one or more of these goals are not attainable for a specific water body. If the director determines that a water body cannot reasonably attain these goals using the available tests and criteria allowed under the Clean Water Act, then one of the following steps shall be taken.
>
> (1) The director shall evaluate the water body's designated beneficial uses and, where uses are not attainable, propose to change the designated uses to the best designations that can be attained; or
>
> (2) The director shall grant temporary variances from compliance with one or more water quality criteria applicable by this chapter pursuant to rule 3745-33-07 of the Administrative Code; or
>
> (3) The director shall remove the designated use if the director determines that the designated use does not or will not apply to the water body or if the director determines that attainment is not feasible due to any of the factors cited under 40 C.F.R. 131.10(g).

The proposed language addresses two issues. First, the draft language, as written, reads that the Director must determine all national goals are not attainable before taking any action. This revision to the language clarifies

that the Director may take action if any of the national goals are not attainable.

Second, the Utilities propose a third option regarding the Director's action. Even after considering the available tests and criteria allowed under the Clean Water Act, the Director may determine that a designated use may be inapplicable or reasonably not attainable for a certain water body. In these instances, the Director should have the flexibility of an option that removes the designated use altogether, which is allowed under federal regulations. (Ohio Utility Group)

Response 25: The Agency agrees with these comments and has made changes in the proposed rule.

Comment 26: Ohio Adm.Code 3745-1-01(C) Overview of this chapter. The Utilities recommend revising Ohio Adm.Code 3745-1-01(C)(2)(a) to read, "Water quality criteria are narrative ~~statements~~ conditions and numeric values that support beneficial uses." The term "conditions" rather than "statements" is more indicative of the actual quality that must be present in a water body.

The Utilities recommend the following revision to Ohio Adm.Code 3745-1-01(C)(3) to eliminate redundancy:

> (a) The antidegradation provisions describe the conditions under which water quality may be lowered in surface waters. ***Existing beneficial uses must be maintained and protected.*** Water quality better than that needed to protect existing uses must be maintained unless, after public notification and participation, lower quality is deemed necessary to allow important economic or social development ~~(existing uses must still be protected)~~.

(emphasis added). The language in this provision already states that existing beneficial uses must be protected. (Ohio Utility Group)

Response 26: These suggested revisions in wording have been used in the proposed rule.

Comment 27: 3745-1-01(C)(3)(a) "Water quality better than that needed to protect existing uses must be maintained unless, after public notification and participation, lower water quality is deemed necessary to allow important economic or social development (existing uses must be protected)."

Comments: Maintaining water quality better than that needed to protect existing sets unrealistic goals for water quality. (How much better?) "Water quality at a level equal to that needed to protect existing uses..." would be a more logical wording of this rule. Also, the lowering of water

quality for purposes such as state and national security, cultural development, public safety, and maintenance of existing infrastructure should also be deemed important. (ODOT)

Response 27: Maintaining existing water quality, if that water quality is better than needed to protect existing uses, is a requirement in federal regulations (40 CFR 131.12). The intent is to recognize the inherent benefit of high water quality and to allow lowering of that water quality only after public participation and a demonstration of need.

The Agency has added language to the rule cited in the comment and in rule OAC 3745-32-04 to speak to the fact that public health and safety concerns are important reasons that may necessitate the lowering of water quality in some circumstances (see language at OAC 3745-1-01(C)(3)(a) and 3745-32-04(J)(1)(d)).

Comment 28: 3745-1-01(C)(3)(c) Comment: It appears that OEPA has attempted to separate antidegradation under two distinct activities.
1. Chemical loading through effluent, and 2. Fill activities. It appears that 3745-1-05 is now focused on antidegradation through chemical loading and 3745-32-04 is focused on antidegradation through fill. It is therefore suggested that 3745-32-04 be added to this section. (ODOT)

Response 28: The additional rule citation has been included in the proposed rule.

Comment 29: Ohio Adm.Code 3745-1-01(D) General provisions. The Utilities recommend that Ohio EPA revise this provision as follows:

> (1) Chemical, physical and biological conditions of any surface waters of the state shall not impair existing and designated beneficial uses of <u>nearby</u> downstream water bodies.

The Utilities recognize the importance of ensuring that upstream water bodies do not contribute to the degradation of downstream water bodies and understand that Ohio EPA has proposed revisions to the surface water rules to address the water quality of primary headwaters. However, as written, the draft language could implicate very small and distal primary headwaters in impairing very large downstream water bodies such as the Ohio River. The insertion of the word "nearby" simply acknowledges that: 1) at some longitudinal distance - this distance being very site-specific – the influence of upstream waters is not perceptible or measurable; and 2) Ohio EPA typically implements NPDES permitting on a water body segment approach with distinct upstream and downstream boundaries. (Ohio Utility Group)

Response 29: Ohio EPA understands and accepts the basic premise that evaluation of impacts on downstream waters is related to distance, the pollutant in

question and many site-specific factors. However, the suggested wording change is not appropriate in all cases. The modifier “nearby” could hinder the Agency’s ability to implement nutrient reduction strategies (NPDES permit limits, TMDLs, NPS reduction targets) designed to restore beneficial uses in Ohio’s inland lakes, Lake Erie and other more distant waters.

Comment 30: (D)(1): Ohio EPA's concept of requiring no downstream/off-permit degradation is a regulatory creep that Ohio EPA has neither the authority nor regulatory structure to support and enforce. Additionally, the mechanisms by which Ohio EPA intends to measure the chemical, physical and biological conditions are not legal as Ohio EPA has only developed guidance and not regulation. (Trade Association Coalition)

Response 30: The CWA requires that WQS be protective of downstream waters.

> *In designating uses of a water body and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters* [40CFR 131.10(b)].

In the context of how standards are applied the Agency has an effective rule that includes the same basic concept.

> *Demonstrate that the mixing zone would not otherwise interfere with the designated or existing uses of the receiving water or downstream waters;* [OAC 3745-2-08(C)(7)]

The proposed rule includes this basic general provision in the WQS rules in order to clarify the matter and satisfy USEPA’s broad expectations on the interpretation of 40CFR 131.10(B). We disagree with the statement regarding measurements and conditions being outside existing regulation. Ohio’s WQS have clearly stated narrative and numeric chemical, physical (temperature, pH) and biological criteria that are used to gauge impairment of beneficial uses.

Comment 31: (E)(3): This provision is specific to coal remining and sets a "proof” requirement of "demonstrated potential for improved water quality from remining." As Ohio EPA is well aware, all remining improves water quality. As such, Ohio EPA is setting a requirement that is not needed and should be removed. (Trade Association Coalition)

Response 31: The language in question was first included in Ohio’s WQS in 1990 and the language being proposed is unchanged. The wording that requires a “demonstration of potential for improved water quality from remining” is based upon the federal law [Section 301(p)(2)(1) of the CWA]. No changes in rule language have been made based on this comment.

Rule 3745-1-02 Definitions.

Comment 32: 3745-1-02(B) Definitions. OEPA should provide a definition for the following terms. The definitions should describe how the following terms relate to waters of the state and waters of the U.S.:

- artificial bed and bank
- bank
- base aquatic life use
- bed
- channel
- jurisdictional ditch
- upland drainage
- water conveyance
- water course
- waterway

(ODOT)

Response 32: Base aquatic life use is defined in rule OAC 3745-1-07 and the drainage uses (upland drainage and water conveyance) have been dropped from the proposed rules. The remaining terms are related to features of a stream. The proposed definition for "stream" has been revised to:

> "Stream" means a water body having a channel with well defined bed and banks, either natural or artificial, that confines and conducts continuous or periodical flowing water. The term "stream" includes captured streams, as that term is defined in paragraph (A)(18) of this rule, but does not include roadside ditches and temporary channel-like features on the land surface created by water erosion.

These revisions together with the changes made in the 401 program rules (OAC Chapter 3745-32) address the fundamental concerns about potential regulatory overreach raised by ODOT and other commenters.

Comment 33: (B)(3): Ohio EPA has removed the term "mortality" from the definition of acute aquatic criterion and replaced it with the term "unacceptable effect." This change creates a subjective determination of "unacceptable effect" and is not reasonable. Ohio EPA should reinstate the term "mortality". (Trade Association Coalition)

Response 33: This change was made to reflect the fact that some data used to calculate water quality criteria have endpoints other than mortality, such as immobilization for the acute criteria and growth and reproduction for the chronic criteria. The revision does not change the way in which criteria are derived or the type of toxicity data that have always been used in deriving aquatic life water quality criteria.

Comment 34: Ohio Adm.Code 3745-1-02(B)(3) Acute aquatic criterion. The definition of acute aquatic criterion in Ohio Adm.Code 3745-1-02(B)(3) is too broad. Previously, Ohio EPA defined it as the highest level of a contaminant to which aquatic organisms may be briefly exposed without causing mortality. Ohio EPA has replaced mortality with the ambiguous term "unacceptable effect," and Ohio EPA fails to define "unacceptable effect." Moreover, the definition needs to match the term itself by clarifying that the criterion is concerned only with acute effects or responses. Temporary sub-lethal effects such as behavioral avoidance or behavioral compensation to exposure (e.g., increased or decreased metabolic activity) are reversible physiological responses. Thus, Ohio EPA should not consider these "effects" for the purposes of criterion derivation. Ohio EPA should either leave the current language unrevised or revise the definition as follows to limit the definition of an "unacceptable effect":

> (3) "Acute aquatic criterion" or "ACC" means the Ohio EPA estimate of the highest concentration of a material in the water column to which an aquatic community can be exposed briefly without resulting in mortality or an irreversible, unacceptable acute effect. (Ohio Utility Group)

Response 34: The existing definition in the draft rules was changed to clarify the fact that acute criteria and values are based on both mortality and certain other nonlethal effects. These are typically expressed as the LC50 (where mortaility is the tested endpoint) and the EC50 (where a particular sublethal effect is measured). The sublethal endpoint that is usually used in aquatic life criteria and value derivation is immobilization (e.g., paralysis), which is considered to be an unacceptable effect. Ohio EPA, like most states and the federal EPA, generally follows the federal guidance document when developing aquatic life criteria. The federal guidance document specifies the type of acute effect endpoints that should be considered when developing acute criteria and values. Two other sublethal effects that are specifically mentioned in the guidance document include loss of equilibrium and incomplete shell development (as in the case of bivalve mollusks such as freshwater mussels). OAC 3745-1-36 specifies that the acute aquatic criterion is based on acceptable acute toxicity tests.

Comment 35: Ohio Adm. Code 3745-1-02(B)(19) Chronic aquatic criterion. The definition of chronic aquatic criterion in Ohio Adm. Code 3745-1-02(B)(19) is not precise because the definition refers to indefinite exposure to a material while the tests developed to determine a chronic aquatic criterion are based on a finite time period. Therefore, the definition and the test method are in contradiction. This definition also includes the same ambiguous terminology, "unacceptable effect," used in the definition of acute aquatic criterion. The Utilities recommend that Ohio EPA either leave the current language unrevised or make the following revisions, which is a more precise definition:

(19) "Chronic aquatic criterion" or "CAC" means the Ohio EPA estimate of the highest concentration of a material in the water column to which an aquatic community can be exposed ~~indefinitely~~ long-term without resulting in mortality or an irreversible, unacceptable chronic effect (e.g., an adverse effect on growth or reproduction). (Ohio Utility Group)

Response 35: The chronic aquatic criteria and values are meant to be protective of aquatic life over a long-term chronic exposure, which could include continuous exposure over the entire lifespan of a species. Chronic toxicity tests are rarely available based upon exposure over an entire life cycle, especially for species with longer life spans. Therefore, chronic tests that cover only part of the life cycle, or tests that consist of exposures to only the early life stages of a species are often used as specified in the national aquatic life criteria derivation guidance. Typically, the endpoints of chronic tests include mortality, as well as effects of long-term exposure on reproduction and growth. While all these chronic toxicity tests may have defined exposure periods that vary depending on the type of organism, the actual criterion or value that is derived is meant to be an estimate of the concentration which should be protective of the aquatic life use designation over any chronic exposure period.

Comment 36: (B)(21): The definition of "Cold Water Fauna" is overly broad and could encompass fauna not typically deemed cold water. Ohio EPA should revise this definition to limit the application consistent with the comments made in Rule Package 4 below. Ohio EPA should modify Table 7-2 to O.A.C. 3745-1-07. (Trade Association Coalition)

Response 36: Ohio EPA made several revisions to the cold water fauna listed in Table 7-2 of the draft rules, including elimination of one fish species, several salamander species, and updates to the benthic macroinvertebrates.

Comment 37: Ohio Adm. Code 3745-1-02(B)(21) Cold water fauna. The Utilities commend Ohio EPA for narrowing the definition of "cold water fauna" by listing the precise types of cold water habitats where these fauna live. The Utilities recommend that Ohio EPA restrict the definition of "cold water fauna" to those species found in these defined coldwater habitats. The Utilities are concerned with the proposed definition because Ohio EPA could consider any organism tolerant of "cool" temperatures (19 - 22°C) as "cold water" fauna. Undoubtedly, this would result in an exhaustive faunal list, as it would include any organism that could "adapt" to cool temperatures on a seasonal basis (e.g., winter periods). Ohio EPA should exclude organisms that have the ability to seasonally acclimate to cold thermal regimes from the definition of "cold water fauna." The Utilities assume that Ohio EPA intended to define "cold water fauna" as organisms that are restricted to habitats with perennial (relatively) cold temperature

regimes. Thus, the Utilities recommend that Ohio EPA revise the definition as follows to ensure that species listed in table 7-2 of Ohio Adm. Code 3745-1-07 that may be present in warmwater habitats are not classified as "cold water fauna":

(21) “Cold water fauna" means the species of aquatic life ~~adopted to~~ restricted to cool (19-22 0c) or cold (is-18°C) thermal regimes and other special stream habitat conditions found in perennial flowing water associated with the out flowing of shallow or deep water aquifers, perched springs or natural seeps. Indicators of cold water fauna in Ohio include, but are not limited to, the organisms listed in table 7-2 of rule 3745-1-07 of the Administrative Code. (Ohio Utility Group)

Response 37: The species listed in table 7-2 of rule 3745-1-07 meet the above definition, and the list is not extensive. However, several modifications were made to the table that reduced the overall number of taxa listed. The remaining listed species are those that are primarily found in coldwater habitats. Taxa that are adapted to a wide range of temperature regimes are not included in the cold water taxa list.

Comment 38: 3745-1-02(B)(29) ”Director”
Comment: This is the third definition of “director” in these rules (3745-1-05 and 3745-32-04). None of the definitions match or are consistent. (ODOT)

Response 38: Rule OAC 3745-1-02 defines “Director" as: “Director” means the director of the Ohio environmental protection agency. Rule OAC 3745-1-05 defines “Director” as: “Director” means the director of the Ohio environmental protection agency, or the director of the Ohio department of agriculture for projects or activities governed under Chapter 903. of the Revised Code. Rule OAC 3745-32-01 defines “Director” as: “Director” means the director of Ohio EPA or his duly authorized representative. The definition of director in rule 3745-1-02 has been revised to match the definition in rule 3745-32-01. The definition in rule 3745-1-05 will remain unchanged because the Director of Ohio Department of Agriculture will be required to implement the rule upon delegation of National Pollutant Discharge Elimination System (NPDES) permitting authority for Concentrated Animal Feeding Operations (CAFOs).

Comment 39: Ohio Adm. Code 3745-1-02(B)(32) Drought. The Utilities commend Ohio EPA’s definition of drought in Ohio Adm. Code 3745-1-02(B)(32). The Utilities find this definition precise and on point. (Ohio Utility Group)

Response 39: Comment acknowledged. The definition has been retained without change in the proposed rule except for an update to the referenced website address.

Comment 40: 3745-1-02(B)(37) and (54) The definitions of estuary and lacustuary are very similar and seem to apply to the same water bodies. The estuary definition (37), as written, appears to apply only to Lake Erie tributaries, while the lacustuary definition (54) starts out by defining general freshwater estuaries as where rivers and lakes mix, but then continues to define lacustuary in the context of Lake Erie and its tributaries. In the context of Ohio's rules, are these two terms meant to be interchangeable? Clarification as to the difference between estuary and lacustuary would be appreciated. (NEORSD)

Response 40: The term lacustuary has been dropped from the proposed rules while the term estuary has been retained with some slight modifications. The definition does recognize that the term lacustuary is still used in various documents and is interchangeable with the term estuary.

Comment 41: 3745-1-02(B)(38) Defining existing use as "a beneficial use actually attained in the water body on or after November 28,1975 regardless of the beneficial uses designated for the water body in this chapter" only adds to the confusion surrounding the term existing use. All permit requirements are based on achieving a water body's beneficial use designation. If a water body's existing use is determined to have changed, then the beneficial use designation should be changed; a new designated use cannot simply be assumed. The definition should read "a designated beneficial use actually attained in the water body on or after November 28, 1975". (NEORSD)

Response 41: The proposed rule language was not changed. Federal regulations require that beneficial uses actually attained in any water body be protected regardless of the status of what beneficial uses have been designated through administrative rule adoption procedures (40 CFR 131.10 & 131.12). Ohio EPA routinely conducts updates to the river basin use designation rules (3745-1-08 to -32) wherein new information on current conditions is considered and existing uses become designated uses. However, antidegradation provisions of state and federal regulations require the protection of existing uses prior to the act of formally designating the use in rule.

Comment 42: Existing Use. Draft OAC 3745-1-02(B)(38) defines "existing use" as a beneficial use that is actually attained in a water body. Actually attained is defined in the same definition as a use that is met on a permanent or reoccurring basis. Because the first portion of the definition is not limited to "designated" uses, this second phrase is concerning because it expands the definition of existing use to one that may not have been clearly identified because it has not been designated. This will cause confusion and uncertainty. Thus, the first sentence should be revised to read "a designated beneficial use actually attained .... " Alternatively, or in

conjunction with the aforementioned change, the term "reoccurring basis" should be eliminated from later in the definition. (AOMWA)

Response 42: Please see the response to comment 41 above.

Comment 43: OFBF policies are based on the tenet of protecting private property rights. The proposed draft rules contain aspects detrimental to the rights of private landowners on how they use and manage their property. Areas that are particularly troublesome relate to private ponds and the expansion of the number of waterbodies captured by the definition of "waters of the state".

Definition of a "Lake" - The definition as proposed (Rule 3745-1-02) would not exclude any farm pond, stormwater retention basin, sediment control structure. borrow pit, or quarry - bringing into question the scale and scope of the waterbodies under Ohio EPA regulatory oversight. The 2009 National Hydrography Dataset (NHD) identifies 99,789 waterbodies in the State of Ohio as a pond, lake or reservoir. The majority of these are small (83%) having a surface area of less than one acre. As proposed, the draft rules will greatly expand the regulatory oversight to tens of thousands of private ponds. (Ohio Farm Bureau)

Response 43: The proposed rules contain a revised definition of lake that excludes farm ponds.

Comment 44: (B)(55): The definition of "Lake" has been unreasonably expanded including encompassing private waters not subject to regulation under R.C. Chapter 6111. Ohio EPA should work with regulated business to develop an appropriate definition of "lake." (Trade Association Coalition)

Response 44: The proposed rules have narrowed and clarified the definition of a lake from that contained in the draft rules.

Comment 45: Ohio Adm. Code 3745-1-02(B)(55). Ohio EPA defines "lake" as:

> a *surface water of the state* that is a natural or constructed pooled or impounded body of water. "Lakes" include ponds, reservoirs, upground reservoirs and impounded stream segments with hydraulic residence time index (RTI) values of 0.5 or greater. "Lakes" do not include wetlands or water bodies designated in rules 3745-1-08 to 3745-1-30 of the Administrative Code as modified warmwater habitat - impounded ...

(emphasis added). Under Ohio Adm. Code 3745-1-02(B)(88), Ohio EPA excludes from the definition of "surface waters of the state" waters defined as "sewerage system," "treatment works," or "disposal system" under R.C. 6111.01(E), (F), and (G). In 2008, the Utilities expressed concern that this definition would encompass borrow pits, ponds created for AMD

remediation, and ponds that store coal combustion byproducts. At that time, the Agency indicated that these would not be included in this definition. Based on Ohio EPA's representations and based on the exclusions set forth in the definition of "surface waters of the state," the Utilities request that Ohio EPA confirm that the above examples would not be included in this otherwise broad definition of "lake." (Ohio Utility Group)

Response 45: The proposed rules have narrowed and clarified the definition of a lake from that contained in the draft rules. The specific examples mentioned in the comment would be excluded from the definition of a lake except in the case of a borrow pond that is both on public land and to which there is public access, such as Antrim Lake on the north side of Columbus adjacent to State Route 315.

Comment 46: Stream and lake definitions are overly broad. The rules indicate four lake types, two of which dugout lakes (e.g. borrow pits) and impoundments (e.g. ash ponds), are quite often used for treatment, storage or associated with construction and as such are not considered "waters of the state." The definition for "surface waters of the state" at Ohio Adm. Code 3745-1-02(B)(88) excludes waters defined as "sewerage systems," "treatment works," or "disposal systems" under Section 6111.01 of the Ohio revised code. At the very least, OEPA should revise the language in these definitions to include these exclusions as well. (First Energy Corp.)

Response 46: The proposed rules have narrowed and clarified the definition of a lake from that contained in the draft rules. These changes would exclude the bodies of water mentioned in the comment.

Comment 47: 3745-1-02(55) – The definition of “Lake” is listed as “a surface water of the state that is a natural or constructed pooled or impounded body of water. Lakes include ponds, reservoirs, upground reservoirs and impounded stream segments with hydraulic residence time index (RTI) values of 0.5 or greater…” This appears to encompass more than, and doesn’t seem consistent with, the federal definition of “lake” found in 33 CFR Part 323.2 (b) “The term lake means a standing body of open water that occurs in a natural depression fed by one or more streams from which a stream may flow, that occurs due to the widening or natural blockage or cutoff of a river or stream, or that occurs in an isolated natural depression that is not a part of a surface river or stream. The term also includes a standing body of open water created by artificially blocking or restricting the flow of a river, stream, or tidal area. As used in this regulation, the term does not include artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water for such purposes as stock watering, irrigation, settling basins, cooling, or rice growing.” (USACE)

Response 47: The proposed rules have narrowed and clarified the definition of a lake from that contained in the draft rules.

Comment 48: Page 11. (B)(55) Lake - The proposed definition introduces the concept of the hydraulic residence time index (RTI). A detailed search failed to identify technical or scientific references related to this index.

Hydraulic residence time, as commonly defined in the limnological literature, is the time required to refill an empty lake with its natural flow. It is calculated by dividing the volume of the lake by the average annual water inflow. Since neither of these are contained in the RTI, how does the index relate to hydraulic residence time?

The ratio of drainage area to surface area is commonly used in pond design (NRCS Conservation Practice Standard 378) to ensure that there will be enough surface water runoff to adequately maintain the pond. A ratio of six to one (6:1) or greater is desired.

