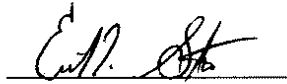


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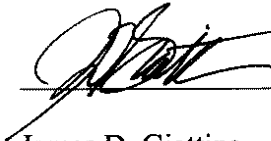
The following Site Management and Monitoring Plan for the Palm Beach Harbor ODMDS has been developed and agreed to pursuant to the Water Resources Development Act Amendments of 1992 (WRDA 92) to the Marine Protection, Research, and Sanctuaries Act of 1972 for the management and monitoring of ocean disposal activities, as resources allow, by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers.



Robert M. Carpenter
Colonel, U.S. Army
District Engineer
Jacksonville District
U.S. Army Corps of Engineers
Jacksonville, Florida

30 NOV 04

Date



James D. Giattina
Director
Water Management Division
U.S. Environmental Protection Agency
Region 4
Atlanta, Georgia

NOV 01 2004

Date

This plan is effective from the date of signature for a period not to exceed 10 years. The plan shall be reviewed and revised more frequently if site use and conditions at site indicate a need for revision.

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Table 3. Palm Beach Harbor ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Measure Extent of Disposal Mound Footprint	Bathymetric Surveys	COE/ Site User	Determine areal influence of dredged material and potential for effects outside of boundaries	Initial site use and for significant projects (>100,000cy)	Disposal mound footprint occurs outside ODMDS boundaries	Continue to use site without restrictions	-Restrict disposal volumes -Modify disposal method/placement -Institute Chemical and Biological Monitoring to determine impact (Environmental Effects).
	Sediment Profile Imaging	COE/ EPA	Determine extent of disposal mound 'apron'	following significant project at one of the SE FL ODMDSs	Disposal mound footprint occurs outside ODMDS boundaries (5cm)	Continue to use site without restrictions	-Restrict disposal volumes -Modify disposal method/placement -Institute Chemical and Biological Monitoring to determine impact (Environmental Effects).
Determine Likelihood of Disposal Plume Reaching Reefs	DiPRiS ¹	EPA/ NOAA	Determine potential for impact to nearshore reefs	In progress	Suspended sediment concentrations at reefs are elevated ² due to dredged material disposal	Continue monitoring with unrestricted disposal	-Restrict disposal during onshore current events -Implement Reef Impact Study
Environmental Effects Monitoring	Chemical Monitoring	EPA/ COE	Determine if chemical contaminants are significantly elevated ² within and outside of site boundaries	Implement if disposal mounds extends beyond site boundaries	Contaminants are found to be elevated ³	Discontinue monitoring unless disposal quantities, type of material or frequency of use significantly changes	-Institute Advanced Chemical and/or Biological Monitoring to determine impact. (Advanced Environmental Effects) -Restrict Disposal
	Benthic Monitoring & Sediment Profile Imaging	EPA/ COE	Determine whether there are adverse changes in the benthic populations outside of the site and evaluate recovery rates		Adverse changes observed outside of site that may endanger the marine environment		-Limit quantity of dredged material to prevent impacts outside boundaries -Create berms to restrict dredged material movement -Cease site use

Table 3 (Continued). Palm Beach Harbor ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Advanced Environmental Effects Monitoring	Chemical Tissue Analysis	EPA/COE	Determine if site is source of adverse bioaccumulation which may endanger the marine environment	Implement if environmental effects monitoring warrants.	Benthic body burdens greater within footprint than outside	Discontinue monitoring unless disposal quantities, type of material or frequency of use significantly changes	-Discontinue site use -Implement case specific management options (ie. remediation, limits on quantities or types of material).
	Benthic Monitoring	EPA/COE	Determine if site is source of adverse sub-lethal ⁴ changes in benthic organisms which may endanger the marine environment		Sub-lethal effects are unacceptable		
Compliance	Disposal Site Use Records	Site User	-Insure management requirements are being met -To assist in site monitoring	Daily during any project	Disposal records required by SMMP are not submitted or are incomplete	Continue Monitoring	-Restrict site use until requirements are met
					Review of records indicates a dump occurred outside ODMDS boundary	Continue Monitoring	-Notify EPA Region 4/COE, and investigate why egregious dump(s) occurred. Take appropriate enforcement action.
					Review of records indicates a dump occurred in the ODMDS but not in target area	Continue Monitoring	-Direct placement to occur as specified.

Table 3 (Continued). Palm Beach Harbor ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Trend Assessment Survey	Chemical and/or Biological Measurements (40CFR 228.13)	EPA/COE	Document and assess changes at the disposal site	As funding allows. Goal is once every 10 years.	Not applicable	Not applicable	Not applicable

¹ Disposal Plume Reef Impact Study: This study is currently being conducted at the Miami ODMDS. Results are expected to be applicable to the Palm Beach Harbor ODMDS.
² Elevated: Beyond the natural limits in terms of intensity, duration, and frequency (McArthur et. al, 2002).
³ Significantly elevated: Concentrations above the range of contaminant levels in dredged sediments that the Regional Administrator and the District engineer found to be suitable for disposal at the ODMDS.
⁴ Examples of sub-lethal effects include without limitation the development of lesions, tumors, developmental abnormality, decreased fecundity.

