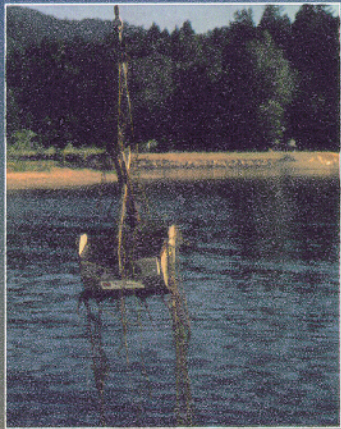
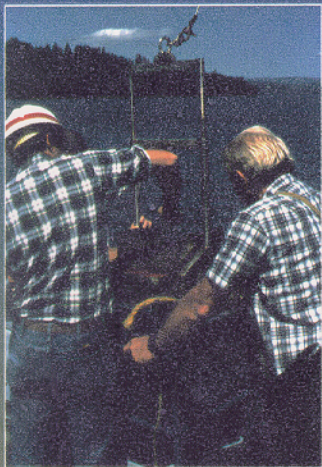




US Army Corps
of Engineers
Portland District

Sediment Quality Summary Report



**US ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT**

SEDIMENT QUALITY PROGRAM

SUMMARY REPORT

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PREFACE

This report is meant to provide basic information and background as well as current status of the USACE, Portland District's Operation and Maintenance (O&M) Sediment Quality Evaluation Program. This is a living document which will be updated annually or as necessary as information, status, and conditions of the USACE, Portland District's O&M sediment quality program changes through time. While it has been attempted to make this document as complete as possible it is a summary of available information. Project descriptions and maintenance practices are provided to present the general conditions of each project. This document may not contain current descriptions as these change due to changes in authorizations or maintenance needs. If further information is required, individual reports, studies, authorizations, regulations, etc. should be consulted. The contents of this report are not to be used for advertising, publication, or promotional purposes. Citation of trade names does not constitute endorsement or approval of the use of such commercial products.

SEDIMENT QUALITY PROGRAM

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Columbia River Side Channels

- **Skipanon River**
- **Baker Bay**
- **Hammond**
- **Chinook Channel**
- **Tongue Point**
- **Skamokawa Creek**
- **Westport Slough**
- **Wahkiakum Ferry**
- **Elochoman Slough**
- **Old Mouth Of The Cowlitz**
- **St. Helens**
- **Willamette River**
- **Old Bonneville Navlock**
- **River Mile 214**
- **MOP (Minimum Operating Pool)**

Portland District Sediment Quality Program

Historical

The Portland District began collecting sediment quality data in the late 1970's. It has utilized a tiered sediment quality evaluation framework since 1986 which was developed in the district. The tiered framework allows for more consistent design of project specific testing programs. Its main objective is to provide a method for more efficiently maintaining statutory compliance while conducting Portland District's dredging program. The framework minimizes tendencies for excessive testing of low-risk projects while justifying more attention to higher-risk actions. This has resulted in more efficiently completing required evaluations, has reduced costs, and is making data available to Corps managers and resource agencies in a more timely manner. Both the "Green Book" and the Inland Testing Manual employ a tiered testing framework for the evaluation of material to be dredged.

O&M project sediment testing is performed on a 5-year rotational cycle for projects dredged on a regular schedule. Projects dredged less frequently are sampled, tested, and evaluated as needed prior to dredging. The 5-year rotation allows the continued even management of both budget and manpower while providing sufficiently current project sediment quality information to allow dredging to proceed unobstructed.

Data collected under Portland District's sediment quality program is stored in a digital data base, in raw laboratory data format, and in various prepared reports. This allows ready access to project sediment information dating back 10 to 15 years.

The greater than 95% of the material dredged within the Portland District are clean sands which are exempt from chemical or biological testing. Most sediment samples analyzed by the Portland District are collected by staff, though contracts are also used in specific cases when special equipment is required to collect the sediment samples. Physical analyses were conducted by the North Pacific Division Materials Testing Laboratory (NPD Lab), chemical analyses were brokered through the NPD Lab to their contract chemical laboratories. Further, the NPD Lab provided QA/QC analyses of the work performed by the contract laboratories with each set of data forwarded to this office. The NPD Lab ceased to exist on September 26, 1997.

Future Issues and Trends

The evaluation of sediment quality has evolved greatly since the late 1970's and will continue to evolve as knowledge of the relationship between sediment contamination and ecological well being grows. Chemicals banned in the early 1970's (DDT, PCBs, etc.) are still present, the ecological effect of "new" chemicals (dioxin, TBT, etc.) are not yet fully understood. The technical ability to detect smaller and smaller concentrations of contaminants has grown. The evaluation of sediment quality has been and will be changing as knowledge, technical abilities, and environmental awareness grows.