Analysis of the RTI as presented makes it hard to imagine a waterbody that would not be classified a lake. For example, a one half acre farm pond would have to have a drainage area of more than 1,000 acres (1.56 square miles) before it would not be classified as a lake.

Recommendation: Provide technical reference for the hydraulic residence time index (RTI) and the justification for the 0.5 or greater endpoint. (Ohio Farm Bureau)

Response 48: The proposed rules have narrowed and clarified the definition of a lake from that contained in the draft rules. The concept of the RTI is no longer necessary in the revised definition.

Comment 49: 3745-1-02(B)(86) "Stream". The terms "channel", "bed", "bank" and "artificial bed and bank" should be clearly defined in Rule 02. Identification of an artificial stream because of the presence of an "artificial bed and bank" may result in features traditionally not considered streams to now be identified as such. (ODOT)

Response 49: The proposed rule has been revised in response to this and other comments. Only streams traditionally considered streams are covered by this definition.

Comment 50: (B)(86): The definition of "Stream" has been unreasonable expanded to include features such as an artificial bed or bank, which could be interpreted very broadly to include areas that are simply not streams. The effect of this works a significant and unlawful expansion of Ohio EPA's regulatory authority and ignores the existing stream definition codified in R.C. 3745.114 of state law. Ohio EPA should not broaden the definition of stream beyond Ohio law. (Trade Association Coalition)

Response 50: The proposed rule has been revised in response to this and other comments. The proposed rule language does not expand the Agency's regulatory authority. The section of Ohio law cited in the comment defines three types of streams based upon water flow characteristics. As proposed, the rule is consistent with Ohio law because water flow is a factor in the definition.

Comment 51: Ohio Adm. Code 3745-1-02(B)(86) Stream. Ohio EPA defines "stream" as "a water body having a channel with well defined bed and banks, either natural or artificial, that confine and conduct continuous or periodical flowing water." The Utilities believe that this definition is overly broad and could include some discharges under this definition that would otherwise not be considered "streams." For example, the Utilities have permitted landfills comprised of active areas where fly ash is deposited as well as clean cover areas. These clean cover areas have contours that convey clean stormwater discharge. Would these contour areas constitute "streams" under this definition? The Utilities believe that Ohio EPA should narrow this definition or identify what discharges would be exempted from this definition. (Ohio Utility Group)

Response 51: The proposed rule has been revised in response to this and other comments. The proposed rule excludes "temporary channel-like features on the land surface created by water erosion." If contour areas are re-graded periodically they are not affected by this rule change.

Comment 52: One of the many concerns we have with the rules is the definition of "stream". Ohio EPA defines "stream" as having a channel with well defined bank and beds, either natural or artificial that confine and conduct continuous or periodical flowing water. This interpretation and definition of a "stream" is, to say the least, overly broad and greatly expands the scope of these water bodies. This definition could include dischargers that would simply not be considered streams under most circumstances. (Ohio Chamber of Commerce)

Response 52: The proposed rule has been revised in response to this and other comments.

Comment 53: Page 15. (B)(86) Stream
The proposed definition defines a stream as "a water body having a channel with well defined bed and banks, either natural or artificial, that confine and conduct continuous or periodical flowing water". It is not clear how Ohio EPA intends to utilize this definition in the implementation of the proposed draft rules. For instance, natural erosional features such as rills and gullies are channels with a well defined bed and banks that confine and conduct periodical flowing water. Will all natural erosional features become waters of the state by the fact that they meet the vague criteria in the proposed definition of a stream? Will standard agricultural practices

need to apply to the Army Corps of Engineers for a permit if a rill or gully is leveled or filled?

Recommendation: Remove ambiguity from the proposed definition for streams by specifically stating what is meant by "well defined bed and banks". (Ohio Farm Bureau)

Response 53: The proposed rule has been revised in response to this and other comments. Specifically the proposed rule excludes “temporary channel-like features on the land surface created by water erosion.” Standard agricultural practices are not affected by this rule change.

Comment 54: 3745-1-02(B)(88) “surface waters of the state”
Comment: We suggest that this definition explicitly exclude upland ditches and upland stormwater conveyances. The implication of this term, in the context of these rules, is the expansion of jurisdiction over resources currently not routinely regulated and currently do not have guidance for how to identify and delineate them therefore increasing regulatory uncertainty, decreasing predictability, and adding confusion to the permitting process. OEPA also apparently uses the term “water body” synonymously with surface water of the state. For clarity and consistency, OEPA should use only one of these terms. (ODOT)

Response 54: The Agency has decided to make no changes to the definition of surface waters of the state. Ohio EPA has made efforts to address the underlying concern expressed in this comment through revisions to the Section 401 program rules (OAC Chapter 3745-32) and linking the permitting actions under this program to waters that meet revised definitions of “stream” and “lake.” While the proposed rules most often use the term “water body,” the Agency believes there are instances when the longer phrase should be used.

Comment 55: 3745-1-02(B)(95) “Tributary”
Comment: In order to increase regulatory clarity, it is suggested that this term be defined in a manner consistent with current USACE use and definition of the same term. (ODOT)

Response 55: Revisions are not proposed to the existing definition of tributary. This term is used in multiple permitting programs and any revision to this definition would impact these programs.

Comment 56: -3745-1-02(B)(101): " . .. "Wetlands" includes swamps, marshes, bogs, and similar areas that are delineated in accordance with the 1987 United States army corps of engineers wetland delineation manual."
EPA Comment - EPA recommends adding the phrase "and appropriate supplements" to the end of the sentence in order to account for new and pending supplements to the delineation manual. (U.S. EPA, Region 5)

-3745-1-02(B)(101) - The definition of "Wetlands" is listed as “those areas that are inundated or saturated by surface or ground water at a frequency and duration that are sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. "Wetlands" includes swamps, marshes, bogs, and similar areas that are delineated in accordance with the 1987 United States army corps of engineers wetland delineation manual”. This definition should be amended to read: “…delineated in accordance with the Corps of Engineers Wetland Delineation Manual (1987) and any subsequent versions/updates and all relevant regional supplements”. (USACE)

-3745-1-02(B)(101) “Wetlands”
Comment: This definition should recognize the regional supplements to the 1987 Manual as a means of delineating wetlands. (ODOT)

Response 56: In accordance with ORC 121.72 Incorporating rule by reference, if the text or other material incorporated by reference was, is, or reasonably can be expected to be subject to change, the agency shall identify, and specify the date of, the particular edition or other version of the text or other material that is incorporated by reference. The rule will have to be revised to include new and pending supplements to the delineation manual.

Rule 3745-1-03 Analytical methods and availability of documents.

Comment 57: The Utilities recommend that Ohio EPA cite and make the following document available under Ohio Adm. Code 3745-1-03: "Water Quality Criterion for the Protection of Human Health: Methylmercury, Office of Science and Technology, Office of Water, U.S. Environmental Protection Agency, Washington, DC, EPA-823-R-01-001, January 2001." U.S. EPA published its ambient water quality criteria recommendations for methylmercury in 2001. This criterion is based on the most recent research; therefore, Ohio EPA should cite and make this document available. The Utilities also recommend that Ohio EPA list U.S. EPA's human health methylmercury criterion implementation guidance manual: "Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion, Office of Water, U.S. Environmental Protection Agency, Washington DC, EPA-823-R-10-001, April 2010." (Ohio Utility Group)

Response 57: The documents have been included in the proposed rule.

Comment 58: 3745-1-03(B)(3)(b)
Comment: Incorporation of unapproved additional rules in this section runs the risk of some portions passing and others being removed. The resulting

confusion from a piecemeal passage of the rules for the regulated community would be tremendous. For example, the manual cited in 3745-1-03(B)(3)(b) should only be included if 3745-1-56 is also passed into rule. It is not advisable to incorporate manuals that may change or not be approved and passed into law into other rules. (ODOT)

Response 58: As practice, Ohio EPA does not include citation of reference materials that are not cited in the chapter. The citation for the "Compensatory Mitigation Requirements for Stream Impacts in the State of Ohio" has been removed from OAC 3745-1-03 in this rulemaking.

Comment 59: 3745-1-03(B)(3)(b)
Comment: For ease of updating the rules in the future, newer additions, and or revisions of this document should be by default incorporated in to rule by simply adding the text," or the latest version of this document." to this rule. (ODOT)

Response 59: In accordance with ORC 121.72 Incorporating rule by reference, if the text or other material incorporated by reference was, is, or reasonably can be expected to be subject to change, the agency shall identify, and specify the date of, the particular edition or other version of the text or other material that is incorporated by reference. The rule will have to be revised to include new and pending supplements to the delineation manual.

Rule 3745-1-04 Criteria applicable to all waters.

Comment 60: Page 1. (F)
The general water quality criteria for public health nuisances has been expanded to include "manure" in addition to "raw or poorly treated sewage". Manure is not defined in Rule 3745-1-02 Definitions.

Recommendation: Add the following definition for manure in Rule 3745-1-02: "Manure means the droppings, feces or excrement of plant-eating mammals (herbivores) and birds. "

The use of the definition above would remove the inherent unintended bias to agriculture and address those situations when waste products from wildlife and pets as well as livestock lead to public health nuisances due to elevated *E. coli* bacteria counts. (Ohio Farm Bureau)

Response 60: The rule language addition is intended to address situations of pollution of waters of the state from point and nonpoint sources of manure that are causing a public health nuisance, regardless of the species that generated the manure. If there is any question on what is manure, the definition of manure available in ORC 903.01 could be consulted. Ohio EPA does not intend to adopt a definition in its rules that conflicts with this definition.

Rule 3745-1-07 Beneficial use designations.

Comment 61: Beneficial use designations and the resulting numeric criteria are duplicative of existing use designations and criteria. OEPA should further explain the necessity of these additional beneficial use designations. For example, if OEPA determines that a water body meets all of the applicable "fishable and swimmable" uses from a use attainability analysis then why are new uses and criteria needed? (U.S. EPA, Region 5)

Response 61: The proposed rule does not include some of the new use designations listed in the draft rule. Upland Drainage, Water Conveyance and Navigation have been dropped. We have retained the three new aquatic life uses (Base ALU, Lake Habitat and Primary Headwater Habitat). Additional rationale has been provided in new fact sheets and elsewhere in this responsive summary.

Comment 62: --General comments. The Utilities find that the proposed new beneficial use designations (within the broad use categories of aquatic life, recreation, and water supply), with resulting numeric criteria where appropriate, to be complex and confusing as to how these "fit in" with existing uses. What can be concluded with some certainty is that a greater number of human health numeric water quality criteria will be applicable to all or most waters. The Utilities believe that the Agency is obligated to consider the real-world implications of the new changes when Ohio EPA implements them in the NPDES program. We request that the Agency provide some example case studies of how the expanded number of criteria - supporting the Water Supply Use designation - would affect hypothetical facilities.

While Fact Sheet Attachment One provides a helpful compilation of proposed new beneficial uses, a reasonable understanding of the impacts of all the new use designations and supporting criteria is difficult unless an analysis using an actual or hypothetical facility is conducted. The Utilities have attempted to analyze the rules to project potential practical impacts of the proposed changes. The results of this analysis are presented following our comments on specific use designations and criteria. See, Appendix 1. (Ohio Utility Group)

--Ohio Adm. Code 3745-1-07(C)(1) Public water supply. The Utilities request clarification from Ohio EPA on the implementation procedures of public water supply criteria in NPDES permits. In particular, how will updates to the "drinking" human health criteria (derived via Ohio Adm. Code 3745-1-38) be applied to discharger wasteload allocation determinations to meet this designated use? (Ohio Utility Group)

Response 62: The agency is no longer moving forward with updating the human health water quality criteria in this rulemaking. Therefore, case studies and wasteload allocations are not necessary.

Comment 63: Ohio Adm. Code 3745-1-07(D) Recreation use designations. General comments. The Utilities are concerned about Ohio EPA's overall justification for the six new recreational use designations. If the Agency made a convincing case that public utilization of the full suite of recreational activities are being prevented or reasonably inhibited by deficiencies in the existing water quality standard regulations, the Utilities would be more receptive to the actual need of additional uses and supporting criteria. Indeed, if Ohio EPA determines that a water body meets all of the applicable "fishable and swimmable" uses as a result of a use attainability analysis, why are new uses and criteria necessary? (Ohio Utility Group)

Response 63: With regard to recreation use designations there is only one new use being proposed (Sport Fishing Recreation use, referred to as General Water Based Recreation use in the draft rule). The others were previously adopted in a 2010 rule-making. The suite of major water contact recreation uses (Bathing Water, Primary Contact and Secondary Contact) and the break out of three sub-categories of Primary Contact was explained at that time. All five water contact uses are in effect only during the recreation season and E. coli is the only criteria designed to protect the use. The reason the Agency is proposing to adopt the Sport Fishing Recreation use is to recognize the fact that people fish, and may consume their catch, on a year round basis. Additionally, fish accumulate contaminants year round, so contaminants discharged in a season with less fishing pressure may be retained in fish tissue and consumed during the traditional recreation season.

Comment 64: Pages 2 - 9. (D) Recreation use designations. It is not clear where private ponds fit into the recreation use designation process. Potentially they could be designated for general water based recreation, Class A primary contact recreation, Class B primary contact recreation or secondary contact recreation. While it is possible that private ponds could potentially support at least one water based recreation activity, due to their restricted access it is highly improbable.

Recommendation. Due to their restricted access, all private ponds should be designated "secondary contact recreation". (Ohio Farm Bureau)

Response 64: As noted in a previous response the proposed rule makes no changes in the water body contact recreation uses. Under the current and proposed rule a farm pond is designated as Class B Primary Contact recreation [see OAC 3745-1-07(D)(4)(b)]. Because of requirements found in federal WQS program regulations the recommendation made in the comment to assign Secondary Contact recreation cannot be done without site-specific

information and a use attainability analysis. This option is possible in theory but is not practical or reasonable use of limited State government resources.

Comment 65: In Ohio Adm. Code 3745-1-07(D)(1)(c), Ohio EPA indicates that the numeric criteria in Ohio Adm. Code 3745-1-41 are for protection of the following uses: boating, water skiing, scuba diving, canoeing, kayaking, swimming, wading, fishing, consumption of sport caught fish, and aesthetic enjoyment of water bodies. The Agency clarifies that all of the potential uses of a water body, however, are not limited to the activities listed above. The Utilities interpret the cumulative uses and criteria of "recreational use" to apply to any activity associated with an individual water body regardless of direct exposure or not to water. As such, even a subjective use such as aesthetic enjoyment of water appearance is to be protected by the criteria in proposed Ohio Adm. Code 3745-1-41. Thus, the Utilities believe that this is too broad and should be revised to limit it to activities associated with water exposure. (Ohio Utility Group)

Response 65: The phrase “aesthetic enjoyment of water bodies” and the general water based recreation concepts have been removed from the proposed rule.

Comment 66: 3745-1-07(D)(2) General water based recreation waters are defined as those that support or potentially support at least one water based recreation activity. It is also indicated that all water bodies are designated for general water based recreation year round. In the Greater Cleveland area, we have a number of culverted streams that cannot support water based recreation activities. These culverted streams are also of concern as 3745-1-07(D)(4)(b) indicates that all streams not otherwise designated are Class B primary contact recreation by default. Class B primary contact recreation waters are defined as those that potentially support occasional primary contact recreation activities. Culverted streams are not suitable for any full-body contact recreation activities and therefore should not be classified as such. The base aquatic life use designation in 3745-1-07(E) would also apply to these culverted streams that, due to human induced changes, are not conducive to the survival, protection and propagation of fish and other aquatic species that inhabit surface waters. NEORSD suggests revising this section to appropriately address culverted streams. (NEORSD)

Response 66: The Agency acknowledges that the placement of streams in culverts in urban environments was commonly done in the past and may still be necessary in some instances today. Ohio EPA has removed use designations assigned to streams that have been placed entirely within culverts. If a channel is placed in a culvert (other than for a short distance under roads or other structures) the water becomes surface waters of the State at the point where the culvert ends or empties into another water body. The proposed rule assigns the general water base recreation use

(renamed sport fishing recreation use) and the base aquatic life use to any unnamed water body. These uses apply to segments of streams that are open channels and not to the segments that are place in culverts for extended distances.

Comment 67: 3745-1-07 (D)(2)" .. All water bodies are designated for general water based recreation year round." A definition of "water bodies" should be provided in 3745-1-02. (ODOT)

Response 67: The term “water bodies” means the same as the term “surface waters of the state,” which is defined in rule 3745-1-02.

Comment 68: For Ohio Adm. Code 3745-1-07(D)(2), the Utilities request clarification from Ohio EPA on the implementation procedures of general water based recreation criteria in NPDES permits. In particular, how will updates to the "non-drinking" human health criteria (derived via Ohio Adm. Code 3745-1-38) be applied to discharger wasteload allocation determinations to meet this designated use? (Ohio Utility Group)

Response 68: The nondrink human health criteria are not being updated in this rulemaking, so wasteload allocation determinations are not needed.

Comment 69: The provision in Ohio Adm. Code 3745-1-07(D)(3) Bathing waters should only include water bodies "where a lifeguard or operational bathhouse facilities are present." There may be water bodies that have existing bathhouse facilities but these facilities are no longer in operation. In such instances, Ohio EPA should not designate those water bodies as "bathing waters." (Ohio Utility Group)

Response 69: No changes to the existing rule language were made. Ohio EPA believes that the presence of infrastructure designed to promote recreation in the water is sufficient to justify the bathing waters use designation and associated criteria necessary to protect the use. Bathing water beaches, which are most often, if not always located at lakes, typically have other amenities too, including convenient parking, and may also be promoted through advertising, internet resources, signage, published maps, etc. that encourage the recreational use at these beaches and are therefore reasonably expected to be among the waters in Ohio that are most heavily used for body contact recreation activities.

Comment 70: Recreation Use. Draft OAC 3745-1-07(D)(4)(b) provides that all streams not otherwise designated are Class B contact recreation by default. Class B primary contact recreation activities are those that support occasional primary contact recreation activities. Draft OAC 3745-1-07(E) would also apply a base aquatic life use designation to an undesignated stream. Because there is no express exclusion, these two standards would appear to apply to culverted (i.e.,underground) streams that do not support either

recreational activities or aquatic life. There needs to be an express exemption included for such culverted streams. (AOMWA)

Response 70: Please see the response to comment 66 above.

Comment 71: --Establishment of concepts such as the proposed "base aquatic life use" (OAC 3745-1-07(E) and 3745-1-42 (E)) could lower water quality in many parts of Ohio and lead to a loss of many years of environmental progress. Because of the potentially negative impacts, we urge further review, changes to the proposal, and caution as this proceeds. Here are some of the Conservancy's concerns:

• The Conservancy does not support rules for base use and drainage use designations without first having adequate nutrient standards in place for phosphorus and nitrogen.
• For the proposed base use and drainage use, the Conservancy is especially concerned about "loss of use" related to biological diversity in streams under these rules, and therefore caution and changes are warranted, especially where the Agency is proposing to remove biological standards.
• There is a need to establish clear, biologically-based outcomes and performance goals for drainage projects and stormwater practices related to primary headwaters protection to lessen some of the continuing impacts of agricultural drainage and development, and to demonstrate these are effective at achieving attainment and protecting declining, rare and sensitive species.
• Establishment of a "drainage use" could have major downstream impacts (e.g., perpetuating impacts to Lake Erie) and lead to declines in stream habitat and downstream impacts across Ohio.

We urge the Agency to limit the application of these concepts by:

• reducing the size of the eligible area allowed for "drainage use;"
• instituting adequate nutrient standards for streams before a base use or drainage use takes effect;
• requiring that all cases have a use attainability analysis conducted before any drainage work proceeds;
• requiring that these UAAs be conducted by Qualified Data Collectors;
• clearly encouraging more environmentally-friendly drainage designs; and
• concerning mitigation addressed in 3745-32-04 and 3745-1-56, the Conservancy requests that such mitigation avoid stormwater unit impacts, and that Class III PHWH streams be placed in Mitigation Category 4 to ensure protection of aquatic life specific to these streams. (The Nature Conservancy)

--Need for nutrient criteria – As a substitute for the loss of biological life criteria that would be created by these proposed base use and drainage use designations, and before implementation of any base use or drainage use rules, the Agency should establish water quality criteria to control nutrient enrichment in streams, and specifically for phosphorus and nitrogen. Further arguments for nutrient criteria in Ohio's water quality standards are provided below related to proposed OAC 3745-1-42, "Water quality criteria for the base aquatic life use designation." (The Nature Conservancy)

--3745-1-07(E) - Base aquatic life use designation. The proposed "base aquatic life use designation" is a major departure from past approaches to Ohio stream protection. For this reason, the Conservancy is strongly concerned that streams worthy of protection and that downstream uses and quality might be compromised by this proposed rule. Our concerns include:

- The need to conduct UAAs, requiring that all cases have a use attainability analysis conducted before a base use is assigned before any drainage work proceeds, and the UAA is conducted by Qualified Data Collectors;
- The broad eligibility, especially related to the gradient and size of the eligible drainage area, the statewide application under this proposal (certain ecoregions might be more or less appropriate), the relatively high proposed gradients, limited demonstration of the effectiveness of channel designs (such as implied in the mitigation rules and the mitigation categories), and the likelihood of misclassification of use designations for streams that have not had a UAA; and
- The need for adequate nutrient standards before any base use or drainage use takes effect.

Need for Use Attainability Analyses - Ohio EPA should not proceed with assignment of "base use," a beneficial use designation which has no biological criteria, without conducting a UAA. In order to determine if presently established use designations are attainable for a stream, base use and drainage use rules should clearly establish two criteria:

(1) Conduct a Use Attainability Analysis (UAA) (http://water.epa.gov/scitech/swguidance/standards/uses/uaa/index.cfm)
UAAs should be required and conducted. The rule and any guidance should state that a UAA needs to be conducted first, before any drainage project is reviewed by the State of Ohio or initiated by the applicant or project manager.
(2) These UAAs should only be conducted by Qualified Data Collectors (QDCs) as established by Ohio law and rule (OAC 3745-4-03)

(http://www.epa.state.oh.us/dsw/credibledata/requirements_for_participation.aspx).

The Clean Water Act requirement for a UAA, whenever a designated use is added or removed, is subject to 40 CFR 131.10(j) and (k) and 40 CFR 131.10(g) and (h), and is covered at http://water.epa.gov/scitech/swguidance/waterquality/standards/handbook/chapter02.cfm.

OAC 3745-32-03(B)(4) establishes the requirements for a UAA. We ask for confirmation that this is required for any base use or drainage use determination. The UAA also is very critical for the purposes of implementation of the Great Lakes Compact, which is under further consideration by the Ohio General Assembly.

