



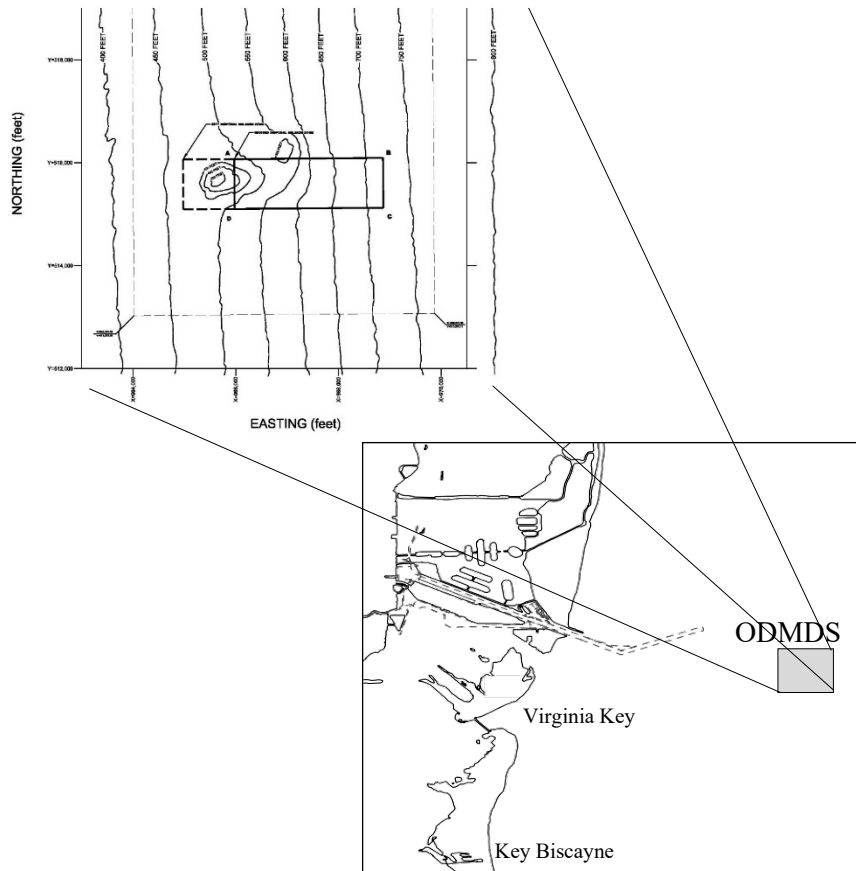
MIAMI OCEAN DREDGED MATERIAL DISPOSAL SITE



SITE MANAGEMENT AND MONITORING PLAN

U.S. Army Corps
of Engineers
Jacksonville District

January 2022



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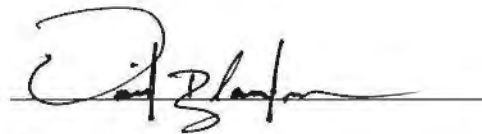
The following Site Management and Monitoring Plan (SMMP) for the Miami Ocean Dredged Material Disposal Site (ODMDS) has been developed in order to comply with Section 102(c)(3) of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 U.S.C. Section 1401, et seq.) as amended by Section 506 of the Water Resources Development Act (WRDA) Amendments of 1992 (Public Law 102-580) and has been approved by the following officials of the U.S. Environmental Protection Agency (EPA) Region 4 and the U.S. Army Corps of Engineers (USACE), Jacksonville District. This supersedes all prior Miami SMMPs.

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Jacksonville, Florida

Date



Daniel Blackman
Regional Administrator
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Atlanta, Georgia

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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**MIAMI OCEAN DREDGED MATERIAL DISPOSAL SITE (ODMDS)
SITE MANAGEMENT AND MONITORING PLAN**

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1.0 INTRODUCTION

The Marine Protection, Research, and Sanctuaries Act (MPRSA), sometimes referred to as the Ocean Dumping Act, regulates the transportation and dumping of any material into ocean waters. Under the MPRSA, no permit may be issued for ocean dumping where such dumping will unreasonably degrade or endanger human health or the marine environment. Most material dumped in the ocean today is dredged material (i.e., sediments) removed from the bottom of water bodies to maintain navigation channels and berthing areas.

In the case of dredged material, the U.S. Army Corps of Engineers (USACE) is responsible for issuing ocean dumping permits and authorizing or conducting Federal projects involving ocean dumping of dredged material (MPRSA Section 103). USACE applies the U.S. Environmental Protection Agency (EPA) ocean dumping criteria when evaluating permit requests for (and implementing Federal projects involving) the transportation of dredged material for the purpose of dumping into ocean waters. MPRSA permits and Federal projects involving the ocean dumping of dredged material are subject to EPA review and written concurrence. EPA may concur with or without conditions or decline to concur (i.e., non-concur) on the permit or Federal project. If EPA concurs with conditions, the final permit or the terms of the Federal project must include those conditions. If EPA declines to concur on an ocean dumping permit or Federal project, USACE cannot issue the permit or conduct the transportation to and disposal of dredged material in the ocean associated with the Federal project. According to USACE regulations at 33 CFR 325.6, MPRSA permits issued for the transport of dredged material for the purpose of disposing of it in ocean waters will specify a completion date for the disposal not to exceed three years from the date of permit issuance.

Under MPRSA Section 102, EPA is responsible for the designation of all ocean disposal sites and the management of such designated sites. The EPA's ocean dumping regulations at 40 CFR Part 228 establish procedures for the designation and management of ocean disposal sites. EPA bases the designation of an ocean disposal site on environmental studies of a proposed site, environmental studies of regions adjacent to the site, and historical knowledge of the impact of disposal on areas with similar physical, chemical, and biological characteristics to the site. All studies for the evaluation and potential selection of dredged material disposal sites are conducted in accordance with the criteria published in 40 CFR 228.5 and 228.6. EPA-designated ocean dumping sites are published at 40 CFR 228.15. Unless otherwise specifically noted, site management authority for each site set forth in 40 CFR 228.15 is delegated to the EPA Regional office under which the site entry is listed. Management of a site consists of regulating times, rates, and methods of disposal; regulating quantities and types of materials disposed; developing and maintaining effective ambient monitoring programs for the site; conducting disposal site evaluation studies; and recommending modifications in site use and/or designation (40 CFR 228.3(a)).

EPA shares the responsibilities of conducting management and monitoring activities at EPA-designated ODMDSs with USACE. Under MPRSA Section 102, EPA, in conjunction with

USACE, is responsible for developing a site management and monitoring plan (SMMP) for each designated ODMDS. The objective of each SMMP is to ensure that dredged material ocean disposal activities will not unreasonably degrade the marine environment or endanger human health or economic potentialities or other uses of the ocean. The SMMP provisions are an integral part of managing all disposal activities at an ocean disposal site.

This SMMP provides a framework for site monitoring and management as required by the MPRSA. Preparation of this SMMP has been informed by the Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites (EPA and USACE, 1996).

