



United States  
Environmental Protection  
Agency

Office of Science and  
Technology (4301)  
Washington, DC 20460

823-N-94-002  
OCTOBER 1994

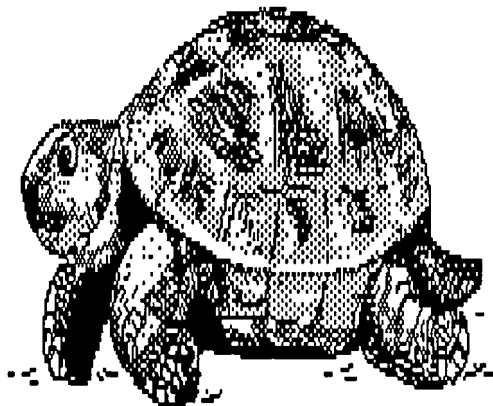
Water

## NEWSLETTER WATER QUALITY CRITERIA AND STANDARDS

**EPA Administrator Signs Agency-wide Contaminated Sediment Management Strategy:** The Standards and Applied Science Division has coordinated the development of an Agency-wide Contaminated Sediment Management Strategy which was signed by EPA Administrator Carol Browner on August 22, 1994. An announcement of availability of the proposed Strategy for public comment was published in the Federal Register on August 30, and the public comment period is scheduled to end on October 31, 1994.

The proposed Strategy describes specific actions that EPA will take to reduce environmental and human health risks associated with contaminated sediment. EPA is acting, under existing statutory and regulatory authority, to implement policies to consistently assess, prevent, and remediate contaminated sediment.

Contaminated sediment poses ecological and human health risks in many watersheds throughout the United States. In these watersheds, sediment serves as a contaminant reservoir from which fish and bottom dwelling organisms can accumulate toxic compounds and pass them up the food chain. Toxic chemicals in sediment come from discharges of industrial waste and sewage; stormwater runoff from waste dumps, city streets and farms, and air pollutants. The magnitude of the toxics problem in the United States is evidenced in more than 1,200 State advisories that have been issued against consuming fish that have accumulated toxic bioaccumulative contaminants from sediment and other sources.



More than ten Federal statutes provide authority to many EPA program offices to address the problem of contaminated sediment. This has resulted in fragmented, and in some cases duplicative, efforts to complete the necessary research, technology development, and pollution control activities required to effectively manage contaminated sediment. Often it has been difficult for EPA programs to agree upon the fundamental question of whether sediment at a particular site poses ecological or human health risks. The proposed Contaminated Sediment

Management Strategy was developed to streamline decision-making within and among the Agency's program offices by promoting and ensuring: the use of consistent sediment assessment practices, consistent consideration of risks posed by contaminated sediment, the use of consistent approaches to management of contaminated sediment risks, and the wise use of scarce resources for research and technology development.

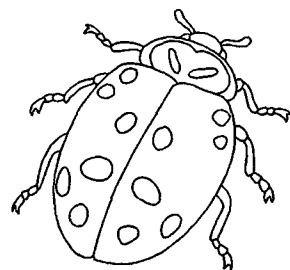
**Goals of the Contaminated Sediment Management Strategy:**

EPA's proposed Contaminated Sediment Management Strategy describes actions that the Agency will take to accomplish the following four strategic goals: 1) Prevent further sediment contamination that may cause unacceptable ecological or human health risks; 2) When practical, clean up existing sediment contamination that adversely affects the Nation's waterbodies or their uses, or that causes other significant effects on human health or the environment; 3) Ensure that sediment dredging and dredged material disposal continue to be managed in an environmentally sound manner; 4) develop and consistently apply methodologies for analyzing contaminated sediments.

**What the Strategy Does:** The proposed Contaminated Sediment Management Strategy is comprised of six component sections: assessment, prevention, remediation, dredged material management, research, and outreach. In each section, EPA describes actions that the Agency will take to accomplish the four broad strategic goals.

In the assessment section of the Strategy EPA proposes that Agency program offices all use standard sediment toxicity test methods and chemical-specific sediment quality criteria to determine whether sediments are contaminated. Actions that EPA will take to develop a national inventory of sites and sources of sediment contamination (the National Sediment Inventory) are described in the assessment section of the proposed Strategy. The National Sediment Inventory will be used by EPA to target sites for contaminated sediment assessment, prevention, and remediation. These assessment actions will enable EPA to focus on cleaning up the most contaminated waterbodies, and ensuring that further sediment contamination is prevented.