The precautionary principle must be applied, i.e., on any undesignated stream, the Agency should not allow action without a UAA, and should not assign a lower use such as base use or drainage use as the first step. Before any stream may be assigned a beneficial use designation, under the Clean Water Act it must be presumed that a stream is fishable and swimmable. Therefore, the State of Ohio must perform a UAA prior to assigning a “base use,” “drainage use,” or any other use. As noted below, small streams such as those subject to this proposed use constitute a major portion of Ohio’s streams and the majority of tributaries in all of Ohio’s watersheds. There are many of these streams that have not yet been assigned a use designation (these are mapped for selected watersheds in Attachment 3; undesignated streams are shown in red, without a use designation overlay (these watersheds are the Auglaize River; Big Darby Creek; Grand Lake St. Marys; Grand River; Sandusky River and Upper Auglaize River). Because there would be no biological standard to meet, assignment of “base use” without a UAA would be more likely to encourage degradation and damaging activities such as conventional trapezoidal ditch construction and stream channelization, and would not provide an incentive for more environmentally-friendly approaches. Small streams, such as those that might be affected by this proposed rule, provide several functions, including biological habitat and pollutant processing, that would be lost with conventional ditch construction and channelization.

The Agency needs to avoid stream misclassification if this rule is implemented. Besides the pollutant removal and other functions that affect downstream uses, streams subject to the proposed base use or drainage use would often be misclassified as to use designation without a UAA. Please note that a 2003 review of Ohio EPA stream data by Ed Rankin of the Center for Applied Bioassessment & Biocriteria showed that:

> "most streams in Ohio, down to one square mile have numerous examples of streams that have the potential to support the Clean Water Act interim fishable goal (WWH) uses."[1]

Even higher uses than WWH are attainable, as noted in the above review. For example, in the Big Darby Creek watershed, the Conservancy is aware of small streams of less than 3.1 square miles (the proposed drainage area for "upland drainage" use in 3745-1-07(G)(2)(b)(ii)) where it appears that EWH and CWH are appropriate designations, and streams with a drainage area of less than one square mile appear to be capable of supporting the proposed Class III PHWH designation in OAC 3745-1-07(F)(9). As an example, this situation appears to be the case at the Conservancy's Big Darby Creek Headwaters preserve in Logan County. Attainments of this level might be missed if activities such as ditch maintenance or channelization are allowed to proceed as have been conventionally practiced. (The Nature Conservancy)

Response 71: The purpose of including the Base Aquatic Life Use is to clearly articulate what is already in effect under the current rule and to eliminate inconsistent statements found in the current rule. The statements at issue are:

- *Each water body in the state is assigned one or more aquatic life use designations.* [OAC 3745-1-07(A)(1)]
- *The "Outside Mixing Zone Average" water quality* ***criteria identified for the warmwater habitat use*** *designation apply to water bodies not assigned an aquatic life use designation.* [OAC 3745-1-07(A)(4)(b), emphasis added]

Creating the Base Aquatic Life Use and having it apply by rule to all water bodies not assigned one of the ten subcategories of tiered aquatic life uses validates the first statement. The proposed rule re-inserts this statement at 3745-1-07(E) to make the point more apparent.

The wording of the current rule has been frequently misinterpreted to say or maintain that a water body not assigned an aquatic life use is "by default" warmwater habitat and that the WWH biological criteria apply. However, the current rule the specifically identifies the "Outside Mixing Zone Average" water quality criteria as what applies, not the WWH use or the associated biological criteria because they are not identified as OMZA criteria.

In summary the proposed rule does not entail "a major departure from past approaches to Ohio stream protection". The Base Aquatic Life Use designation is simply meant to put a better name to a provision of the current rule that has been widely misinterpreted.

Comment 72: Qualified Data Collectors –
Any UAAs should only be conducted by Level 3 Qualified Data Collectors (QDC). This determination requires specialized expertise. Many

misclassifications of the use designations of streams would result if UAAs are not required and the party making the determination is not a QDC. The determination of the base use, drainage use and other use designations needs to be conducted by a qualified data collector under OAC 3745-4-03. This appears to be relevant as it would seem to apply to TMDL and permit decisions. This should be explicitly stated in the rule. These efforts should be supported by a study plan, and data must be verified by Ohio EPA. (The Nature Conservancy)

Response 72: Please see the response to comment 76 below.

Comment 73: Paragraph (E). After reading the proposed revisions, it is our understanding that all "unlisted" waters of the state, regardless of size, would receive a "Base Aquatic Life" use designation, and that chemical criteria currently associated with the Warmwater Habitat (WWH) use will apply. Potentially drainage ditches, swales and similar channels could receive this designation.

Clermont County does not feel WWH chemical criteria are appropriate for these types of "streams." The WWH criteria were developed with the protection of various fish and macroinvertebrate species in mind, many of which would not be found in these channels even if the chemical criteria were met. For example, Ohio EPA's proposed OMZM and OMZA criteria for cadmium are taken directly from the Final Acute and Final Chronic Values calculated for cadmium in U.S. EPA's "2001 Update of Ambient Water Quality Criteria for Cadmium." According to this document, the Final Acute Value (FAV) is based on the Genus Mean Acute Values for four fish genera, including Oncorhyncus (Coho and Chinook salmon, rainbow trout), Morone (striped bass), Salvelinus (brook trout, bull trout) and Salmo (brown trout). In addition, the FAV was lowered further to protect the rainbow trout. The Final Chronic Value was based on sensitivity data for 16 genera, 10 of which are fish. Criteria for other parameters are similarly calculated. These criteria are not appropriate in small streams that cannot support a healthy fish population, not to mention cold water species.

Additionally, if these streams do not meet the WWH chemical criteria (which is likely, particularly during wet weather), and therefore their designated use, a TMDL would be required. Undoubtedly, Ohio EPA does not have the resources to develop TMDLS for all such waterbodies. (John McManus, Clermont County Water & Sewer District)

Response 73: In general the chemical criteria that apply to unlisted waters are not changing as a result of this rule (see previous response which explains the Base Aquatic Life Use). The proposed rule is changing the criteria for cadmium. See comments under rule OAC 3745-1-42.

Comment 74: Ohio Adm. Code 3745-1-07(E)(1) defines the "base aquatic life use designation" as "waters conducive to the survival, protection and propagation of fish and other aquatic species that naturally, or through intentional introduction and management by resource agencies, inhabit surface waters of the state. ***Other wildlife species that depend upon aquatic resources are likewise afforded protection***." (emphasis added). The Utilities seek clarification on whether this applies to wildlife that permanently resides within or around a water body or whether this also applies to migratory species whose exposure to water quality at a particular site is limited. (Ohio Utility Group)

Response 74: In general, Base Aquatic Life Use criteria should be protective of migratory species. However, the agency may, on a case by case basis, evaluate if there is a need to evaluate migratory species individually.

Comment 75: 3745-1-07(E) & 3745-1-42(E) – Base aquatic life use designation. The OEPA's draft rules propose new beneficial use categories for small "historically channelized" streams in Ohio that would be termed a general "base use." According to the draft rules, any water course designated as a drainage use will no longer have the protection of bacteriological or bio-criteria if they are considered a historically channelized water body. The OEPA should not remove the bio-assessment method of measuring water quality since it provides a more accurate evaluation of a given body of water, and the bio-assessment points to the effectiveness of water quality management programs. Without including a bio-assessment, the "base use" called for in the draft rules is not adequate to meet the CWA antidegradation goals. Many of Ohio's streams that are subject to these rules have not yet been designated a use and are capable of meeting warm water habitat use designations. Additionally, those streams that have not yet been assigned a designated use are considered to have a warm water habitat use designation by default. See Ohio EPA Public Notice These streams, which have not specifically been assigned uses, will be designated a "base use" upon implementation of the draft rules. This leap from streams that are designated warm water habitat by default or streams which have not been assigned a use but would meet warm water habitat if they were assessed to a "base use" constitutes a "loss of use" and a degradation of water quality in violation of the CWA. "Loss of use" means the elimination of an existing use through failure to maintain conditions necessary for continuation of one or more of the beneficial uses, including failure to maintain adequate physical aquatic habitat features, failure to meet chemical criteria and, where applicable, failure to meet bacteria and biological criteria associated with the uses attained in that water body. OAC 3745-32-04(K). The CWA prohibits revising the water quality standards where the quality of such waters equals or exceeds the necessary levels to protect the designated use for the waters unless the revision is consistent with the antidegradation policy. 33 U.S.C. §1313(d)(4)(B).

The "base use" and all other revisions to use designations should be subject to OEPA's proposed abbreviated anti-degradation review. Draft rule ORC 3745-1-05. Specifically, the correlation between habitat quality and downstream water quality should be addressed in the provision requiring a consideration of the "cumulative impacts on streams within the 12-digit hydrologic unit watershed boundary" when conducting an antidegradation review. Draft rule 3745-1-05(C)(1)(c). (Ohio Environmental Council)

Response 75: Please see the response to Comment 74 above.

Comment 76: Use Attainability Analyses. The OEC requests the OEPA to include a requirement in the rules to perform a use attainability analysis ("UAA") prior to assigning any use, including the proposed "base use" and "drainage use," to guarantee compliance with the CWA's national goal of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters. 33 U.S.C. §1251(a)(2). The OEPA should not assign the proposed "base use" designation, which removes bio-assessment from the rules, without first conducting a use attainability analysis ("UAA") demonstrating such change is necessary and properly supported. The quality of many of Ohio's small streams will be placed in jeopardy through implementation of these proposed rules. Numerous small streams do not currently even have an assigned use designation and could likely meet warm water habitat standards. Ohio EPA is obligated by a 1981 public notice to review and evaluate all aquatic life use designations outside of the WWH use prior to basing any permitting actions on the existing, unverified use designations. In these streams that have not been assigned a use designation, the default designation is warm water habitat. Therefore, an assignment of "base use" is a backsliding which would result in degradation of the water quality standards.

The CWA requires all states to conduct UAAs when designating waters for beneficial uses that support the CWA "fishable and swimmable goals," and most significant to these proposed rules, a UAA is also required prior to a state proposing to remove or change a designated use. 33 U.S.C. §1313(c); 40 C.F.R. §131.20; 40 CFR §131.6; 40 C.F.R. §131.10(g)(h) and (j). States may only remove a designated use if the state can demonstrate that attaining the designated use is not feasible upon meeting one of several factors including the physical, chemical, biological and economic use. 40 C.F.R. §131.10(g).

The assignment of "base use" and "drainage use," without a prior UAA to confirm the assignment of such uses, encourages misclassification of uses which could result in degradation of downstream water quality in violation of the CWA's prohibition against degradation of water quality. Other detrimental results include the delivery of more pollutants to lakes, an increase in rapid runoff by drainage, a decrease in a stream's biological habitat and the exacerbation of flooding.

The OEC recommends the rule explicitly provide for Tier 3 QDCs to conduct all UAAs. ORC 3745-4-03. The OEPA should verify all data. (Ohio Environmental Council)

Response 76: Federal water quality standards regulations require a UAA prior to the designation of any use that does not meet the basic Clean Water Act goals (fishable and swimmable). The Base aquatic life use and the Primary Headwater Habitat use provide chemical and physical criteria compatible with CWA goals. Biological criteria and alternative chemical criteria associated with the Modified Warmwater Habitat (less than goal use) and Exceptional Warmwater Habitat (a goal use) uses are put into effect as the result of a UAA. Biological criteria for the Warmwater Habitat are put into effect in two ways: 1)the default assignment that all named streams are considered WWH until such time that a UAA is performed (basic premise of the 1981 policy statement referenced in the comment); or 2) as the result of a UAA. The Agency routinely conducts the UAA surveys as part of its surface water monitoring program to ensure that accurate beneficial use information is available in the TMDL and NPDES permit program. The issue of the drainage use is moot since that beneficial use is not included in the proposed rule.

Applicants seeking permits to authorize placement of fill material into streams are required by law to provide a UAA if the stream is unnamed. Proposed rule revisions in Chapter 3745-32 provide the necessary data collection requirements to ensure proper UAA assessment methods are followed and that the stream's existing use is protected. The Agency's Credible Data program does provide one means to gauge the technical training and skills acquired by an individual performing the UAA. However, linking qualified data collector credentials to a permit application process could be beyond the legislative intent of the Credible Data law. Ultimately, acceptance of UAAs from applicants will be a Director's decision that is based on the material submitted to document the UAAs including the types of data collected, how the data were collected, how the data were analyzed, and how the data were used to draw conclusions as to the appropriate aquatic life use.

Comment 77: 3745-1-07 (E)(2) "The designation of base aquatic life use shall apply to all water bodies that are not otherwise designated under the tiered aquatic life use system...." The terms "water bodies" and" base aquatic life use" should be defined in Rule 02. The designation of "all water bodies" at a minimum attaining "base aquatic life use", which is stated in Fact Sheet Attachment 1 as being equivalent to warmwater habitat, will greatly overestimate or exaggerate the aquatic life use of many impaired waters in the state. The extent of the overestimation is also dependant on the definition of "water body". Please consider adding a statement confirming

that the "base aquatic life use" is determined by chemical standards not through biological criteria. (ODOT)

Response 77: Please see previous responses on definitions and Base Aquatic Life Use.

Comment 78: The definitions of "coldwater habitat" and "native cold water fauna streams" in Ohio Adm. Code 3745-1-07(F)(4) are not consistent with the definition of "cold water fauna" as listed in Ohio Adm. Code 3745-1-02(B)(21). At a minimum, the specific technical definition of "cold water fauna" in this section should be embedded into the definition of "native cold water fauna streams." Note, however, that the Utilities provided comments above on the definition of "cold water fauna."

Regarding the designation of streams as "native cold water streams" in Ohio Adm. Code 3745-1-07(F)(4)(ii), the faunal criteria for streams having a drainage area of less than 1.0 m^2 is: (1) one reproducing population of a species of cold water vertebrate and/or (2) organisms from four taxa of cold water macroinvertebrates. Thus, Ohio EPA could designate a headwater stream as "native cold water" if only a single population of salamander (as listed in Table 7-2) is present (i.e., no cold water fish or macroinvertebrates need be present). The Utilities believe that a greater level of "biological exception" should be applied. Within the list of cold water salamanders, the northern and southern two-lined salamander (*Eurycea bislineata bislineata* and *E.b,cirrigera*, respectively) are, according to Ohio EPA, the most common salamander species found in the entire state in primary headwater habitats. During Ohio EPA's amphibian survey from 1999 - 2001, one (or both) of these species was found in 89% of all primary headwater habitat sites surveyed. Clearly, this salamander can tolerate a wide range of habitat requirements relative to other cold water salamander species. As such, the Utilities believe that Ohio EPA should delete these species from the list in Table 7-2. Also, we believe that the faunal criterion of "one reproducing population of a species of cold water vertebrate" in Ohio Adm. Code 3745-1-07(F)(4)(ii)(b)(i) should be replaced with "<u>at least one reproducing population of a species of cold water fish and one reproducing population of a species of cold water salamander</u>." (Ohio Utility Group)

Response 78: Several revisions were made to the rules which address the comments raised. In particular, the proposed rules will generally restrict the designation of coldwater habitat to streams over one square mile in drainage area and coldwater habitat designations will not be dependent on the presence of salamander species. Furthermore, the list of cold water salamander species was revised to exclude the northern and southern two-lined salamanders (*Eurycea bislineata bislineata and E.b. cirrigera*) as well as the long-tailed salamander (*Eurycea longicauda*). These salamanders remain key vertebrate indicator species of Class IIIA primary headwater habitat streams as populations can only be sustained by the continuous presence of water year round in order to complete their life cycle. For

streams having drainage areas of less than one square mile, such a flow regime can only be supported by the contribution of some groundwater flow.

The commenter also makes the following statement: “During Ohio EPA's amphibian survey from 1999 - 2001, one (or both) of these species was found in 89% of all primary headwater habitat sites surveyed.” This statement is inaccurate. The vertebrate technical manual states on page 12 the following: “The two-lined salamander was found in 54 of 61 (88.52%) of all PHWH streams where salamanders were collected.” A total of 215 streams were surveyed, so the actual percentage of all the surveyed streams having two-lined salamanders was 25%.

Comment 79: In Table 7-2 Cold water fauna native to Ohio waters, some of the listed species appear to be suitable as coldwater fauna while other species are inappropriate for this classification. Trautman has documented the habitat requirements and geographic distributions of coldwater fish species. According to Trautman, the following fish species can reasonably be regarded as coldwater species: brook trout, longnose dace, brook stickleback, and the western tonguetied minnow. The relative restriction of these species to coldwater streams and brooks is well documented. In contrast, the following species, do not have relatively strict requirements for cold water regimes: central bigmouth shiner, central mudminnow, southern redbelly dace, and redside dace. While most of these species have obligated habitat requirements regarding clear water, high gradient, or clean gravel substrate, Trautman fails to mention a restriction to perennial cold water regimes. Further, it is inconclusive whether the American brook lamprey and mottled sculpin are restricted to cold brooks and streams, although they do prefer high gradient streams with clean substrate. The Utilities request that the Agency re-evaluate the inclusion of the fish species listed as coldwater as one cannot assume that a preference or restriction to one habitat attribute (e.g., water clarity or substrate) means, by default, that the species is a coldwater fauna.

With regard to the list of salamander species, the Utilities also believe that some species are inappropriately listed. According to Pfingsten, three of the salamander species listed (long-tailed salamander, northern two-lined salamander, and southern two-lined salamander) have widespread distributions in Ohio (at least in the portions of the state encompassing their geographic range). In addition, Davis et al. reported the occurrence and relative distribution of amphibian species in Hamilton County, Ohio. When reporting the abundance of each species in county parks, the authors stated that the southern two-lined salamander was "abundant" or "common" in the majority of these locations. Harding has also noted that "[t]wo lined Salamanders seem to tolerate a wider range of habitat situations than related streamside species." (p. 112). The Utilities question whether it is appropriate to consider these salamander species as

coldwater fauna, considering factors of geographic distribution, relative abundance, and habitat requirements. (Ohio Utility Group)

Response 79: Table 7-2 was populated empirically based on temperature records, and based on known and published temperature tolerances. Brook trout and brook stickleback are well documented coldwater species; American brook lamprey, mottled sculpin, longnose dace, redside dace, western tonguetied minnow, and central mudminnow are documented to have a strong affinity for cold and cool water streams, and these tendencies are borne-out by Ohio EPA data.

Southern redbelly dace are widely distributed in headwaters throughout the Western Allegheny Plateau, Erie-Ontario Lake Plain, and the portion of the southern half of the Eastern Cornbelt Plain Ecoregion where channelization and tile drainage is not, as yet, extensive. Southern redbelly dace are well-documented to have an affinity for groundwater seeps, and require permanent flow. Analysis of Ohio EPA data shows that the abundance of southern redbelly dace is strongly related to temperature. Abundance of southern redbelly dace decreases as stream temperatures increase beyond 20^{o}C. As such, southern redbelly dace are good indicators of the presence of groundwater, and can therefore be used as an indicator species in support of coldwater habitat designations.

The temperature requirements of bigmouth shiner are broader than what is demonstrated empirically in Ohio, likely due to the limited distribution of the species in Ohio. As such, bigmouth shiners could be dropped from the list.

Several revisions were also made in the proposed rules to the cold water amphibians listed in Table 7-2, including removal of the northern and southern two-lined salamander (*Eurycea bislineata bislineata* and *Eurycea bislineata cirrigera*) as well as the long-tailed salamander (*Eurycea longicauda*).

Comment 80: 3745-1-07(F)(4) Table 7-2. Northern two-lined salamander (Eurycea bislineata bislineata) and Southern two-lined salamander (Eurycea bislineata cirrigera) should be removed from this table of salamander indicators. These species have been regularly found in streams totally void of canopy cover and warmer headwater streams. At a minimum these species should have an asterisk.

Also, the rosyside dace (Clinostomus funduloides) is very closely related to the redside dace and yet is not listed as a coldwater species. The rosyside dace lives in very similar habitat as the southern redbelly and redside dace (small, clear, perennial headwater streams with steep gradient). ODOT recommends that the rosyside dace also be included in this table of cold water fauna.

These conclusions are supported by years of data submitted to your office collected by ODOT biologists and consultants. (ODOT)

Response 80: The northern and southern two-lined salamander (*Eurycea bislineata bislineata* and *Eurycea bislineata cirrigera*) as well as the long-tailed salamander (*Eurycea longicauda*) were removed from Table 7-2. While these species do require surface water to be present on a continuous basis year-round in order to successfully complete their life cycle and maintain their populations, they do appear more adaptive to a slightly broader range of temperatures than the rest of the salamander species on Table 7-2 which are typically found only near springs, seeps, caves, and other groundwater sources.

The data for Ohio do not support including rosyside dace as a coldwater indicator. Temperature and abundance data for rosyside dace in Ohio demonstrate that the species is found in relatively warm headwater streams – mean temperature during the summer index period at locations where rosyside were sampled is 23.1^{o}C, compared to a statewide mean of 20.6^{o}C for headwaters.

Comment 81: 3745-1-07(F)(8) "Lake Habitat". At this time it is unclear how the antidegradation rule(s) (3745-1-05 and 3745-32-04) will apply to this new classification of tiered aquatic life uses. (ODOT)

Response 81: Application of the Antidegration rule (OAC 3745-1-05) will not change from current practice regarding point source discharges and dredge and fill impacts to lakes. The chemical criteria are the same as currently applicable (since we are not currently including nutrient criteria) and no biological criteria are applicable to this use designation.

Comment 82: In Ohio Adm. Code 3745-1-07(F)(8), Ohio EPA has introduced a new beneficial use designation of lake habitat. The rules define this use designation to include "natural or constructed pooled or impounded bodies of water." While Ohio EPA has stated that this use designation would not apply to treatment facilities such as industrial ash ponds and clay borrow pits, the Utilities are concerned that the broad language would encompass these man-made standing water bodies that have never been regarded as a "water of the state." Because this definition may be construed broadly to include treatment facility or waste storage ponds, the Utilities request that Ohio EPA include the following language that would exempt constructed treatment facilities such as ash ponds and clay borrow pits to ensure that these industrial sites will not be subjected to the water quality criteria for lake habitats:

(8) Lake habitat.

(a) These are natural or constructed pooled or impounded bodies of water, excluding lake Erie, that meet the definition of lake in rule 3745-1-02 of the Administrative Code. <u>These do not include sewer systems, treatment works, or disposal systems as defined in 6111.01 of the Revised Code.</u> (Ohio Utility Group)

Response 82: Ohio EPA believes that ORC 6111 provides adequate language that exclude the water body types of concern expressed in the comment from the criteria that apply to the lake habitat use designation. However, additional revisions to the draft rules provide further clarity regarding the definition of a lake and the applicability of the lake habitat criteria that further address the concern raised in the comment.