This SMMP may be modified during its term if EPA in conjunction with USACE determines that such changes are warranted, including as a result of information obtained from monitoring or due to other factors. This SMMP will be reviewed and revised as needed, or no later than 10 years of issuance, whichever is sooner. The MPRSA provides that the SMMP shall include, but not be limited to:

- A baseline assessment of conditions at the site
- A program for monitoring the site
- Special management conditions or practices to be implemented at each site that are necessary for the protection of the environment
- Consideration of the quantity of the material to be disposed of at the site and the presence, nature, and bioavailability of the contaminants in the material
- Consideration of the anticipated long-term use of the site including the anticipated closure of the site, if applicable, and any need for continued management after closure of the site, and
- A schedule for review and revision of the plan (which shall be reviewed and revised at least every 10 years).

The provisions in this SMMP apply for all dredged material disposal activities at the Miami ODMDS including monitoring and management activities by the federal agencies. This SMMP also includes template provisions for USACE to include in future permits issued for disposal at this site (Appendix B) and USACE template contract conditions (Appendix C). References in this document to matters that “should be required” refer to implementation in a subsequent proceeding to authorize disposal of dredged material, whether in a permit, in contract or other Federal project specification for the transportation and disposal of dredged material, or by USACE directly.

Matters that “should be required” are for implementation through application of the template language included in Appendices B and C, or the language may vary from the terms of the Appendices. EPA can ensure implementation of the template provisions in Appendix B and C as necessary through the EPA’s concurrence actions.

A SMMP was first developed for the Miami ODMDS in August 1995. This current revision to the Miami ODMDS SMMP supersedes all prior SMMPs. Upon issuance of this revised SMMP, the SMMP provisions provide the framework for future site monitoring and management as required by MPRSA. All Section 103 (MPRSA) ocean disposal permits or contract specifications will be conditioned as necessary to assure consistency with the SMMP.

For the purposes of this document the following definitions apply:

“Authorization document” means any permit issued pursuant to MPRSA and/or authorizations from the Corps for the transportation and/or ocean disposal of dredged material including but not limited to transportation-related or disposal-related conditions in contract documents and/or specifications.

“Site user” as used here means a person utilizing a permit issued by the Corps of Engineers under section 103 of the Act (see 33 C.F.R. 209.120) and any person operating any Federal dredging and ocean disposal projects reviewed under section 103(e) of the Act (see 33 C.F.R. 209.145) or under a Dredged Material Permit as defined as defined in 40 C.F.R. 220.2(h).

“Disposal vessel” is any barge, scow, or self-propelled vessel (such as a hopper dredge) that carries dredged material during transit and from which the dredged material is discharged, typically by opening doors in the bottom of the hull or by splitting the hull.

“Transit” or *“transport”* to the disposal site begins as soon as dredged material loading into the disposal vessel is completed and a towing vessel begins moving the disposal vessel to the disposal site.

“Disposal Release Zone” is the area identified within the ODMDS in which dumping of dredged material must occur in order for it to stay within the boundaries of the site, within which the disposal vessel must discharge all of the dredged material.

“Towing vessel” is any self-propelled tug or other marine vessel used to transport (tow or push) the “disposal vessel” for any portion of the transit to the ODMDS.

1.1 Site Management and Monitoring Plan Team

In 1995, an interagency SMMP team was established to assist EPA and USACE in developing the Miami ODMDS SMMP. The team consisted of the following agencies:

- EPA Region 4
- Jacksonville District U.S Army Corps of Engineers
- State of Florida
- National Oceanic and Atmospheric Administration
- Port of Miami

EPA and USACE will continue to consult with these Florida and Federal agencies as appropriate to assess the need for future revisions to the Miami ODMDS SMMP. The other agencies have, in the past, assisted EPA and USACE on deciding on appropriate disposal practices, appropriate monitoring techniques, the level of monitoring, the significance of results and potential management options.

Specific responsibilities of EPA and the Jacksonville District Corps of Engineers are:

EPA is responsible for designating, modifying, and de-designating ODMDSs under MPRSA Section 102, regulating site use, developing, and implementing disposal monitoring programs, evaluating environmental effects of disposal of dredged material at these sites, and for reviewing and concurring on dredged material suitability determinations.

Under Section 1411 and 1415 of MPRSA, EPA has broad authority to assess civil penalties and seek injunctive remedies for unauthorized transporting of material for the purpose of dumping it into ocean waters, including deviations from transportation-related and disposal-related conditions required by a regulation designating the ODMDS or (for Federal projects) deviations from disposal-related conditions required by a Dredged Material Permit (as defined in 40 C.F.R. 220.2(h)) or construction contract.

USACE is responsible for evaluating and documenting the suitability of dredged material proposed for disposal at the ODMDS, issuing MPRSA Section 103 permits, and cooperating with EPA in regulating site use and developing and implementing disposal monitoring programs. USACE contracts for transportation and disposal of dredged material at the ODMDS incorporate performance requirements, including quality assurance/quality control system requirements.

The SMMP provisions apply to all dredged material transportation to and disposal at the site, including monitoring and management activities by the federal agencies. In addition to the SMMP provisions, the SMMP also includes template provisions for USACE to include in subsequently issued permits (see Appendix B) or in the transportation and disposal requirements for a Federal project (see Appendix C). EPA can ensure implementation of the template provisions as necessary through their inclusion as

conditions in EPA's Section 103 concurrence actions. The agencies may adjust the template provisions to individual projects as necessary. All MPRSA Section 103 ocean disposal permits, or contract specifications shall ensure compliance with the conditions of the SMMP.

228.3 SITE MANAGEMENT

Section 228.3 of the Ocean Dumping Regulations (40 Code of Federal Regulation (CFR) 220-229) states: "Management of a site consists of regulating times, rates, and methods of disposal and quantities and types of materials disposed of; developing and maintaining effective ambient monitoring programs for the site; conducting disposal site evaluation and designation studies; and recommending modifications in site use and/or designation (e.g., termination of use of the site for general use or for disposal of specific wastes)." The SMMP may be modified if it is determined that such changes are warranted as a result of information obtained during the monitoring process. MPRSA, as amended by WRDA 92, provides that the SMMP shall include but not be limited to:

- A baseline assessment of conditions at the site
- A program for monitoring the site
- Special management conditions or practices to be implemented at each site that are necessary for the protection of the environment
- Consideration of the quantity and biological/physical/chemical characteristics of dredged materials to be disposed of at the site
- Consideration of the anticipated use of the site over the long-term, and
- A schedule for review and revision of the plan

2.1 Disposal Site Characteristics

The regulatory designation language for the Miami ODMDS can be found in 40 CFR 228.15(h)(19). The Miami ODMDS is an approximately 1 nautical mile (nmi) by 1 nmi square area centered at the coordinates 25° 45.00'N latitude and -80° 03.37'W longitude (NAD 27) or state plane coordinates 516,078 ft N and 966,926 ft E (NAD83). The site coordinates are in Table 1.