EPA's plan to stop sediment contaminants from reaching the environment is described in the prevention section of the proposed Strategy. In order to regulate the use of pesticides and toxic substances that accumulate in sediment, EPA proposes the use of acute sediment toxicity tests to support registration of chemicals under the Federal Insecticide, Fungicide, and Rodenticide Act and the Toxic Substances Control Act. In the prevention section of the Strategy EPA also proposes: developing effluent guidelines for industries that discharge sediment contaminants in significant amounts; using pollution prevention policies to reduce or eliminate



sediment contamination resulting from noncompliance with permits; preparing guidelines for design of new chemicals to reduce bioavailability and partitioning of toxic chemicals to sediment; and implementing point and nonpoint source controls that will protect sediment quality. EPA's prevention actions will stop further contamination of sediment and reduce ecological and human health risks.

In the remediation section of the Strategy EPA proposes using multiple statutes to require contaminated sediment remediation by parties responsible for pollution. These statutes include the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Toxic Substances Control Act (TSCA), the Rivers and Harbors Act, and the Oil Pollution Act. EPA states in the proposed Strategy, however, that the Agency will not proceed with a clean-up if a combination of pollution prevention and source controls will allow the sediments to recover naturally in an acceptable period of time. EPA's remediation actions will clean up existing sediment contamination that adversely affects the Nation's waterbodies.

In the dredged material management section of the proposed Strategy, EPA discusses the development of technical guidance regarding dredged material testing, dredged material disposal site selection, and disposal alternatives. EPA actions described in the proposed Strategy will ensure continued disposal of dredged material in an environmentally sound manner.

In the research section of the Strategy, EPA proposes a program of investigative research that is needed to: develop and validate new chemical-specific sediment criteria and other sediment assessment methods; improve EPA's understanding of the transfer of sediment contaminants through the food chain; and develop and evaluate a range of technologies for remediating contaminated sediments. EPA's proposed research program will support improved assessment, prevention, and remediation of contaminated sediment.



The outreach section of the proposed Strategy describes actions that EPA will take to demonstrate, through public involvement, the Agency's commitment to, and accountability for, sediment management efforts. EPA will produce, and make available to the public, regular status reports on sediment management activities.

**Copies of the Strategy are Available:** Requests for copies of EPA's Contaminated Sediment Management Strategy (EPA document number EPA 823-R-94-001) should be sent to: U.S. Environmental Protection Agency, National Center for Environmental Publications and Information, 11029 Kenwood Road, Building 5, Cincinnati, Ohio 45242; telephone: 513-891-6561, fax: 513-891-6685.

Comments on the Strategy may be mailed or delivered to: Contaminated Sediment Management Strategy Comment Clerk, Water Docket MC-4101, Room L102, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460. Commenters are requested to submit an original and 3 copies of their written comments and enclosures. For further information contact Tom Armitage at (202) 260-5388.



*Elizabeth Southerland*

**ELIZABETH SOUTHERLAND  
ACTING DIRECTOR, STANDARDS  
& APPLIED SCIENCE DIVISION**

**MARGARET J. STASIKOWSKI  
DIRECTOR, HEALTH &  
ECOLOGICAL CRITERIA DIVISION**

## **MEETING NOTICE - THE 1994 INTERNATIONAL HAZARDOUS M A T E R I A L   S P I L L S CONFERENCE**

The concept of partnerships--working together for a common goal of improved safety and health--is the theme of the 1994 International Hazardous Material Spills Conference. The conference, from October 31-November 3, 1994 at the Hyatt Regency Hotel and Convention Center in Buffalo, NY, will feature discussions and presentations on how cooperation between disparate groups with different agendas has resulted in greater public awareness; improved industry safety procedures; and strengthened international, national and state laws and programs. Anyone interested in the prevention, preparedness and response to chemical accidents should attend this three-day interactive conference. For registration information, please contact Angela Moody, of Professional and Scientific Associates, at (703) 442-9824.

**GREAT LAKES WATER QUALITY  
INITIATIVE  
FRED LEUTNER  
(202) 260-1542**

## **EPA PUBLISHES DATA NOTICE FOR GLI**

On August 30, 1994, EPA published a notice in the Federal Register (59 FR 44678) inviting comment on three reports we are considering in developing the final Water Quality Guidance for the Great Lakes System. The three reports are:

(1) "Results of Simulation Tests Concerning the Percent Dissolved Metal in Freshwater Toxicity Tests." The notice invites comment on whether the conversion factors contained in the report for converting total recoverable metal criteria to dissolved metal criteria should be adopted in the final GLI methodology for aquatic life.