Comment 83: 3745-1-07 (F)(9): The Service supports the addition of three classes of primary headwater habitat to Ohio's tiered aquatic life uses. As discussed in the rule, primary headwater habitats collectively exert strong influences on the chemical, physical, and biological integrity of downstream waters. In addition, Class III headwater habitats often exhibit high biodiversity and are difficult to replace in highly disturbed project sites. Addition of primary headwater habitat to Ohio's tiered aquatic life uses will help ensure protection of the beneficial uses of these streams. (U.S. FWS)

Response 83: Comment acknowledged.

Comment 84: 3745-1-07(F)(9): "(9) Primary headwater habitat … (d) Technical classification system for primary headwater habitats - … The assignment of primary headwater class does not require a water quality standard rulemaking under Chapter 119, of the Revised Code."

EPA Comment – EPA commends Ohio EPA on its excellent technical work in developing a classification system and assessment tools for primary headwaters. EPA would like to discuss further with Ohio EPA the implementation of this system. (U.S. EPA, Region 5)

Response 84: Comment acknowledged.

Comment 85: Paragraph (F)(9). In the Fact sheet, it is stated that Class III streams are "generally equated to Coldwater Habitat" (CWH). It has been our experience in reviewing numerous streams across the State every year that many headwater streams could be classified as Class III Primary Headwater Habitat (PHWH) by assessing the habitat features (HHEI), marcoinvertebrate residents at the family/order level (HMFEI), or by the presence of northern or southern two-lined salamanders. Often these streams do not harbor taxa traditionally characteristic of the CWH designation. Describing all Class III PHWH streams as CWH is misleading, and greatly skews what the expected biotic community of a given stream will be. Additionally, equating Class III PHWH streams with the CWH

designation affords these streams extra protections as if they were as rare or unique as CWH.

As currently defined, Class III PHWH streams appear to be fairly common within Ohio, and they are not unique aquatic resources like CWH or EWH streams. According to Ohio EPA's Field Evaluation Manual for Ohio's Primary Headwater Streams, V 1.0 (2002), Class III Primary Headwater Habitat (PHWH) Streams represent 16% of the total estimated stream miles in Ohio while all of the named streams (ODNR, USGS blue lines) in Ohio account for only 12% of estimated stream miles. Of these named streams 0.6% (961 miles) are designated cold water. If all Class III PHWH streams are equated with CWH, then CWH would not be a unique or rare stream habitat type (since they are approximately 16% of all Ohio Streams) and should not be afforded special protections or considerations (such as the increased mitigation ratios proposed in the Draft Stream Mitigation Rules).

While assessing streams throughout the state, ODOT biologists have made the following observations. First, water quality appears to be the driving force behind whether a stream is capable of supporting PHWH cold water fauna. While in-stream habitat features can certainly play a role in water quality, we have observed spring fed, man-made roadside drainage ditches with few or no Class III habitat features that meet the biological criteria of a Class III PHWH streams. This would lead us to believe that the composition and quality of the biological community is more directly related to water quality than habitat characteristics, and that the HHEI may be based on somewhat spurious correlations between habitat and biota. Second, it appears to us that some of the taxa associated with the Class III designation (specifically northern and southern two-lined salamanders) may be more tolerant of water quality and habitat impairments than others. While these taxa do require permanent flow to successfully reproduce within a stream, water quality and temperature can be somewhat less than what is typically associated with CWH. This was often observed in southeastern Ohio where many of the PHWH streams support two-lined salamanders despite the presence of water quality impairments (such as siltation and minor amounts of acid mine drainage inputs) and very few other "cool water" adapted taxa may persist.

While it is recognized that Class III PHWH streams provide perennial flow, the proposed level of protection afforded to these streams is greatly disproportionate to other more unique resources (such as EWH or CWH streams). This requirement would also result in costly, excessive permit processes, which often times may not have viable alternatives. As such, it is strongly suggested that OEPA clearly communicates how and when Class III Headwater Streams are equivalent to CWH. If Ohio EPA continues to propose to associate and protect Class III PHWH streams the same as streams with the CWH designation, we believe some effort should

be made to further segregate the Class III PHWH use designation into two categories, "cool water" PHWH streams and those that are truly "cold water" PHWH streams. By doing so, less sensitive "cool water" Class III PHWH streams could have similar mitigation ratios as more common stream types (such as those associated with the WWH use designation), while "cold water" Class III PHWH streams could have similar mitigation ratios as less common stream types (such as those associated with the CWH use designation). Since a primary goal of protecting these Class III PHWH streams appears to be the protection of downstream aquatic life uses, another option may be to apply stricter protections and mitigation ratios to Class III streams within the watersheds of CWH or EWH streams, and less penalizing ratios where downstream uses are less reliant on water temperature (WWH, MWH, and LRW designations). (ODOT)

Response 85: Ohio EPA has considered these comments and made substantial revisions to the draft rules. The revisions to the Class III primary headwater habitat classification are essentially consistent with the recommendations made in the comments. Changes include revisions to the cold water taxa list in Table 7-2, modifications to the rule language pertaining to primary headwater habitat, and division of Class III PHWHs into two sub-categories. These changes will focus stricter protection and mitigation efforts in the highest quality small watersheds because keeping those environments relatively intact and functional is critically important to protection of downstream aquatic life uses, especially CWH and EWH.

Comment 86: Primary Headwater Habitat Use Designation - The description as proposed (Rule 3745-1-07) does not exclude standard agricultural structural management practices such as grass waterways, diversion channels or other watercourses without a defined bed and bank from this use designation. See comments related to water quality permits and the stream mitigation process above under definition of a stream. (Ohio Farm Bureau)

Page 18. (9) Primary headwater habitat. The classification system as proposed does not exclude standard agricultural structural management practices such as grass waterways, diversion channels or other watercourses without a defined bed and bank from this use designation.

Recommendation: Clarify the water conveyances regulated under the proposed draft waterways and specifically exempt structural agricultural management practices such as grass waterways and diversion channels and other watercourses without a defined bed and bank from primary headwater stream related regulation. (Ohio Farm Bureau)

Response 86: Watercourses without a defined bed and bank do not fit within the definition of stream. Grass waterways and most other types of structural management practices installed for runoff and erosion control from cropland should not create permanent channels with defined bed and

banks if properly designed and maintained. Revisions were made in the stream definition to clarify that a "temporary channel-like feature on the land surface", such as may arise in a grass waterway following a large rain event, are not streams.

There are other water management structures such as petition ditches and privately constructed farm ditches that would meet the definition of stream. While these types of streams may fall under a primary headwater habitat classification, any associated permitting and mitigation requirements would take into account these modifications. The primary headwater habitat use designation includes a modified sub-type that recognizes the differences inherent to these versus natural streams.

Comment 87: 3745-1-07(F)(9) Primary headwater habitat. The OEC commends the OEPA's inclusion of primary headwater habitat use designations in the rules and their recognition that this contributes to protecting overlooked waters and the health of downstream waters. These streams are the initial entry of pollutants to the aquatic ecosystem. They supply water and nutrients to the stream network ecosystem. Biological life, such as headwater-dependent fish and amphibians, is dependent on the existence of these streams, further justifying the inclusion of primary headwater habitat use designations in the rules. These streams determine the quality of downstream waters. Establishment of primary headwater habitat could help to protect biological life and a habitat type that is far too often overlooked and lost, as well as helping to protect downstream uses.

The OEC encourages the Agency to stand firmly behind their statements recognizing the importance of PHWH and apply full Antidegradation review to these streams. The result would include requiring the same demonstration of avoidance and minimization that is required from larger stream systems. Streams that are subject to both the PHWH and a Drainage Use Designation should require a Use Attainability Analysis ("UAA") conducted by a Tier 3 Qualified Data Collector ("QDC") before assigning such a drainage designation (and a subsequent utilization of base aquatic life use). (Ohio Environmental Council)

Response 87: Support for the Primary Headwater Habitat use is acknowledged. Please see the response to comment 76 regarding the UAA issue.

Comment 88: 3745-1-07(F)(9) Primary headwater habitat. The Conservancy strongly supports the establishment of this use designation. Antidegradation protection should apply to primary headwater habitat (PHWH) streams, and at least Class III streams; it should include a full analysis of the potential for those streams.

As with the UAAs that should be conducted to determine if a stream is eligible for the "base use" or "drainage use," PHWH status needs to be done by a Qualified Data Collector.

The PHWH use designation is necessary and justified because of the essential and primary role these streams have as the initial entry of pollutants to the aquatic ecosystem, their role in supplying water and nutrients to the stream network ecosystem, and because of the biological life that is dependent on their existence, such as headwater-dependent fish and amphibians. These streams determine the quality of downstream waters. Establishment of primary headwater habitat could help to protect biological life and a habitat type that is far too often overlooked and lost, as well as helping to protect downstream uses.

Because it is not clear that PHWH uses would be protected from damage such as from channelization, as we have stated above, the "base use aquatic life designation" in 3745-1-07(E) or "drainage use" should not be established without a UAA.

We appreciate the Agency's effort to address headwater streams and water quality impairments related to drainage and development impacts. We believe Ohio has well-recognized impacts and extensive data[2]. We support standards leading to related improvements in stream protection and water quality. We also support further analyses of impacts and environmentally-friendly Best Management Practices and designs related to drainage projects proposed for such streams.

While recognizing we have specific comments on the need for improvements, in general we support these proposed rules, based on evidence such as Ohio EPA's 2008 Integrated Report[3] findings on small streams and Total Maximum Daily Load (TMDL) results. TMDL reports consistently list "land disturbance" activity related to agriculture and development. As Ohio EPA has summarized in the 2008 Integrated Report, these are the predominant causes of aquatic life impairment in Ohio. In this rules package, Ohio EPA is recognizing the importance of these small streams, and we support protective rules. Drainage practices and development impacts can be lessened. Mitigation can be improved, and the proposed rules could help to encourage more widespread adoption of more effective mitigation.

The importance of headwater streams

These stresses above can directly impact large streams and rivers, although the most impact is documented on smaller watercourses, as Ohio EPA has extensively documented in its TMDL reports and biennial Integrated Reports. Impacts accumulate and affect the streams they flow into. As has been well summarized by experts such as Ohio EPA[4] and

Meyer et al,[5] small streams have a high importance in freshwater ecosystems and for human use. This summary notes this need and states "To provide the ecosystem services that sustain the health of our nation's waters, the hydrological, geological, and biological characteristics of small streams and wetlands require protection."

The Journal of the American Water Resources Association published a series of articles on headwater streams in 2007.[6] This series covers many important aspects of headwater streams: the contributions of headwater, intermittent and ephemeral streams to the integrity of downstream waters, including biodiversity contributions, downstream water quality, ecological integrity, hydrological connectivity, groundwater, and nutrient management. Ohio should recognize this and its own data and science, and use it to protect and improve headwater stream quality in Ohio. Where these streams are affected by drainage or threatened by development, the State of Ohio should establish protection goals for PHWH and downstream uses.

The Agency documented the lag in improvement in the health of small streams in its 2008 Integrated Report (Page A-6), i.e., small streams are not recovering well or meeting attainment goals in spite of the efforts under the Clean Water Act. Recognition of these impacts and functions is essential, and we appreciate and support the Agency's proposals where they support protection of headwater streams.

Ohio EPA, in its 1999 document, "Association Between Nutrients, Habitat, and the Aquatic Biota in Ohio Rivers and Streams, Ohio EPA Technical Bulletin MAS/1999-1-1," stated:

> "Headwater streams are important to the assimilation of nutrients and sediment in runoff in determining total maximum daily loads (TMDLs), and to the overall quality of downstream resources. Headwater streams compose 78% of the stream miles in Ohio that, in the aggregate, represent a significant source of assimilative capacity for the protection of downstream uses. *The aggregate condition of headwater streams is correlated with the quality of water and aquatic life resources in larger streams, and reflects the integrity of the watershed as a whole*." (emphasis added) (The Nature Conservancy)

Response 88: Comment acknowledged.

Comment 89: 3745-1-07(F)(9)(i)(b) and (ii)(b). We support these definitions for primary headwater habitat (PHWH) streams, and strongly agree with the Agency's statement in the rule "these habitats exert strong influences on the chemical, physical and biological quality of downstream waters" (see 3745-1-07(9)(a)).

While we recognize that mitigation for PHWH is addressed elsewhere in the proposed rules, we want to emphasize the need to protect PHWH stream functions adequately. Class I and Class II streams should not be replaced by stormwater control Best Management Practices unless the BMPs: (1) include flow regimes that match natural conditions; and (2) match temperature regimes, avoiding temperature increases from stormwater BMPs. Concerning Class I and II primary headwater habitat streams, while we recognize some functions of these streams might be replaced by stormwater control best management practices, they especially need to match the flow regimes, i.e., the pattern of flow over time. Stormwater related to development is typically "flashy," and the flow pattern shows high and low flows not typically of pre-development conditions, e.g., see the figure for "Hydrograph Patterns Typical of Developed and Undeveloped Watersheds" at http://gvsu.edu/wri/isc/york-creek-management-plan-stormwater-runoff-steam-hydrology-9.htm. The BMPs should not cause downstream channel instability/erosion/scouring or lower base flows. The Agency should research what other states have done to remedy the flow and temperature problems of such BMPs.

Also, see below our comments related to "3745-1-56(B)(3)(d) Streams assigned to mitigation category 3." As we explain further, the Conservancy recommends that Class III PHWH streams be placed in Mitigation Category 4 (instead of 3) to ensure protection of aquatic life specific to these streams. (The Nature Conservancy)

Response 89: Specifics on stream mitigation have been tabled from this rulemaking and will be pursued in a follow-up rulemaking to this one.

Comment 90: 3745-1-07(F)(9)(i)(b) and (ii)(b). The OEC urges the OEPA to greatly consider the grave impacts that accompany replacing Class I and Class II primary headwater stream functions with stormwater best management practices. While we recognize some functions of these streams might be replaced by stormwater control best management practices, they especially need to match the flow regimes, i.e., the pattern of flow over time. Stormwater related to development is typically "flashy," and the flow pattern shows high and low flows not typically of pre-development conditions. The BMPs should not cause downstream channel instability, erosion, scouring or lower base flows. The Agency should research what other states have done to remedy the flow and temperature issues of such stormwater BMPs and should develop BMPs particularly for these classes of headwater streams. (Ohio Environmental Council)

Response 90: The portions of this rulemaking pertaining to stream mitigation have been removed for further consideration. Our plan is to introduce stream mitigation requirements in a separate rulemaking in 2012.

Comment 91: 3745-1-07
(9) Primary headwater habitat
(c) Assignment of primary headwater habitat classes – For purposes of reviewing applications for authorizations required by Chapter 6111 of the Revised Code, the classification system for primary headwater habitats in paragraph (D)(9)(d) of this rule shall be applied if the director believes that such information will be useful in the review process. The classification system is intended to assist in efforts that will avoid, minimize, and mitigate the effects of the regulated activity upon the following: the physical habitat conditions of the stream channel; the chemical, physical and biological integrity of the primary headwater habitat; and the existing uses and designated uses of the immediate segment and of downstream stream segments. The assignment of primary headwater class shall be done at the time of the project review.

Comment #1: The premise of the development of the Primary Headwater Habitat Streams is based on defining categories of streams and the scientific basis on which these categories are based does not in any way lend to determining stream quality. When reviewing applications for authorizations required by Chapter 6111 of the Revised Code (Section 401 Certifications), it is imperative that the primary headwater classes be viewed in the same way that they are described within "Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams". Particularly, the classes are explained in the manual as a classification to differentiate stream type with water temperature as the major factor of aquatic community structure (Class III = streams with cool-cold perennial flowing water; Class II = streams with warm-water adapted fauna present either seasonally or annually; and Class I = streams with normally dry channels and little to no aquatic life). This assessment tool will only provide meaningful and reproducible results if applied within the sensitivity and responsiveness of the bio-indicators, and as written in the Manual, the biology is to be used to indicate stream type based on water temperature NOT quality. For example, you can have a stream that falls within the scoring ranges of a Class III stream but does not have any cold water taxa or sensitive taxa. Further, the use of a reproducing population of Two-lined salamander may be an adequate indicator of stream type (i.e. perennial flowing cold-cool water habitats- based on their site selection for egg-deposition and length of larval period), but just the presence/absence criteria as defined within the manual is not. Further investigation is required to determine if salamander populations are an adequate indicator of the overall stream quality; and therefore, should not be applied in this way until further scientific evidence is provided. (Kleski Environmental Consulting)

Response 91: Several revisions were made to the rules which address the comments raised. The concept of Class III remains that the flow regime is perennial and tied to the presence of groundwater as a source of continual flow.

However, the proposed rules break out the Class III PHWH streams into two different types – IIIA and IIIB. Class IIIA streams are those that have a weaker groundwater source that is reflected in the biology while those that are IIIB have a stronger groundwater connection that is also reflected in the biology.

In particular, the proposed rules will generally restrict the designation of coldwater habitat to streams over one square mile in drainage area and coldwater habitat designations will not be dependent of the presence of salamander species. Furthermore, the list of cold water salamander species was revised to exclude the northern and southern two-lined salamander (*Eurycea bislineata bislineata* and *E.b,cirrigera*) as well as the long-tailed salamander (*Eurycea longicauda*). These salamanders remain key vertebrate indicator species of Class IIIA primary headwater habitat streams as populations can only be sustained by the continuous presence of water year round in order to complete their life cycle, and for streams having drainage areas of less than one square mile, such a flow regime can only be supported by the contribution of some groundwater flow.

Comment 92: (9) Primary headwater habitat
(d) Technical classification system for primary headwater habitats- Each primary headwater habitat water body may be classified using the evaluation methods described in "Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams." The director shall consider all pertinent data and information collected by Ohio EPA, an applicant for authorization of an activity regulated under Chapter 6111 of the Revised Code, or a third party. The assignment of primary headwater class does not require a water quality standard rulemaking under Chapter 119 of the Revised Code.

Comment #1: The Section 401 Unit along with the USEPA and USACE want to use the numerical results of the biological and habitat assessment schemes developed by the Ohio EPA for gagging impacts associated with permitted activities. These assessments were not developed with this intended use in mind. This is an application of a technology that needs to be developed in order to gage the natural variability of these aquatic systems both temporally and spatially over time. To date research has not been provided with sufficient repeat sampling at specific sites to provide the statistical basis on which to establish target values. This is exemplified by the PHWH. Several components of natural variability are not accounted for in the PHWH evaluations, which may severely decrease the likelihood that scores will be reproducible even if human disturbance is not a factor. Spatial variation (between sites) and temporal variation (within the field season and across years) should be evaluated to distinguish irrelevant factors from an actual stressor (Jackson et al., 2000).

It is essential for biological assessments to produce a consistent and reproducible sample (DeShon, 1995). To accomplish this, the components of natural variability, particularly temporal and spatial factors, must be defined and accounted for during the monitoring. In addition, because biological attributes vary geographically, it is critical to evaluate them based on regional standards. In this way, Ohio EPA's biological water quality criteria for streams and rivers are classified to reflect the different flora and physical characteristics of the five Ohio ecoregions (Ohio EPA, 1987). Although primary headwater streams were sampled regionally (see PHWH Data Compendium, page 6-7) and differences were found among the ecoregions (see Technical Report: Ohio's Primary Headwater Streams- Fish and Amphibian Assemblages, page 10 and Technical Report: Ohio's Primary Headwater Streams- Macroinvertebrate Assemblages, page 2), it does not appear that the PHWH aquatic life use designations were adjusted to reflect these differences. To be effective, each of the components required for the classification (i.e. presence/absence of cold-water fish, presence/absence of cold-water salamanders, and HMFEI scores/ presence of cold-water macroinvertebrate taxa) should be tested and calibrated for each of the five Ohio ecoregions.

Of particular concern are the findings for the West Allegheny Plateau (WAP) ecoregion (see PHWH Data Compendium, page 7). Because salamander presence and Class III streams were disproportionate in the WAP compared to the other ecoregions, an additional factor and/or class may be necessary to refine the classification within this region. Based on these recent surveys, as previously stated there is some uncertainty that salamander presence alone has the ability to discriminate the quality of a site. Further, the natural habitat features common in the WAP, large riparian corridors and large, contiguous forested areas may make salamander presence more common regardless of headwater stream quality.

Comment #2: Another closely related factor to regional consideration is defining reference conditions within the study area. Barbour et al. (2000) emphasizes that "reference conditions are a critical element of assessing the quality or health of the aquatic system." Defining the characteristics of waterbody segments that are minimally impacted by human activities is necessary to determine what condition is reasonably attainable within a region. To illustrate the importance, Ohio EPA scores each ICI metric and IBI metric with respect to a database of least impacted regional reference sites (Ohio EPA, 1987).

The PHWH Data Compendium Section 3.1, page 4 details the criteria used for selecting sites for the program. While an extensive sampling effort was carried out, it is not clear the sites were selected using a reference site approach or that they possessed a condition gradient (i.e. condition differences among sites) other than potential impacts by rapid

development. While the use of fish, salamanders, and benthic macroinvertebrates fulfills most considerations for an adequate biological indicator (Barbour et al., 2000; Jackson et al., 2000), there was no testing of these as a measure to anthropogenic stress and perturbations in the primary headwater systems. The presence and/or absence of fish and salamanders are used to define class (stream type), yet the species were not defined by their sensitivity to habitat and chemical degradation. Again, this is a crucial factor because the PHWH assessment is commonly applied within the regulatory community as a method to assign a quality to primary headwater streams (i.e. aquatic life use designation), yet it was not developed in way that considered various environmental conditions; and therefore, should not be used in this way.

Comment #3: Biological monitoring programs often restrict sampling to a specific index period to account for seasonal differences in biological attributes and to ensure a strong and stable environmental signal (Jackson et al., 2000). Ohio EPA confines their own biological sampling for macroinvertebrate and fish communities to a specific index period from mid-June through September to minimize seasonal differences. Because the PHWH protocols do not restrict sampling to a specified time frame, within year variation may be a factor when comparing HMFEI scores collected during different seasons. Of particular concern, the macroinvertebrate communities may not be comparable due to differences in composition in the spring and fall.

The current biological surveys being required of the industry demand much planning, expertise, and financial investment. Considering these factors, it is expected that the mandated assessment tool provide meaningful and reproducible results, and based on these points described, it is clear many key considerations have been neglected.

Comment #4: The rule 3745-1-07(F)(9)(d) describes the PHWH classification as a method to differentiate stream type with water temperature as the major factor of aquatic community structure (Class III = streams with cool-cold perennial flowing water; Class II = streams with warm-water adapted fauna present either seasonally or annually; and Class I = streams with normally dry channels and little to no aquatic life); yet the HMFEI score is adapted from a scoring system used by the Ohio DNR Scenic Rivers Stream Quality Monitoring system and is used to reflect “the overall condition of the benthic macroinvertebrate community” (Field Evaluation Manual, page 53). In order to be consistent with the rule 3745-1-07(F)(9)(d) and each of the other components required for the classification (i.e. presence/absence of cold-water fish, presence/absence of cold-water salamanders, and presence of cold-water macroinvertebrate taxa), the HMFEI score should be based on whether the community is warm-water adapted or cold-water adapted. For example, each identified taxon should receive a score based on its expected presence in cool/cold perennial

waters (score = 3), intermittent or warm water perennial streams (score= 2), or ephemeral streams (channel usually dry, score = 1) and not weighted based on sensitivity. If scored in this way, the final summed score would be highest for cool-cold perennial waters and lowest for ephemeral. (Kleski Environmental Consulting)

Response 92: In regards to the first paragraph of Comment #1, these comments pertain to a sampling requirement that is not part of this rulemaking effort.