More and more attention is being focused by more and more parties towards the issue of dredging and sediment quality. Nationally sediment quality criteria for certain chemicals are being developed by EPA, risk analyses is being increasingly used where clear impacts are hard to document, and the need for long-term planning has been determined. The Dec. 1994 Maritime Administration (MARAD) report, "The Dredging Process in the United States, An Action Plan for Improvement", called for the development of national and regional/local dredged material planning groups. The regional/local groups are to aid in the development of regional dredged material management plans. To be comprised of federal and state agencies and other affected stakeholder, these groups will have a wide range of responsibilities. The full impact of these groups on present and future operations is yet to be determined.

Locally the Oregon Dept. of Environmental Quality (DEQ) through its 401 Water Quality Certification process has decided to take a more active role in dredging and sediment quality issues. In the past they have been for the most part deferring sediment quality issues to the expertise of the EPA and the Corps. With recent changes in structure and personnel, DEQ has in several ways expressed a renewed interest and desire to take a more active role. Other local issues will be dealing with the information coming out of the Bi-State study and interfacing with the Columbia River National Estuary Program study. The latter will culminate in a management plan for the Columbia River, no doubt a part of this plan will include the issue of dredging, dredged material, and dredged material disposal.

To meet these changes the Portland District with others are actively developing a regional dredged material testing manual for the Columbia River. The Marine Protection and Sanctuaries Act, Sec 102/103 requires dredged material to be evaluated for suitability for ocean disposal, and directed EPA and the Corps to develop methods for this evaluation. The methods are to be based in criteria presented in Sec 102 of the act. The outcome of this was the manual entitled "Evaluation of Dredged Material Proposed for Ocean Disposal-Testing manual", dated Feb. 1991. It is commonly referred to as the Green Book, and has been the standard reference since it was published final. A second manual is entitled "Evaluation of Dredged Material proposed for Discharge in Waters of the U.S.-Testing Manual" (draft). The preparation of this manual was required by Sec. 404 of the Clean Water Act and again is a joint effort of the Corps and EPA. This manual has undergone its draft public review and will eventually be published as final in the Federal register. These manuals are extremely important to the Corps and are the standard by which the Corps and EPA evaluate dredged material for both civil works and regulatory.

The regulations for both laws (40 CFR 220-229 and 40 CFR 230) reference these manuals and require their use. The regulations and the manuals require the development of regional testing/evaluation procedures (manuals) to supplement the national manuals where necessary. Areas that the national guidelines recognized as needing supplementing for the detail necessary for a project specific evaluation were:

- * Contaminants of concern
- * Frequency of testing/evaluation
- * Sampling schemes

- * Reference sites
- * Species selection
- * Data interpretation
- * Special local considerations

It is stressed in the national guidance that when a region develops the above topics that the outcomes must not be in conflict with the national manuals, but merely provide the details necessary to evaluate individual projects for a region.

Based on the outcome of seminars held in November 1995 and May 1996 to familiarize the region with the national procedures a working group was established for the purpose of developing these regional procedures for the Columbia River. The Columbia River was selected based on the expressed interest of the state of Washington and Oregon to have similar protocols for evaluating dredging projects on the Columbia River. The working group consists of representatives from Oregon's DEQ, EPA, NWP, NWD, NWS, and the State of Washington's Department of Ecology and Department of Natural Resources. The Willapa Bay/Grays Harbor manual (June 1995) was used as a template but customized for the Columbia River. Whereas Willapa Bay/Grays Harbor as well as the Puget Sound area is predominately fine grained dredged material, which requires more detailed analysis, the Columbia River contains mostly sand which will reduce testing requirements.

The working group was established for the purpose of developing regional testing procedures for the Columbia River. The Columbia River was selected based on the expressed interest of the State of Washington and Oregon to have similar protocols for evaluating dredging projects on the Columbia River. An internal review draft was presented in July 1997 to the various participating agencies for comment. Comments were reviewed and acted upon at a joint meeting conducted over three days in September 1997. A draft manual was completed and released for public review in April 1998. A two day seminar on the manual was held April 21 and 22 in Portland.

PART I: BACKGROUND

Statutory Requirements and Guidance Documents

The U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) have statutory and regulatory responsibilities with regard to the management of dredged material discharge activities in inland and near coastal waters. The USACE is responsible for regulating non-Federal dredging and dredged material discharge activities through a permit program, and for conducting Federal dredging and dredged material discharge activities in conjunction with its Civil Works Program. EPA is responsible for establishing, in conjunction with the USACE, guidelines pertaining to the evaluation of these activities, and performing oversight actions. Specifically, Section 404 of the Federal Water Pollution Control Act of 1972 (FWPCA), Public Law 92- 500, as amended by the Clean Water Act of 1977 (CWA), Public Law 95-217, requires, among other things, that the discharge of dredged or fill material into waters of the U.S. be permitted by the USACE. The USACE also conducts Civil Works dredging and dredged material discharge activities in accordance with Section 404. Section 404 further requires that discharge sites be specified through the application of the Section 404(b)(1) Guidelines (Guidelines) developed by EPA in conjunction with the USACE. Section 404 requires that the "guidelines shall be based upon criteria comparable to the criteria applicable to the territorial seas, contiguous zone, and the ocean". Thus, a clear connection for comparable testing for ocean, inland and near coastal waters was established as early as 1972.

