UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 2 7 2012

OFFICE OF
WATER

The Honorable Andy Harris, M.D.
Chairman
Subcommittee on Energy and Environment
Committee on Science, Space, and Technology
U.S. House of Representatives
Washington, D.C. 20515

Dear Chairman Harris:

Thank you for your June 12, 2012, letter to U.S. Environmental Protection Agency (EPA) Administrator Lisa P. Jackson. Your letter raises important questions regarding the scientific, technical, and legal bases for final EPA and U.S. Army Corps of Engineers guidance ("guidance") clarifying the scope of Clean Water Act protections under current law. As the senior policy manager of the EPA's national water program, I appreciate the opportunity to respond to your letter.

Your letter raises concerns about the EPA and U.S. Army Corps of Engineers guidance clarifying the scope of CWA protections in light of the Supreme Court's decisions in *SWANCC* and *Rapanos*. The agencies believe strongly that existing 2008 guidance issued in the previous administration is confusing and is causing avoidable delays and inconsistency for those who need CWA permits. The agencies' final guidance is currently undergoing interagency review at the Office of Management and Budget.

Our goals in issuing new guidance are to reduce costs for the public and the agencies; increase transparency to the public and predictability in CWA permit programs; and assure that implementation of the CWA is fully consistent with current law. I would emphasize that the guidance clarifies existing law, would not establish any new requirements, and would not expand the historic scope of CWA jurisdiction. I also want to highlight the agencies' commitment to transparency in releasing draft guidance for public comment and an associated economic analysis, a step that the agencies were not required to undertake. By the time the final guidance is issued, the agencies plan to release a summary of the approximately 230,000 public comments that the agencies received on the draft guidance, the vast majority of which supported moving forward to finalize the guidance.

The agencies are also moving ahead with plans to revise their regulations defining the scope of CWA jurisdiction. This planned rulemaking effort is, in fact, included in the EPA's Fall 2011 Semiannual Regulatory Agenda.[2] The agencies' rulemaking will be conducted in a manner that is fully consistent with the Administrative Procedure Act, including an opportunity for robust public notice and comment. The EPA has consistently made sound science and public participation the backbone of our rulemaking efforts, and we intend to continue to do so here.

[2] EPA Fall 2011 Regulatory Agenda. Available at http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OA-2012-0077-0001. This activity is listed under "Water—Long-Term Action" under "Clean Water Protection Rule" (Identifier 2040-AF30). See pp. 19 and 61-62.

Your letter includes specific questions regarding two efforts underway in the Agency. These are "*The Importance of Water in the U.S. Economy*," which your letter refers to as "The Value of Water Study," and "*Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence*," which your letter refers to as the "Connectivity Study." Please see enclosed for detailed responses to each of your questions.

Thank you again for your letter, and I hope this response and the enclosure effectively address your concerns. Please feel free to contact me if you have any additional questions, or your staff may contact Denis Borum in the EPA's Office of Congressional and Intergovernmental Relations at (202) 564-4836.

Sincerely,

Nancy K. Stoner
Acting Assistant Administrator

Enclosure

cc: The Honorable Bob Gibbs
Chairman, Subcommittee on Water Resources and Environment

The Honorable Brad Miller
Ranking Member, Subcommittee on Energy and Environment

The Honorable Timothy Bishop
Ranking Member, Subcommittee on Water Resources and Environment

Enclosure

"Importance of Water" Study

1. **Please outline all actions taken in support of the Value of Water study and those expected in the future, as well as a detailed timeline going forward.**

   As part of the study, the EPA aims to provide a review of existing literature related to the importance of water to key sectors of the economy. This review of existing literature is currently under development. The EPA is also supporting the development of a series of papers written by experts to supplement existing information and to present current economic analyses and innovations. The Agency completed a public solicitation for paper abstracts and quotes in May 2012. The EPA plans to hold a technical workshop to present and discuss the agency's literature review and the expert papers, and to solicit feedback. This workshop is tentatively scheduled for September 2012. The EPA will then produce a draft report that synthesizes all of this information and release it during a public symposium, which is tentatively scheduled for December 2012. The draft synthesis report will be available for public review and comment and will be submitted to the SAB for review. The study is expected to be completed sometime in 2013.