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Parameter	Keyword	Value
Cloud/Ambient Density Gradient Ratio	GAMA	0.250 ¹
Turbulent Thermal Entrainment	ALPHAO	0.390 ⁴
Entrainment in Collapse	ALPHAC	0.100 ¹
Stripping Factor	CSTRIP	0.003 ¹

¹Model Default Value

²Profiles from EPA 1998 measurements

³Velocity data represents average conditions. Determined from WES 1998 analysis of ADCP data offshore Ft. Lauderdale, FL.

⁴Calculated from NOAA Field Work at Miami (1991)

Dilution Rates for Generic Material:

Minimum dilution outside disposal site: 15,000 to 1

Minimum dilution after 4 hours: 36,000 to 1

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III. PERMIT LIABILITY

A. The permittee shall be responsible for ensuring compliance with all conditions of this permit.

B. The permittee and all contractors or other third parties who perform an activity authorized by this permit on behalf of the permittee shall be separately liable for a civil penalty of up to \$50,000 for each violation of any term of this permit they commit alone or in concert with the permittee or other parties. This liability shall be individual, rather than joint and several, and shall not be reduced in any fashion to reflect the liability assigned to and civil penalty assessed against the permittee or any other third party as defined in 33 U.S.C. Section 1415(a).

C. If the permittee or any contractor or other third party knowingly violates any term of this permit (either alone or in concert), the permittee, contractor or other party shall be individually liable for the criminal penalties set forth in 33 U.S.C. Section 1415(b).

PALM BEACH HARBOR ODMDS SMMP

Appendix C

Jacksonville District Corps of Engineers
Contract Specification Language

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SAMPLE SUMMARY SPREADSHEET

ETS Date Sheet: Palm Beach Harbor MD, W912P-XX-X-XXXX
Master ETS Dump Log to Accompany Scatter Plots

--Data to be extracted from ETS ASCII Data files--

DATE	TIME	LOADNO	CHAN	CUYDS	CAPTAIN	DRAFT*	EQUIPMEN T	BEGDUMPN	BEGDUMPE	ENDUMPN	ENDUMPE
06/15/02	1400	0001	AS1	2,453	Nichols	10.8	Scow 3002	1448772	814016	1448677	814060
06/15/02	1320	0002	AS1	2,567	Nichols	9.7	Scow 3001	1448465	814471	1448383	814563
06/16/02	0800	0003	AS1	2,567	Nichols	4.3	Scow 3002	1447989	813558	1447861	813622
06/16/02	1400	0004	AS1	2,818	Nichols	4.3	Scow 3001	1448049	813706	1447981	813755
06/16/02	1320	0005	AS1	2,567	Nichols	9	Scow 3002	1447967	814014	1447843	814118
06/16/02	0800	0006	AS1	2,453	Nichols	12.2	Scow 3001	1449087	814761	1449015	814832
06/16/02	1430	0007	AS1	1,517	Nichols	4.3	Scow 3002	1448123	814497	1448034	814552
06/16/02	1400	0008	AS1	1,563	Nichols	5	Scow 3001	1448487	813889	1448448	813917
06/17/02	1320	0009	AS1	2,589	Nichols	4.2	Scow 3002	1446384	813383	1446198	813476
06/17/02	0800	0010	AS1	2,886	Nichols	11.4	Scow 3001	1448097	813833	1448028	813893
06/17/02	1400	0011	AS1	2,772	Nichols	10.7	Scow 3002	1445275	814369	1445151	814465
06/17/02	1320	0012	AS1	2,681	Nichols	12.2	Scow 3001	1445293	815594	1445308	815682
06/17/02	0800	0013	AS1	2,567	Nichols	4.7	Scow 3002	1444986	815579	1444940	815741
06/17/02	1430	0014	AS1	2,749	Nichols	10.5	Scow 3001	1445861	815663	1445856	815760
06/17/02	1400	0015	AS1	2,521	Nichols	11.8	Scow 3002	1444683	815297	1444761	815422
06/18/02	1320	0016	AS1	2,886	Nichols	4.3	Scow 3001	1445098	815121	1445136	815220
06/18/02	0800	0017	AS1	2,818	Nichols	5.1	Scow 3002	1445633	813658	1445624	813816
06/18/02	1400	0018	AS1	2,612	Nichols	5.2	Scow 3001	1445551	815476	1445616	815549
06/18/02	1320	0019	AS1	2,567	Nichols	11	Scow 3002	1445509	813621	1445500	813761
06/18/02	0800	0020	AS1	2,795	Nichols	4.3	Scow 3001	1445180	814844	1445127	814944

