



RANKING TOXIC HOT SPOTS IN CALIFORNIA

The California State Water Resources Control Board (SWRCB) has proposed alternate toxic hot spot ranking systems for the Bay Protection and Toxic Cleanup Program (BPTCP) in accordance with the California Water Code, Section 13393.5. This code requires the SWRCB to develop and adopt a ranking system for toxic hot spots in enclosed bays and estuaries.

This system will encourage development of narrative sediment quality objectives, cleanup plans, revision of waste discharge requirements needed to alleviate impacts of toxic pollutants and a database that will contain information pertinent to describing and managing toxic hot spots. Long-term benefits to be gained using this system include the

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development of strategies to prevent the formation of new toxic hot spots and reducing the damaging effects of existing ones. Of the two new systems developed by BPTCP, a modification of the Clean Water Strategy is proposed for usage. This ranking system is expected to become effective July 1, 1993.

--*Environment Reporter*, Vol. 3 No. 7, February 15, 1993, p. 2485.

--Draft SWRCB report. "Criteria to Rank Toxic Hot Spots in Enclosed Bays and Estuaries of California," January 1993.

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EPA ESTABLISHES HAZARDOUS WASTE COMPLIANCE DOCKET

Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), the EPA has completed its 7th update of the Hazardous Waste Compliance Docket. The Docket contains information on federal facilities that manage and possibly release hazardous waste into the environment. The Docket is significant because within 18 months of a federal facility being listed, it is EPA policy to require a preliminary assessment and, if needed, a site inspection. Information collected with these activities is used to determine if the facility should be placed on the National Priorities List (NPL).

The 7th update added 263 new facilities to the NPL. This raises the total number of facilities on the NPL to 1,930. Additional information is available from the Federal Facilities Docket Hotline at (800) 548-1016.

--*Environment Reporter*, Vol. 23 No. 42, February 12, 1993, p. 2678.

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EPA RULE REMOVES BARRIER TO BIOREMEDIATION

A final rule that will simplify clean-up of hazardous wastes through greater use of innovative technologies will be effective April 19, 1993. This rule, issued by the EPA, allows for broad areas of contamination to be designated as a single Corrective Action Management Unit (CAMU). As a unit, waste will be transported within the site for proper treatment. The establishment of the CAMU allows the use of advanced, more attainable technologies such as bioremediation. For more information regarding this rule, contact David Fagan or Anne Price, EPA, Corrective Action Programs Branch,

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Office of Solid Waste (5303W), 401 M Street S.W., Washington, D.C. 20460, telephone (703) 308-8657 or (703) 308-8620.

--*Environment Reporter*, Vol. 23 No. 43, February 19, 1993, p. 2707.

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1987 MANUAL TO IDENTIFY WETLANDS

On January 19, the EPA announced that the agency will use a manual issued in 1987 (58 FR 4995) to identify wetlands. The 1991 Bush administration proposal, essentially a rewritten wetland delineation manual developed by the EPA in 1989, was thwarted by environmentalists who sent over 80,000 comments to the EPA. Environmentalists warned that if the 1991 Bush administration proposal was finalized, over half the nation's wetlands would be at risk. The 1987 manual will most likely stand until the National Academy of Sciences (NAS) completes its recently funded study on wetlands. According to former EPA Administrator William K. Reilly, "EPA's use of the 1987 manual will eliminate former confusion over federal wetlands programs by assuring consistency and predictability in wetlands determinations made by EPA and the Army Corps."

--*Environment Reporter*, Vol. 23 No. 39, January 22, 1993, p. 2485.

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NEW EPA GUIDANCE FOR REDUCING NON-POINT SOURCE POLLUTION IN COASTAL AREAS

The EPA together with the National Oceanic and Atmospheric Administration (NOAA), released guidance documentation on January 14 to help states control non-point source pollution in coastal zones. Non-point source pollution that might affect the coastal zone via agriculture, silviculture, urban runoff, hydro-modification, and marinas is classified as hazardous waste. Using these guidance documents, states and territories are required to develop their own coastal non-point source management plan and submit them by July 1995 to both the EPA and NOAA. The two agencies must completely review these management plans by January 1996 and by January 1999 the plans must be fully implemented. Finally, the states and territories must conduct a full assessment of the program by January 2001.