   The EPA is developing a website where all these documents will be made available and a dedicated email address (ImportanceOfWater@epa.gov) to receive comments and suggestions from the public.

2. **Please describe any and all future purpose for the study with regard to any clarification and/or expansion of CWA jurisdiction.**

   The Importance of Water study is not being conducted in support of the agency's efforts to clarify the scope of Clean Water Act (CWA) jurisdiction. Rather, the EPA is conducting the study to:

   - Better understand how water contributes to the economic welfare of the nation and plays a critical role in many sectors of the U.S. economy;
   - Help people in the public and private sectors make better decisions related to managing the nation's waters, and to identify gaps where further research would be useful;
   - Capture existing knowledge about the role of water in the U.S. economy; and
   - Identify areas where additional research would be useful and create a way to continue building understanding of how water relates to the economy.

   The EPA hopes that the study will be a starting point for a broad discussion about strategies to make efficient and effective decisions about water as it relates to the U.S. economy. The EPA's study is not a new law, regulation, guidance or policy, and does not change any existing laws, regulations, guidance, or policies.

3. **Please detail the cost-benefit analysis undertaken in development of the Draft Guidance. Will the Final Guidance incorporate information from and include a cost-benefit analysis related to the Value of Water study? Will the cost-benefit analysis be consistent with requirements under OMB Circular A-4 and EPA's Guidelines for Preparing Economic Analyses?**

The EPA, in coordination with the Corps of Engineers, completed an economic analysis to provide a preliminary estimate of the possible range of indirect costs and benefits associated with implementing the draft guidance on *Identifying Waters Protected by the Clean Water Act*. This economic analysis accompanied the request for public comment on the draft guidance. The draft guidance itself is not binding; it is the existing statutory and regulatory programs and requirements that would impose costs and provide benefits. Additionally, neither field staff nor courts are required to follow the guidance -- it is only to the extent that the non-binding guidance is followed that the estimated indirect costs and benefits accrue. Nevertheless, the analysis attempted to estimate possible indirect costs and benefits associated with implementing the draft guidance when compared to implementation of existing guidance. The quantitative portion of the analysis focused on additional compensatory mitigation costs and projected costs increases of about $90-170 million per year. The analysis also found that the quantitative value of benefits (e.g., flood protection and improved water quality deriving from more restored wetlands) would exceed these costs. This analysis and a summary are posted on EPA's website at http://water.epa.gov/lawsregs/guidance/wetlands/CWAwaters.cfm.

The economic analysis completed for the draft guidance is consistent with the EPA's Guidelines for Preparing Economic Analyses, and was developed in close coordination with the EPA's National Center for Environmental Economics, the authors of the EPA's Guidelines. OMB Circular A-4 (2003) is intended to define good regulatory analysis and standardize the way benefits and costs of federal regulatory actions are measured and reported. The EPA's Guidelines provide guidance for implementing Circular A-4, and so following the EPA's Guidelines ensures consistency with Circular A-4.

The economic analysis to be completed for the final guidance is not related to the Importance of Water study, and these efforts serve different purposes. The Importance of Water study is focused broadly on the importance of water in the U.S. economy. An economic analysis completed for the final guidance would specifically analyze the indirect economic effects that may result from implementing that guidance, and would also include consideration of comments on the economic analysis that accompanied the draft guidance.

4. **Will this study be deemed a "Highly Influential Scientific Assessment" (HISA) as defined by OMB?**

No. The EPA's study does not constitute a scientific and/or technical work product to support a regulatory program or policy position and is therefore not a "scientific assessment" or a "highly influential scientific assessment."

