

Guidebook for Dredging Regulations & Dredging Projects Lessons Learned



Presented to:
NSRP – Environmental Technologies Panel

June 21, 2007

Why Is This Guidebook Necessary?

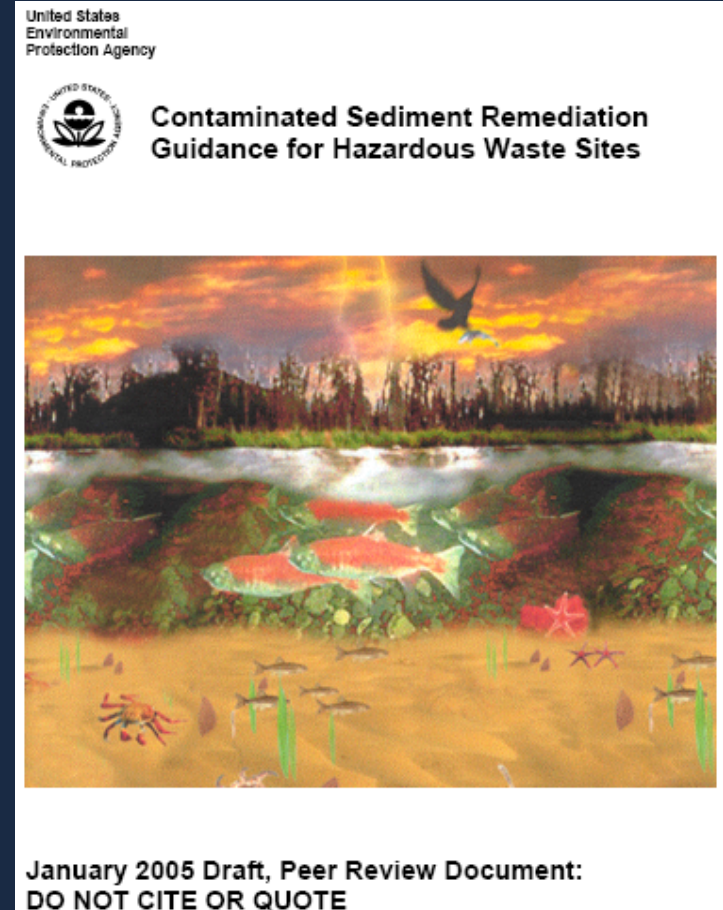
- Lots of Regulations – Differ from State to State
- Lots of Lessons Learned
- No Comprehensive Guidance Currently Available

Environmental Dredging – General Guidance

EPA Superfund Sediment Guidance

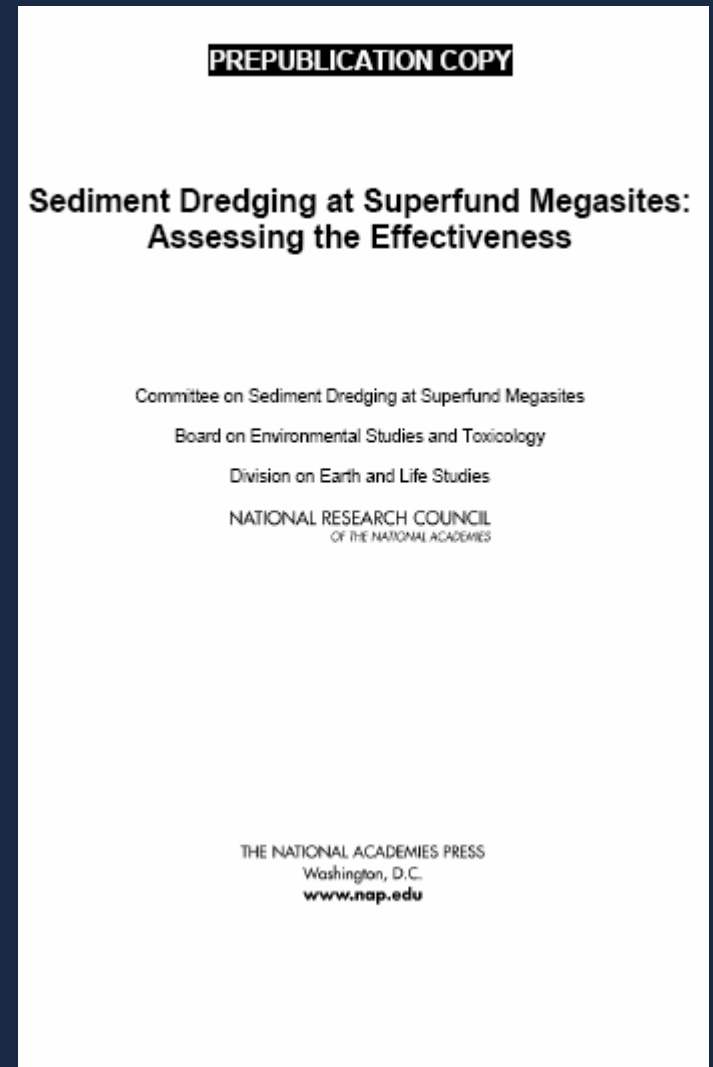
USACE/EPA
Environmental
Dredging Technical
Resource/ Guidance