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The guidance is divided up into two documents. The first is entitled *Guidance Specifying Management Measures for Sources of Non Point Pollution in Coastal Waters*, and is the EPA's technical methodology to reduce or prevent non-point pollution in coastal waters. The second document, *Coastal Non Point Pollution Program: Program Development and Approval Guidance*, was created by NOAA with the EPA describing how states can develop programs using the technical guidance measures found in the first document.

Copies and information regarding these documents can be obtained by contacting Ann Beier, Assessment and Water Protection Division (WH-553), U.S. Environmental Protection Agency, 410 M St. S.W., Washington, D.C. 20460; telephone, (202) 260-7085.

--*Environment Reporter*, Vol. 23 No. 39, January 22, 1993, p. 2484.

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MULTI-MEDIA APPROACH TO POLLUTION CONTROL AT FEDERAL FACILITIES

A trial plan to conduct state and federal enforcement inspections simultaneously is underway. The pollution control plan combines all environmental laws through the use of a multi-media testing approach. The use of multi-media allows for a single permit to be issued for each facility and compliance plans would be based on the release of all pollutants in all media including air, water and earth.

The multi-media approach is a response to current problems associated with EPA enforcement policies. The current policies allow for pollution standards to go "to the media of less regulation." Although there are complaints that the single permit system will be more complicated, EPA states that it will enhance inspection and enforcement standards and ease conflicting State and Federal regulations.

--*National Environment Watch*, Vol. 3 No. 38, January 18, 1993, p. 3.

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RECORD PENALTIES SOUGHT BY EPA IN FY92

The EPA sought over \$135 million in compensatory damages against violators in fiscal 1992. This is the first time that the EPA has sought penalties in excess of \$100 million for damages in a given year. One of the largest fines levied was \$22 million for the *Exxon Valdez* oil spill.

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The increased level of enforcement can be attributed to several initiatives launched by EPA. The Pollution Prosecution Act of 1990 resulted in increased indictments, prison sentences and criminal fines. In addition, more stringent regulations on industries such as metal manufacturing, smelting, and chemical manufacturing were imposed.

--*National Environment Watch*, Vol. 3 No. 35, December 21, 1992, p.1.

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STATE REGULATORY HIGHLIGHTS

Louisiana: An addition to the Louisiana Oil Spill Act places more regulations on facilities with sumps, pits and reservoirs. The law provides for a study to identify, locate, mark and catalog all facilities and their associated equipment involved in actual or threatened unauthorized discharge of oil in coastal waters, and where possible, identify the owners.

--*Environment Reporter -- State Water Laws 3*, January 1, 1993.

Louisiana: Regulations for groundwater protection fees are now in effect and apply to all facilities that are required to produce annual reports concerning the groundwater condition at their site. In addition, the regulations set out specific fees for funding departmental review and oversight for The Department of Environmental Quality.

--*Environment Reporter -- State Water Laws 3*, January 1, 1993.

Michigan: A new state rule, which allows the use of general permits for storm water discharges from most industrial activities, went into effect Nov. 13, 1992. The new rule (R 323.2190 of the Water Resources Commission) allows the Department of Natural Resources to issue permits faster and more efficiently.

--*Environment Reporter*, Vol. 23 No. 39, January 22, 1993, p. 2503

Mississippi: New regulations regarding hazardous and non-hazardous solid waste applicant disclosure rules are now in effect. The laws were adopted January 18, 1993. For full text of the new regulations, contact MESO.

--*Environment Reporter -- State Solid Waste Land Use 7*, March 5, 1993.



New Jersey: The New Jersey Department of Environmental Protection and Energy (DEPE) readopted the States Stormwater Management rules. The rules will be updated and expanded within the next year to include a comprehensive statewide strategy for non-point source pollution control. To receive background information and materials on the statewide strategy and the revised storm water management rules, contact the DEPE office of Regulatory Policy at (609) 292-2113.