The comment in the second paragraph of Comment #1 erroneously compares numeric biocriteria with PHWH classifications. The field manual provides a scientific data-based methodology for differentiating between three different types of primary headwaters streams that vary in their aquatic biology based primarily on flow regime, which is strongly influenced by the water source. The methods contained in the manual have been developed and successfully used in all ecoregions of the state. As described in the manual, there are differences in the relative abundance of different PHWH stream classes as would be expected by geological differences, among other characteristics. However, the fact that cold water macroinvertebrate and vertebrate taxa may only be infrequently encountered in some parts of the state relative to other parts does not alter the ecological and physiological requirements necessary for cold-water adapted fauna or fauna requiring continuous water year-round to survive, grow and successfully reproduce.

The proposed rules have further refined the Class III PHWHs into two types to recognize the relative influence of groundwater on the biological community. Where the groundwater connection is strongest, the biological community will be reflected as a Class IIIB PHWH.

In response to Comment #2, the methods employed in the PHWH field manual differentiate PHWH classes. A variety of tools are included within a range of assessment rigor ranging from the simplest based on habitat to the most complex (biological assessment based on identification of vouchers to the lowest taxonomic level). These water quality standards rules pertain only to the identification of the type of PHWH.

In response to Comment #3, the PHWH manual and the classification tools it describes were intentionally designed to be able to be used year-round, within reason, so as to accommodate the regulated community by providing flexibility. The manual does clearly state that seasonal differences may occur both with the HHEI and macroinvertebrates, for example. However, the manual also states that where results of an assessment differ between a seasons that acceptable results from a summer sample would trump acceptable results from another season, all other things being equal.

In response to Comment #4, the HMFEI is a rapid bioassesment field sampling method which has been documented to be a good predictor of PHWH classes. It awards the most points to those benthic macroinvertebrate taxa most associated with Class III PHWH streams. In a case where the HMFEI is suspected of erroneously classifying a PHWH stream, a more detailed taxonomic survey may be conducted to either verify or refute the classification based on the HMFEI. The HMFEI is merely a tool that is designed to provide enhanced PHWH class identification compared to the HHEI based on biology while bearing cost in mind.

Comment 93: (F)(9)(d)(iii) : Primary Headwater Habitats-Class III. Ohio EPA has set a characteristic as "high functional value" but there is no metric or other objective, promulgated standard to determine what is characterized as a "high functional value" primary headwater habitat. While the Trade Association Coalition objects to the use of such classifications, if Ohio EPA continues to embrace such a concept, Ohio EPA should work with regulated business to develop objective standards. Additionally, Ohio EPA has set such a restrictive standard for Class III Primary Headwater Habitats that such standard is effectively a prohibition against any impact on a Class III area. Ohio EPA should develop a realistic and reasonable approach to considering impacts to Class III areas. (Trade Association Coalition)

Response 93: Significant modifications were made to the Class III PHWH definition. The term “high functional value” that was deemed in the comment to be abstract was removed from the draft rule. The Class III PHWH has been re-structured into two separate categories to recognize differences in the biological community that inhabit these streams. As such, this provides more refinement to Class III PHWH definition compared to that found in the draft rules, and will provide greater flexibility in the permitting process.

Comment 94: (9) Primary headwater habitat
(d) Technical classification system for primary headwater habitats- Each primary headwater habitat water body may be classified using the evaluation methods described in “Field Evaluation Manual for Ohio’s Primary Headwater Habitat Streams.” The director shall consider all pertinent data and information collected by Ohio EPA, an applicant for authorization of an activity regulated under Chapter 6111 of the Revised Code, or a third party. The assignment of primary headwater class does not require a water quality standard rulemaking under Chapter 119 of the Revised Code.
(iii) Class III primary headwater habitat
(a) These streams are fed by ground water and support a cold water fauna meeting one or more of the following criteria
(ii) A reproducing population at least one species of salamander listed in table 7-2 of this rule

Comment: The application of salamander presence/absence should be removed from the PHWH protocols until further research is conducted into the applicability of this criteria. For example the rule uses another term "reproducing population" as a reference but does not explicitly define what constitutes “a reproducing population” of salamander, or what approach should be taken to assign a PHWH classification when there is no evidence of a reproducing population.

Again it cannot be emphasized enough that if these assessment methods are going to be used as an applied technology for the measure of water quality change by the regulatory community then they should be statistically evaluated over a range of conditions in order to establish the natural variability within these aquatic systems at any one site. (Kleski Environmental Consulting)

Response 94: Refinements to the use of salamanders in the classification of PHWH streams were made in the proposed rules. The terms “reproducing populations” of salamanders has always been defined in the field manual as “larva, eggs, or a mixture of juveniles and adults” – please see Table 6 of the field manual.

Comment 95: 3745-1-07 (F)(9)(d)(iii)(c) "If impacts cannot be avoided, then the project applicant must demonstrate that class III primary headwater habitats are locally and regionally abundant as part of an overall mitigation plan, submit a viable watershed management plan that ensures their protection."

This statement is vague and could possibly result in an excessive bureaucratic and potentially unlawful burden on an applicant. ODOT questions whether it should be the responsibility of the applicant to develop a watershed management plan for an entire watershed, when the applicant is likely affecting a very small component. This is of special concern when the applicant cannot control the watershed management and may be unaware of other current or planned impacts in the watershed. We suggest the sentence be deleted. This requirement will add a tremendous cost and burden to ODOT. (ODOT)

Response 95: This sentence has been dropped in the proposed rule. However, the Agency believes there are instances where the loss of stream aquatic life use should be examined on a broader scale than an individual project’s footprint. See the revised language in rule 3745-32-04. We have considered the potential environmental analysis and cost considerations in drafting the new language.

Comment 96: 3745-1-07(F)(9)(d). The primary Headwater Habitat Evaluation Index (HHEI) is required to designate a primary headwater class: Class I, II, or III. Class III headwaters are considered high quality based on the interaction of groundwater and the presence of cold water fauna. In the draft rules, the

assignment of primary headwater class shall be done (understood: confirmed by Ohio EPA) at the time of project review (application review). We respectfully submit an option to assign (confirm) a primary headwater class be available in the rules before the time of project review. Ohio EPA would note the previously verified class designation during the project review process. A change in stream designation to a Class III stream during project review would have significant negative effects, primarily in project development and costs. Considering project development, assignment of a Class III stream could obligate applicants to modify their project after investing significant time and financial resources. According to 3745-1-07 (F)(9)(d)(iii)(c), "if impacts to Class III primary headwater habitat streams cannot be avoided, then the project applicant must demonstrate that Class III primary headwater habitats are locally and regionally abundant and, as part of an overall mitigation plan, submit a viable watershed management plan that ensures their protection." Accordingly, there is a significant cost associated with potential project redesign, information collection, and mitigation. Early confirmation of a stream class would provide information critical to the project development process and reduce the potential for impacts to these high quality streams, which appears to be one purpose of this proposed rule. The option for pre-application stream class determination should be available and specified in the rules.

In 3745-1-07 (F)(9)(d)(iii)(a) it states that Class III primary headwater streams **are** fed by groundwater and support cold water fauna (read: required characteristics to be Class III). In 3745-1-07 (F)(9)(d)(iii)(b) a list of characteristics is provided some or all of which **may be** typical of Class III streams. It is unclear if Ohio EPA has the ability to designate a stream as Class III based on one or more of these characteristics without meeting both criteria in (a). If this is the case, this should be specifically stated in the regulations. (Gregory K. Eastridge, HzW Environmental Consultants, LLC)

Response 96: We agree with the commenter that in order to properly plan and to expedite project review, it is essential to conduct accurate assessments of any primary headwater streams on a site as early as possible. The statement referred to in the comment that an assignment of primary headwater class shall be done at the time of project review was not intended to mean that assessments can only occur at the time of project review, but as a statement by which assessments would need to be done. We have removed the language from the draft rule.

The draft rule language In 3745-1-07 (F)(9)(d)(iii)(a) mentioned in the comment has been removed. Clarifications have been made to the Class III primary headwater habitat definition. See proposed rule language in OAC 3745-1-07(F)(9)(d)(iii).

Comment 97: 3745-1-07(F)(9)(d)(iv)(b) "Modified primary headwater habitats may include, but are not limited to, streams dominated by native species and... "

We suggest that Modified primary headwater habitats are those streams dominated by non-native species. Or avoid this confusion by simply removing the phrase “streams dominated by native species” and state, “..may include streams that because of long lasting channel modifications have limited potential for increased functional values.” (ODOT)

Response 97: The particular paragraph referenced in the comment and containing the language of concern was removed.

Rule 3745-1-32 Ohio river standards.

Comment 98: OEPA is now officially adopting ORSANCO Pollution Control Standards. They should include the words 'most current version' (Ramesh D. Kashinkunti, Greater Cincinnati Water Works)

Response 98: Rather than incorporate the ORSANCO Pollution Control Standards by reference, the revised draft rule contains those water quality criteria in the ORSANCO PCS that are more stringent than the statewide WWH criteria. Whenever ORSANCO changes their PCS, Ohio EPA will revise this rule to be consistent with it, if necessary. Ohio law does not allow the incorporation by reference of undated materials.

Comment 99: The current version of the PCS does not include any notification of a bypass or any regulatory parameter that is greater than the 30 day average specified in the NPDES permit. The NPDES should include a statement that any NPDES dischargers has to notify all drinking water utilities who source water is the Ohio River within 25 miles of the discharge of any bypass or analysis of any regulatory parameter that is greater than the 30 day average specified in the NPDES permit within one hour of becoming aware of the incident. (Ramesh D. Kashinkunti, Greater Cincinnati Water Works)

Response 99: ORSANCO’s 2011 PCS does have a requirement that industrial waste treatment facilities shall notify ORSANCO of all upsets and bypasses within two hours of their discovery. ORSANCO also has the Organics Detection System for unreported spills/releases and an Emergency Response Program to alert water utilities of upstream spills. Please see the response to comment 20 above.

Comment 100: General comments. In 2008, Ohio EPA proposed to incorporate the most current version of ORSANCO's Pollution Control Standards ("PCS") in this section. In its most recent proposal, Ohio EPA opted to not incorporate the

PCS by reference but instead adopt criteria from the PCS that are more stringent than the State criteria.

First, the Utilities commend the Agency for not adopting these standards by reference as originally proposed in 2008. The Utilities always questioned whether this action was permissible under Ohio's administrative procedures as wholesale adoption of the PCS does not permit the public to review and object to any of ORSANCO's standards. While R.C. §6113.01 grants ORSANCO the authority to develop PCS, nothing in the compact requires Ohio EPA to wholly adopt the PCS. By not incorporating the PCS by reference, the public has an opportunity to comment on the standards, and if necessary, challenge standards that are not supported by current scientific and technical data.

However, the Utilities are still concerned that Ohio EPA has provided no scientific justification for adopting those PCS limits that are more stringent than the Ohio criteria. Ohio EPA must be able to demonstrate that these criteria are necessary and are scientifically defensible. Thus, the Utilities request that Ohio EPA articulate a scientific justification for adopting these criteria. (Ohio Utility Group)

Response 100: Under the ORSANCO Compact, Ohio EPA is required to set effluent limits on dischargers to the Ohio River that are at least as stringent as the ORSANCO Pollution Control Standards. Currently, some water quality criteria for the Ohio River basin are more stringent than ORSANCO's 2011 PCS. In this case, these parameters will be used in permit development for dischargers to the Ohio River. Since Ohio EPA has decided to delay the update of human health water quality criteria in accordance with the updated federal national methodology, numerous human health water quality criteria are less stringent than ORSANCO's PCS. We are, therefore, including these values in this rulemaking. In regard to the request for scientific justification, Ohio EPA defers to ORSANCO for their justification. Ohio EPA has requested that ORSANCO provide such documentation for their PCS.

Comment 101: In this proposed rule, Ohio EPA adopts standards that are more stringent than statewide WQ standards. Such action minimizes the role of ORSANCO and Ohio in the multi-state Ohio River Valley Water Sanitation Compact and overlooks Ohio's agreement to work cooperatively with surrounding states to address water quality in the Ohio River watershed. Ohio EPA should revise this rule to create a mechanism to update Ohio water quality standards as needed to meet its obligations to work cooperatively on Ohio River issues. (Trade Association Coalition)

Response 101: Ohio has in the past and continues to maintain an active role as an ORSANCO member state. The current rulemaking will incorporate ORSANCO's PCSs for the main stem of the Ohio River, unless Ohio has

more protective criteria. Ohio plans to update its WQ standards for the Ohio River main stem to incorporate ORSANCO PCSs in future rulemakings.

Comment 102: Water quality criteria for the protection of human health (Ohio Adm. Code 3745-1-32(B)). Ohio EPA has proposed that human health water quality criteria in paragraph (A) of Ohio Adm. Code 3745-1-40 apply to the Ohio River. These criteria are values applicable to the public water supply use designation (Tables 40-1 and 40-2). It appears that the ORSANCO human health criteria as listed in Section IV.C and Appendix E of the ORSANCO PCS are being superseded by criteria values in Tables 40-1 and 40-2. The Utilities have two comments. First, it is very difficult to compare the Ohio EPA public water supply criteria with the ORSANCO human health criteria on a pollutant-by-pollutant basis. Was it Ohio EPA's intention to adopt the more stringent of the two sets of criteria? The Utilities would like to request that Ohio EPA provide a table that compares the criteria in Tables 40-1 and 40-2 with the most recently approved ORSANCO human health criteria. Second, the Utilities recommend that Ohio EPA adopt the fish-tissue based human health criterion for methylmercury. This criterion is included in Appendix E of the ORSANCO PCS. (Ohio Utility Group)

Response 102: In the draft rules, Ohio EPA intended to update human health water quality criteria for the Ohio River Basin based on the revised U.S. EPA methodology. This would have made human health water quality criteria for most parameters more stringent than ORSANCO's Pollution Control Standards. The draft rule OAC 3745-1-32 only included those parameters from ORSANCO PCS that were more stringent than the Ohio River basin criteria. We have decided not to move forward with the revision of human health water quality criteria based on the revised U.S. EPA methodology in the proposed rulemaking. However, the existing human health criteria for the Ohio River mainstem have been updated to include the ORSANCO Pollution Control Standards if they are more stringent than the current values. A fact sheet is available with this proposed rulemaking that compares the current rule and proposed rule values. In regards to the comment about mercury, Ohio EPA has included the U.S. EPA 0.3 mg/kg methylmercury in fish tissue criterion in OAC Chapter 3745-33. Please note the 12 ppt water column criterion is based on a back-calculation using 0.3 mg/kg as the threshold.

Comment 103: Selenium. Outside Mixing Zone Maximum ("OMZM") aquatic life criterion for selenium (Table 32-1): Ohio EPA proposes to adopt the ORSANCO value of 20 µg/L. The Utilities note that this criterion is not applicable to any inland Ohio waters or Lake Erie (see Table 42-1). The Utilities believe that this criterion is no longer scientifically defensible as the value has no toxicological basis concerning acute exposure of freshwater aquatic life to inorganic selenium. Indeed, if Ohio EPA adopted of this criterion, it would be

inconsistent with the proposed new definition of "acute aquatic criterion." See, Ohio Adm. Code 3745-1-02(B)(3).

Moreover, the criterion was remanded and vacated as a result of a U.S. Appeals Court decision concerning U.S. EPA's adoption of the Great Lakes Water Quality Guidance. While the Utilities have submitted many comments to ORSANCO on the technical inappropriateness of the retaining the 20 µg/L criterion, adoption of the Pollution Control Standards by the ORSANCO Commissioners is insulated from adjudication. The Utilities believe that Ohio EPA's adoption of the selenium aquatic life OMZM criterion would not stand up to a legal challenge.

The Utilities request that Ohio EPA take one of two courses of action regarding the proposed aquatic life OMZM criterion: (1) remove the value from Table 32-1 and adopt U.S. EPA's revised acute criterion when the Agency issues final updated water quality criteria or (2) remove the value from Table 32-1 and replace it with the draft revised maximum freshwater criteria issued by U.S. EPA in 2004 (258 µg/L for selenite; sulfate-based criterion for selenate). (Ohio Utility Group)

Response 103: The OMZM aquatic life selenium criterion of 20 ug/l is proposed for adoption to fulfill the legal requirements as an ORSANCO member state. Ohio is required to adopt criteria for the Ohio River that are as protective as those contained in ORSANCO's Pollution Control Standards.

Rule 3745-1-33 Water quality criteria for the lake Erie drainage basin.

No comments have been submitted on this rule.

Rule 3745-1-34 Water quality criteria for the Ohio river drainage basin.

No comments have been submitted on this rule.

Rule 3745-1-35 Site-specific modifications to criteria and values.

No comments have been submitted on this rule.

Rule 3745-1-36 Methodologies for development of aquatic life criteria and values.

No comments have been submitted on this rule.

Rule 3745-1-37 Methodology for deriving bioaccumulation factors.

No comments have been submitted on this rule.

Rule 3745-1-38 Methodologies for development of human health criteria and values.

Comment 104: This section outlines the methodology used to develop the water quality criteria. Ohio Adm. Code 3745-1-38(C) states "[t]he criteria derived pursuant to this rule are available on the Ohio EPA website http://www.epa.state.oh.us/dsw/wqs/criteria.html." The Utilities are concerned that publication of the criteria on a website evades the notice and comment rulemaking process. Ohio EPA has indicated this process allows it to update the criteria based on the most recent scientific evidence. However, this process is convoluted by uncertainty and will not provide the public the ability to comment on these "updates." The right to participate in notice and comment rulemaking and the right to judicial review is an inherent aspect of Ohio's administrative procedures, which provides a level of transparency regarding the Director's action. This is especially critical when this action should be based on scientific and technical judgments of the Director. Thus, Ohio EPA should include the criteria within the rule. Should updated scientific evidence emerge, Ohio EPA can engage in a separate rulemaking process to update the criteria. (Ohio Utility Group)

Response 104: The Agency will continue the current protocol of posting human health criteria developed in accordance with the methodology in OAC 3745-1-38 on the Division of Surface Water web page. Human health criteria may be updated based on new scientific information that serve as inputs to the methodology. These human health criteria are available for review and comment at any time and the values used in the methodology are available for review upon request. The most important time for review and comment would be at the point when these values are included in a draft NPDES permit. Should an applicant disagree with the value included in the permit, comment should be made during the draft permit comment period. The Agency will make revisions to the criteria on the web page clear to the public by maintaining a list of recent revisions at the top of the web page.

Rule 3745-1-39 Methodology for the development of wildlife criteria for the lake Erie drainage basin.

No comments have been submitted on this rule.

Rule 3745-1-40 Water quality criteria for water supply use designations.

Comment 105: 3745-1-40: Table 40-1. Water quality criteria for the protection of the public water supply use designation – ambient water quality criteria based on Safe Drinking Water Act maximum contaminant levels.

EPA Comment – The criterion (Based on the MCL) for Toxaphene in Table 40-1 is listed as 0.30 µg/L where the MCL is 3.0 µg/L. Is this a typographical error or is there a reason for this difference? (U.S. EPA, Region 5)

Response 105: The typographical error has been corrected in the proposed rule.

Comment 106: 3745-1-40: Table 40-1.

EPA Comment – The following chemicals have Safe Drinking Water Act (SDWA) MCLs but do not appear in Table 40-1. If these criteria were intentionally omitted, EPA requests that the rationale for omitting these criteria be provided. EPA suggests that these chemicals be added to Table 40-1.

- Aldicarb (3.0 µg/L)
- Aldicarb sulfone (2.0 µg/L)
- Aldicarb sulfoxide (4.0 µg/L)
- Fluoride (MCL is 4000 µg/L but the current Ohio criterion of 1000 or the secondary MCL of 2000 would be more appropriate as a water quality criterion)
- Sulfate (there is no primary MCL for sulfate, but Ohio may want to consider a health-based criterion to protect drinking water use since there are health implications). (U.S. EPA, Region 5)

Response 106: For aldicarb and associated constituents, U.S. EPA does not have currently promulgated MACLs. EPA has said the following regarding the MCLs for aldicarb and constituents in a July 15, 2011 newsletter for the Association of State Drinking Water Administrators: "EPA promulgated MCLs for aldicarb, aldcarb sulfoxide, and aldicarb sulfone in the Phase II rulemaking in 1991. In response to an administrative petition from the manufacturer Rhone-Poulenc, the Agency issued an administrative stay of the effective date. EPA will reexamine risk assessment and occurrence data on aldicarb and make a determination of what further action is appropriate. There are no projected dates for this action." Since the MCLs for aldicarb and constituents do not have currently promulgated MCLs, we will not be including them in table 40-1.

For fluoride and sulfate, the omissions were inadvertent and the values of 4,000 ug/l and 250,000 ug/l, respectively, have been added to the table.

Comment 107: 3745-1-40: Table 40-1.

EPA Comment – table 40-1 contains a few chemicals that have been assigned MCLs because their occurrence in finished drinking water is a byproduct of certain treatment techniques applied at public water systems. EPA questions whether these are necessary criteria to adopt in ambient surface waters to protect the drinking water use. It may be more appropriate to consider criteria for precursors to disinfection byproducts (DBP) such as total or dissolved organic carbon. It is unlikely that these DBPs themselves will be detected in ambient waters at MCL levels.

- Haloacetic acids
- Total Trihalomethanes (U.S. EPA, Region 5)

Response 107: These chemicals have been removed from table 40-1.

Comment 108: Table 40-2. This table contains drinking water criteria for the protection of the public water supply use, equivalent to ambient drinking water criteria developed under the Clean Water Act. In the Human Health Criteria Fact Sheet for arsenic, Ohio EPA has calculated a drinking water ("two route") criterion value of 0.23 µg/L total arsenic to protect against potential carcinogenic effects. The Utilities assume that this value would be placed in Table 40-2 if arsenic was listed as a parameter. The Utilities comment that this criterion value is quite stringent, is considerably lower than typical levels of arsenic discharged from utility waste streams, and is exceeded consistently in the analysis of background ambient samples. For example, ORSANCO's 2010 clean metals data for various locations on the Ohio River (and tributaries) indicate virtually 100% of all measured levels of total arsenic as being higher than 0.23 µg/L.