<http://www.epa.gov/superfund/resources/sediment/guidanchtm>



Recent Guidance

- Lessons Learned Section
- <http://www.nap.edu/catalog/11968.html>



Regulations

Standard	Source	Description	Remarks	Alternatives	Administrative Permit, Approval or Compliance Determination Required	Permit Review Timeframe ³
Living River Trust Operating Agreement	Living River Trust; Elizabeth River Program	Requires Trustee approval for expenditure of trust funds (ERP, USACE, VA DEQ).	Coordination with Trust Advisory Board required.	Applicable for all activities.	No.	N/A
VA DEQ Voluntary Remediation Program	Code of VA Section 10.1-1232; Regulations at Chapter 14, Title 10.1, Article 4.1, Sections 10.1-1429.1-1429.3	Provides guidelines for voluntary site cleanup using restricted or unrestricted (residential) end-use.	Tiered assessment: cleanup goals may be based on background concentrations, literature-derived values, or site-specific risk assessment conclusions.	Applicable to all activities pertaining to soil, groundwater, and sediment remediation.	No. VADEQ approval via other state permits may incorporate program standards.	N/A
Hazardous Waste Determination	40 CFR 262.11 and VA Hazard Management Waste Regulations Ch. 60	Characterization of waste to determine if it is hazardous as (a) listed under 40 CFR 261, Subpart D, or (b) identified in 40 CFR 261 Subpart C by testing the waste according to specified test methods. VA regulations at 9VAC20-60-12.	Money Point sediments have been characterized as non-hazardous; see Section 3.3.3 and Tables 3.3-2 and 3.3-3.	Applicable to alternatives that involve removal/disposal of contaminated sediments.	No.	N/A
Virginia Solid Waste Regulations	9 VAC 20-80-113 D 2 Chapter 80 Solid Waste Regulations	Regulates management of solid waste for waste materials not regulated by the State Board of Health or State Water Control Board.	Dredged sediments would be considered solid waste if not hazardous and subject to regulations for handling and disposal.	Applicable to non-hazardous sediment to be removed from the site.	Yes.	N/A
Virginia Water Quality Standards	State Water Control Law Section 62.1-44.15(3a)	Provides state water quality standards including designated uses, water quality criteria to protect designated uses, and anti-degradation policy.	Activities may not degrade existing uses and may not violate state water quality standards. Need to determine existing use designations for Elizabeth River.	Applicable to remedial remedies, state permitted activities, and federally permitted activities through Sec. 401 approval process.	Yes. State-issued 401 WQC required in conjunction with USACE permit.	N/A
Clean Water Act Section 404	33 USC Section 1344 (CWA Sec 404) 33 CFR 323, 33 CFR 320-330, 40 CFR 6 App. A 404(b)(1) guidelines	Regulates discharges of dredged or fill material in waters of the U.S., including wetlands.	The Money Point site is tidal; jurisdiction consists of high tide line for open water areas and the landward limit of adjacent wetlands.	Applicable for hydraulic dredging, cap placement, shoreline stabilization below mhw or in wetlands. Applicable for any storage, processing, or disposal alternative with temporary and/or permanent fill in jurisdictional waters or wetlands.	Yes. USACE Sec. 404/Sec. 10 permit required.	60 - 120 days from complete application
Clean Water Act Section 401	33 USC Section 1341 (CWA Section 401) 33 CFR 320.3(a).	Section 404 discharges shall not violate state water quality standards.	401 WQC from VA DEQ required for any 404 permit; applicable regulations provided above for VA Water Quality Standards.	Would apply VA DEQ WQ standards to water quality impacts during dredging, dewatering, processing and disposal activities, and all other Sec. 404 activities as described above.	Yes. State-issued 401 WQC required in conjunction with USACE permit.	120 days or USACE can presume a waiver.
Rivers and Harbors Act of 1899	33 USC 403 (Section 10)	Regulates structures or work in or affecting navigable waters, including tidal waters and major rivers used for interstate commerce.	Money Point site is tidal, jurisdiction consists of mean high water.	Applicable for structures or work below mean high water including dredging.	Yes. USACE Sec. 404/Sec. 10 permit required.	60 - 120 days from complete application