--*National Environment Watch*, Vol. 3 No. 42, February 15, 1993, p.6.

Texas: New standards specifically outline financial responsibilities of plugging and abandonment of underground injection and control wells.

--*Environment Reporter -- State Water Laws 5*, February 26, 1993.

Texas: The State Water Administration established the Texas Groundwater Protection Act. The act provides for a commission that will oversee groundwater protection activities. Their duties are focused on developing a comprehensive protection strategy for the prevention of contamination and conservation of ground water.

--*Environment Reporter -- State Water Laws 5*, February 26, 1993.

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CONE PENETROMETER - FIBER OPTIC PETROLEUM SENSOR DEVELOPED AT NRaD

A laser-induced fiber optic fluorometer sensor for petroleum hydrocarbons has been developed by Dr. S. Lieberman at NRaD with funding provided by the Naval Facilities Engineering Command. As part of the Tri-Service (Army, Navy, Air Force) Site Characterization and Analysis Penetrometer System (SCAPS) program, this sensor system was integrated into a cone penetrometer system that can be used to push a fiber optic probe up to 150 feet into the ground (see diagram, right). This system provides a capability of real-time subsurface measurements of petroleum

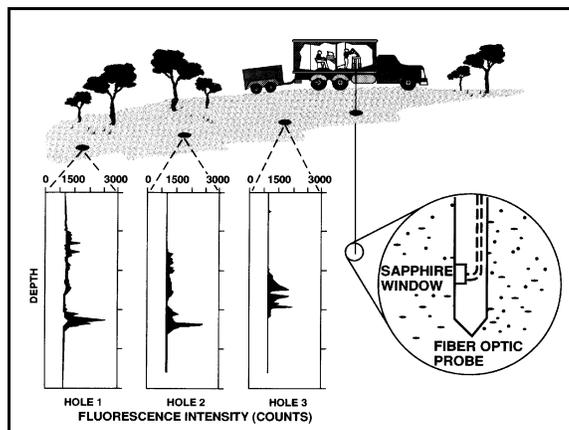


Diagram of the cone penetrometer - fiber optic petroleum sensor in action. Fluorescence intensity can be converted to petroleum hydrocarbon concentration.

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hydrocarbons for delineation of contaminant plumes. The need for pre-existing monitoring wells is eliminated and contaminant distributions can be mapped on centimeter-scale resolutions.

NRaD is currently in the process of implementing and transitioning this capability. The first Navy penetrometer system is expected to be in the field by late June 1993. Follow-on systems will be available for operational site assessment use and will also be used in conjunction with conventional field screening methods to establish regulatory acceptance of this new technology. NRaD is currently negotiating Cooperative Research and Development Agreements (CRADAs) with several companies interested in commercializing this technology.

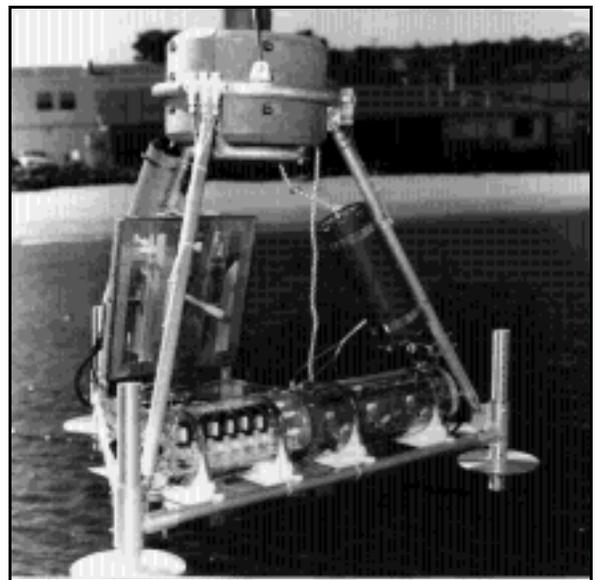
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CURRENT RDT&E DEVELOPMENTS AT NRaD'S ENVIRONMENTAL SCIENCES DIVISION

The following RDT&E programs are currently under development at NRaD, and range from basic research to advanced development:

Advanced Method for Sediment Pollution Assessment and Monitoring -

D.B. Chadwick - The Benthic Contaminant Flux Sampling Device (see photograph, right) measures the release of contaminants from sediment in support of aquatic HW risk assessments. It provides one of the few methods for direct evaluation of contaminant migration, subsequent exposure levels, and provides unique insight into the cycling and degradation of contaminants.