5. **A review of the EPA website demonstrates that 15 of 19 listed members of the SAB Environmental Economics Advisory Committee reviewing the Value of Water study, nearly 80%, have recently received EPA funding. Will EPA appoint a new SAB panel to review the final study? What steps would the Agency take to ensure a new panel's independence? Has EPA changed the regional or industry related scope of the study in response to SAB suggestions?**

The EPA requested the Science Advisory Board provide early consultative advice on a proposed outline of a planned study to estimate the Value of Water to the U.S. Economy. The charge to the SAB requested comment on the proposed scope, planning, and issues that the EPA's Office of Water should address in developing this report. The augmented SAB committee that reviewed the EPA's study outline included economists and engineers with experience in economics, drinking water, wastewater, and water resource management. Members of the augmented committee were drawn from the academic and consulting community with vast experience in different regions of the country, multiple sectors of the economy, diverse water management issues, and experience interacting with public and private sector water stakeholders. In accordance with regulations and guidance from the U.S. Office of Government Ethics, the EPA determined that there were no conflicts of interest presented by these SAB members.

The SAB anticipates that when the EPA completes the Importance of Water in the U.S. Economy report, the report will again be reviewed by the SAB and that the SAB will produce a consensus report. At that time, the SAB Staff Office will form an ad-hoc advisory panel to review the report. Consistent with its normal procedures, the SAB Staff Office will provide an opportunity for public comment on the candidates for the advisory panel.

The EPA recognizes that regional differences have a major effect on the ways in which water is used, and that these differences have important implications for the value of water in particular areas. This issue was highlighted in early comments that the EPA received on this effort. The report will attempt to address these issues on a sector-by-sector basis.

6. **A recent Congressional staff briefing by the EPA on the study described a so-called "background report" that will be compiled by a contractor, IEC, as a synthesis of papers solicited from environmental, industry and economic experts in the water sector. What specific methodology will be used to determine the authors and content of these papers? Have the authors, content or topic areas been finalized? If so, please provide them.**

The contractor conducted a "Call for Papers and Request for Quotes" in April and May 2012. The request was distributed publicly through multiple listservs and websites, including ResEcon: Land and Water Resource Economics Network , Water Scientific Information Syndication, and the American Water Resources Association. Prospective candidates submitted paper abstracts and quotes for developing each proposed paper. The contractor is now in the process of finalizing candidate selections and setting up subcontracts with authors. Papers will be publicly available through the EPA's website once they are completed.

7. **When does EPA anticipate publishing the "background report" for required public review and comment?**

The "background report" associated with this study is essentially a review of available published literature and analysis of U.S. economic and water resource statistics. The purpose of the "background report" is to provide a consistent set of information that sets a baseline understanding of the economic and natural resource statistics, methods, and models available for describing, and for conducting analysis of, the importance of water to the U.S. economy. Though public review and comment is not required for the "background report," the EPA will make draft products available to the public through our website. The EPA welcomes public feedback, particularly where it provides additional information that could help inform this effort.

"Connectivity Study" and CWA Definition of "navigable waters"

1. **Please provide the current draft of the study.**

   EPA scientists have developed a draft report summarizing and synthesizing existing published scientific literature regarding the connectivity of water, titled "Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence." This report is not a new scientific study. Rather, it provides an up-to-date summary of existing, mainstream scientific information on the relationships of small streams, wetlands, and other water bodies to larger downstream waters - the "connectivity" of waters - in an easily accessible and reviewable format. The review focuses on foundational concepts in stream and wetland hydrology and ecology, summarizing basic relationships that have been well studied and well documented in the literature. It also identifies data gaps in the literature, and includes examples of studies providing new information that could inform future research.

   The draft report has undergone external scientific peer review by an independent panel of nationally recognized experts. The eleven-member panel was selected by a contractor without input from the EPA, consistent with the EPA's Information Quality Guidelines. The EPA's Office of Research and Development is currently revising the draft to address peer review comments. The EPA will share the peer review report with the public, and release the revised draft for public comment, prior to review by the Agency Science Advisory Board (see response to question 7 below). We would be pleased to provide a copy of the report to the Committee at that time.