Source – SAIC, Money Point Feasibility Study

Regulations – Cont.

Standard	Source	Description	Remarks	Alternatives	Administrative Permit, Approval or Compliance Determination Required	Permit Review Timeframe ³
Coastal Zone Management Act	16 USC 1451, Section 307(c)(1)	Activities must be consistent with VA CZM program, implemented by the VA DEQ Coastal Program.	As tidal waters and a tributary to the Chesapeake Bay, the project site is located within the state's coastal zone.	Applicable to all activities/alternatives.	Yes. CZM consistency determination via USACE permit process.	120 days or USACE can presume a waiver
NPDES CWA Section 402	40 CFR 122 Subpart B, and 40 CFR 135	Virginia regulates the NPDES program as VPDES; VA DEQ regulates industrial discharges pursuant to state regulations at 9 VAC 25-31-120; DCR regulates construction discharges under the VA Stormwater Management Law.	Run-back from a dredged material storage or processing area may require a VPDES permit; construction sites such as dredged material processing facilities or disposal sites would require compliance with erosion and sediment control ordinances of the municipality, as directed by DCR.	Applicable to all runback from dredged material containment, storage, and/or processing facilities. May apply to upland remediation activities for non-point sources (e.g., construction GP).	Yes.	
VA DEQ Water Protection Permit	Virginia Administrative Code 9 VAC 25-210.	Water Protection Permits regulate activities in state waters, including wetlands. Jurisdictional boundaries are the same as for the Corps (Section 404 above) plus isolated wetlands. Permits may be processed in conjunction with Sec. 401 WQC process.	Applicable to work below high tide line and/or in wetlands.	Applicable to Sec. 404 activities and other activities regulated by the state including dredging, filling or discharging any pollutant into or adjacent to a surface water, or otherwise altering the physical, chemical, or biological properties of surface waters, excavating and other activities in wetlands.	Yes. Joint application procedures with USACE permits.	
Virginia Marine Resource Commission	Subtitle III Title 28.2 Code of VA Chapters 12-13	State Bottomlands Permits from VMRC required for physical encroachments into subaqueous or bottomlands, tidal wetlands, and coastal primary sand dunes.	VMRC would regulate activities below mean low water.	Applicable for impacts/activities below mean low water.	Yes. Joint review with VADEQ and USACE permits.	
Federal Clean Air Act Ambient Air Quality Standards	42 USC Sections 7401-7571 (2001)	Establishes National Ambient Air Quality Standards (NAAQS) for six priority pollutants to protect human health and welfare.	Norfolk-Virginia Beach-Newport News is a nonattainment area for 8-hour ozone as of Sep. 25, 2005 ¹ . Need to confirm whether Chesapeake is an attainment area.	Applicable to air emissions from all dredging and construction activities.	Yes. USACE coordinates compliance determination via Sec. 404/Sec. 10 permit.	60 - 120 days from complete application
National Historic Preservation Act	16 USC 469 Section 106	Protection of properties listed, or eligible for listing, on the National Register of Historic Places.	Occurrence of listed or potentially eligible sites in the vicinity of any project sites must be investigated.	Potentially applicable to alternatives for dredged material transport (e.g., pipeline over land), processing, and disposal.	Yes. USACE coordinates compliance determination with State Historic Preservation Officer (SHPO) via Sec. 404/Sec. 10 permit.	60 - 120 days from complete application
Endangered Species Act	16 USC 1531, 50 CFR 200 and 402	Protects federally-listed threatened and endangered species and their critical habitat.	No listed species or critical habitat occur at/near the Money Point site.	Potentially applicable to in-water activities and alternatives for dredged material transport (e.g., pipeline over land), processing, and disposal.	Yes. USACE coordinates compliance determination with National Marine Fisheries Service and US Fish and Wildlife Service via Sec. 404/Sec. 10 permit.	60 - 120 days from complete application
Fish and Wildlife Coordination Act	16 USC 661	Protection of wildlife coordinated by USFWS and NMFS.	Review conducted through agency coordination and NEPA process.	Applicable to in-water activities including dredging and all disposal alternatives, potentially applicable to upland alternatives including dredged material disposal.	Yes. USACE coordinates compliance determination with National Marine Fisheries Service and US Fish and Wildlife Service via Sec. 404/Sec. 10 permit.	60 - 120 days from complete application