The Utilities are very concerned about the permitting impacts that may be realized if Ohio EPA adopts this criterion. In fact, the Utilities evaluation of the beneficial use designations and the associated criteria indicates that most facility outfalls evaluated have potential compliance issues with Ohio EPA's proposed two route human health criterion for arsenic (0.23 µg/L). See, Appendix 1. While the implementation of this criterion to facilities only within 500 yards of a public drinking water intake may mitigate the application of stringent effluent limits, the criterion value itself is extremely stringent, well below ambient upstream levels, and would likely result in reasonable potential for all industrial and POTW facilities within 500 yards of a drinking water intake.

In addition, adoption of this ambient criterion for arsenic could have significant implications for the designation of impaired water bodies under Clean Water Act Section 303(d). Has the Agency analyzed the permitting and impaired water body status implications should Ohio EPA adopt this criterion? (Ohio Utility Group)

Response 108: The MCL of 10 ug/l for arsenic would apply, not the calculated 0.23 ug/l. The MCL takes into account the risks, costs and benefits of the arsenic drinking water standard, whereas the human health water quality criterion only accounts for the risk.

Comment 109: Finally, the Utilities analysis of the beneficial use designations and the associated criteria indicates that the Utilities may also have potential compliance issues with the criteria for cadmium and molybdenum. See, Appendix 1. Because of the impact that these revised criteria may have on all industrial and POTW facilities within 500 yards of a drinking water intake, Ohio EPA should conduct its own impact analysis on how all of the new human health criteria will affect resulting WQBELs at various facilities

and whether the calculated wasteload allocations will require costly treatment. (Ohio Utility Group)

Response 109: The update of the human health water quality criteria based on U.S. EPA's updated methodology is not included in this proposed rulemaking. Ohio EPA will conduct an impact analysis as part of the future rule update.

Comment 110: OEPA is still stating that the water quality in the river within 500 yards, cannot exceed the MCLs as developed under the Safe Drinking Water Act. Or simply put a discharger could be permitted to discharge a compound (Benzene) into the waterway at a concentration so that at a river flow (7Q10) the concentration would be < MCL within 500 yards of a drinking water intake. It is our understanding that OEPA Drinking Water will not let a PWS use a source if it contains a contaminant that is more that 50% of a MCL without treatment for that contaminant. We recommend that WQC should read cannot exceed 50% of the MCL. (Ramesh D. Kashinkunti, Greater Cincinnati Water Works)

Response 110: The comment regarding the 50% of an MCL requirement is not correct. If a source contains a contaminant above 50% of an MCL, Ohio EPA DDAGW can approve it without a treatment requirement as long as it appears that the contaminant concentration will remain below the MCL. There have been instances when treatment was strongly recommended for proposed sources with concentrations close to the MCL (i.e. above 80%), but it was not a requirement (not unless an MCL is exceeded).

Comment 111: General comments. According to the rule, these criteria only apply "within five hundred yards of surface water intakes for public water systems." The Utilities seek clarification regarding whether Ohio EPA intends to implement this requirement for facilities discharging directly to the Ohio River (which has a "water supply" use designation). (Ohio Utility Group)

Response 111: Proposed rule OAC 3745-1-32 states that the criteria in table 40-1 of rule OAC 3745-1-40 apply within 500 yards of the intakes for public water systems.

Comment 112: Clermont County does not feel it is appropriate to include Maximum Contaminant Levels (MCLs) as water quality criteria. The Safe Drinking Water Act, under which the MCLs were developed, did not intend for these levels to be achieved in surface water, but rather in finished drinking water. (John McManus, Clermont County Water & Sewer District)

Response 112: Ensuring that surface water used as a drinking water source meets MCLs at the intake relieves water supply utilities from the financial burden of having to treat raw water from constituents that were contributed by upstream industrial facilities. Using the MCLs for surface water drinking water intake criteria ensures that the cost of treating for the contaminants is

borne by the industry that discharges the contaminants, instead of the users of the downstream municipal water source.

Comment 113: 3745-1-40 Both tables 40-1 and 40-2 contain criteria for the public water supply use. The criteria presented in Table 40-2 are based on factors that are not related to the safety of drinking water and therefore do not belong in this section. (NEORSD)

Response 113: The criteria in Table 40-2 were developed assuming two liters of consumption of drinking water per day, using a hazard index of one for noncarcinogens and an excess lifetime cancer risk of one in 100,000 for carcinogens. Therefore, the criteria do relate to the safety of drinking water, for drinking water sources.

Comment 114: Under the proposed water quality standards in Ohio Administrative Code (OAC) 3745-1 Ohio EPA proposes revisions to Ohio's water quality standards, including water quality standards for 135 different chemicals. The Ohio Chamber feels these rules go beyond federal requirements and are even inconsistent with federal requirements. For example, with respect to water supply use designations, Ohio EPA asserts that the new limits are consistent with federal requirements. However, in order to make such a statement, Ohio EPA has inappropriately applied water quality contaminant limits meant for drinking water to surface waters. From a regulatory perspective, drinking water and surface water are not comparable and should not be regulated the same. As such, Ohio EPA's proposed water quality rules are inappropriately more stringent than federal regulation. (Ohio Chamber of Commerce)

Response 114: Please see the responses to Comments 109 and 112 above.

Comment 115: Concern with future Industrial water supply where no criterion is in effect now and will vary with type of industry involved. Does this mean that a proposed siting of a soft drink bottling plant on a stream could dictate applicable WQ for existing point sources? (Clark County Utilities)

Response 115: This rule language was written in the 1970s has remained unchanged. The situation described in the comment has never arisen. In theory Ohio EPA could under this rule recognize the intended use for a proposed water consuming industry with unique water quality needs and develop site specific chemical criteria. Before such criteria could be implemented they would have to be proposed and adopted in a rule making. The impact and potential costs of such new criteria on existing point source dischargers would be considered as part of that rule making process.

Rule 3745-1-41 Water quality criteria for recreation use designations.

Comment 116: 3745-1-41 Are the criteria associated with the general water based recreation use designation intended to apply as outside mixing zone averages? It appears as though the word "averages" may have been left off here and possibly in other locations. (NEORSD)

Response 116: The proposed rule is clear that the criteria apply as outside mixing zone averages.

Comment 117: Page 1. Define mixing zones. How large are these zones? (J2ENTRY@aol.com)

Response 117: Mixing zones are defined in rule OAC 3745-2-08.

Comment 118: Table 41-1 Water quality criteria for the protection of the general water based recreation use - visual aesthetic qualities. The Utilities understand the benefits of assigning numeric thresholds to the specific criteria listed in Table 41-1 (foaming agents, oil & grease, and phosphorus) for the purpose of supporting the narrative "free from" prohibitions found in Ohio Adm.Code 3745-1-04(B), (C), and (E). However, the Utilities have the following comments on these criteria.

The Utilities would like information on how Ohio EPA arrived at the value of 10 mg/L for the numeric outside mixing zone criteria for oil & grease. Are values above this concentration likely to cause a visible sheen?

The water quality criterion for phosphorus in Table 41-1 is very ambiguous and subjective regarding the amount of total phosphorus limited to prevent a nuisance. The Utilities recommend that Ohio EPA revise this criterion and provide an objective description regarding what level of phosphorus would be "determined significant by the director."

The Utilities also request that the phrase "anthropogenically-caused" should be inserted between the words "prevent" and "nuisance" in the first sentence. This phrase is needed to distinguish between nuisance algal growths caused by point-source and non-point agricultural loadings versus algal growths that are caused by natural conditions (e.g., low flow conditions). (Ohio Utility Group)

Response 118: The chemical criteria related to visual and other aesthetic qualities have been moved from rule OAC 3745-1-41 to rule 3745-1-04 since the sole function of these criteria is related to maintaining the basic narrative criteria. The oil and grease standard does have a basis related to visual detection of sheen and the common analytical method of analysis. No revisions were made to the narrative phosphorus criteria. The Agency has plans to propose numeric criteria for nutrients in the near future. All statements in rule 3745-1-04 are prefaced with the statement that “to every

extent practical and possible as determined by the director, these waters shall be…"; thus, the Agency has not added the phrase "anthropogenically-caused".

Comment 119: Page 2. Total Phosphorus (Murphy -Riley Method?) APAHA 2001?

You need to define a concentration x mg L-1. and not some undefined statement "be limited to the extent necessary to prevent nuisance growths of algae, weeds, and slimes that result in a violation of the water quality criteria set forth in paragraph ". (J2ENTRY@aol.com)

Response 119: Ohio EPA is developing numerical water quality criteria for phosphorus. Those criteria are expected to be available for public review and comment in 2012.

Comment 120: Phosphorous criteria. The water quality criterion for phosphorous given in Table 41-1 is very subjective. An objective description providing what level of phosphorous would be "determined significant by the director" is needed. (First Energy Corp.)

Response 120: Please see the response to comment 118 above.

Comment 121: Page 4. pathogen indicators . "Compliance with the E. coli criteria shall be based on the seasonal geometric mean if more than one measurement is available and on the single sample maximum if only one measurement is available".

Geometric means should not apply to pathogen indicators. Where is the precedent for this? Humans don't ingest pathogens based on geometric means, the ingest pathogens because high concentrations of these organisms exist in the water during recreational activities. This is a law suit waiting to happen. (J2ENTRY@aol.com)

Response 121: Adoption of the E. coli water quality criteria proceeded ahead of this rulemaking and were adopted on December 15, 2009. This comment was addressed in the response to comments for that rulemaking.

Comment 122: Define the water quality monitoring network and justify sampling locations and frequency. (J2ENTRY@aol.com)

Response 122: Information about Ohio EPA's water quality monitoring program in on our website at www.epa.ohio.gov/dsw. It is not appropriate to include that information in the rule.

Rule 3745-1-42 Water quality criteria for the base aquatic life use designation.

Comment 123: This rule sets stringent water quality criteria for the protection of aquatic life that will require industrial users to drastically reduce pollutant levels. The rule sets forth three separate standards for 31 different pollutants: the maximum within the mixing zone ("IMZM"), the maximum outside the mixing zone ("OMZM"), and the average outside the mixing zone ("OMZA"). With respect to OMZM and OMZA, the standards generally, but not completely, match U.S. EPA's National Recommended Water Quality Criteria ("NRWQC"); however, certain provisions have been made more stringent in Ohio's regulations without justification. For example, Ohio's Nonylphenol OMZA standard is 6.6 µg/l which is less than the NRWQC freshwater nonylphenol chronic standard of 7 µg/l. The Trade Association Coalition objects to Ohio EPA's imposition of more stringent standards on Ohio's businesses without any justification. Additionally, there is no Federal standard that matches the IMZM. Ohio EPA's creation of a new standard serves no clear environmental benefit and, as such, should be removed. (Trade Association Coalition)

Response 123: The structure of the proposed water quality criteria is no different than it has always been. The OMZM is a criterion intended to protect against adverse acute effects as a result of pollutant exposure, while the OMZA is a criterion meant to be protective of adverse chronic pollutant exposure. The IMZM is set at twice the OMZM and applies within a mixing zone and is intended to prevent acute lethality of aquatic life within the mixing zone area. These criteria are all federal requirements.

The proposed criterion for nonylphenol of 6.6 ug/l exactly matches the national recommendation in US EPA's criteria document. See page 34 of the federal criteria document at: http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/pollutants/nonylphenol/upload/2006_5_18_criteria_nonylphenol_final-doc.pdf. Note also that the chronic cadmium aquatic life criteria in Ohio EPA's proposed rules are actually less stringent than those in the federal criteria document.

Comment 124: 3745-1-42 Water quality criteria for the base aquatic life use designation. Many of Ohio's undesignated streams, or streams that will be categorized as drainage uses and base uses, if these rules are promulgated, are heavily impacted by phosphorus and nitrogen loading. Ditch construction and maintenance practices exacerbate the nutrient loading problem and downstream migration degrades the quality of larger streams. The OEC urges the OEPA to develop numerical water quality criteria for nitrogen and phosphorus prior to adoption of any "base use" or "drainage use."

Paramount to OEPA designating base and drainage uses, the OEPA should enact water quality criteria to control nutrient enrichment in streams, specifically phosphorus and nitrogen. Nutrients are significant contributors to depreciation of water quality in streams. Without implementing criteria to

control nutrient enrichment, the use designations will result in impermissible rollbacks of Ohio's water quality standards. If these proposed rules are enacted without nutrient standards for streams, a decline in Ohio's water quality would result, including harm to biological diversity, increase in harmful algal blooms, degradation of drinking water quality and negative economic impacts to recreation and tourism businesses in Ohio. The OEPA should look to USEPA Region 5 and other Great Lakes counterparts to observe their nutrient standards. (Ohio Environmental Council)

Response 124: The Agency decided to table further rule making involving the drainage uses because of the concerns and questions raised by many commenters. Ohio EPA plans to consider the adoption of nutrient criteria in a future rulemaking. A draft framework for addressing nutrient problems in the State has been prepared and submitted to Region 5. For information see: http://www.epa.ohio.gov/portals/35/documents/nutrient_reduction_strategy_framework.pdf.

Comment 125: 3745-1-42 Water quality criteria for the base aquatic life use designation. If any "base aquatic life use" is adopted, prior to such an adoption the rule should include criteria for nitrogen and phosphorus. We ask that Ohio EPA develop numerical water quality criteria for these pollutants, and not adopt any "base use" or drainage use" until such criteria are in place.

We recognize that these proposed rules include nutrient criteria for inland lakes in OAC 3745-1-43, but the agency should establish adequately protective criteria for streams, including the protection of downstream uses in these inland lakes, Lake Erie, and the Ohio River.

As the Agency is well aware of and has published in its biennial Integrated Reports, nutrients such as phosphorus and nitrogen are leading, major contributors to water quality problems in Ohio. It is a national problem recognized in most states, significantly increasing the risk of poor biological conditions in streams.[14] A "base use designation" should address these pollutants in a way that allows the identification and contribution of these important pollutants in base use, or subsequently drainage use, streams. These nutrients:

- cause nonattainment in a large portion of Ohio streams;
- cause drinking water problems either directly through nitrate violations or indirectly through harmful algal bloom contaminants such as microcystin;
- contribute to the degradation of Lake Erie and inland lakes; and
- contribute to Gulf of Mexico hypoxia.

Headwater streams generally are the first part of the stream network to receive these pollutants. Because base use or drainage use streams would largely be composed of contributions from headwaters, they are likely to receive relatively high nutrient concentrations from surface runoff and bank

and channel erosion. Nutrient criteria that apply to these streams would help establish where to reduce nutrient concentrations within watersheds. The importance of nutrients and headwaters on downstream and cumulative uses is supported by Ohio EPA's (1999) statement:

> "The available scientific information about nutrient spiraling in lotic ecosystems indicates that headwater streams strongly influence the elemental dynamics of higher order streams and rivers within a watershed through the cumulative cascading of near-field effects in a downstream direction."[15] (The Nature Conservancy)

Response 125: Please see the response to Comment 124 above.

Comment 126: 3745-1-42 and 43 The tables that contain the ammonia criteria are inconsistent; the tables for WWH and CWH (42.2B) have 30-day specified in the OMZA, while the tables for EWWH (43.4B) and MWWH (43.7) do not. (NEORSD)

Response 126: The typographical errors in the OMZA ammonia criteria tables for EWH and MWH have been corrected to specify the averaging period of thirty days.

Comment 127: 3745-1-42,43: The proposed water quality standards include chemical-specific criteria for the base aquatic life use and tiered aquatic life uses. Ammonia-N criteria vary among aquatic life uses (Tables 42-2,43-4,43-7, and 43-9 in the rule). Ohio streams and lakes support almost 80 species of freshwater mussels (Unionidae), including 10 federally endangered, proposed, and candidate species. Recent research has demonstrated that juvenile unionids are particularly susceptible to ammonia toxicity (Augspurger et al. 2003, Mummert et al. 2003, Newton et al. 2003, Newton and Bartsch 2007, Wang et al. 2007a, Wang et al. 2007b). The United States Environmental Protection Agency (USEPA) recently released the "Draft 2009 Update, Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater" (USEPA 2009). In developing the updated ammonia criteria, USEPA incorporated data reported in many of the above-referenced publications regarding ammonia toxicity to juvenile mussels. Data regarding sensitivity of mussels to ammonia led USEPA to develop numeric criteria for waters where mussels are present. At many pH and temperature combinations, especially in warmer water and higher pH, the currently proposed Ohio numeric criteria for ammonia are not as protective as the USEPA draft criteria (Table 1, Table 2). This is true of Ohio criteria for both the base aquatic life use and exceptional warmwater habitat. We believe it is extremely important that Ohio's numeric chemical criteria are based on the latest scientific data to help ensure that water quality standards are protective of aquatic life, including freshwater mussels. We request that Ohio's ammonia criteria be revised to incorporate toxicity data

for freshwater mussels reported over the last decade, and that resulting numeric criteria be protective of listed, proposed, and candidate mussels.

Table 1. Comparison of USEPA (2009) Draft Ammonia Continuous Maximum Concentration – Mussels Present (USEPA), with Ohio's proposed Outside Mixing Zone Maximum Criteria at the base aquatic life use (Ohio Base) and Exceptional Warmwater Habitat Life Use (Ohio EWH) at selected temperature and pH combinations. Ohio Criteria that are less protective than the draft USEPA criteria are italicized in bold.

	Ammonia-N (mg/l)								
	pH 7.0			pH 8.0			pH 9.0		
Temperature (° C)	USEPA	Ohio Base	Ohio EWH	USEPA	Ohio Base	Ohio EWH	USEPA	Ohio Base	Ohio EWH
14	30.7	13	13	7.15	***9.2***	5.7	1.13	1.1	0.7
20	18.7	13	13	4.35	***9.1***	***5.6***	0.684	***1.2***	***0.8***
26	11.3	***13***	***13***	2.64	***8.5***	***5.3***	0.416	***1.3***	***0.8***
30	8.15	***13***	***13***	1.9	***6.6***	***4.1***	0.299	***1.1***	***0.7***

Table 2. Comparison of USEPA (2009) Draft Ammonia Continuous Chronic Concentration – Mussels Present (USEPA), with Ohio's proposed Outside Mixing Zone Average Criteria at the base aquatic life use (Ohio Base) and Exceptional Warmwater Habitat Life Use (Ohio EWH) at selected temperature and pH combinations. Ohio Criteria that are less protective than the Draft USEPA criteria are italicized in bold.

	Ammonia-N (mg/l)								
	pH 7.0			pH 8.0			pH 9.0		
Temperature (° C)	USEPA	Ohio Base	Ohio EWH	USEPA	Ohio Base	Ohio EWH	USEPA	Ohio Base	Ohio EWH
14	1.26	***2.3***	***2.1***	0.521	***1.4***	***1.3***	0.104	***0.2***	***0.2***
20	0.858	***2.2***	***2.1***	0.354	***1.4***	***1.3***	0.0707	***0.2***	***0.2***
26	0.583	***1.4***	***1.4***	0.24	***0.9***	***0.8***	0.048	***0.1***	***0.1***
30	0.451	***1.1***	***1***	0.186	***0.7***	***0.7***	0.0371	***0.1***	***0.1***

(U.S. FWS)

Response 127: Ohio EPA agrees that there are number of studies such as those highlighted in the comment that demonstrate that freshwater mussels as a group are more sensitive to ammonia exposures than most other forms of aquatic life that have been studied. However, we believe it is prudent to await the publication of the final federal ammonia criteria before making revisions to Ohio's existing ammonia criteria.

Comment 128: 3745-1-42 and 3745-1-43: Ammonia criteria

EPA Comment – EPA has draft aquatic life criteria for ammonia available which were published in 2009, *Draft 2009 Update, Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater*, (available at http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/pollutants/ammonia/factsheet2.cfm). EPA's draft criteria are based on more current scientific data than what was available when Ohio last revised its aquatic life ammonia criteria. New toxicity data representing some of the latest scientific research has shown mussels, specifically juvenile unionids, to be among the most sensitive species, EPA urges Ohio to adopt the ammonia criteria in EPA's draft document cited above instead of retaining the ammonia criteria in Ohio's draft rules OAC 3745-1-42 and OAC 3745-1-43. (U.S. EPA, Region 5)

Response 128: Ohio EPA is aware of the draft ammonia criteria document mentioned in the comment. However, Ohio EPA believes it is prudent to await final publication of the federal criteria document, as it is possible significant changes may have been made to the draft criteria document that would make the criteria in the draft criteria document outdated.

Comment 129: We write to you on behalf of the Ohio Association of Metal Finishers (OAMF), an organization representing the interests of industrial metal finishers and their suppliers in Ohio. It has been brought to our attention that the revisions to the Ohio Water Quality Standards (3745-1) you are proposing will require our regional Publicly Owned Treatment Works (POTW) to drastically reduce permitting levels for industrial users in order to comply with the proposed amendment. It is our opinion that the proposed limits are unachievable. For example, cadmium levels would be reduced from 2 mg/L (ppm) to 2 ug/L (ppb), a level that is an order of magnitude below even a non-cadmium utilizing industrial facility's discharge effluent concentration.

In addition to the expenses associated with attempting to meet the inappropriately low discharge levels, the costs associated with the ongoing analysis/monitoring would be unfeasible. If the changes you are proposing are enacted, they will be contrary to several tenets of the State of Ohio Governor's Executive Order 2008-04S, *Implementing Common Sense Business Regulation*, and will force the migration and loss of manufacturing businesses from the state. Metal finishing operations who support the region's industrial base by employing an estimated 5,000 individuals in Ohio, will be forced to cease operation, creating an immense ripple effect that would be felt throughout Ohio's entire manufacturing base.

The OAMF Board of Directors urge you to reject the proposed revisions. To this end, OAMF will be pleased to provide industry representatives to work with your staff to justify the appropriateness of the current limits. We

can also provide additional detail on the negative effect of following the proposed limits. (Stephen Brown, Ohio Association of Metal Finishers; Kenneth Schultz, Cleveland Black Oxide)

Response 129: The revised draft aquatic life criteria for cadmium are based on the U.S. Geological Survey report "Cadmium Risks to Freshwater Life: Derivation and Validation of Low-Effect Criteria Values using Laboratory and Field Studies." That study identified additional toxicity data and used the U.S.EPA water quality criteria derivation procedures to justify alternative criteria.

The revised draft criteria are less stringent that those in the August 2008 draft rule, but are still more stringent that those in the currently effective rule. The reports by U.S. EPA and USGS show that cadmium levels this low are necessary to protect aquatic life in Ohio's water bodies. Rule 3745-33-07 enables discharges to apply for temporary variances from meeting water quality criteria if they are unachievable.