The Benthic Contaminant Flux Sampling Device being readied for deployment in San Diego Bay. -US Navy photograph.

Biomonitoring for Navy Effluents - D.

Lapota - Simple, alternate cost-effective toxicity assays to support National Pollutant Discharge Elimination System (NPDES) permits and general environmental risk assessment at reduced cost are under development. Acceptance of the Qwik-Lite bioassay as an alternative to traditional methods is the ultimate objective.

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Chlorinated Hydrocarbon Detector for Cone Penetrometer System - G.F. Mastny - The Cone Penetrometer System (see the article above), when equipped with this detector, will allow for rapid and cost effective screening of proven and suspect chlorinated hydrocarbon waste sites by determining the boundaries and depth of the contaminant plume before and after site remediation efforts.

Contaminant Dispersion Model - K. Richter - This hydrodynamic model, initially developed for San Diego Bay, will be able to guide sampling designs and could be used to select and defend Navy operations and remediation efforts.

Integrated Ecological Assessment of Navy HW Sites on San Diego Bay - K. Richter - NRaD is developing new biological assessment methods that provide a more rapid, less expensive tool for the risk assessment of contaminated environments.

Biomarkers in Marine Organisms (Environmental Biotechnology) - E. Lindner - A simple assay that is rapid and flexible is under development that can potentially replace some present standard bioassay methods. The new bioassay methods should greatly reduce the time and cost associated with current bioassay procedures used in risk assessment and monitoring.

Field Analytical Methods for Metals at HW Sites - C.A. Dooley - This system is expected to rapidly map the extent of a hazardous waste site for metals, monitor remediation efforts at that site, and limit analytical costs by delineating those samples that would require more detailed and more expensive conventional analysis to comply with EPA requirements.

Investigation Into the Use of Fuzzy Logic to Choose and Apply Soil Characteristic Dependent Calibration Curves for Environmental Measurements in the Field - S.E. Apitz - This technology provides a significant enhancement to the Cone Penetrometer capability that could lower costs for characterization and monitoring, and further speed cleanup efforts by providing more quantitative maps of chemical data to the decision makers in near-real time.

Harbor Sediment Remediation - S.E. Apitz - A technology assessment and feasibility study is underway that compares alternate remediation procedures for contaminated dredged sediments.

Potential Environmental Impact from In-Water Hull Cleaning of Ablative Antifouling Coatings - J.G. Grovhoug - Monitoring surveys of water and sediment quality are being conducted in San Diego Bay to study the effects of the in-water hull cleaning of U.S. Navy vessels coated with ablatives copper antifouling paints.



Portable Lead Analyzer - C. Clavell, A. Zirino and P. Umnuss - This instrument will be capable of conducting rapid, on-site analyses for lead directly in drinking, ground or sea water samples. This instrument will allow analyses to be run for approximately the same cost as it currently takes just to collect samples.

Organotin Monitoring of Navy Harbors - J.G. Grovhoug - Continuing documentation of butyltin concentrations in water, tissues and sediments is being performed in harbors that serve as home ports for U.S. Navy vessels coated with organotin antifouling paints to determine if butyltin concentrations are changing significantly over time in relation to use patterns.

Portable PCB Monitor for Solid Materials on Ships - C.A. Dooley and E. Lindner - The evaluation of detection techniques in the laboratory will result in a simple hand-held PCB monitoring device to be demonstrated in the laboratory and onboard ships.

Ship Effluent Risk Assessment - D.B. Chadwick - Monitoring and assessment surveys for contaminants related to shipboard bilge-water effluents were performed on board U.S. Navy ships and in the receiving waters of San Diego Bay. These surveys are being used to determine base-line levels and relative inputs of Navy vs. non-Navy sources, characterize the effluents, and to identify potential reductions in chemical concentration and toxicity due to Navy pollution control strategies.