Source – SAIC, Money Point Feasibility Study

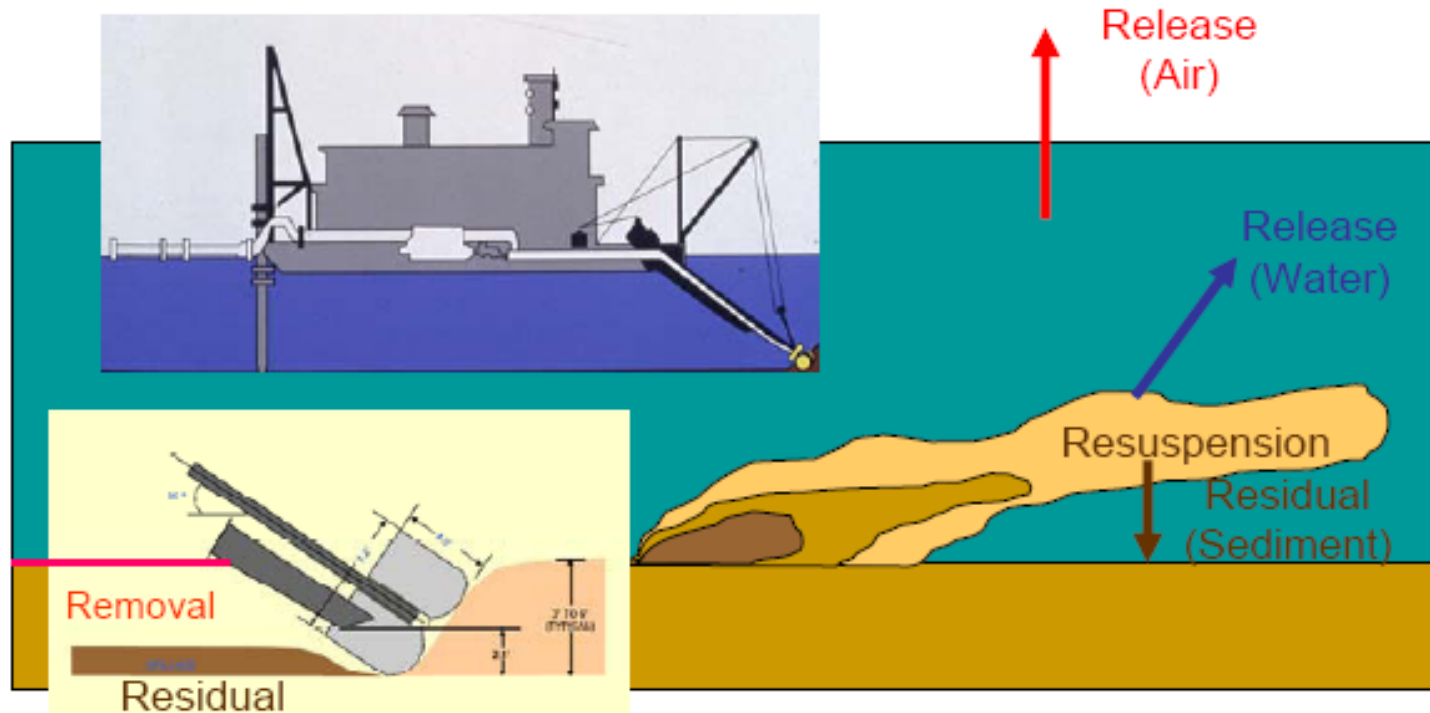
Regulations – Cont.