The site is 4.7 nmi offshore (as measured to the center) with an area of approximately 1 nmi². Figure 1 shows the location of the Miami ODMDS. As of 2015, it had a depth range of 335 to 720 feet (102 to 219) meters. The site itself begins at 420 feet (128 meters) on the ocean floor but, due to accumulation of dredged material, has a minimum depth of 335 feet on the western edge of the disposal release zone. Figure 2 shows the most recent bathymetry of the Miami ODMDS from 2015. The benthos consists mostly of very fine sands and silt with areas of limestone rubble as a result dredged material disposal.

	Geographic (NAD27)		Geographic (NAD83)		State Plane (FL East 0901 Ft NAD83)	
Center	25° 45.00'N	-80° 03.37'W	25° 45.02'N	-80° 03.35'W	516,078 N	966,926 E
NW Corner	25° 45.50'N	-80° 03.90'W	25° 45.52'N	-80° 03.89'W	519,086 N	963,978 E
NE Corner	25° 45.50'N	-80° 02.83'W	25° 45.52'N	-80° 02.82'W	519,128 N	969,829 E
SW Corner	25° 44.50'N	-80° 03.90'W	25° 44.52'N	-80° 03.89'W	513,028 N	964,021 E
SE Corner	25° 44.50'N	-80° 02.83'W	25° 44.52'N	-80° 02.82'W	513,070 N	969,874 E