2. **Please provide a detailed and comprehensive explanation of the justification and basis for incorporating only the Kennedy "significant nexus" test in the Draft and Final Guidance.**

   The May 2011 draft guidance incorporates both the Scalia "relatively permanent" test as well as the Kennedy "significant nexus" test, and we anticipate that the final guidance will similarly reflect both. This is the same approach the Agencies took in prior guidance published in 2007 and 2008, and it is reflected in numerous briefs the U.S. has filed in litigation. For example, Section 4 on Tributaries in the May 2011 draft guidance includes subsections on "Tributaries covered Under the *Rapanos* Plurality Standard" and "Tributaries covered under the *Rapanos* Kennedy Standard." (pp. 12-15), and Section 5 on Adjacent Wetlands similarly has subsections addressing each test. The introductory section of the May 2011 draft guidance (as well as the 2007 and 2008 documents) addresses why the agencies believe both tests are relevant for jurisdiction under the CWA, noting that "[t]he agencies continue to believe, as expressed in previous guidance, that it is most consistent with the *Rapanos* decision to assert jurisdiction over waters that satisfy either the plurality or the Justice Kennedy standard, since a majority of justices would support jurisdiction under either standard" (p. 3).

3. **Please provide a comprehensive explanation of the specific need, content, and future utility of the Connectivity study, with particular regard to the priorities and requirements put forth in ORD's five year "Water Quality Research Multi-Year Plan 2009-2014".**

The Office of Research and Development's current strategic research actions are outlined and guided by "Safe and Sustainable Water Resources: Strategic Research Action Plan 2012-2016," which is available online at http://epa.gov/research/docs/sswr-strap.pdf. This document is an update to the "Water Quality Research Multi-Year Plan 2009-2014" that is referenced in your question.

The Strategic Research Action Plan was developed by EPA scientists and managers from ORD, the Office of Water, and other program offices and EPA Regions with input from stakeholders from water associations, water research foundations, utilities, environmental groups, tribes, industry, and state agencies. The Strategic Research Action Plan outlines two broad, interrelated research themes: 1) Sustainable Water Resources and 2) Sustainable Water Infrastructure Systems. Research activities related to connectivity are outlined in theme 1.

Supreme Court decisions have emphasized the importance to CWA jurisdiction of the connectivity of tributaries and their adjacent wetlands to traditional navigable waters. To ensure the agencies implement the CWA in a manner fully consistent with *Rapanos*, the EPA believes it is important to understand what peer-reviewed, published scientific literature has examined and concluded regarding connectivity among waters. The EPA's Science Synthesis Report synthesizes that literature. Additional potential uses for the study are discussed in Question 5 below.

4. **Please outline all actions taken in support of the Connectivity Study and those expected in the future, as well as a detailed timeline going forward.**

The EPA's Science Synthesis Report was developed by agency scientists within the Office of Research and Development and the Office of Water. One author of the report was from the U.S. Department of Agriculture (USDA), Agricultural Research Service. The agency has taken various steps throughout the development of draft of this report to ensure that the conclusions are based upon the best-available published literature.

An internal draft of the report was produced in February 2011. That draft was reviewed by agency scientists, and used to conduct an informal peer consultation involving 11 reviewers from federal agencies (the U.S. Geological Survey, USDA, Army Corps of Engineers), academia, and several consulting groups. A second, revised internal review draft was developed in July 2011 and reviewed by agency scientists within the Office of Water and various Regional offices. That same draft was shared with the Army Corps of Engineers. An external review draft was developed in October 2011 and an interagency briefing was coordinated by CEQ to present the major findings of that draft. The October 2011 external review draft was peer reviewed by an independent panel of 11 experts in January 2012 (see Question 7). The EPA's Office of Research and Development is currently revising the draft to address peer review comments. The EPA will share the peer review report with the public, and release the revised draft for public comment, prior to review by the Agency's Science Advisory Board

5. **Please describe any and all future or jurisdictional purpose for the study.**

The science synthesis was developed to help inform policymakers on what peer-reviewed, published scientific literature has concluded regarded connectivity among waters, in light of *Rapanos'* emphasis on connectivity being critical for CWA jurisdiction. The synthesis is a science document, and does not make legal conclusions regarding jurisdiction or applicability of the *Rapanos* tests. The intended use for the synthesis is to inform future rulemaking on the definition of "waters of the United States." In addition, an increased awareness of the peer-reviewed scientific literature on connectivity has helped to inform development of the guidance.