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MFRSA - EFH	16 USC 1855(b) Section 305(b); 50 CFR Sec.600.920	Essential Fish Habitat provisions of MFRSA implemented by NMFS.	Mid-Atlantic fisheries council manages ten finfish species and two bivalves pursuant to the EFH regulations ² . Coordination on potential impacts to anadromous species may be required; in-water time-of-year restriction may prohibit activities 15 Feb - 30 Jun.	Applicable to all in-water, wetland and shoreline activities.	Yes. USACE coordinates compliance determination with National Marine Fisheries Service via Sec. 404/Sec. 10 permit.	60 - 120 days from complete application
Chesapeake Bay Preservation Act	9VAC10-20-60A and 9VAC10-20-105	The Bay Act established the Resource Protection Area (RPA) as shoreward extension of the Chesapeake Bay Preservation Area (CBPA). RPA includes tidal wetlands, adjacent non-tidal wetlands, tidal shores, and 100 ft buffer.	Performance criteria apply to any use, development, or redevelopment of land in CBPAs and RPAs.	Potentially applicable to disposal activities if located in a CBPA or RPA.	Yes. Coordinated through state CZM review.	
City of Chesapeake Wetlands Boards	Wetlands Board Approval	Wetlands Board has jurisdiction over tidal waters and wetlands to mean low water.	Approvals required in accordance with local ordinances and procedures.	Applicable to project site waters and wetlands from 1.5x mean tide range to mean low water; and potentially applicable to disposal site(s) if in the nearshore zone.	Yes. Joint application procedures with USACE and VADEQ permits.	
Virginia Pollution Abatement Permit	Chapter 32; 9VAC25-32-10	Regulates treatment, storage, and land application of industrial waste and other wastes not discharging to a municipal sewer and not discharging to state waters pursuant to a VPDES permit.	In order to dispose of Money Point sediment at an existing, permitted facility such as Port Tobacco, a permit amendment would be required. Money Point sediment chemistry would have to be compared to the VADEQ sediment standards, the EPA Region 3 Risk-Based Concentrations (RBCs) for industrial soils.	Applicable for disposal at Port Tobacco site.	Yes.	
Floodplain Management	Executive Order 11988	Prohibits development in the floodplain unless there are no practicable alternatives.	Fill to raise ground elevations at the waterfront sites may impact the 100-year floodplain.	Applicable to all alternatives with disposal for beneficial use located in the floodplain and remedial alternatives that include fill in upland areas.	Yes. USACE coordinates compliance determination via Sec. 404/Sec. 10 permit.	60 - 120 days from complete application
Safe Drinking Water Act	42 USC Section 300 et seq.	Primary and secondary drinking water standards. Provides special protections for sole-source aquifers, including stringent review of any action that could potentially damage the aquifer.	Potential impacts to aquifer or drinking water supplies in area would have to be assessed.	Applicable for CAD or other buried disposal option.		
Occupational Safety and Health Act	29 USC Section 651 et seq.	Protection of human health and safety.	Construction activities would be subject to compliance.	Applicable to all dredging and construction operations.		
Craney Island Dredged Material Management Plan	USACE Norfolk District	Provides procedures for use of the Craney Island Confined Disposal Facility (CDF) for disposal of dredged material.	Material must be tested in accordance with EPA's inland testing manual and determined to be suitable for disposal.	Applicable for disposal at the Craney Island CDF.	Yes.	

