

Office of Water (4305)



FACT SHEET

DRAFT INLAND TESTING MANUAL (ITM)

INTRODUCTION

The draft Inland Testing Manual (ITM) contains up-to-date procedures to implement requirements in the Clean Water Act (CWA Section 404(b)(1) Guidelines) for 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 was prepared by a joint Environmental Protection Agency/Corps of Engineers (EPA/CE) Workgroup. In 1991, EPA and the CE revised an Ocean Testing Manual ("Evaluation of Dredged Material Proposed for "Ocean" Disposal - Testing Manual") for evaluation of potential contaminant-related impacts associated with the discharge of dredged material in the ocean, under the Marine Protection Research and Sanctuaries Act (MPRSA).

The ITM Addresses:

- contaminant-related impacts associated with discharges of dredged material in open water disposal areas
- contaminant-related impacts to surface water and surrounding environs associated with dredged material effluent discharged from confined disposal areas.

The ITM Does Not Address:

- impacts associated with the dredging activity itself
- impacts associated with the discharge of fill material (except where dredged material is used for fill and there is a reason to believe that contaminants may be released).
- impacts associated with the discharge of dredged material in the ocean, under the MPRSA.

BACKGROUND

Sediments may contain contaminants which, if bioavailable, can cause adverse environmental effects and, in some cases, affect human health. Dredged material disposal activities may release or redistribute these contaminants. The vast majority of disposal activities occur in inland and near coastal waters. The ITM sets

forth national technical guidance (which replaces a 1976 guidance manual) for evaluating potential contaminant-related impacts from dredged material discharges in such waters.

THE ITM

- is a new document
- contains up-to-date procedures
- provides a national framework
- allows for regional flexibility

SCHEDULE

The ITM was released in early 1993 for peer review by the EPA Science Advisory Board (SAB), and for broad agency review and comment. It is being released for public review and comment at this time, and will be finalized in late 1994. As per the Federal Register notice announcing the availability of the ITM, a copy may be obtained from Shirley Walker at the CE Waterways Experiment Station (601-634-2571).

PURPOSE

The ITM provides a national testing framework which comprises one element of an overall decision-making process for determining whether dredged material can be discharged into CWA Section 404 waters. The ITM is intended to provide for consistency between dredged material evaluations under CWA and MPRSA. In recognition of the importance of site- and situation-specific concerns, regional flexibility in implementation and application is allowed within this national framework.

DESCRIPTION

The ITM uses a tiered testing approach as shown in Figure 1 and described below.

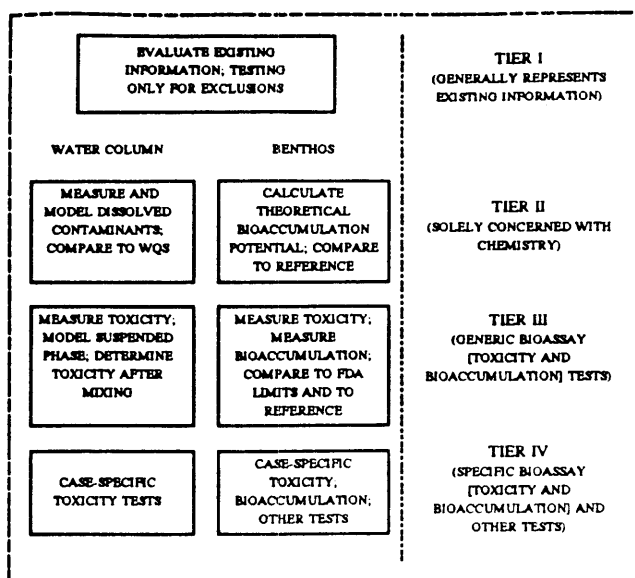


Figure 1 Overview of ITM Tiered Testing Approach

Tier I - Involves an examination of existing information to determine (1) whether or not there is "reason to believe" that the dredged material needs to be tested for potential adverse effects, and (2) identification of any contaminants of concern relative to testing in later tiers. Material may be excluded from further testing if there is reasonable assurance that (1) it is not a carrier of contaminants, or (2) it is adjacent and similar to the disposal site material, and dispersal of the discharge can be controlled. Some limited testing may be necessary to confirm such exclusions.

Tier II - Is concerned solely with sediment and water chemistry. Tier II provides useful information through screening tools, but not all possible determinations can be reached at this tier. It presently consists of (1) measuring dissolved contaminants, (2) evaluation of state Water Quality Standard (WQS) compliance using a numerical mixing model, and (3) an evaluation of theoretical bioaccumulation potential for nonpolar organic chemicals.

Tier III - Employs well-defined, nationally accepted bioassays including: (1) water column laboratory toxicity tests, (2) whole sediment laboratory toxicity tests, (3) whole sediment bioaccumulation tests. Appropriately sensitive organisms are recommended, including benchmark species for evaluating the sensitivity of regional species. Summaries of test conditions and test acceptability criteria for all recommended bioassay species are also provided. Toxicity testing emphasizes acute responses, generally survival. Water column toxicity evaluations consider mixing of the dredged material at the discharge site. Benthic bioaccumulation testing provides for the determination of bioavailability through 28-day exposure tests. Tier III testing will usually provide sufficient information for use in the overall decision-making process for compliance with the Guidelines.

Tier IV - Will only be used in certain cases, where results from tests in earlier tiers are insufficient to determine the potential adverse effects of the material to be discharged. Tier IV, like Tier III, uses toxicity and bioaccumulation tests, however: (1) toxicity tests may involve field (rather than laboratory) exposures, different end-points (e.g., chronic rather than acute), different species, or longer laboratory exposures; (2) bioaccumulation tests may involve field (rather than laboratory) exposures using transplanted or resident organisms, or longer laboratory exposures. Tier IV can also include benthos studies.

Reference Sediment - Is the key to the evaluation of dredged material - results of tests using reference sediment provide the point of comparison (reference point) to which effects of dredged material are compared. Reference sediment is generally collected outside the influence of previous disposal operations at the disposal site, but near enough to the disposal site that the reference sediment is subject to all the same influences (except previously disposed dredged material) as the disposal site. It should not be located in the immediate vicinity of spills, outfalls, or other significant sources of contaminants, and should have a grain size as similar as practicable to that of the dredged material and disposal site sediment. The reference sediment concept is the subject of a CWA rulemaking that will be proposed in the Federal Register for public comment prior to issuance of the final ITM.

THE ITM INCLUDES:

- Statutory and Regulatory Background
- Scope and Applicability
- Overview of Testing and Evaluation
- Technical Guidance
 - Sampling and Analysis
 - Physical and Chemical Evaluations
 - Bioassays (Toxicity and Bioaccumulation)
 - Quality Assurance/Quality Control
 - Evaluation of Discharges from Confined Disposal Facilities
 - Evaluation of Mixing
 - Statistical Methods
 - Identification of Ammonia Toxicity

SUMMARY

The ITM is intended to provide greater national consistency in the (1) testing process, and (2) level of environmental protection, both among regions of the U.S. and between inland and ocean waters.