Comment 130: Many of the proposed discharge levels, such as those for cadmium, are lower than current discharge limits and are not reasonable or feasible. Ohio EPA has stated that it has based these levels on a U.S. Geological Survey Report "Cadmium Risks to Freshwater Life: Derivation and Validation of Low-Effect Criteria Values using Laboratory and Field Studies" ("Report"). The Trade Association Coalition sees significant problems with use of this Report. First, the Report was developed using Idaho-specific aquatic assemblages, some of which are not present in Ohio. As such, the Report does not account for Ohio specific considerations that could prove significant with respect to discharge limits. Second, Ohio EPA justifies its use of the Report - which includes non-Ohio species – by noting that such species are representative of "many" Ohio species for which there is no toxicity data. Thus, Ohio EPA acknowledges that it is enforcing a burdensome one-size fits-all approach that does not consider Ohio's unique aquatic assemblage or the ability of Ohio's businesses to comply. Finally, Ohio EPA has not examined these discharge limits in light of the costs of these regulations to the business community. The inability of business to meet these limits, including the significant expense of monitoring and analysis, will force many companies to cease operations. Ohio businesses can ill afford additional job and business losses. As such, the Trade Association Coalition opposes the increasingly stringent discharge limits in the rule and urges Ohio EPA to retain the current discharge limits. (Trade Association Coalition)

Response 130: Ohio EPA is required by Section 303 of the Clean Water Act and federal regulations in 40 CFR 131.11 to adopt criteria that are protective of designated beneficial uses. US EPA published final aquatic life criteria for cadmium under Section 304(a) of the Clean Water Act. Ohio is proposing to adopt those criteria, with some modification based on the USGS report

referenced in the comment that makes the resulting criteria less stringent than those published in US EPA's final cadmium criteria document. Furthermore, evidence from Ohio EPA's extensive biological and chemical database do suggest that the current cadmium criteria are not fully protective of the warmwater habitat biocriteria, further supporting the necessity of adopting the proposed cadmium criteria to protect Ohio's aquatic life and meet basic Clean Water Act goals.

Ohio EPA has conducted analyses of our ambient chemistry data and found that 95% of the over 20,000 samples collected from Ohio surface waters are below 0.53 ug/l, which is well below the proposed chronic cadmium criteria over the range of water hardness levels normally encountered in Ohio surface waters. Our data also show that 98% of our reference locations samples are below the detection level of 0.2 ug/l.

A review of Agency information indicates that a total of 600 facilities with permitted wastewater discharges sample the treated effluent for cadmium. This number should not increase substantially with the adoption of revised criteria. There are 33 facilities with permitted wastewater discharges with set effluent limitations. Depending upon the size and dilution available in the receiving stream of these facilities, some facilities may need to add additional chemicals to current precipitation treatment and/or install filtration to meet potentially lower cadmium effluent limits. A schedule of compliance to meet a potentially lower limit would be included in their permit at the time of permit renewal.

Facilities with permitted wastewater treatment discharges that currently just have monitoring requirements for cadmium may see increased monitoring and permit compliance costs by a small amount so effluent samples can be analyzed using lower level laboratory detection methods. Ohio EPA's laboratory charges $21.50 per sample for the cadmium low level detection analysis. After a permit cycle of monitoring at the lower level (typically five years), permit limits may be required.

A schedule of compliance would then be included in their permit at the time of permit renewal. A search through Ohio EPA bioassay data for several major dischargers indicates that cadmium was not detected in most effluent samples analyzed using the lower level for cadmium analysis. As a result, it is unlikely that lower permit limits and additional treatment would be necessary.

However, industries that discharge wastewater to a publicly owned treatment works may see a change in their local limits for cadmium since the industrial limits are based on a calculated wasteload allocation and not the POTW's effluent limits. In such cases, some industries may need to provide additional chemical treatment and/or install filtration to meet

potentially lower cadmium local limits. This is industry specific and POTW specific.

Comment 131: The proposed decrease in the cadmium criteria could prove difficult for Southerly Wastewater Treatment Center (WWTC) to meet. The chronic wasteload allocation (WLA) for Southerly WWTC is currently 5.05 µg/L. If approved, the proposed OEPA cadmium criterion would likely decrease the chronic WLA to 0.540 µg/L. The resulting change in the effluent limits at Southerly WWTC would require the Northeast Ohio Regional Sewer District (NEORSD) pretreatment program to justify the current local limits and to adjust as necessary.

Some industrial users in the NEORSD service area would likely have difficulty complying with the new local limit that is based on the proposed OEPA cadmium criterion. The local limit for industrial users could potentially decrease from the current 2,000 micrograms per liter (µg/L). The lowered local limit, using the OEPA proposed rationale, was calculated to be between 58 µg/L and a negative number; this is dependent on the assumptions for the cadmium removal efficiency of Southerly WWTC and the domestic background cadmium concentration in sanitary wastewater. The utilization of clean sampling techniques allows for more representative concentrations to be achieved, which results in obtaining a higher local limit value.

In December 2008, the OEPA informed NEORSD about a paper written by the United States Geological Survey (USGS) from 2006, “Cadmium Risks to Freshwater Life: Derivation and Validation of Low-Effect Criteria Values using Laboratory and Field Studies.” The paper reviewed, among other things, how the United States Environmental Protection Agency (USEPA) determined the federal criterion for cadmium and determined an alternative to accepting the federal cadmium criterion. The federal criterion was the basis for the proposed OEPA cadmium criterion. The USGS rationale, which includes an increased amount of toxicity data, was used to determine less stringent chronic criteria for Idaho. Using the USGS rationale and using clean sampling for determining domestic background and plant removal efficiency, the chronic WLA for Southerly WWTC could result in a local limit of 122.4 µg/L. The USGS rationale cadmium criteria suggest a maximum PEL of 3.95 µg/L and an average PEL of 1.103 µg/L. The maximum and the average PELs are greater than their respective PEQs. The highest ratio of PEQ to PEL was for the average, which was 69%; this would assign cadmium to the reasonable potential Group 4 (no limit will be recommended, however monitoring will be required).

Each criteria rationale, that proposed by OEPA and that proposed by USGS, has pros and cons when applied to Southerly WWTC. With the proposed OEPA criteria, NEORSD will receive a less stringent acute criterion (6.66 µg/L); however, then NEORSD must address the lower QL,

and the local industry may have trouble with compliance with a local limit based on the chronic criterion. The proposed OEPA cadmium criteria rationale would also likely require a cadmium effluent limit at Southerly WWTC. The USGS suggests a less stringent chronic criterion (1.103 µg/L) which relates to a higher local limit (122.4 µg/L), but a more stringent acute criterion (3.95 µg/L) would apply. If the USGS criterion is applied, then Southerly WWTC will most likely not have an effluent limit for cadmium, but would be required to monitor for cadmium. Based on the 2008 effluent data from Southerly WWTC, the USGS rationale would not have resulted in violations of any water quality based effluent limits (WQBELs). The OEPA criterion was unable to be compared to the 2008 effluent data since the AS PQL is above calculated WQBELs.

We recommend the utilization of the USGS rationale within the State of Ohio. As commented during the review period of Idaho's toxic criteria update, the United States Environmental Protection Agency (EPA) stated that the USGS rationale was, "… technically solid, well written, and exemplifies a very good alternative approach to adopting EPA's nationally recommended cadmium criteria." Although, in recommending this approach, OEPA may need to revise the USGS rationale, originally for the State of Idaho, to ensure adequate protection of aquatic life within the State of Ohio.

In conclusion, we believe there are problems with adopting the national criteria. The criteria are overprotective for aquatic assemblages found in Ohio. Some of the species used in development of the national criteria are not present in Ohio such as Tilapia, Atlantic Salmon, Flagfish, Guppy, and African Clawed Frog to name a few. Recent toxicity data needs to be considered and included in the calculation. In some situations, indirect dischargers may receive unattainable limits based on the OEPA proposed criteria.

We suggest that the OEPA follow other examples for alternative development of cadmium criteria. For example, Chadwick Ecological Consultants, Inc. developed alterative criteria, in 2004, for Colorado and the United States Geological Survey, commissioned by Idaho, developed additional alterative criteria in 2006. (Ron Maichle, Northeast Ohio Regional Sewer District)

Response 131: We agree that the study by USGS justifies alternate cadmium criteria protective of aquatic life in Ohio. The revised draft criteria are based on that study. Although some of the species used in the development of the criteria are not present in Ohio, they serve as representatives of the many species that are present but for which there are no toxicity data.

Comment 132: Table 42-2 contains Cadmium criteria that have been developed based on a study conducted by the United States Geological Survey (USGS). We are

pleased to see that Ohio EPA used this alternative rational for the development of criteria in Ohio as we continue to believe that the federal criterion is over-protective for the state of Ohio. (NEORSD)

Response 132: Ohio EPA believes that the new cadmium toxicity data from the USGS study was significant and of high quality. Since it was published after completion of the US EPA cadmium criteria document, it was not accounted for in US EPA's criteria derivation. Ohio EPA believes it is prudent to make use of this information and has done so in its proposed revision of the cadmium aquatic life criteria.

Comment 133: OAC 3745-1-42: Water quality criteria for the base aquatic life use designation. The proposed revised aquatic life criteria for cadmium would ultimately require BCWS to revise its local industrial discharge limitations for cadmium. For example, based on an updated wasteload allocation incorporating the revised cadmium criteria, the cadmium local limit for dischargers to BCWS' Upper Mill Creek water reclamation facility could decrease from 0.24 mg/L (current) to as low as 0.03-0.08 mg/L. A limit this low could cause compliance problems for several of our industrial dischargers, and potentially require the installation of costly cadmium pre-treatment / removal processes. While BCWS understands that the revised criteria are based on USEPA and USGS reports, and are necessary to protect aquatic life in Ohio, Ohio EPA should know that it may take some time to bring all of our industrial dischargers into compliance. Butler County would likely utilize compliance schedules and/or narrative or BMP-driven limits in accordance with our Sewer Use Rules to expedite and ensure compliance with any new cadmium local limits driven by the revised aquatic life criteria. (Butler County Water and Sewer Department)

Response 133: Compliance schedules should be able to be worked out in the event more stringent permit limits are triggered as a result of the new cadmium criteria and the regulated entity needs some time to come into compliance. Also, rule OAC 3745-33-07 allows the director to grant temporary variances from compliance with water quality criteria if attainment of the criteria is not feasible.

Comment 134: Cadmium/Chloride. AOMWA would encourage Ohio EPA to consider more recent data that is available on cadmium and chloride which may impact the development of limits for these parameters. (AOMWA)

Response 134: Ohio EPA did consider and use more recent toxicity data available for cadmium in its draft criteria that result in less stringent cadmium criteria as compared to the chronic cadmium criteria in US EPA's criteria document. The chloride criteria in the draft rules have been dropped in the proposed rules. Ohio will consider the most recent data as suggested in the comment in a future rulemaking to address toxicity associated with chloride discharges.

Comment 135: Dissolved solids criterion. This criterion has been listed in the statewide aquatic life criteria table for several years. The Utilities question whether the technical basis of this criterion is still valid. Can Ohio EPA provide the laboratory and/or field data that were utilized to derive the criterion value of 1,500 mg/L? What were the biological endpoints evaluated? Could the biological effects evaluated been caused by a single cation or anion instead of the sum of all dissolved salts? Do Ohio EPA's biological monitoring studies, cumulatively, support a consistent biological effect that can be expected to occur at a total dissolved solids level of 1,500 mg/L or higher? (Ohio Utility Group)

Response 135: The current total dissolved solids aquatic life criterion of 1,500 mg/l has been in Ohio's WQS since 1978 and is based upon a federal recommendation. Ohio EPA intends to pursue an update to the TDS criterion that could include a number of possibilities such as replacement of the TDS criterion with a new TDS criterion, replacement of the TDS criterion with a suite of ion-specific criterion, or a combination of both.

Comment 136: 3745-1-42: Table 42-5. Temperature Criteria.

EPA Comment – Table 42-5 is essentially the same as the current Table 7-14 which it replaces. The Cuyahoga River is included in the current Table 7-14 as section (L) but it is not included in the new Table 42-5. Why is the Cuyahoga River removed from the temperature criteria table? (U.S. EPA, Region 5)

Response 136: The current standards in Table 42-5(L) were adopted in 1987 and apply to the Cuyahoga River between the Gorge dam pool in Akron and the shipping channel in Cleveland. The temperature criteria values are a degree or two higher than the values generally applicable throughout the Lake Erie basin, including segments of the Cuyahoga River upstream from Akron. This set of site specific standards was adopted at a time when the Ohio Edison power plant was operational. This facility has been in-active for some time and was recently demolished. Ohio EPA is re-establishing the general Lake Erie basin temperature standards for this segment of the Cuyahoga River.

Comment 137: 3745-1-42: Table 42-6. Water quality criteria for the protection of wildlife.

EPA Comment – Please explain what the source or basis of the PCB criteria for ORB in table 42-6. (U.S. EPA, Region 5)

Response 137: The PCB wildlife criteria fact sheet will be sent electronically along with this response to comments.

Comment 138: Table 42-6 Water quality criteria for the protection of wildlife. Ohio EPA has added new criteria for the protection of wildlife applicable to the Ohio

River drainage basin. These criteria, applicable to polychlorinated biphenyls ("PCBs"), are 0.001 µg/L (water concentration) or 0.64 mg/kg wet weight for "any whole sample of any representative aquatic organisms." The criteria were derived to protect one particular wildlife species (mink). Ohio EPA presented the technical justification for these criteria in Ohio EPA's document "Justification for PCB Standard" dated November 26, 1984 (Appendix 2). The Ohio EPA document indicates that U.S. EPA's 1980 PCB criterion document was the primary source of effects data used to calculate the criteria.

The procedure used by Ohio EPA to calculate the water and tissue residue PCB criteria is confusing. Also, the procedure is not consistent with any procedure that Ohio EPA allows for deriving water quality criteria (aquatic life, human health, or wildlife). Last, the technical basis of the proposed criteria is woefully outdated and the Agency has not attempted to justify the criteria based on scientific information that has become available after 1984.

The Utilities are also opposed to the derivation of water-based criteria for pollutants that bioaccumulate or biomagnify. The underlying assumption for developing water-based criteria for bioaccumulative pollutants is that the primary route of exposure for organisms (at trophic level 2 or higher) is via water. The Utilities believe that the cumulative scientific literature on PCB bioaccumulation indicates that other factors are more important in how PCBs accumulate through food webs such as organism lipid content, η-octanol-water partition coefficient (K_{ow}) , and trophic position. In a recent paper, Walters et al. measured 127 PCB congeners in biotic and abiotic components of a PCB-contaminated lake in South Carolina. The authors found that the trophic position of aquatic organisms was significantly and positively related to PCB concentrations. Trophic magnification factors ("TMF") varied between 1.5 to 6.6 among the congeners. The authors also investigated how chemical K_{ow} related to trophic magnification factor values across various ecosystems (e.g., freshwater, marine, arctic, temperate). A significant predictive relationship between K_{ow} and TMF was found ($p<$ 0.0001; $r^2 = 0.75$). Overall, this study provides evidence that factors other than water concentration (specifically, trophic position and chemical K_{ow}) are more important in predicting the bioaccumulation of PCB congeners in aquatic organisms.

The above discussion is relevant to the proposed wildlife criteria. The Utilities think that the proposed water-based wildlife criterion should be deleted since aquatic organisms (and wildlife species that consume them) accumulate PCBs mainly through dietary exposure. A water-based criterion should not be adopted simply because such criteria are relatively easy to implement for NPDES permitting purposes.

The Utilities think that Ohio EPA should consider evaluating a tissue-based criterion derived from updated scientific findings. Appendix 3 to this document contains a review of toxicological findings relevant to wildlife that were exposed to PCBs via diet. The report provides reasons why Ohio EPA's proposed water and tissue wildlife criteria for the Ohio River basin are not scientifically sound. The principal toxicity value used by Ohio EPA to derive the criteria was based on a paper published in 1973. However, a wide variety of technical studies on the effects of PCBs on wildlife species has been available since 1984. In addition, several regulatory jurisdictions have proposed or promulgated tissue-based PCB benchmarks or criteria. These are summarized in Appendix 3. The key conclusions of the report are: (1) water-based criteria for wildlife are not sound due to other factors that are more important in food web biomagnification of PCBs and (2) a protective mink threshold value of about 0.25 mg/kg (whole fish concentration) may be considered as a potential wildlife criterion.

A related concern with the proposed water-based wildlife criterion value of 0.001µg/L is the ability to detect and quantify a concentration of PCBs at this level with statistical confidence. On September 23, 2010, U.S. EPA proposed several changes to analytical methods for a number of pollutants (47 Fed. Reg. 58023-58076). In this proposal, U.S. EPA proposed as new Method 1668C. This method can detect a number of individual PCB congeners in the low picogram per liter (parts per quadrillion) range. The proposed water-based wildlife criterion (0.001µg/L or 1.0 ng/L) is at least 1,000 times greater than the MDL for U.S. EPA's proposed Method 1668C (about 1 picogram per liter, or 1 pg/L). However, the existing approved method for PCBs, which measures all congeners as a mixture, is about 1.0 µg/L (EPA Method 608).

The Utilities are concerned that if Ohio EPA adopts the proposed water-based wildlife PCB criterion, it may require regulated entities to use proposed Method 1668C for quantification and compliance purposes. There are several technical and procedural concerns with U.S. EPA's proposed Method 1668C. These concerns are delineated as formal comments to U.S. EPA by the Federal Water Quality Coalition. Environmental Standards, Inc. authored a technical critique of U.S. EPA's procedure to develop Method 1668C (e.g., interlaboratory validation studies) and submitted it with the Coalition comments. The Electric Power Research Institute ("EPRI") also released its own technical critique of U.S. EPA's proposed method 1668A (an earlier version of 1668C). One of the conclusions identified in the EPRI report was the erroneous quantification of PCB congeners when no quantifiable levels were present:

> [Q]ualified laboratories, over the course of many analytical batches, will experience PCB detections that are not related to the sample composition and that would not be screened out by censoring reported

> results at a statistically based interlaboratory detection or quantitation limit. Virtually all samples analyzed by Method 1668A will have PCBs present at levels above noise-based, instrumental detection limits. This will pose a problem to facilities that have wastewater discharge limits that are set at "zero discharge" of PCBs.
>
> (EPRI Critique, p. xiii).
>
> Because of unresolved technical problems concerning the precision and reproducibility of Method 1668C and due to the fact that U.S. EPA has not yet approved this method for incorporation into 40 CFR Part 136, the Utilities urge Ohio EPA to not adopt the water-based PCB wildlife criterion. The PCB wildlife criterion for the Lake Erie basin (0.12 ng/L or 120 pg/L) is 1,000 times more stringent than the proposed Ohio River basin criterion. The Utilities would like to know how this criterion is implemented in NPDES permits. Does Ohio EPA's PQL policy apply when the Agency places a PCB WQBEL in a permitee's permit? Clearly, the Utilities believes that facilities in the Lake Erie basin should not be required to measure total PCBs using U.S. EPA's draft Method 1668C for assessing compliance with either a stringent WQBEL or the "no discharge of PCBs" requirement found in many NPDES permits. (Ohio Utility Group)

Response 138: In regards to the first part of the comment, the report in Appendix 3 (hereafter the Environ report), states that the criterion is “outdated” rather than “not scientifically sound” as stated in the comment. The Environ report also does not state that water-based criteria for wildlife are “not sound,” only that there is more uncertainty associated with a water-based criterion as it relates to wildlife than a tissue criterion. We agree with the overall comment that the criterion could use updating, and will consider an update in a future rulemaking. However, the human health water quality criterion for PCBs is going to be the driver in the Ohio River basin. The proposed human health water quality criterion for PCBs is 0.000023 ug/l, which is far lower than the wildlife criterion of 0.001 ug/l. In the Integrated Report 2010 Appendix E, the back-calculation of the current PCB human health water quality criterion for the Ohio River basin, which is based on a water column value of 0.0017 ug/l, is 54 ug/kg average for all fish, well below the Environ proposal of 250 ug/kg for wildlife. Therefore, the wildlife criterion has little bearing in the Ohio River basin on what the permit limit will be, because it is HH driven.

In regard to developing a water column number, BAFs used to derive water quality numbers use Kows, and lipid content in their calculations, they are not strictly based on water column levels. The BAFs we use already take all of the concerns in paragraph 3 into account.

Also, having a water column number, possibly in addition to a tissue criterion, is vital, not just for implementation purposes, but because having

only a tissue number implies that all permitted entities would need to conduct routine fish tissue monitoring as a permit condition. This would impose significant additional costs and difficulties on many of the smaller permittees.

Rule 3745-1-43 Water quality criteria for the tiered aquatic life use designations.

Comment 139: Ohio Adm. Code 3745-1-43(B)(2) states:

> Biological criteria are applied differently than chemical specific criteria and whole effluent toxicity because they are an expression of the biological condition of the receiving water and are not measurable in a wastewater effluent. The need for chemical specific or whole effluent toxicity effluent limits is often confirmed by the biological criteria results generated through biological surveys. However, the attainment of the aquatic life use, the absence of biological survey data or inconclusive biological survey results does not obviate the need for chemical specific or whole effluent toxicity water quality based effluent limits where such limits are needed to maintain water quality standards (chemical specific criteria and whole effluent toxicity). ***The relationship of biological criteria to the application of chemical specific criteria and whole effluent toxicity provisions in the setting of water quality based effluent limits is described in rule 3745-2-03 of the Administrative Code.***

(emphasis added). The Utilities note that the effective surface water regulations do not contain the rule cited (Ohio Adm.Code 3745-2-03). In addition, this rule is not within the various rules to which the Agency is proposing changes. Can Ohio EPA clarify whether Ohio Adm.Code 3745-2-03 exists? (Ohio Utility Group)

Response 139: The draft changes that are the subject of the comment have been removed from the proposed rule. The existing rule language has been re-inserted into the proposed rule.

Comment 140: 3745-1-43(B)(2): Biological criteria.

EPA Comment – The last sentence references rule 3745-2-03 which does not exist. This sentence needs to be corrected. (U.S. EPA, Region 5)

Response 140: The draft changes that are the subject of the comment have been removed from the proposed rule. The existing rule language has been re-inserted into the proposed rule.

Comment 141: 3745-1-43(B)(4)(a) States that "a narrative macroinvertebrate assessment of aquatic life use attainment may be used in lieu of the invertebrate

community index at sampling stations if the invertebrate community index is not available, or is deemed inappropriate for use ... " It is unclear, however, in which instances the ICI would be inappropriate to use. Clarification is requested regarding this issue. (NEORSD)

Response 141: Obvious situations where the ICI score may not be available are those where the artificial substrates are irretrievable either due to vandalism or the effect of excessive high flows. The artificial substrates may be gone, out of the water completely, partially submerged to the point where they are deemed not collectable, or partially or fully buried in natural substrates to the point where artificial substrate surface area available for colonization has been compromised. Sampling protocols also require a minimum set and retrieve current velocity (0.3 fps) for the deployment location of the artificial substrates. Usually, an excursion from this requirement occurs at the artificial substrate retrieval where stream flows may have receded to the point where the minimum current velocity is not met. In these circumstances, the artificial substrate samplers are usually still retrieved and processed but the results may be over-ridden by a narrative assessment if they differ significantly from the qualitative natural substrate, multi-habitat collection and other stream community observations, especially for the components or IC metrics which are flow/velocity sensitive.