* DRAFT AT COMMENCEMENT OF DUMP

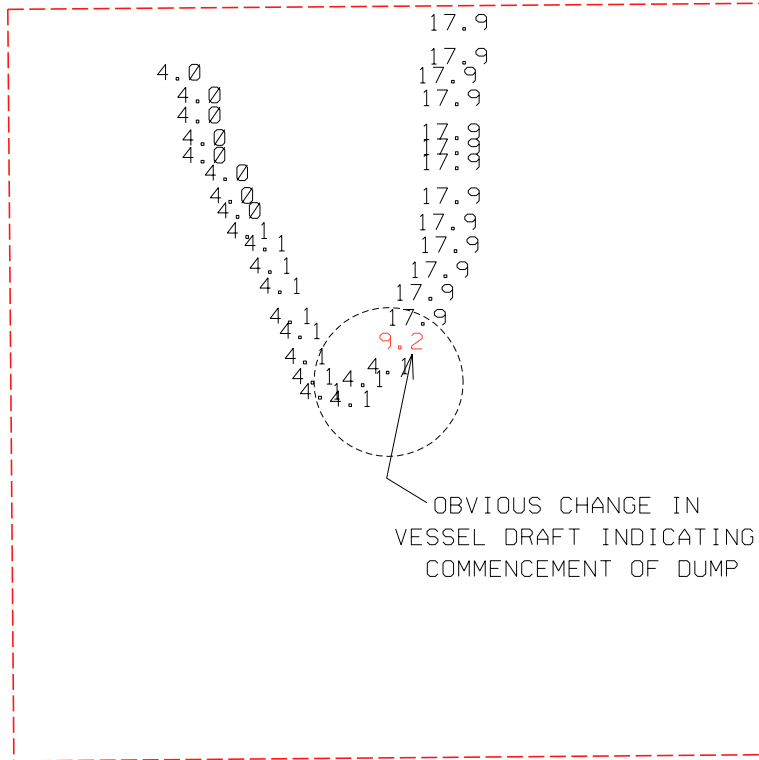
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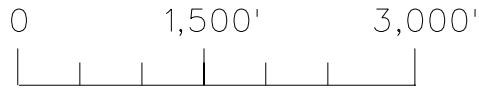
SAMPLE TRACK AND DRAFT PLOT

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PALM BEACH ODMDS

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CONTRACT NUMBER: W912EP-XX-X-XXXX

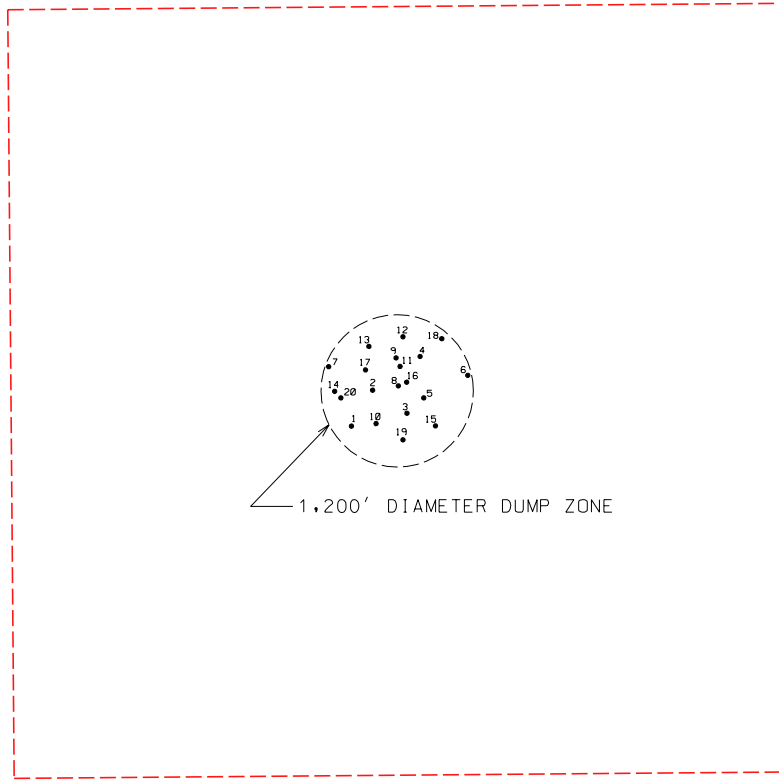
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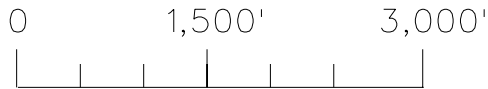
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SAMPLE SCATTER PLOT

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PALM BEACH ODMDS

PROJECT NAME: PALM BEACH, MAINTENANCE DREDGING

CONTRACT NUMBER: W912EP-XX-X-XXXX

DATE OF TRIP: 1 JUN 01 TRIP NUMBER: 20