

Marine Environmental Update

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About the Marine Environmental Update

This is the first issue of a newsletter dedicated specifically to alert and inform the Navy about marine environmental issues that influence how the Navy conducts its operations. Significant developments in marine law, policy, and scientific advancements will be covered, along with references and points of contact for further information.

Highlights of activities from your Marine Environmental Support Office (MESO) will be included to give readers ideas of innovative approaches to marine issues. In addition to the Update, periodic Bulletins will be published in response to timely newsworthy events. Articles or news items readers would like to share with each other in future issues, and any comments may be sent to:

Marine Environmental Support Office
Naval Ocean Systems Center
Code 522
San Diego, CA 92152-5000

(619) 553-5330 or AUTOVON 553-5330.

Marine Environmental Support Office (MESO)

MESO is located at the Naval Ocean Systems Center in San Diego, California. It is one of four Navy environmental Specialty Offices under the administration of the Naval Energy and Environmental Support Activity (NEESA).

MESO provides marine environmental scientific and technical expertise to the Navy community. This takes the form of special studies conducted by MESO scientists to support a Naval facility or activity, as well as cost reimbursable support services.

Observational Method

Is the "RI" in the RI/FS process exhausting your budget long before you reach the clean-up stage? This plight is shared by many facilities involved in the RI/FS process. Don't lose heart, however, because there are efforts underway to speed this process.

The superfund process requires an extensive up-front delineation of the extent of contamination before clean-up efforts are detailed and initiated. In many cases a more

streamlined process may be adequate to characterize the site.

One such process is termed the Observational Approach. This approach provides a framework for an earlier start for clean-up and usually at lower total cost.

This approach recognizes that knowledge of the extent of environmental contamination is uncertain. Decisions based on uncertain knowledge should be continuously challenged throughout the life of the project by observing the system to see if it is responding as expected during each phase of the project. The need to address uncertainty is the focus of the decision making and action process called the observational method.

After a small initial survey of a site, a reasonable estimate of the probable conditions can be formed. Potential deviations from this most likely state are also listed. Deviations are conditions such as the spatial extent or level of contamination is higher or lower than estimated, or additional contaminants are involved.

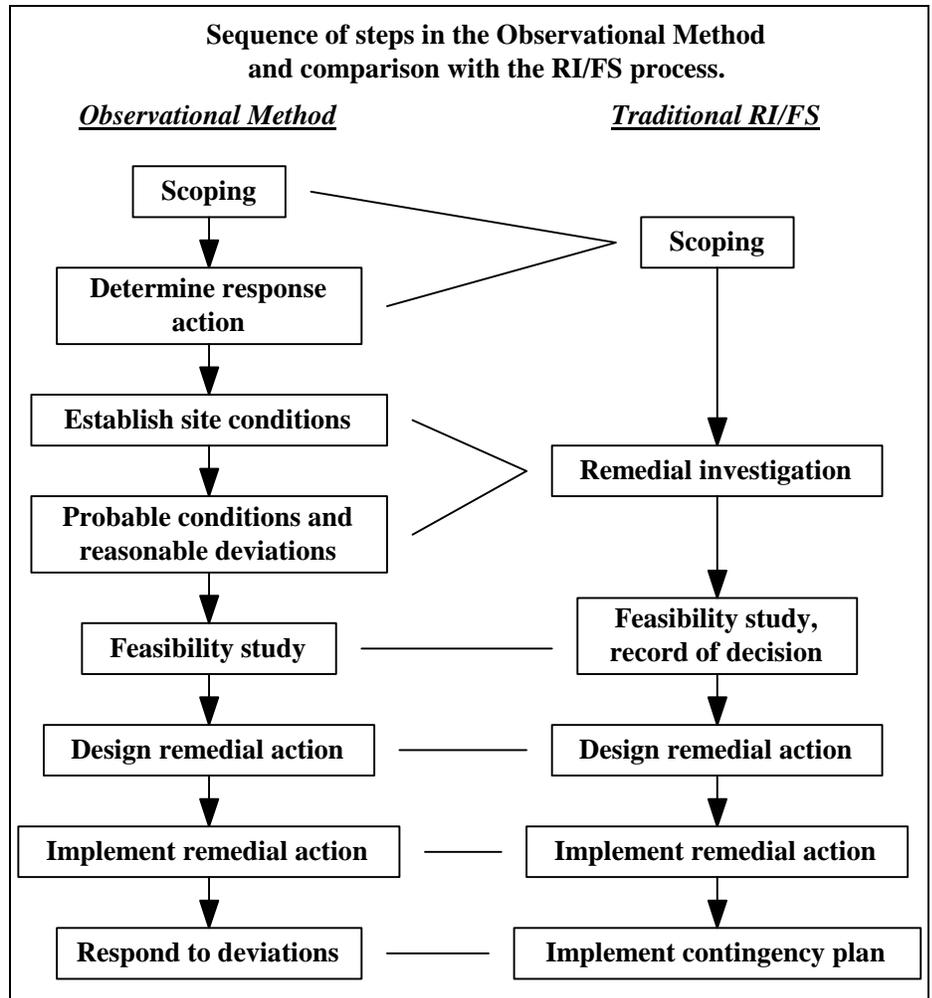
Based on the likely state of the site, the number and type of samples needed to confirm this state is determined. The probable remediation method to use is also determined. For the deviations, the number and type

of samples needed to identify a deviation is determined.