Comment 142: The 2008 version of the draft criteria contained sections 3745-1-43(8)(4)(d) and (e) that provided a much needed demonstration approach regarding the use of biological criteria. These sections allowed for the demonstration of attainment of applicable biological criteria to take precedence over the application of certain chemical-specific or whole effluent criteria when these criteria are deemed inappropriate. These sections also set up a framework for determining the cause of non-attainment of biological criteria and a path forward in situations of non-attainment. These sections should be returned to the draft rules to allow the flexibility necessary to determine causes of impairment and if designated uses are appropriately applied. (NEORSD)

Response 142: The existing rule language has been re-inserted into the proposed rule.

Comment 143: Demonstration Approach. In the draft rule revisions from 2008, OAC 3745-1-43(B)(4) contained a new (d) and (e) that included a demonstration approach regarding the use of biological criteria. These sections created a framework for determining the cause of non-attainment of biological criteria. These sections should be returned to the draft rules to allow flexibility in determining the causes of impairment and if designated uses are appropriately applied. (AOMWA)

Response 143: The existing rule language has been re-inserted into the proposed rule.

Comment 144: Ohio Adm. Code 3745-1-43(B)(4)(a) allows Ohio EPA to make aquatic life use attainment evaluations at locations where a narrative macroinvertebrate assessment only is available (i.e., in lieu of the invertebrate community index). While the Utilities do not object to this change, the Utilities would like to receive feedback from the Agency concerning the number of temporal sampling events that are typically conducted for narrative assessments. The Utilities believe that Ohio EPA should conduct at least two seasonal sampling events. (Ohio Utility Group)

Response 144: Narrative macroinvertebrate assessments (i.e., those based on qualitative, multi-habitat sampling which generates a presence/absence list of taxa) are generally restricted to sampling locations with drainage areas < 20 sq. miles. For an aquatic life use attainment decision to be made the narrative data must be considered with the corresponding fish biological index and criterion based on the IBI score; the attainment decision cannot be made on only the narrative macroinvertebrate assessment. Under routine conditions, macroinvertebrates collected using the narrative sampling protocols are only collected one time during the summer sampling index period (June 15-September 30). At this point in time, the Ohio EPA does not feel that more than one macroinvertebrate collection in conjunction with fish data is necessary to make a valid aquatic life use attainment decision at sampling locations collected during our routine index period. We have seen no evidence or documentation in the literature which would suggest otherwise.

Comment 145: Ohio Adm.Code 3745-1-43(B)(4)(b) specifies that the Director can waive applicable biological criteria during periods of "stream dessication." While the Utilities agree with the intent of this section, the proposed wording suggests that "stream dessication" would only apply to headwater and wadeable streams and not medium to large rivers. While the complete lack (or virtual lack) of aqueous habitat in headwater and wadeable streams during drought periods is stressful to aquatic life, adverse effects in medium to large rivers also occur during these periods (e.g., reduction in dissolved oxygen, concentration of fish due to dessicated tributaries). The Utilities recommend that this section should be amended to read:

> Episodes of stream desiccation. Biological criteria presented in tables 43-1, 43-2 and 43-5 of this rule shall not be applicable in situations, as determined by the director, where desiccation of the stream bed or a significant reduction of flow, as a result of drought or other natural phenomena, is of such an extent and magnitude that a water body so affected lacks the reasonable potential to support aquatic life communities relative to less stressful conditions, due to the absence of suitable aqueous habitat. This temporary exclusion of the applicability of biocriteria in desiccated streams is limited to the observed time period of desiccation and its attendant after effects, as determined by the director.

In this section, the Utilities also suggest that the Agency consider referencing the proposed definition of "drought" (Ohio Adm.Code 3745-1-02(B)(32)). (Ohio Utility Group)

Response 145: The rule language was specifically written to address the effects of drought conditions on small streams or losing streams that become completely desiccated.

Comment 146:3745-1-43(B)(4)(b) Episodes of stream desiccation.
While the Conservancy supports this proposed rule, we urge the agency to ensure that these "episodes of stream desiccation" are not human-caused, such as through water withdrawals, artificial drainage, stormwater management or reservoir releases. As possible wording, the rule might be stated: "this rule does not apply to episodes of stream desiccation that are human-caused, such as through water withdrawals, artificial drainage, stormwater management or reservoir releases." In general, many, if not most Ohio streams experience periods of little or no flow, and many experience this annually; it is a stress that is at least partially natural. However, stream life has had to adapt to these conditions, and temporary desiccation should not be a reason for lowering designation of a use for a stream. It is not appropriate to downgrade a use because of the additional stresses such as those listed above.

Desiccation and low base flows can be exacerbated by the human causes mentioned above. Human-caused desiccation should be considered a stress which can be addressed and mitigated through best management practices, and should not lead to lowering of use designations.

> "Natural desiccation is a seasonally predictable event (Gasith & Resh 1999) to which native species have adapted through evolutionary history (Moyle 1995; Williams 1996; Poff 1997; Magoulick and Kobza 2003).
>
> During artificial desiccation environmental changes occur abruptly causing rapid and extensive deterioration of water quality and habitats, and organisms may face conditions which they have not experienced in their recent evolutionary history. This may lead to mass deaths of certain species, such as fish, that may provoke serious threats to their persistence in the system (Stanley et al. 2004; Magalhaes et al. 2007)."[16] (The Nature Conservancy)

Response 146: We agree that the exception regarding biological criteria during episodes of stream desiccation should be limited to natural events. That is the intent behind using the phrase "as a result of drought or other natural phenomena" and including a definition for drought in rule 3745-1-02. A cross reference to the definition of drought has been added to the rule.

Comment 147:3745-1-43(B)(4)(c): "(c) Limit of calibration – Except in circumstances documented through site specific data collection and use attainability analyses, biological criteria shall not apply at stream locations where the drainage area is less than 1.0 square mile. If the stream is designated upland drainage, the drainage area cut off point for the applicability of biological criteria is 3.1 square miles.

Where site specific data are available at locations with drainage areas below the limit of calibration thresholds, the director shall consider that data, along with all available information on sampling methods, specialized habitats, prevailing environmental conditions and other factors that influence biological criteria scoring, to determine if biological criteria should apply and to determine the existing use to protect under rule 3745-1-05 of the Administrative Code.

[Comment: Water bodies designated in rules 3745-1-08 to 3745-1-32 of the Administrative Code for tiered aquatic life uses with applicable biological criteria shall retain those designated tiered aquatic life uses while subject to the limit of calibration thresholds.]"

EPA Comment – The information available with the public notice of the proposed rules does not include data and analyses to allow EPA to evaluate the scientific basis for the assertion that the biological criteria do not apply at stream locations where the drainage area is less than 1.0 square mile (3.1 square miles for streams designated "upland drainage"). Analyses conducted for EPA do not support the conclusion that Ohio's biological assessment methods and/or biological criteria do not function well in waters of this size for all ecoregions statewide. These analyses show that the distribution of streams across aquatic life uses is roughly similar both above and below the limit of calibration thresholds. These analyses are in the process of being finalized. EPA will provide them to Ohio EPA as soon as they are final.

In addition, Ohio's rules at OAC 3745-1-01(D)(1) state:

> (D) General provisions.
>
> (1) Chemical, physical and biological conditions of any surface waters of the state shall not impair existing and designated beneficial uses of downstream bodies.

Analyses of Ohio data conducted for EPA indicate that the gap in applicability of the Ohio biological criteria resulting from application of the limit of calibration thresholds in proposed OAC 3745-1-43(B)(4)(c) seems likely to contribute to violations of 3745-1-01(D)(1) because it is the preservation and maintenance of the habitat in these waters rather than attainment of chemical water quality criteria that plays a significant role in determining attainment of waters above the proposed limit of calibration

thresholds. If adopted as proposed, it seems likely that more waters clearly covered by biological criteria would become impaired if there is increased anthropogenic disturbance in waters below the calibration threshold. As mentioned above, EPA will provide the analyses to Ohio EPA as soon as they are final. (U.S. EPA, Region 5)

Response 147: The upland drainage use has been dropped from the rule package so that the drainage area cut off is one square mile is all cases. Additional data from U.S. EPA was not received as of this date. Ohio EPA will consider additional information and comments if submitted. However, as a general matter Ohio EPA continues to believe that the primary headwater evaluation methods are typically appropriate in most watersheds with drainage areas below one square mile. The technical reports available on the Division's web page support this position. For more information see http://www.epa.ohio.gov/dsw/wqs/headwaters/index.aspx.

Comment 148: Ohio Adm. Code 3745-1-43(B)(4)(c) states that biological criteria will not apply to stream locations where the drainage area is less than 1.0 square mile with the following exceptions:

- Site-specific studies and/or use attainability analyses;

- Potentially, locations having a drainage area less than 1.0 mi^2 and where other information is available. At these locations, the Director may determine that biological criteria - even criteria that were calibrated using reference site information for stream segments having a drainage area of 1.0 mi^2 or greater.

The Utilities are concerned that Ohio EPA may be seeking an overly-liberal interpretation of the applicability of biological criteria when the underlying reference site database may prohibit such an encroachment. Ohio EPA should not try to "force" numeric biological criteria into water bodies where comparable reference site data are lacking. The smallest streams where numeric biological criteria have been developed and are applicable are "headwater sites" (Tables 43-1, 43-2, and 43-5). These sites, by definition, have drainage areas less than 20 mi^2. The proposed wording of Section (B)(4)(c), however, appears to allow the Agency the freedom of applying "headwater site" biological criteria to locations designated either primary headwater habitat or base aquatic life use without verifying that reference site data for streams with a drainage area of less than 1.0 mi^2 actually exist and are comparable to the site in question.

The Utilities evaluated the number of reference sites having very small drainage areas (1 – 2 mi^2) among all reference sites used to develop the "headwater site" Index of Biotic Integrity ("IBI"). Appendix Table A-3 of the September 30, 1989 addendum to the Ohio EPA Report "Biological Criteria for the Protection of Aquatic Life: Volume II: User's Manual for Biological

Field Assessment of Ohio Surface Waters" contains a listing of all Ohio reference sites used to calibrate the numeric biological criteria that are placed in various tables of Ohio Adm.Code 3745-1-43. For headwater reference sites (sites having a drainage area of 20 mi^2 or less), a total of 226 stream locations are listed. Five of these locations (2.2% of total) have a drainage area of 1.0 square mile or less, while 16 locations (7.0% of total) have a drainage area of 2.0 square miles or less. On page 4-3 of Volume II of the User's Manual, the text indicates that ***the range of mean drainage areas for reference sites at headwater locations varied between 5.5 to 10.2 mi^2 between the five ecoregions***. Thus, the representation of Ohio EPA reference stream sites having drainage areas of less than 1.0 mi^2 - among the entire reference stream sites used for calibration of the "headwater sites" IBI - is disproportionately underrepresented.

Moreover, Rankin.[24] conducted an analysis of total number of macroinvertebrate taxa and fish species, as a function of drainage area for Ohio headwater sites. Within a drainage area range of 0.1 to 100 mi^2, there was a significant positive slope between drainage area and the number of macroinvertebrate taxa (r^2 = 0.64). The drainage area relationship for fish species was more significant (r^2 = 0.78). Within the drainage area range of 0.1 to 10 mi^2, there was a clear increase (positive slope) in the number of fish species. The Utilities conclude, based on the above discussion, that the applicability of "headwater site" numeric biological criteria to headwater stream sites having a drainage area of 1.0 mi^2 or less is very speculative. The "biological performance expectation" for very small watersheds should be based on reference sites that have similar or comparable drainage areas. It is quite possible that many watersheds having drainage areas less than 1.0 m^2 could not attain "headwater site" biological criteria due to reasons unrelated to anthropogenic impacts.

The Utilities think that this may be an improper extrapolation of numeric biological criteria that are developed and calibrated using a scaling watershed area approach. If this interpretation of proposed Ohio Adm.Code 3745-1-43(B)(4)(c) is incorrect, please indicate so.

The sentence of proposed Ohio Adm.Code (B)(4)(c) states that:

> Where site specific data are available at locations with drainage areas below the limit of calibration thresholds, the director shall consider that data, along with all available information on sampling methods, specialized habitats, prevailing environmental conditions and other factors that influence biological criteria scoring, to determine if biological criteria should apply ***and to determine the existing use to protect under rule 3745-1-05 of the Administrative Code***.

(emphasis added). The phrase " ... and to determine the existing use to protect under rule 3745-1-05 of the Administrative Code" needs explanation. There is nothing in Ohio Adm.Code 3745-1-05 that provides a

process for assigning a designated use. Is the reference to Ohio Adm.Code 3745-1-05 based on an existing provision of this rule or does it reference a proposed change? The Utilities believe that Ohio EPA needs to better explain the intent of this phrase. In addition, the Utilities request that Ohio EPA cite the specific section of Ohio Adm.Code 3745-1-05 in this paragraph so that there is no confusion regarding how this paragraph is related to the antidegradation rule. (Ohio Utility Group)

Response 148: The proposed rule language is focused on these two principle points:

- Biological criteria were not specifically designed or calibrated for use in very small streams (less than 1 mi^2) (the same point made in the comment);
- Notwithstanding the above we know that there are situations where environmental conditions are such that these very small streams do fully support aquatic life uses (biological criteria are met).

The cross reference to the antidegradation rule (3745-1-05) is meant to signify that, if after careful consideration of all the factors listed in the rule, the regulations require protection of the existing uses that are legitimately documented as occurring in the stream. To clarify this point the proposed rule includes the following new language:

Verifiable, representative data that documents attainment of tiered aquatic life uses having biological criteria confirm the existing use to be protected under the antidegradation rule (3745-1-05 of the Administrative Code).

Comment 149: Ohio Adm.Code 3745-1-43(D) Water quality criteria that apply in addition to, or in lieu of, the base aquatic life use criteria. In Ohio Adm. Code 3745-1-43(D)(4), Table 43-8 lists the numeric water quality criteria for the coldwater habitat aquatic life use designation. For cyanide (Ohio River drainage basin), the Inside Mixing Zone Maximum ("IMZM"), OMZM, and OMZA criteria are identical to the criteria applicable to the Lake Erie basin in Table 42-1. In Table 42-1, the cyanide criteria for the Ohio River basin are approximately two times the values for the Lake Erie basin values in the same table. Can Ohio EPA explain the reason for the discrepancy of criteria values between the two drainage basins? (Ohio Utility Group)

Response 149: This rulemaking does not make any changes to the existing cyanide criteria that are currently found in OAC 3745-1-07, Table 7-1.

As required by the Great Lakes Water Quality Initiative, Ohio adopted the cyanide criteria (as shown in existing rule OAC 3745-1-07, Table 7-1) for waters in the Lake Erie basin in 1997. These criteria were moved to draft rule OAC 3745-1-42, Table 42-1. These cyanide criteria are protective of salmonid fish species as required by the Great Lakes Water Quality Initiative.

The cyanide criteria that apply to waters in the Ohio river basin do not fall under the requirements of the Great Lakes Water Quality Initiative. The cyanide criteria that apply to the Ohio River basin for all uses (currently found in OAC 3745-1-07, Table 7-1) except the CWH use, were moved to draft rule OAC 3745-1-42, Table 42-1 and are unchanged from what is currently in rule. The CWH cyanide criteria were moved to OAC 3745-1-43, Table 43-8. Like the cyanide criteria that apply to waters in the Lake Erie drainage basin, the cyanide criteria applicable to the CWH use designation include toxicity data on cold water organisms such as salmonid fishes. The cyanide criteria that apply to other aquatic life uses within the Ohio River drainage basin such as WWH and EWH exclude the salmonid toxicity data (and are therefore less stringent) because waters not designated CWH do not need to be protective of cold water fauna since these waters do not support cold water fauna.

Comment 150: 3745-1-43(D)(4): "(4) Cold water habitat. The water quality criteria in table 43-8 of this rule apply in lieu of the water quality criteria for the base aquatic life use in rule 3745-1-42 of the Administrative Code."

EPA Comment – EPA recommends revising the wording to clarify that except for the parameters in table 43-8, the parameters in 3745-1-42 still apply. EPA suggests adding "for the following parameters; for all other parameters 3745-1-42 applies" at the end of the sentence after "Administrative Code." (U.S. EPA, Region 5)

Response 150: The rule language has been revised to address the comment.

Comment 151: Tables 43-1, 43-2, and 43-5 reference the "Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices". Should this reference instead be "Biological criteria for the protection of aquatic life: Volume III. Standardized biological field sampling and laboratory methods for assessing fish and macroinvertebrate communities"? (NEORSD)

Response 151: We believe you are referring to footnote 2 in each of these tables where reference is made to sampling methods descriptions being found in the "Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices." We concur that the more appropriate reference would be one you mention above. In past revisions of the Surveillance Manual, the biological SOPs were included but recent revisions have excluded these procedures. OAC 3745-1-03 now specifically mentions Volume III of the Biocriteria manuals so this would be the appropriate reference in footnote 2 of each table. The changes will be made.

Comment 152: Table 43-8 also indicates that "[a]t no time shall the water temperature exceed the temperature which would occur if there were no temperature change attributable to human activity." Many of the Utilities possess 316(a) variances, which allow their once-through cooling discharge to exceed

temperature limits as long as they ensure the protection and propagation of aquatic species. The Utilities seek clarification from Ohio EPA regarding how this language will impact, if at all, those Utilities that possess 316(a) variances. (Ohio Utility Group)

Response 152: This rule language should not impact Utilities with 316(a) variances. If the Agency undergoes a rulemaking to redesignate a stream Exceptional Warmwater Habitat or Coldwater Habitat, the effect of the redesignation on the discharger would be considered as part of the rulemaking process.

Comment 153: Table 43-9. The outside mixing zone maximum for total ammonia-nitrogen for coldwater habitat and seasonal salmonid habitat in Table 43-9 are more stringent than the maximum for warmwater habitat. The Utilities seek clarification on how these values were calculated. Were certain "warmwater" species removed from the underlying toxicological database? (Ohio Utility Group)

Response 153: Yes, the differences in the SSH and CWH ammonia criteria compared to the ammonia criteria for the warmwater habitat use are related to the differences in the species dataset that were considered. Some of the coldwater fish considered in the derivation of the CWH and SSH ammonia criteria were not used in the WWH ammonia criteria calculation. Note that this rulemaking makes no changes to the existing ammonia criteria currently in the WQS rules. US EPA published draft revisions to the federal ammonia criteria document in 2009. We anticipate updating Ohio's ammonia aquatic life criteria for ammonia once US EPA published its final ammonia criteria document.

Comment 154: EPA Comment – There is no table 43-10 in the draft rule. Is a table missing? (U.S. EPA, Region 5)

Response 154: The table numbering has been fixed in the proposed rule.

Comment 155: Ohio Adm.Code 3745-1-43(D)(6) provides applicable criteria for the Limited Resource Water aquatic life use designation. Subsection (a) of this section reads "Except as identified in paragraph (E)(6)(b) of this rule, the outside mixing zone average criteria do not apply." It appears that "(E)" should be replaced with "(D)." (Ohio Utility Group)

Response 155: The proposed rule has been corrected.

Comment 156: Ohio Adm. Code 3745-1-43(D)(8) defines a new aquatic life use designation (lake habitat) and provides numeric water quality criteria in Table 43-12. Ohio Adm.Code 3745-1-43(D)(8)(a) indicates that the water quality criteria in Table 43-12 apply (in lieu of or in addition to) the water quality criteria established for the base aquatic life use (Tables 42-1 to 42-5). Numeric temperature criteria for the base aquatic life use are provided

in Table 42-5. The Utilities comment that the numeric temperature criteria are stratified by watershed and were based (several decades ago) on ambient temperatures measured largely in flowing water bodies. The only exception are the criteria specific to the lacustuaries of Lake Erie, the Maumee, River, and Sandusky Bay. These water bodies are more lentic concerning physical attributes. It does not appear that any of the temperature criteria in Table 42-5 are based on temperature measurements in inland lakes. The Utilities question the validity of applying stream-based temperature criteria[25] to inland lakes. Has Ohio EPA evaluated whether inland lakes can actually attain the temperature criteria? Shouldn't temperature criteria for lakes be based on historical temperature data for lakes themselves? (Ohio Utility Group)

Response 156: The rule does not apply stream-based temperature criteria to the inland lakes as suggested in the comment. The temperature criteria that apply to inland lakes are exactly the same as have always applied. They have merely been moved from OAC 3745-1-07, Table 7-1 to proposed rule OAC 3745-1-43, Table 43-12.

Comment 157: Ohio Adm. Code 3745-1-43(D)(8)(b) provides definitions of the four kinds of lake types: dugout lakes, impoundments, natural lake, and upground reservoir. The Utilities note that many dugout lakes and impoundments are created for the sole purpose of wastewater treatment/storage and the Utilities do not consider these water bodies "surface waters of the state." The Utilities are concerned that water bodies such as borrow pits, ponds created for AMD remediation, and ponds that store coal combustion byproducts may be regarded by the Agency as "surface waters of the state" and, thus, must meet the numeric water quality criteria defined in Section (4)(8)(a). While the Utilities believe that Ohio EPA should revise this definition to be more narrowly construed, at a minimum, the Utilities recommend the following revision to the rule:

(8) Lake habitat.

(a) The water quality criteria in table 43-12 of this rule apply in lieu of or in addition to the water quality criteria for the protection of the base aquatic life use in rule 3745-1-42 of the Administrative Code.

(b) For the purposes of the water quality criteria in table 43-12 of this rule, the following four lake types are recognized.

(i) Dugout lake is a lake formed by the accumulation of rainfall or ground water in a hole excavated in an upland area including, but not limited to, borrow pits, ponds, and quarries.

(ii) Impoundment is a lake formed by an impoundment structure, such as a dam, within a flowing body of water such that the normal water flow is interrupted, resulting in a residence time index of 0.5 or greater.

(iii) Natural lake is a lake formed without human intervention, including, but not limited to, kettle lakes formed from glacial outwash.
(iv) Upground reservoir is a lake constructed of earthen dikes separate from the water source primarily used to store drinking water. Surface water or ground water is pumped into the lake to fill the basin.

(c) The water quality criteria in table 43-12 of this rule do not apply to:

(i) Sewer systems defined under 6111.01(E) of the Revised Code;

(ii) Treatment works defined under 6111.01(F) of the Revised Code; or

(iii) Disposal systems defined under 6111.01 (G) of the Revised Code. (Ohio Utility Group)

Response 157: Ohio EPA believes that ORC 6111 provides adequate language that exclude the water body types of concern expressed in the comment from the criteria that apply to the lake habitat use designation. However, additional revisions to the draft rules provide further clarity regarding the definition of a lake and the applicability of the lake habitat criteria. In addition, since the nutrient criteria for lakes have been tabled from this particular rulemaking and instead will be pursued at a later date, the language in the draft rule pertaining to lake types was removed since it is no longer necessary at this time.

End of Response to Comments