6. **Why was the Connectivity Study not completed prior to release of the Draft Guidance? Would the findings of the study have been significant or instrumental in the draft process of future CWA Guidance (May 2011 Draft Guidance; February 2012 Final Guidance)?**

The science synthesis is intended to provide support and to inform development of a rulemaking effort to revise the regulatory definition of "waters of the United States." The effort was not initiated, nor was it intended to be directly relevant to, Corps of Engineers and EPA efforts to clarify existing agency regulations in new guidance. The agencies expect to propose revisions to their definition of "waters of the United States" consistent with the CWA and Supreme Court decisions in *SWANCC* and *Rapanos*. Because the agencies' guidance does not change existing requirements of law or substantively alter the scope of CWA jurisdiction, a comprehensive evaluation of the scientific literature like the science synthesis was determined not to be necessary to support preparation of agency guidance.

The EPA and the Corps have developed draft guidance on waters of the United States, and the agencies have carefully evaluated and relied upon relevant peer-reviewed scientific literature to inform their decision-making. This scientific literature includes some scientific papers that are being evaluated as part of the Connectivity Study. The guidance cites such current peer-reviewed scientific literature in several places to support its conclusions.

7. **Will this study be deemed a "Highly Influential Scientific Assessment" (HISA) as defined by OMB? Who will conduct the peer review and when? At the April 16 EPA and Congressional staff briefing on this study EPA staff stated that external peer reviewers have read a draft study. Please identify those peer reviewers and when the review occurred.**

Yes. The Science Synthesis is a "Highly Influential Scientific Assessment" (HISA) as defined by OMB. A draft of the report will be reviewed by the Science Advisory Board (SAB). A previous draft of the report was independently peer reviewed in January 2012. Eastern Research Group, Inc. (ERG) managed the peer review for the EPA's Office of Research and Development. ERG was responsible for identifying and selecting the eleven-member panel of expert reviewers; managing the review process; organizing and facilitating a one-day peer review meeting; and preparing the peer review summary report. ERG identified and secured the services of eleven nationally recognized experts to conduct this review:

- David J. Cooper, Ph.D., Colorado State University
- William G. Crumpton, Ph.D., Iowa State University
- Kenneth W. Cummins, Ph.D., Humbolt State University

- Walter K. Dodds, Ph.D., Kansas State University
- James W. La Baugh, Ph.D., U.S. Geological Survey
- Mark C. Rains, Ph.D., University of South Florida
- John S. Richardson, Ph.D., University of British Columbia
- Joel W. Snodgrass, Ph.D., Towson University
- Arnold van der Valk, Ph.D., Iowa State University
- Mark S. Wipfli, Ph.D., U.S. Geological Survey
- William R. Wise, Ph.D., University of Florida[3]

8. **EPA Staff described the study as a synthesis report of relevant technical literature and research since the *Rapanos* decision, to be compiled by contractor ERG. The stated focus was to comprise both what is known and unknown with regard to the science of connectivity (including all three components: physical, chemical and biological). Following a presentation to the National Institute of Water Resources by then-Acting Administrator for the Office of Water, Nancy Stoner, it was reported that the final study was, " ... slated for release sometime this spring; .. " and that, " ... could help the agency defend its draft guidance ... and a possible rulemaking to codify the guidance ..." Will this study be released prior to the Final Guidance? If so – and if not – what will be its direct and/or indirect bearing on the guidance and further, on the guidance's impact with respect to CWA jurisdiction and regulation?**

   As of today, it is not clear whether or not the Science Synthesis will be completed before any final guidance on waters of the United States is issued. The EPA began development of the Science Synthesis to support and inform development of a rulemaking effort to revise the regulatory definition of "waters of the United States." The schedule for the study was prepared in order to provide the agencies and the public with data and information relevant to this rulemaking. The schedule for the study was not linked to issuance of guidance clarifying the existing regulatory definition of waters of the United States because a final study was not needed to provide the kinds of clarifications to be provided in the agencies' guidance. Unlike a regulation, the guidance would not change existing requirements of law or substantively alter the scope of CWA jurisdiction.