(2) "1991-1992 Michigan Sport Anglers Fish Consumption Study." The report contains data on fish consumption rates for the State of Michigan. The notice invites comment on whether the GLI methodologies for development of human health

criteria and values should be adjusted based on the results of study.

(3) "Great Lakes Water Quality Initiative Technical Support Document for the Procedure to Determine Bioaccumulation Factors, July 1994." The notice invites comment on whether changes in the GLI methodology for deriving bioaccumulation factors should be incorporated in the final rule.

The public comment period ends September 29, 1994. EPA is on schedule to meet a court ordered deadline to sign the final rulemaking for the GLI, entitled Water Quality Guidance for the Great Lakes System, by March 13, 1995. For more information on how to obtain the documents described in the notice, call Wendy Schumacher (312-353-2079).

**WATER QUALITY STANDARDS  
DAVE SABOCK  
(202) 260-1315**

## **SASD INFORMATION AND TECHNICAL MATERIALS**

Documents, videos and software developed by SASD can now be requested from the Water Resource Center via e-mail. The e-mail address is: [waterpubs@epamail.epa.gov](mailto:waterpubs@epamail.epa.gov). The Water Resource Center is staffed by a contractor, Labat-Anderson. If you would like to speak to someone in the Water Resource Center, call 202-260-7786.

## **MULTI-REGIONAL MEETINGS IN SEATTLE/CHICAGO**

Multi-regional meetings on numerous water quality criteria and standards topics of current interest are scheduled for Seattle, November 28-Dec. 1 and in Chicago, December 5-9. These meetings are particularly useful for State and Tribal representatives as well as municipal, environmental, and industrial groups.

A meeting devoted to reviewing and evaluating EPA's fish advisory program and how it compares with State programs will be held on the last day. Topics for the criteria and standards workshops include: human health and aquatic life criteria development methodologies, endangered species act issues, independent applicability, metals

criteria, protection of existing uses, and other subjects.

Information on these meeting may be obtained from Liz Heitt, Tetra Tech, 10306 Eaton Place, Fairfax, VA 22030, telephone 703-385-6007.

## **WQS PROMULGATIONS UNDERWAY**

Several water quality standards promulgation actions are underway at the end of FY94. Final action on the San Francisco Bay/Delta is nearing completion. EPA is also working on proposal to re-establish criteria for toxic pollutants as part of several California water plans that were found by the California Supreme Court to be invalid due to administrative errors in the State. Issues with respect to the antidegradation policy are the subject of another promulgation proposal being developed to apply to Florida. A proposed rulemaking affecting the mixing zone language adopted by New Mexico and disapproved by EPA is expected to be published for public review and comment early in FY95.

## **WQS HANDBOOK TO BE REPUBLISHED**

The Water Quality Standards Handbook—Second Edition will be republished early in FY95 to include several major guidance documents produced by EPA since the second edition was published late in 1993. The new guidance incorporated into the Handbook includes: (1) derivation of water-effect ratios, (2) the Office of Water policy statement on metals, and (3) an interpretation of the antidegradation policy as it relates to nonpoint sources. Each of these documents has been released by EPA. Their incorporation into the Handbook is for convenience.

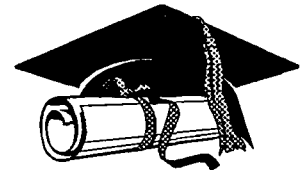
The Handbook will be distributed directly to the EPA Regional offices, the States and Tribes. When available, copies may be obtained from the EPA Resource Center 202-260-2814. Copies will not be available until at least several weeks after this newsletter is issued.

## **DIVISION GETS A NEW CONTRACTOR**

The Cadmus Group was awarded a contract to provide services to the Standards and Applied Science Division. The new contractor has previous experience in other Office of Water programs.

## **WQS ACADEMY PLANS FOR FY95**

The highly successful Water Quality Standards Academy, a formal training program in criteria and standards aimed at people with 6



months or less experience, will continue in FY95. Academy sessions are planned for: Salt Lake City, Utah in January 1995; Tampa, Florida in February; Albany, NY, in March; Portland, Oregon in April, and Minneapolis, MN in May. In addition, there will be a session or two in Washington, DC. In FY94, a total of 406 participants completed the course. Six hundred and fifty-two people have attended the Academy in the past two years.