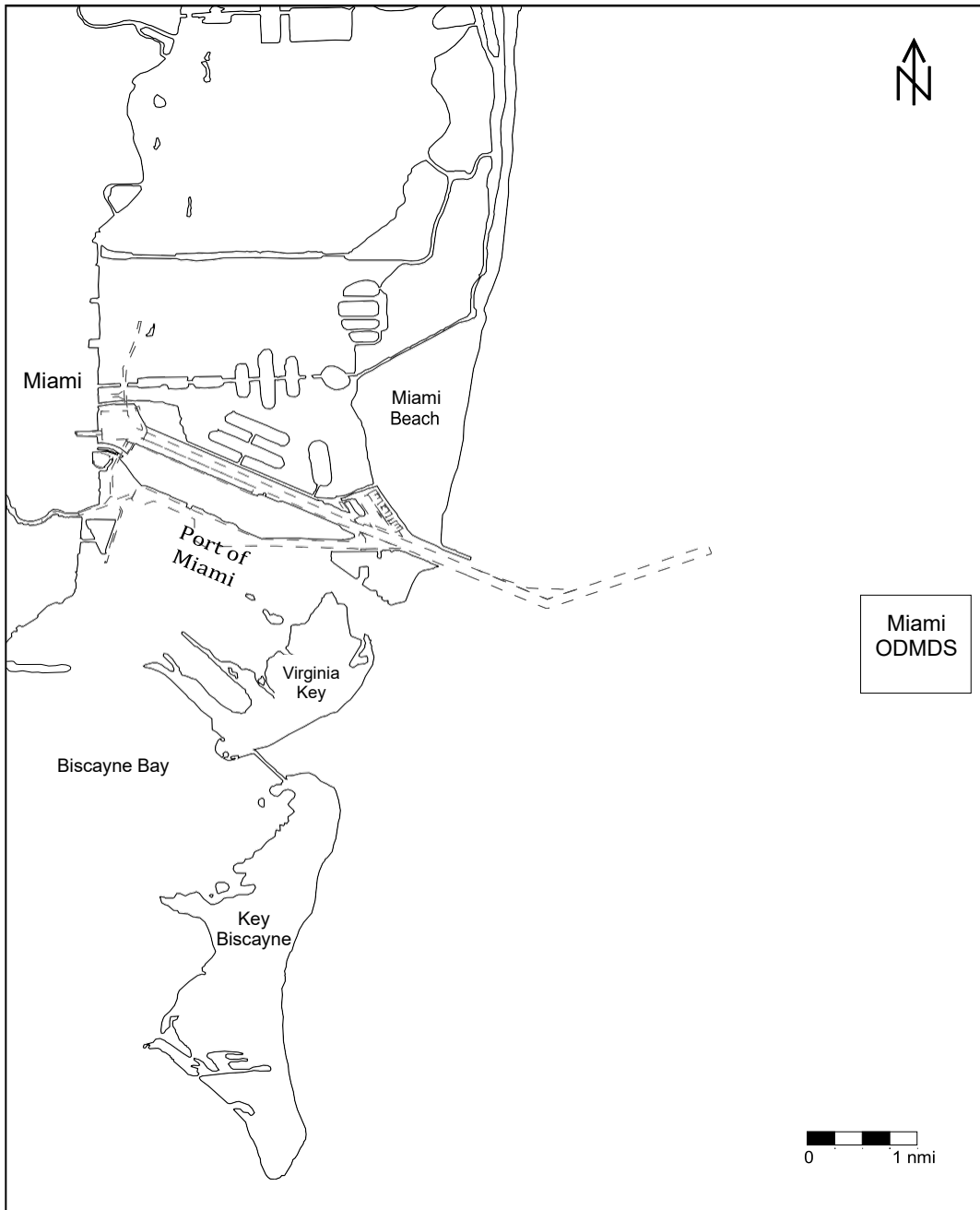


Figure 1. Miami ODMDS Location

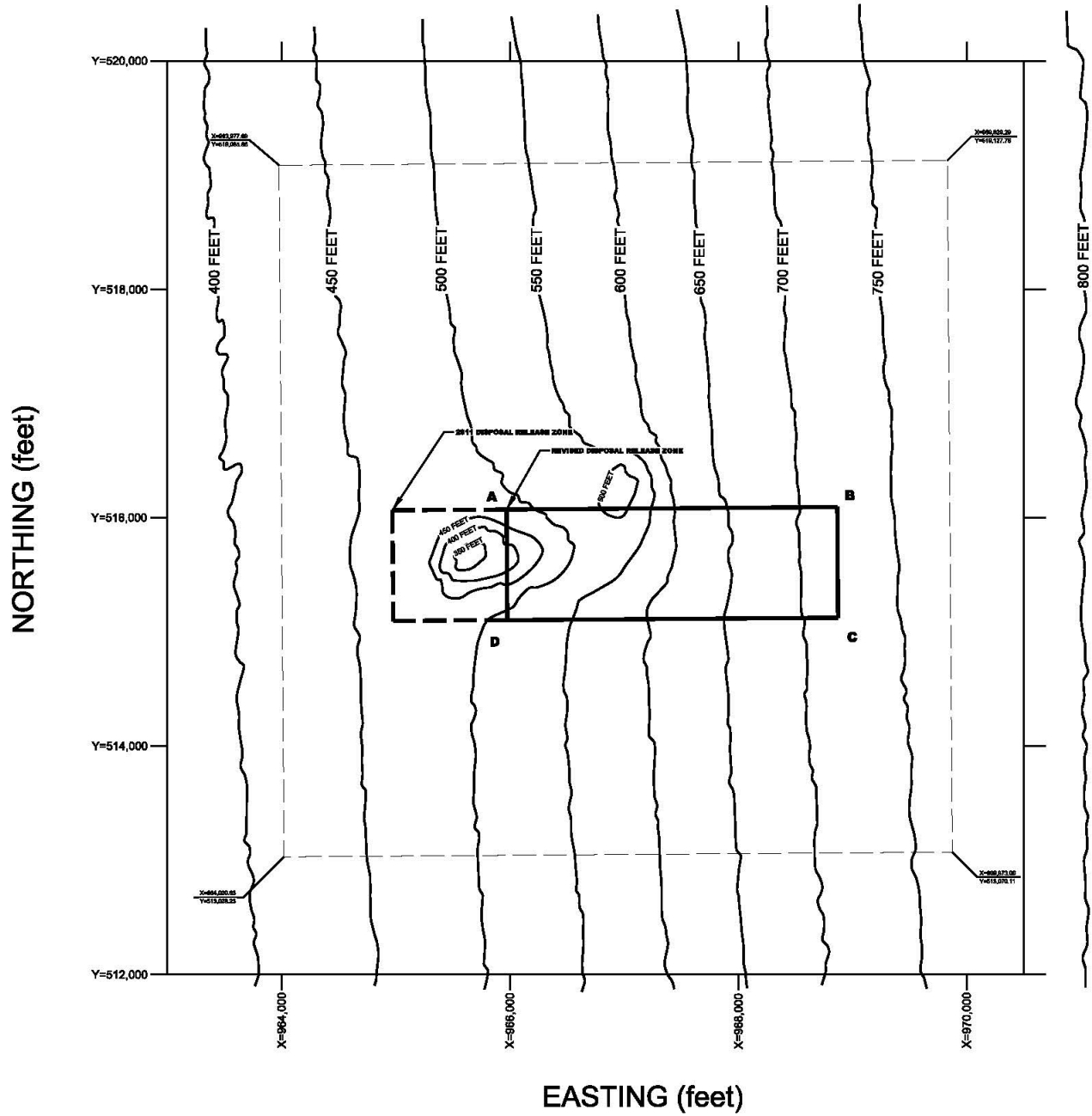


Figure 2. Miami ODMDS Bathymetry. December 2015. Indicated disposal release zone (solid bar) and prior disposal release zone (includes hashed bar on west side).

2.2 Management Objectives

Appropriate management of an ODMDS is aimed at assuring that disposal activities do not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities (MPRSA section 103(a)). The primary objectives for management of an ODMDS include but are not limited to:

- Protecting the marine environment, such that:
 - No unacceptable physical, chemical, or biological impacts occur inside or outside the disposal site; and
 - Adequate site monitoring is conducted to detect environmental impacts.
- Ensuring that disposed material (1) meets the suitability requirements of the ocean dumping regulations (40 CFR Parts 227 & 228) and (2) is consistent with national and regional guidance for the evaluation of dredged material proposed for ocean dumping.
 - Under MRPSEA section 103, evaluation of any proposed dumping of dredged material into ocean waters must apply the EPA ocean dumping criteria. To apply the criteria, the Ocean Testing Manual, sometimes referred to as the Green Book, (EPA/USACE, 1991) and the Southeast Regional Implementation Manual (2008) provide guidance for sampling, testing, and analysis of water, sediment, and tissue to evaluate the environmental acceptability of dredged material proposed for ocean disposal. The criteria prohibit the ocean dumping of uncharacterized materials (40 CFR 227.5(c)).
- Identifying management conditions to be implemented by EPA and USACE and those to be required in permits, contracts, and documents establishing the terms of a Federal project applicable to transportation and dumping in ocean waters. For Federal projects, EPA will condition its Section 103 concurrence letters on the Corps including the site management and monitoring conditions in any contract documents.
- Documenting disposal activities and ensuring compliance with transportation-related and disposal-related conditions in the SMMP, the permit, and/or contract conditions.
- Maintaining a long-term disposal alternative for dredged material, while encouraging beneficial use of dredged material where practicable.
- Identifying a schedule or condition triggering a review or renewal of this SMMP.

SMMP sections 2.0, 3.0, and 4.0 summarize the disposal operation conditions that EPA and USACE will consider for management of Miami ODMDS as described in 40 CFR 228.15(h)(19).

The template special conditions provided by USACE in Appendix B are applicable to dredging projects authorized under a MPRSA Section 103 permit. Appendix C provides example language for USACE to use in development of contract specifications for use of the site in Federal projects, and EPA's concurrence should be conditioned on use of these specifications. If EPA concurs with conditions, USACE must incorporate the conditions in the Section 103 permit or

contract documents. 33 U.S.C. 1413(c)(3), (5). The conditions specified or confirmed by the EPA in its ocean disposal concurrence letters for individual projects are in addition to any other conditions that USACE may include in its MPRSA Section 103 permits or in contract documents.

EPA may determine not to include one or more of the conditions identified in from this SMMP or to require additional, more specific, or different conditions on a project-specific basis. Violations of the MPRSA may be subject to compliance action, including recommendations for suspension of disposal operations or other injunctive remedies or possible assessment of administrative, civil, or criminal penalties, as appropriate.

2.3 Disposal History and Dredged Material Volumes

The Miami ODMDS and vicinity has been used for the ocean disposal of dredged material since 1957. Table 2 outlines the history of disposal of dredged material.

Since final designation in 1995, the Miami ODMDS has been used mostly for disposal of construction (new work) dredged material. Disposal of maintenance material is not expected on a routine basis and occurs rarely.

Table 2. Volume of Dredged Material Placed in Miami ODMDS

YEAR	DREDGED MATERIAL QUANTITY - CUBIC YARDS (paid <i>in situ</i> volume)			Notes
	Maintenance	Construction	Total	
1957 ¹	80,000		80,000	Disposed approximately 1 nmi shoreward of current ODMDS
1960 ^{1,2}	80,083		80,083	Disposed approximately 1 nmi shoreward of current ODMDS
1964 ²		2,957,443	2,957,443	
1965 ²	38,935		38,935	
1966 ²	54,173		54,173	
1968 ¹	210,000		210,000	Disposed approximately 1 nmi shoreward of current ODMDS
1985 ¹	15,000		15,000	Disposed approximately 1 nmi shoreward of current ODMDS
1990	225,000		225,000	Silt/clay
1993 ²	247,000		247,000	Sand
1995 ²	3,000		3,000	Sand/gravel from U.S. Coast Guard
1995		300	300	Limerock rubble from NOAA Reef Restoration
1995-1999		2,800,000	2,800,000	Sand/silt/rock from Phase II Deepening

2005 ³		1,348,000	1,348,000	Blasted rock from completion of Phase II Deepening
2006 ³	270,000		270,000	Sand/silt
2015 ³		5,738,699	5,738,699	Silt/Sand, and Rock from Phase III deepening
Total	1,223,191	12,844,442	14,067,633	

¹Data from Miami ODMDS EIS (EPA, 1995)

²Data from the Jacksonville District 1999 Fax to EPA

³Data from the Jacksonville District Post Disposal Monitoring Reports

2.4 Dredged Material Characteristics

2.4.1 Previously Disposed Materials The composition of dredged material dumped at the Miami ODMDS has been variable ranging from sand and silt to limestone rubble.