Source – SAIC, Money Point Feasibility Study

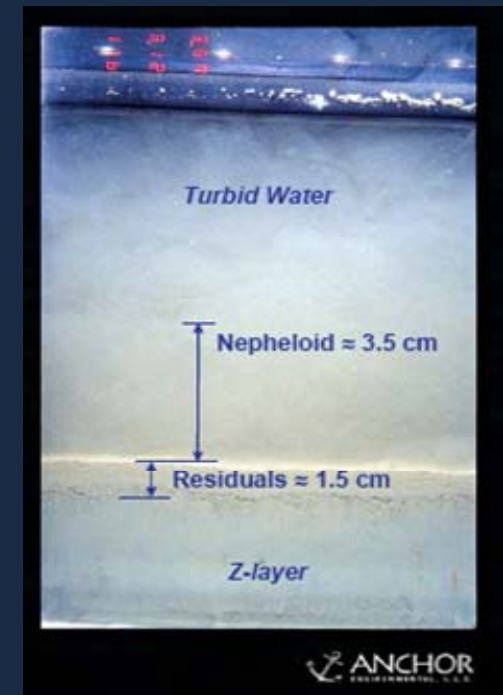
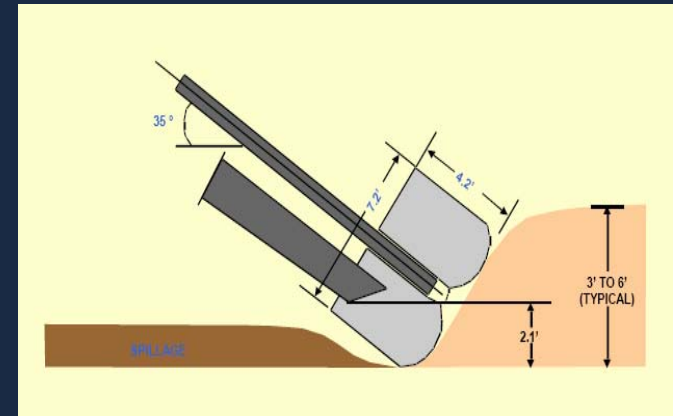
Lessons Learned – 4 Rs

Figure 1. Conceptual Illustration of Environmental Dredging and Processes



Residual Sediment

- Residual Sediment = mass and concentration of contaminated sediment remaining in the area dredged after completion of dredging
- Consider “generated residuals” and/or “undisturbed residuals”
- Estimates based on field experience or empirical models
- Compare monitoring data (or estimates) to action levels
- Determine need (or potential need) for management actions



Lessons Learned

- Monitor dredge operations
 - Water quality not a good indicator
- Need for up-front contingency planning
 - Post-dredge data interpretation
 - Facilitate rapid management decisions
- Re-Dredge
 - Limited effectiveness in many cases
- Cap residual sediment
 - More certain solution
 - Combine with enhanced natural recovery

Discussion

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Source – GD-BIW website