[3] Dr. Wise was unable to attend the workshop. Only his pre-meeting comments were considered.

9. In the EPA staff briefing cited above, a recent scientific method being developed by ORD for assessing the physical characteristics of streams and their potential impacts on downstream water bodies was discussed. According to an EPA ORD fact sheet, the "Streamflow Duration Assessment Method for Oregon" (Method) is to be used for, "[m]apping hydrological landscape regions for use in developing a system for classifying the effects of non-navigable waters on navigable waters ... " and "[e]xamining the connectivity of non-navigable streams and influence on navigable rivers with respect to water sources, nitrogen and fish." With particular regard to the Method's development under the Five Year Research Plan and the stated gaps in connectivity and significant nexus science therein, what will be the comprehensive and future connections between the Method, the Connectivity Study, and the content and future interpretation of the Final Guidance?

The cited EPA fact sheet references multiple research projects within the EPA, described below. Completed work was directed by the EPA Fiscal Year 2009-2014 Five Year Research Plan. Current work is directed by the Safe and Sustainable Water Resources (SSWR) Research Action Plan[4]. There is no direct connection between the methods and studies described below and the science synthesis report; however, individual research scientists involved in one or more of these projects also participated in the review and synthesis of literature for the report.

a) The "Streamflow Duration Assessment Method for Oregon" was developed by the U.S. Army Corps of Engineers (USACE) Portland District and EPA Region 10. It is a rapid assessment method to distinguish between ephemeral, intermittent and perennial streams (three streamflow duration classes; see response to question 10) from data collected during a single site visit. It does not classify hydrological landscape units (see response 9.b, below). EPA's Office of Research and Development, working with EPA Region 10 and USACE, conducted a two-year field test to validate the interim method. The EPA also contributed analytical methods that improved assessment accuracy. The interim version[5] was released in March 2009; the final version was released in November 2011.[6] A journal article manuscript with the results from the multi-year field validation is currently being prepared for agency peer-review and subsequent submission to a peer-reviewed journal.

b) EPA's Office of Research and Development has developed a Hydrologic Landscape classification approach for Oregon that that describes factors that control the hydrologic characteristics of watersheds. This classification system provides a framework for comparing hydrologic attributes of streams and rivers in the region. A paper on the Oregon Hydrologic Landscape classification approach is in review for publication in the Journal of the American Water Resources Association, an independent peer-reviewed journal.

c) The EPA's Office of Research and Development also is conducting studies in Oregon that examine the connectivity of streams and wetlands with respect to fish habitat, nitrogen removal, and water source. A recent paper by Brooks et al.[7] shows how the source of Willamette River mainstem water changes during the course of the annual wet and dry cycles of the basin. Work in the Calapooia River Basin is examining how water moves through the permanent and temporary flowing portions of the river network and the ability of these streams to remove nitrogen from agricultural landscapes. The EPA also has conducted work that examines how seemingly dry streams in eastern Oregon can create cold water refuges in mainstem rivers through subsurface or

[4] http://www.epa.gov/ord/priorities/docs/SSWRFramework.pdf
[5] http://yosemite.epa.gov/R10/ecocomm.nsf/wetlands/sdam
[6] http://www.epa.gov/region10/pdf/water/sdam/final_sdam_oregon_nov2011.pdf
[7] Brooks, J. R., P. J. Wigington, Jr., D. L. Phillips, R. Comeleo, and R. Coulombe. 2012. Willamette River Basin surface water isoscape (d18O and d2H): temporal changes of source water within the river. Ecosphere 3(5):39.

hyporheic flow. Some research is still underway and other research efforts are being summarized for peer-reviewed journal articles.

10. The same fact sheet states that EPA is, "developing methods to estimate hydrologic permanence." What is EPA's definition of "hydrologic permanence," and what does estimating it entail beyond a measurement of water flow? What specific consideration is given to both frequency and duration of flow in EPA's definition of "hydrologic permanence"? What authority is EPA operating under when the Agency states that it is "classifying watersheds and landscapes to aid in determining the contributions of headwaters and non-navigable streams to downstream waters"?