2.4.2. Anticipated Materials

Future dredged material disposed of at the ODMDS is expected to be similar in terms of composition.

2.4.3 Beach Quality and Rock Materials

The disposition of any beach compatible sand from future projects will be determined during state and local permitting activities for each project. Disposal of coarser material, such as rubble or rock, should be coordinated during the same permitting activities. USACE and EPA will work to promote possible beneficial uses of the material, to the maximum extent practicable.

2.4.4 Dredge Material Quality Verification

Prior to authorizing transportation and disposal, USACE verifies the suitability of dredged material for ocean disposal and EPA must concur in writing (with or without conditions). Pursuant to the terms of 33 CFR 325.6(c), EPA concurs on sediment disposal at the ODMDS for a period up to three years on a project specific basis.

Sediment quality verification process:

- 1) Case-specific evaluation against the exclusion criteria (40 CFR 227.13(b))
- 2) Determination of testing requirements for non-excluded material based on the potential of sediment contamination since last verification.
- 3) When applicable, conduct testing and confirm the suitability of non-excluded material for ocean disposal.

The site user, project sponsor, or USACE completes documentation for suitability prior to use of the ODMDS in the form of a MPRSA Section 103 Evaluation. Potential testing and the evaluation follow the procedures outlined in the 1991 EPA/USACE Dredged Material Testing Manual and 2008 Southeast Regional Implementation Manual (SERIM), or the appropriate updated version. Necessary testing and evaluation include descriptions of how dredging projects will be subdivided into project segments for sampling and analysis. Appendix C of the SERIM outlines the form used for the MPRSA Section 103 Evaluation. Water Quality Compliance determinations will be made using the STFATE (ADDAMS) model. Only material determined to

be suitable and in compliance with the Ocean Dumping Criteria (40 CFR Part 227) through the verification process by USACE and EPA Region 4 is appropriate for transportation and disposal in the ODMDS.

2.5 Time of Disposal

No restrictions have been determined to be necessary for disposal related to seasonal variations in ocean current or biotic activity. Based on monitoring results (see section 3.4), restrictions on disposal during certain ocean currents are no longer required. As additional monitoring results are compiled, should any such restrictions appear necessary, disposal activities will be scheduled so as to avoid adverse impacts. Additionally, if new information indicates that endangered or threatened species are being adversely impacted, restrictions may be imposed.

2.6 Disposal Technique

No specific disposal technique is required for this site. Standard surveillance and evasive measures to protect sea turtles, marine mammals, and corals, however, shall be employed during all disposal operations at the ODMDS.

2.7 Disposal Route

Disposal vessels shall remain within the navigation channel while west of the buoy G'1" (sea buoy). Disposal vessels are not allowed to transit the Particularly Sensitive Sea Area south of the channel in accordance with International Maritime Organization best practices. See Figure 3 for relative locations of the G'1 buoy (green circle) and Particularly Sensitive Sea Area (green boundaries) highlighted on the NOAA Navigation Charts.

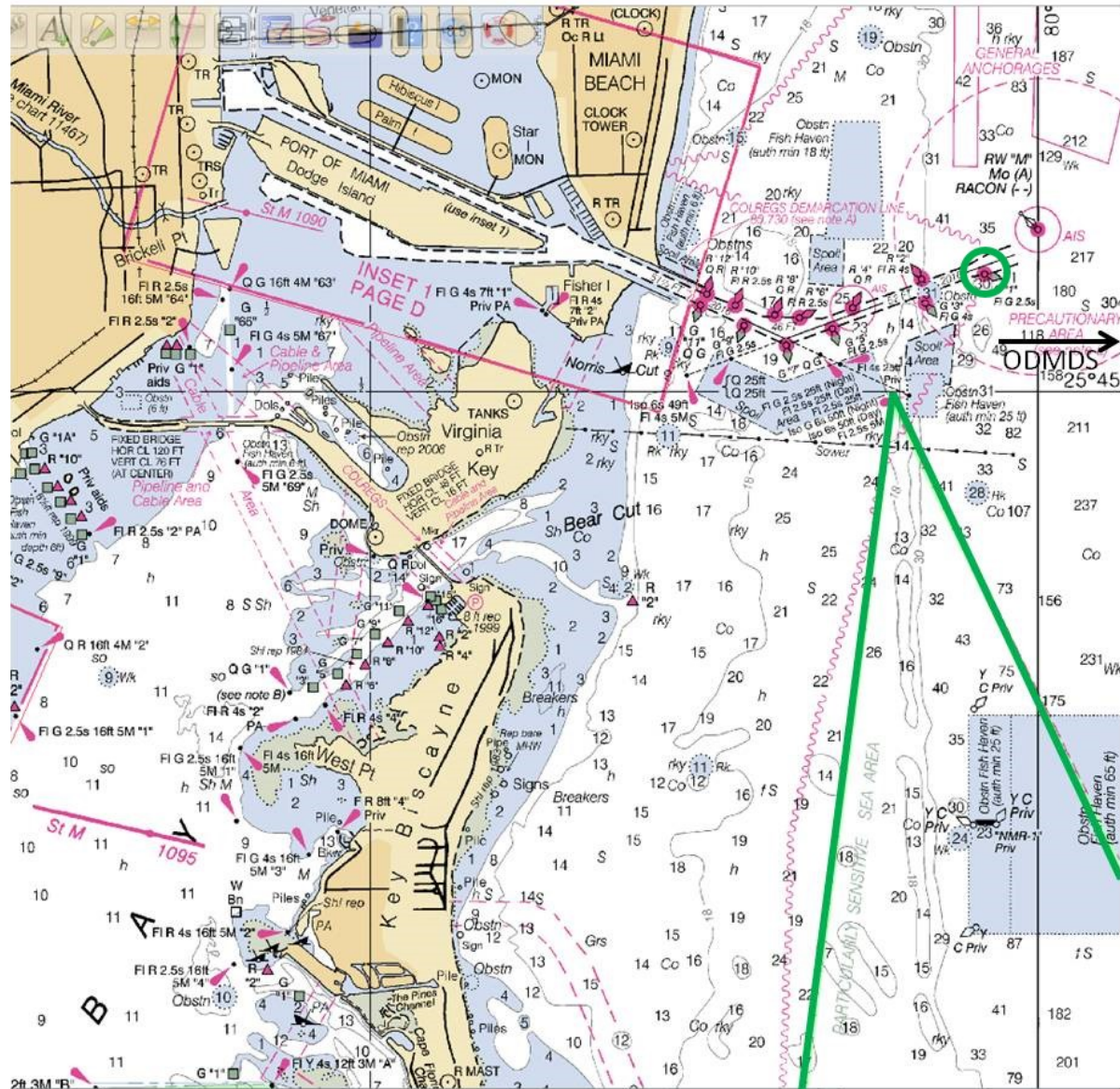


Figure 3. Miami Port general area as derived from NOAA navigation charts showing Particularly Sensitive Sea Area and Sea Buoy (green lines).