## **MEMORANDUM OF AGREEMENT ON ENDANGERED SPECIES ACT IN NEGOTIATION**

The task of negotiating a memorandum of agreement between EPA, the Fish and Wildlife Service, and the National Marine Fisheries Service is continuing. The draft agreement covers consultation procedures on water quality criteria, water quality standards, and NPDES permits.

## **NEW VIDEOS FOR FY 95**

Two new videos are expected to be completed early in FY95 as production is now underway. The videos are: Developing Site-Specific Criteria; Total Maximum Daily Loads and Water Quality Standards. Upon completion, our video library will contain 11 titles. All videos are available free.

**RISK ASSESSMENT AND  
MANAGEMENT BRANCH  
TOM ARMITAGE  
(202) 260-5388**

## **DRAFT INLAND TESTING MANUAL COMPLETED**

In July 1994 a joint Environmental Protection Agency/Corps of Engineers (EPA/CE) Workgroup completed a draft Inland Testing Manual (ITM) which contains up-to-date procedures to implement requirements in the Clean Water Act (CWA Section 404(b)(1) Guidelines) for the evaluation of potential contaminant-related impacts associated with the discharge of dredged material in fresh, estuarine, and saline (near-coastal) waters. Formally titled "Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. - Testing Manual (Draft)," it is available for public comment as per the July 21, 1994 Federal Register notice (59 FR 37234). A copy of the draft ITM may be obtained from Shirley Walker, CE Waterways Experiment Station, at (601) 634-2571. For further information, contact Mike Kravitz, EPA, at (202) 260-8085.

## **NATIONAL FORUM ON MERCURY IN FISH**

Approximately 250 people attended the National Forum on Mercury in Fish which the Fish Contamination section organized and hosted. The Forum was held in New Orleans, Louisiana from September 27-29, 1994. The Forum was primarily targeted towards regulatory personnel who must understand and respond to concerns about possible human health effects resulting from mercury in fish tissues. National experts spoke on such topics as: mercury's biogeochemical cycling; watersheds and habitats where mercury is a concern; mercury toxicity and risk assessment; risk management and communication; and mercury control strategies. A Proceedings Document will be completed in FY



95. For further information, contact Rick Hoffmann at (202) 260-0642.

## **RISK COMMUNICATION GUIDANCE DOCUMENT**

In September, a revised draft SASD's Risk Communication guidance document was sent out for peer review and comment to various State agencies who issue fish consumption health advisories. The document, titled Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Volume IV: Risk Communication is part of SASD's guidance series on fish consumption advisories. The final document will be published in FY 95 after completion of the peer review process. For further information, contact Rick Hoffmann at (202) 260-0642.

**EXPOSURE ASSESSMENT BRANCH  
RUSS KINERSON  
(202) 260-1330**

## **REGIONAL TMDL WORKSHOPS**

The Watershed Modeling Section of SASD, along with the watershed branch of OWOW, has sponsored TMDL technical workshops throughout the country. The final two workshops in the series are scheduled for November 8-10 in San Francisco (Region 9) and December 13-15 in Seattle (Region 10). These workshops are designed to provide technical and programmatic support for Regional, State, and local government personnel responsible for developing and implementing TMDLs. Tentative topics include: hands-on computer modeling for point source, nonpoint source, and watershed loading, a technical discussion of bioaccumulation, bioavailability, and monitoring in support of TMDLs, regional case studies, and highlights of the HQ technical support program's efforts to make TMDL models more user friendly. For more information call Dave Smith in Region 9 (415-744-2012), Allen Henning in Region 10 (206-553-8293), or Marjorie Coombs at HQ (202-260-9821).

## **COASTAL OIL AND GAS ENVIRONMENTAL ASSESSMENT**

The effect of existing discharges of produced water on the coastal environment in the Gulf of Mexico and Cook Inlet, Alaska were investigated in support of the proposal (scheduled for January 1995) of the coastal subcategory of the oil and gas industry effluent guideline. Estimates were made of impacts on aquatic life and of risk to human health from consumption of contaminated seafood. The potential ecological benefits resulting from the proposed effluent guidelines were also investigated.

## **PHARMACEUTICAL MANUFACTURING ENVIRONMENTAL ASSESSMENT**

The environmental assessment was completed for the proposed pharmaceutical manufacturing effluent guideline (scheduled February 1995). The discharges, both direct and indirect, were evaluated for possible excursions of water quality criteria and for other possible adverse effects. Also, the release of ozone precursors from the effluent to the atmosphere was evaluated for both human health and agricultural effects. Human exposure to compounds released to air and the expected cancer cases were estimated for Puerto Rico.