These deviations may be "reasonable" meaning a minor expansion or alteration in the original remediation plan will take care of the deviation. The deviations may also be "unreasonable" meaning that they are contrary to the underlying assumptions for the site and that the whole approach to remediation at the site will have to change. An example of a reasonable deviation would be the case where the spatial extent of soil contamination is greater than estimated, resulting in more soil needing treatment. An unreasonable deviation example is if soil presumed to be contaminated by petroleum with the intended clean-up to be incineration of the most contaminated and bioremediation of the rest, is found to contain heavy metals. Now a whole different remediation approach is needed. Deviations are handled with contingency plans.

Immediate benefits of this approach are that time and money are not spent on samples and studies that are not specifically directed at determining how much and what type of remediation is needed. Any field sampling is targeted to answer specific questions.

Another benefit is that if probable conditions and possible deviations indicate that certain remediation steps are needed, these steps can be initiated. This



is beneficial because clean-up can begin much sooner in the RI/FS process, potentially reducing the spread and impact of the contamination. Secondly, the initial steps of remediation may make further sampling much easier. For example if surface soil is excavated, formerly sub-surface soil is now readily available for sampling.

Because there is uncertainty in the knowledge used to design remedial actions, observations of the site must be made throughout the life of a project. This approach monitors the success of the remediation method. The

unique keys to the approach are (a) explicit recognition of deviations from the initial estimate of the state of the site, and (b) observations are made to identify if a deviation is occurring.

This article was developed from information presented in the course "Data Sufficiency and Decision Making for Site Remediation" offered by the University of Wisconsin-Madison.

EPA Proposed Guidance for Nonpoint Source Pollution

EPA has developed and requests public comment on proposed guidance specifying management measures for the control of nonpoint sources (NPS) that pollute coastal water. This document addresses five sources: Agriculture, silviculture, urban (to include construction), hydro-modification, and marinas. Because of strong regional and local influences in pollutant loadings and impacts, EPA is still maintaining its position that NPS will be regulated largely from the state and local levels. The proposed guidelines, dated May 1991, provide a basis for the development of coastal NPS control programs by the states. For a copy of the guidance manual or to provide comments contact:

Steve Dressing
Assessment and Watershed Protection
Division (WH-553)
U.S. EPA
401 M Street SW
Washington, DC 20460
(202) 382-7085

Proposed Discharger Fees for the Navy

The California State Water Resources Control Board staff is finalizing a new schedule of discharger fees to fund the Bay Protection and Toxic Cleanup Program. Under the new program all point and nonpoint source dischargers, whether they are NPDES permitted or not, that discharge directly into bays,

estuaries, or the ocean will pay annual fees ranging from \$300 to \$22,000 per permit or discharge. Draft designs for the program originally specified that fees would be charged per discharger, but this has changed. The reason behind the change is that many dischargers have more than one discharge or permit. The Navy is an organization that fits into this unfortunate category and will be subject to very large fees.

The fee program was intended to create incentives to reduce discharges to the ocean and enclosed bays and estuaries. It is presumably based on the relative threats to water quality from different types of point and nonpoint discharges. Between the maximum annual fee of \$22,000 (which represents an \$11,000 or 100% surcharge on the "base" fee, and which almost all Navy facilities will be subject to) and the low fee of \$300, there are 9 fee tiers which represent different levels of "threat" to water quality. Each discharge has already or is being rated by the respective Regional Water Boards so their annual fees can be determined.

The timeline for this program is still somewhat flexible, but approximates this schedule: The California State Water Resources Control Board will have a "workshop" meeting in October to discuss the program as revised by the Board's Bays & Estuaries Unit. Two weeks later, the Board will meet again to vote on the

proposed program. If it passes, it will then go before the State Office of Administrative Law, where it will be reviewed for validity. If it is approved by OAL, it will be filed at the State Secretary's Office in Sacramento. About 30 days after that (estimated January 1992), the bills to dischargers will be mailed out by the State Water Board, and enforcement will be by the regional boards.

Highlights of MESO Work

MESO has recently completed a marine environmental survey for WESTDIV, responding to a short (3-4 week) notice request. Hunters Point Annex (HPA) of Naval Station Treasure Island San Francisco is slated for base closure and turnover to the city of San Francisco. The difficulty is that the base is believed to be severely contaminated with hazardous wastes. The Navy is proceeding with the RI/FS process to investigate, characterize, and ultimately remediate the site. Civilian regulatory concern has focused on possible ground contamination of HPA leaching into bay water and sediments. A contractor is planning to do some extensive risk assessment work for the Navy in the areas of sediment and water quality as part of the RI/FS. To give WESTDIV an initial assessment of the perceived water quality problem, MESO's Marine Environmental Survey Craft (MESOC) was detoured during its return trip

from a project in Sinclair Inlet in the Puget Sound in order to perform a 2-day water quality survey in the vicinity of HPA.

The primary water quality parameter of interest was petroleum although other parameters were measured in order to identify currents and water masses. MESC has a unique capability for near real-time measurement of multiple water quality parameters with graphical display. Petroleum is detected in a continuous stream of pumped water, flowing through a series of fluorometers. The fluorometers measure fluorescence from the oils, which is later calibrated against discrete samples analyzed at a commercial lab.

The results of this study are still being analyzed but initial indications are that HPA is not producing any significant inputs of petroleum to the bay. Petroleum concentrations near HPA were in fact lower than areas farther offshore in the bay. This type of information can be very useful to remedial project managers as they decide the scope of work for more comprehensive studies. This type of information is easily, quickly, and inexpensively obtained and may help to satisfy regulatory concerns.