2.8 Disposal Location

Disposal release zone will be specified by the EPA and USACE at the time of site use to maintain compliance with the Ocean Dumping Criteria set forth in 40 CFR Part 227 and will be inside the below listed coordinates (Table 3). Disposal shall be initiated within the applicable disposal release zone and completed (i.e. doors closed) prior to leaving the ODMDS. The disposal authorization documents, or contract specifications should specify methods to prevent mounding of dredged materials. 40 CFR §227.28 requires that disposal occur no less than 330 feet (100 meters) inside the designated site boundaries. Based on the results of monitoring

surveys (see section 3.4) and computer modeling simulations (Taylor, 2010), the disposal release zone has been retained to match the 2011 SMMP revision with a minor adjustment to avoid mounding from the Miami Harbor Phase III deepening project. The disposal release zone is the same as modeled in 2010 with the western boundary shifted east (figure 4, table 3). If any further projects requiring disposal of significant volumes of rock, the release zone will be reevaluated. The disposal release zone coordinates are as follows:

Table 3. Disposal Release Zone Coordinates

Release Zone Point	Geographic (NAD83)		State Plane (FL East 0901 NAD83)	
	Latitude	Longitude	X (Easting)	Y (Northing)
NW Corner (A)	25° 45.02'	-80° 03.53'	965,969	516,071
NE Corner (B)	25° 45.02'	-80° 03.00'	968,865	516,092
SE Corner (C)	25° 44.86'	-80° 03.00'	968,872	515,123
SW Corner (D)	25° 44.86'	-80° 03.53'	965,976	515,102

Dredged material shall be spread throughout the disposal release zone to prevent mounding which has led to dispersal of fine material well beyond the boundary of the ODMDS during past dumping activities.

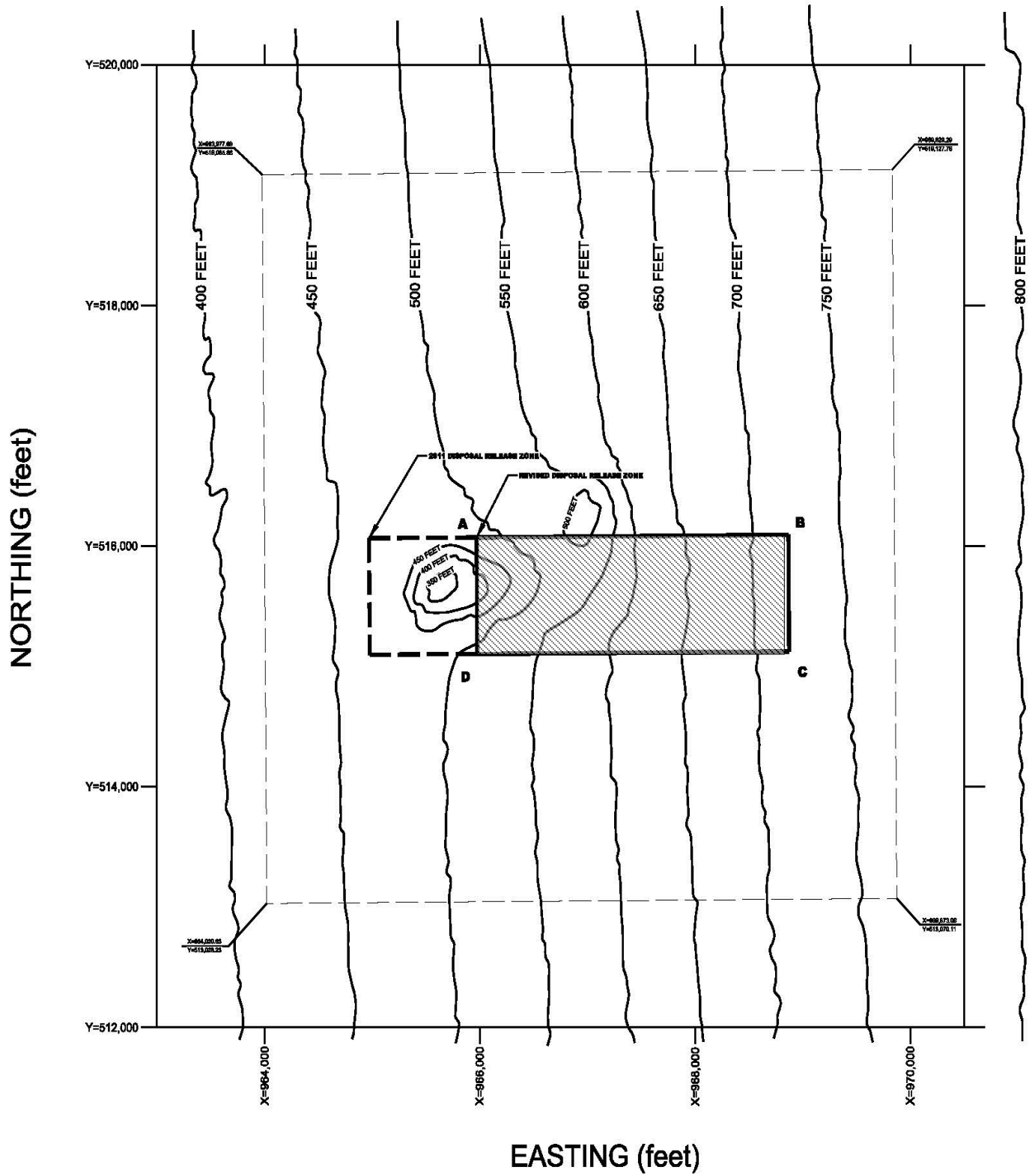


Figure 4. 2020 Miami ODMDS Disposal Release Zone (hashed area) and bathymetry as of 2015.

2.9 Permit and Contract Conditions

The disposal monitoring and post-disposal monitoring requirements described under Site Monitoring (section 3.0) will be included with the management requirements described in this section as permit conditions on all MPRSA Section 103 permits and will be incorporated in the contract language for all federal projects. A summary of the management and monitoring requirements to be included is listed in Table 4. Template language to be used is included in appendices (see Appendices B and C).