The Guidelines, which impart other requirements in addition to those associated with contaminant-related impacts, are published at 40 CFR 230. Testing procedures applicable to determining the potential for contaminant-related environmental impacts associated with the discharge of dredged material have been established. Dredged material must also satisfy all other applicable requirements of 40 CFR 230-232, 33 CFR 320-330, and 33 CFR 335-338 in order to comply with the Guidelines and to be authorized for discharge.

An Inland Testing Manual designed to allow for regional flexibility in implementation and application including development of regional manuals and documentation was released in February 1998. The manual will be periodically revised and updated as warranted by advances in regulatory practice and technical understanding. This manual replaces the May 1976 proposed testing protocol, "Ecological Evaluation of Proposed Discharge of Dredged or Fill Material Into Navigable Waters", which will no longer be applicable. The 1976 protocol was developed in response to a requirement in the Federal Register notice of the Guidelines, Vol. 40, No. 173, Friday, 5 September 1975. That notice states the "EPA in conjunction with the Corps of Engineers will publish a procedures manual that will cover summary and description of tests, definitions, sample collection and preservation, procedures, calculations, and references." In December 1980, the Guidelines were revised and finalized in the Federal Register Vol. 45, No. 249. The present joint effort by EPA and USACE contains up-to-date testing procedures to implement the Guidelines at Sections 230.60 and 230.61, and is intended to bring comparable level of environmental protection for dredged material testing in ocean, inland, and near coastal waters.

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The Inland Testing Manual is one of a series of guidance documents jointly developed by EPA and the USACE pertaining to dredged material disposal. This series includes a document entitled "Evaluating Environmental Effects of Dredged Material Management Alternatives - A Technical Framework" (Framework Document - USACE/EPA, 1992). The Framework Document articulates those factors to be considered in identifying the environmental effects of dredged material management alternatives on a continuum of discharge sites from uplands to the oceans (management alternatives include open water, confined, and beneficial use situations) that meet the substantive and procedural requirements of the National Environmental Policy Act (NEPA), the CWA, and the Marine Protection, Research, and Sanctuaries Act (MPRSA). The Ocean Disposal Testing Manual "the Green Book" (EPA/USACE, 1991) is included in the series. Application of the testing guidance in the Inland Testing Manual in addition to guidance provided in the Framework Document and the Green Book allows for consistency in decision making with respect to technical considerations, across statutory boundaries and the continuum of dredged material discharge options.

Under CWA, some material may be exempt from testing as specified in 40 CFR 230.60. Under MPRSA, testing must be conducted unless the exclusions in 40 CFR 227.13 are met. These are commonly referred to as the exclusionary clauses and are used to establish whether there is a "reason to believe" that contaminants are or are not present. If there is no reason to believe that contaminants are present and if certain other conditions are met, including grain size and chemical/physical similarity of the dredged material and substrate at the disposal site, no further testing is required. If there is reason to believe that contaminants are present, or if sufficient information is not available, additional evaluations including testing may be required.

Promulgation of the Final Rule

On 26 April 1988 the US Army Corps of Engineers published the Final Rule for operation and maintenance of Corps Civil Works projects involving the discharge of dredged material into waters of the United States or ocean waters (33 CFR Parts 209, 335-338). This action replaced 33 CFR 209.145 dealing with these operations and complies with Executive Orders, court decisions, and policy changes that occurred since the previous regulations were published on 22 July 1974. This regulation provides current procedures for compliance with state water quality certification, coastal zone consistency, and other environmental requirements of COE maintenance dredging and disposal operations. This regulation enables the COE to more effectively implement the relevant provisions of the Clean Water Act (CWA) and Ocean Dumping Act (ODA) when carrying out projects involving dredged

material relocation into waters of the United States and ocean waters.

The Federal Standard

As practice has shown, difficult questions have arisen as to the respective roles and decision authorities of States and the Federal Government in actions involving the relocation (disposal) of dredged material. The Federal Standard as described in 33 CFR 335-338 is simply the disposal alternative identified by the COE which complies with Federal environmental laws and regulations in the least costly manner consistent with sound engineering practices and the NED. All negotiations of the COE with state agencies and public organizations will use this alternative as the point of reference.