Hydrologic permanence describes the duration and frequency of flowing water in stream channels.[8] In addition to continuous monitoring, such as streamflow gages, one can use physical and biological indicators. Indicators respond to varying degrees of hydrologic permanence and therefore can be useful where continuous data of water flow is not available. For example, some aquatic organisms require year-round flow (or conversely lack of year-round flow) to mature and reproduce. Therefore, the presence of such organisms is indicative of streamflow duration.[9,10,11]

Hydrologic permanence has been broadly categorized into ephemeral (flows for short periods following rain), intermittent (flows in some parts of the year but dry during others), and perennial (flows year-round in years without drought) classes, but in reality hydrologic permanence varies continuously through space and across time. From a scientific perspective, streamflow frequency and duration are being investigated to better understand how each component controls stream condition and function.

The research described here addresses Goal 2, "Protecting America's Waters" of the EPA Fiscal Year 2011-2015 Strategic Plan[12] and comes under the authority of Section 104(b) of the CWA.

11. Please provide a detailed description of laboratory data associated with conductivity and total dissolved solids in the database for the experimental stream facility in Clermond County, OH, also cited in the ORD fact sheet.

Conductivity is a standard measure of stream water quality. In stream monitoring, the background level of specific conductance (conductivity) at a location is established and used as a baseline for comparison with future measurements. Significant changes in conductivity can be an indicator that a

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[8] Fritz, K. M., B. R. Johnson, and D. M. Walters. 2006. Field Operations Manual For Assessing The Hydrologic Permanence And Ecological Condition Of Headwater Streams. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-06/126 (NTIS PB2007-100972).

[9] Fritz, K. M., B. R. Johnson, and D. M. Walters. 2008. Physical Indicators of Hydrologic Permanence in Forested Headwater Streams. Journal of the North American Benthological Society 27:690-704.

[10] Johnson, B. R., K. M. Fritz, K. A. Blocksom, and D. M. Walters. 2009. Larval Salamanders And Channel Geomorphology Are Indicators Of Hydrologic Permanence In Forested Headwater Streams. Ecological Indicators. Elsevier Science Ltd, New York, NY, 9(1):150-159.

[11] Fritz, K. M., J. M. Glime, J. Hrbljan, and J. Greenwood. 2009. Can Bryophytes Be Used To Characterize Hydrologic Permanence In Forested Headwater Streams? Ecological Indicators. Elsevier Science Ltd, New York, NY, 9(4):681-692.

[12] http://www.epa.gov/planandbudget/strategicplan.html

discharge or other form of pollution has entered a stream. In that case, more detailed analysis of the ionic composition and concentrations may be required.[13]

The EPA Experimental Stream Facility (ESF) in Clermont County, Ohio, is designed for controlled research for linking pollution reductions to in-stream biological conditions monitored in local and state regulatory programs. Interactions and effects observed in the ESF help identify assessment endpoints, fate, and transport of water quality stressors, including inorganic dissolved solids associated with elevated conductivity in streams, such as chloride, nitrate, sulfate, and phosphate, sodium, magnesium, calcium, iron, and aluminum ions.[14] Conductivity is one of the standard variables measured to characterize background water quality on each and every ESF mesocosm test run. For example, the ESF was used to experimentally create a gradient of TDS/conductivity produced by adding different amounts of sodium chloride and calcium chloride salts. The results of this test run are being analyzed and prepared for agency clearance and publication next year.

12. Does EPA plan to provide detailed and comprehensive responses to public comments submitted on the Draft Guidance in July 2011? When will these responses be made publicly available?

The agencies are in the process of developing a Response to Comments document that will address categories of comments received on the May 2011 draft guidance. The Response to Comments document will be made publicly available when the final guidance is issued.

[13] http://water.epa.gov/type/rsl/monitoring/vms59.cfm
[14] http://www.epa.gov/nrmrl/wswrd/wq/esf/esf.html