Table 4. Summary of Permit and Contract Conditions

Condition	Reference
Dredged Material Suitability and Term of Verification	Miami ODMDS SMMP (2.4.4) Southeast Regional Implementation Manual
Disposal Release Zone	Miami ODMDS SMMP (4.1.4)
Pre- and Post-Bathymetric Surveys	Miami ODMDS SMMP (3.1 & 3.3)
Disposal Monitoring	Miami ODMDS SMMP (3.2)
Reporting Requirements	Miami ODMDS SMMP (4.4)

2.9.1 Permit Process

All transportation to and disposal of dredged material in the ocean, with the exception of Federal Civil Works projects, requires an ocean dumping permit issued by USACE pursuant to Section 103 of the MPRSA. A summary of the permitting process can be found at:

<https://www.epa.gov/ocean-dumping/ocean-disposal-dredged-material>

2.9.2 Information Management of Dredged Material Placement Activities

As discussed in the following sections, a substantial amount of diverse data regarding use of the Miami ODMDS and effects of disposal is required from many sources. If this information is readily available and in a useable format it can be used to answer many questions typically asked about a disposal site:

- What is being dredged?
- How much is being dredged?
- Where did the dredged material come from?
- Where was the dredged material placed?
- Was dredged material dredged correctly? Disposed correctly?
- What will happen to the environment at the disposal site?

In an attempt to streamline data sharing, EPA Region 4 and USACE South Atlantic Division have agreed on an eXtensible Markup Language (XML) standard for sharing of disposal monitoring data (see also Section 4.4). Additional standards will continue to be investigated for sharing of other disposal site related information (e.g. environmental monitoring data, testing data, etc.).

3.0 SITE MONITORING

Under the SMMP, site monitoring is conducted to ensure the environmental integrity of a disposal site and the areas surrounding the site, as well as to verify compliance with the site designation criteria any special management conditions, and permit requirements. Monitoring programs should be flexible, cost effective, and based on scientifically sound procedures and methods to meet site-specific monitoring needs. Tiered approaches to monitoring should be used where specific management actions or additional monitoring activities may be triggered when unacceptable environmental conditions are recorded. The intent of the program is to provide the following:

- 1) Information indicating whether the disposal activities are occurring in compliance with the permit (or Federal project authorization documents) and site use restrictions
- 2) Information indicating the short-term and long-term fate of materials disposed of in the marine environment
- 3) Information concerning the short-term and long-term environmental impacts of disposal activities

The main purpose of a disposal site monitoring program is to determine whether dredged material site management practices, including disposal operations, at the site need to be altered to avoid adverse impacts.

3.1 Routine Monitoring

Site characterization surveys of the ODMDS have been conducted by EPA and USACE as part of the designation process. These are summarized in Table 5.

Bathymetric surveys will be used to monitor the disposal location to assist in verification of material placement, to monitor bathymetry changes and trends and to ensure that the site capacity is not exceeded (i.e., does not exceed the site boundaries). The need for pre-disposal bathymetric surveys will depend on project volumes. Pre-disposal surveys of the ODMDS will be required within three (3) months prior to disposal for projects greater than 100,000 cubic yards. Surveys will conform to the minimum performance standards for Corps of Engineers Hydrographic Surveys for “Other General Surveys & Studies” as described in USACE Engineering Manual, EM 1110-2-1003, *Hydrographic Surveying* dated 30 November 2013

[https://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM_1110-2-1003.pdf?ver=2014-01-06-155809-307]. The number and length of transects required will be sufficient to encompass the ODMDS and a 500-foot-wide margin around the site. The surveys will be taken along lines spaced at 500-foot intervals or less.

The minimum performance standards in *Hydrographic Surveying* (table 3-1 of that document) will guide monitoring at the site. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing a differential global positioning system. The vertical datum will be referenced to prescribed

NOAA Mean Lower Low Water (MLLW) datum. The horizontal datum should be referenced to the local State Plane Coordinate System (SPCS) for that area or in Geographical Coordinates (latitude-longitude). The horizontal reference datum should be the North American Datum of 1983 (NAD 83). This SMMP does not anticipate any other additional pre-disposal monitoring at this site.

Table 5. Surveys Conducted at the Miami ODMDS

Survey Title	Conducted by	Date	Purpose	Results
<i>Environmental Survey in the Vicinity of an Ocean Dredged Material Disposal Site, Miami Harbor, Florida</i>	Conservation Consultants, Inc.	1985	Physical, Chemical and Biological Characterization of the ODMDS.	Included physical and chemical analysis of the sediments; chemical analysis of the water column; characterization of the benthic macroinvertebrates, meiofauna and macro epifauna; chemical analysis of fish and invertebrate tissue samples. A video survey and bathymetry of the site was also completed.
<i>Miami Harbor Dredged Material Disposal Project</i>	NOAA-AOML	1991	Compare in-situ measurement of dredged material disposal plume suspended sediment concentrations to results of numerical modeling.	The material disposed, except for a low concentration residual remaining within the water column, reached the bottom within the designated site boundaries. A very rapid convective descent of the central core discharge plume was observed to occur.
<i>Miami Harbor Dredge Material Disposal Project: Total Suspended Solids Measurements</i>	NOAA-AOML	1993	Obtain field measurements of total suspended solids (TSS) for a number of dredged material discharges.	Initial (1 minute after disposal) surface TSS concentration ranged from 34 to 77 mg/l. Approximately 30 minutes after discharge, plume concentrations decreased to a few mg/l. The general direction of transport was north-northeast.
Pre-Disposal Bathymetry	USACE Jacksonville District	1995	Pre-disposal bathymetry	No observable disposal mound.
<i>Miami ODMDS Side scan Sonar Survey</i>	U.S. EPA Region 4	1998	Look for evidence of dredged material on the bottom.	Numerous mounds of limestone rubble throughout and to the west and northwest of the ODMDS were observed.

<i>Real-Time Current Monitoring at the Miami ODMDS</i>	NOAA-AOML	1995-2000, 2005-2006	Monitor currents and cease disposal operations during shoreward directed current events.	Shoreward directed currents capable of transporting disposed material towards reef are infrequent (NOAA, 2006)
Miami ODMDS Sediment Survey	U.S. EPA Region 4	June 2000	1) Characterize sediments in anomalous areas identified in the side scan sonar record; 2) document environmental trends in the physical and chemical characteristics of the benthic sediments.	1) no significant changes in sediment chemistry; 2) stations to the north of the ODMDS remained unchanged; 3) many areas are now coarser grained or contain limestone rubble.
<i>Pre-disposal Bathymetry Survey</i>	USACE Jacksonville	June 2005	Pre-disposal bathymetry	No observable disposal mound.
<i>Plume Tracking/Measurement</i>	EPA Region 4 / NOAA-AOML	August & October 2005	Obtain suspended sediment concentrations of disposal plume.	Concentrations dropped below 10mg/l within 30 minutes from disposal at water depths of 5 and 10 meters.
<i>Coral Sediment Stress Study</i>	EPA Region 4/NOAA-AOML/GAT	2005-2006	Determine if dredged material disposal is inducing a stress response in hermatypic corals on nearby coral reefs.	Stress genes are activated during sedimentation following dredging activities. Similarly to increased temperatures. Outcome is that dredging operations should avoid times when stress is already present, such as during high temperature events.
<i>Post-Disposal Sediment Profile Imaging at the Miami ODMDS</i>	U.S. EPA Region 4 / Germano & Assoc., Inc.	May 2006	1) map the spatial distribution of disposed dredged material on the seafloor; 2) characterize physical changes in the seafloor resulting from disposal; 3) evaluate benthic recolonization.	1) elliptical deposit of dredged material detected on the seafloor extending beyond the site boundaries; 2) main physical change is a shift in sediment texture to coarser sediments; 3) no adverse changes in oxygen demand, redox state detected within or around the disposal site 4) benthos appeared in an intermediate to