## **MIDDLE PLATTE RIVER ECOLOGICAL RISK ASSESSMENT CASE STUDY**

The watershed level ecological risk assessment of the Middle Platte continued with strong regional and state participation. The Middle Platte is one of five case studies selected to follow and expand the principles established in EPA's Framework for Ecological Risk Assessment. The initial phase of the risk assessment (problem formulation) was completed and formally reviewed by the Risk Assessment Forum, allowing initiation of analysis. Problem formulation established the goals, breadth, and focus of the assessment. Major factors considered during the process include stake

holder values, ecosystem stressor characterization, observed ecological effects, and ecological end points of concern. This evaluation resulted in the development of conceptual models that include hypotheses about potential risks to ecological resources within the watershed ecosystem. Samples of endpoints selected for this case study include sandhill cranes; western prairie fringed orchids; and the community integrity of wetland types including wet meadow, aquatic, and sandbar. Direct destruction of wetlands, water withdrawal for irrigation, and use of pesticides were identified as important stressors in the system.

The second phase will focus on modeling the hydrology (both ground and surface) to better understand the impact on the Platte wetland/riverine ecosystem. To reduce impacts from these activities a variety of management practices are being implemented. These practices will be reviewed as part of the risk assessment process.

## **RAPID BIOASSESSMENT OF COMBINED SEWER OVERFLOWS**

A draft of the report entitled "Combined Sewer Overflows and the Multimetric Evaluation of their Biological Effects: Case Studies in Ohio and New York" has been received and is currently undergoing review and comment.

This is a report on two case studies designed to determine the biological effects of combined sewer overflows on receiving streams using EPA's Rapid Bioassessment Protocols (RBPs), and to evaluate the utility of the RBP methodology as a monitoring tool in urbanized streams. We found significant deleterious effects of CSOs, in combination with other effects of urbanization, on the benthic invertebrate community, but also documented recovery of the biota following removal of CSOs. Results obtained with the RBP methodology agreed well with historical data supplied by State personnel. RBPs may prove to be a useful tool





for, among other things, characterizing CSO effects and monitoring the effectiveness of controls, under the Agency's CSO permitting policy. The document is expected to be finalized early in FY95.

## **SPREADSHEET-BASED MIXING ZONE EQUATION DEVELOPED**

An equation is described in the TSD (Technical Support Document) to help permit writers analyze discharge mixing zones. Bruce Zander, the TMDL coordinator in Region VIII analyzed and developed improvements to this equation that substantially improved its utility to permitting situations. Daryl Brydie, a summer intern from Virginia State University, analyzed Zanders improvements and then programmed these improvements into a spreadsheet. The spreadsheet is very easy to use, with sections for data entry and range analysis. Graphic depictions of the plume are displayed as the user enters input parameters for visual feedback of what's occurring in the stream. The mixing zone spreadsheet is written for Excel 5.0, but a Lotus 1-2-3 version is also available.

## **WQ MODELS GO GOPHER**

Final preparations have been made to upload SWMM, SWRRB and P-ROUTE on the Gopher server which is connected to the INTERNET at the National Data Processing Division (NDPD) in Research Triangle Park, N.C. The Public Access on the Internet project is an experimental prototype which offers EPA information to the public. EPA is determined to play a lead role in making environmental information available to the public. To that end, OIRM and NDPD are positioned to assist EPA program offices, regions and labs to electronically mount information on the Internet and make this information available to the public. This greatly expands our information sharing and technical outreach capabilities.

## **MINI GRANTS**

The Exposure Assessment Branch in SASD, the Nonpoint Source Branch, and the Watershed Branch in OWOW jointly funded 20 regional

projects to support the TMDL program through a series of "Mini Grants." The purpose of these grants are to initiate projects that can be continued through local funding if they prove to be valuable in TMDL work. The projects are selected on their applicability to other areas of the country. This way we can fund creative solutions to TMDL problems and have the benefit of those studies as we approach similar problems elsewhere.

## **ECOLOGICAL RISK ASSESSMENT ROBERT APRIL (202) 260-0658**

Biological Criteria: Technical Guidance for Streams and Small Rivers will be released in the next few weeks. It will be announced in the Federal Register. Copies of the document will be available from NCEPI - phone (513) 891-6561 or fax (513) 891-6685. For further information contact Susan Jackson at (202) 260-1800.