Slurry Bioreactor for Decontamination of Navy Hazardous Waste - S.E. Apitz - Slurry bioreactor remediation approaches are being refined and validated for fine-grained soils and sediments contaminated with Navy-specific fuels. Methods to increase the rate and efficacy of bioremediation of clay-rich soils not amenable to *in-situ* biotreatment are emphasized.

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ECOLOGICAL RISK ASSESSMENT TRAINING SYMPOSIA FOR NAVY EMPLOYEES

A training program, to be sponsored by MESO, is currently under development to provide an Ecological Risk Assessment (ECORISK) training class for Navy personnel. The plan calls for the development of a pilot training class in FY93. Based on the outcome of the pilot, a permanent ECORISK curriculum could be integrated into the Naval Environmental Protection Support Service (NEPSS) training program beginning in FY94. For the FY93 pilot, two symposia are envisioned sometime this summer; one on the east coast (Philadelphia, PA) and one on the West Coast (San Diego or Port Hueneme, CA).



Proposed Curriculum - Ecological Risk Assessment Training Symposia

The training symposia will be designed to provide Engineering Field Division (EFD) and other Naval activity personnel basic understanding of ecological risk assessment methodologies and how to specifically apply ecological risk assessments in support of Installation Restoration projects at Navy Facilities. The proposed training symposia sessions are identified below:

1. **Regulatory Requirements:** The cleanup requirements specified by the Comprehensive Response Compensation and Liability Act (CERCLA) and the National Contingency Plan (NCP) are reviewed in the context of other federal and state laws, and Federal Facility Agreements (FFA) which define the Applicable or Relevant and Appropriate Requirements (ARARs) that need to be addressed by ECORISK studies.
2. **Conceptual Framework:** Presents the concepts and framework for ECORISK being developed by EPA's Risk Assessment Forum and how the concepts can be applied to Naval Facilities.
3. **Project Scoping and Method Selection:** Describes how to evaluate and select appropriate analytical and toxicological testing methods for ECORISK; How to develop scopes of work and QA/QC work plans for ECORISK; and Approaches to data management and monitoring for ECORISK at Navy Facilities.
4. **Case Studies:** Selected case studies will be evaluated to illustrate key concepts in the application of ECORISK at Navy sites.
5. **Ecological Risk - Human Health Comparisons:** Discusses salient conceptual differences between ecological risk framework and human health risk assessment paradigm.
6. **Uncertainty Analysis:** Presents concepts, principles and sources of uncertainty in risk analysis, including presentation of methods for reducing overconfidence.
7. **Ecological Significance:** Use of natural variability as one possible benchmark for comparison with predicted ecological perturbations that might be produced by a stressor; Interpreting risk estimates in larger ecological context (e.g., spatial, temporal or ecological scales).



8. Hands-On Exercise: Specific exercises for hands-on participation to reinforce concepts presented.
9. Regional Perspective: Guest Lecture from EPA Regional Representative (from Region where symposium is held) on current guidance required for ECORISK.

The Marine Environmental Support Office would be interested in any comments you might have on the training session concept or the proposed curriculum and enquiries regarding attendance are welcome. A pre-addressed form has been provided on the following page. **[NOTE: FORM NOT INCLUDED --Editor]**

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ABOUT THE MARINE ENVIRONMENTAL UPDATE

This newsletter is produced by the Marine Environmental Support Office (MESO) and is dedicated specifically to inform the Navy about marine environmental issues that may influence how the Navy conducts its operations. MESO is located at the Naval Command, Control and Ocean Surveillance Center's Research, Development, Test and Evaluation Division (NRaD) in San Diego, California. The mission of MESO is to provide Navy-wide technical and scientific support on marine environmental science, protection and compliance issues. This support covers a broad spectrum of activities, including routine requests for data and information, technical review and consultation, laboratory and field studies, comprehensive environmental assessments, and technology transfer. Significant developments in marine law, policy, and scientific advancements will be included in the newsletter, along with references and points of contact for further information. The Marine Environmental Support Office may be reached at:

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