				advanced stage of benthic recolonization.
<i>Post Disposal Bathymetry Survey</i>	USACE Jacksonville District	June and August 2007	Document bathymetric changes.	A mound approximately 25 meters high has formed in the center of the ODMDS. Bathymetry surveys at this depth are accurate to approximately +/-3 meters.
<i>Post Disposal Status & Trends Survey of the Miami ODMDS</i>	EPA Region 4 and Barry Vittor and Associates	October 2007	Assess the extent and trends of environmental impact. Included assessment of the macroinfaunal communities within and outside of the ODMDS, sediment grain size, sediment chemistry and water quality	There exists a significant amount of limestone rubble near the center of the ODMDS that did not exist previously. Disposal release zone needs to be moved and modeled again for future work. Areas both in and outside of the ODMDS show bulk chemistry with high PCB and copper values.
<i>Pre-disposal Bathymetry Survey</i>	USACE Jacksonville District	November 2013	Pre-disposal bathymetry	Reduction of prior identified mound identified in 2007.
<i>During Dredging Bathymetry</i>	USACE Jacksonville District	November 2014	Monitor disposal characteristics during the Phase 3 Deepening Project	Mounding evident due to a single location being selected inside the disposal release zone. Future dumping must utilize the entire zone.
<i>Post Disposal Bathymetry Survey</i>	USACE Jacksonville District	September 2015	Post-disposal bathymetry	Significant mounding identified on the western edge of the disposal release zone (>40 meters). Will need to be avoided for future disposal.
<i>PCB/Cu assessment and SPI disposal apron mapping</i>	EPA Region 4	2016	Map the extent of dredged material movement from the disposal release zone through	Apron of disposed fine materials extends northward from the site by a significant distance, however, this area should return to normal biological organization within a few

			and beyond the ODMDS boundaries. Also, to look at bulk chemistry for any elevated compounds.	years. Any large future projects may require the expansion of the ODMDS to capture such material.
<i>Status and Trends Assessment</i>	EPA Region 4	2017	To assess environmental condition (chemical, physical, biological) post phase 3 project.	Elevated levels of copper and PCBs were not identified on this trends survey. No difference in benthic community was observed compared to 2007. Verify prior to any large new work projects. Fine sediments did progress out of the ODMDS due to mounding.

3.2 Disposal Monitoring

For all disposal activities, permits and projects must use an electronic tracking system (ETS), such as the Dredge Quality Management (DQM) system. Appendices B and C provide template language that should be used. An ETS provides surveillance of the transportation and disposal of dredged material. An ETS is maintained and operated to continuously track the horizontal location and draft condition (accuracy \pm 0.1 foot) of the disposal vessel (i.e. hopper dredge or disposal scow) from the point of dredging to the disposal site and return to the point of dredging. Data shall be collected at least every 0.25 nautical mile or every 4 minutes during travel to and from the ODMDS and every twelve seconds or every 30 feet of travel within the ODMDS and while hull status is open. In addition to the continuous tracking data, the following trip information shall be electronically recorded for each disposal cycle:

- a. Load Number
- b. Disposal Vessel Name and Type (e.g. scow)
- c. Estimated volume of Load
- d. Description of Material Disposed
- e. Source of Dredged Material
- f. Date, Time and Location at Initiation and Completion of Disposal Event

The SMMP expects that disposal monitoring will be conducted utilizing the DQM system [see <http://dqm.usace.army.mil/Specifications/Index.aspx>], or equivalent acceptable system. Disposal monitoring and ETS data will be reported to EPA Region 4 on a weekly basis (within one week of disposal) utilizing the eXtensible Markup Language (XML) specification and protocol per Section 4.4. EPA Region 4 and USACE District require notification by email within 24 hours if disposal occurs outside of the specified disposal release zone, if excessive leakage occurs, if hull open status occurs outside the ODMDS, if a scow transits the Particularly Sensitive Sea Area, or other violation of the conditions in this SMMP occur. Excessive leakage is defined as more than 1.5 feet of draft loss between sea buoy (G'1) and the ODMDS averaged between forward and aft sensors, or more than de minimis loss west of the sea buoy (G'1) near protected resources during transit (section 4.1.2). Correspondence will be required to explain how the issue was addressed, pertinent dates, and corrective actions to be implemented to prevent repetition in the future.

3.3 Post Disposal Monitoring

USACE, or other site user, will be required to conduct a bathymetric survey consistent with the pre-disposal survey requirements within 30 days after disposal project completion, unless a deviation is coordinated with EPA. Surveys will not be required for projects less than 100,000 cys. The number and length of transects required will be sufficient to encompass the release zone and a 500-foot wide area around it. Bathymetric surveys will be utilized to monitor the disposal release zone to ensure a navigation hazard is not produced, to assist in verification of material disposal location, to monitor bathymetry changes and trends, and to ensure that the site capacity is not exceeded, i.e., the dredged sediment does not exceed the site boundaries on disposal.

3.4 Summary of Results of Past Monitoring Surveys

Surveys conducted at the Miami ODMDS are listed in Table 5. The original SMMP identified two major monitoring objectives: 1) assess the intensity and frequency of disposal plumes reaching nearshore reefs, and 2) assess the potential for long-term transport of dredged material towards critical habitats. The surveys summarized in Table 5 have demonstrated that the likelihood of dredged material disposal plumes reaching nearshore reefs is exceedingly low when released in the disposal release zone. The surveys have also shown that there is no indication of material being transported in the long-term towards critical habitats. However, the results have shown that material is being transported in the short-term (during initial disposal) and deposited outside of the disposal site boundaries to the north (see Figure 5).

Monitoring results have also shown that there are rubble mounds throughout the site and to the west and northwest of the site. Due to the historical use of the vicinity for disposal of construction dredged material, it cannot be determined when these mounds were created.

Bathymetry results have shown that significant mounding (40+ meters) was formed during the last phase of the Miami Harbor Deepening Project near the center of the site and subsequent surveys have shown that this mound contains a significant amount of limestone. In addition, fine materials have moved outside of the boundary of the ODMDS (Figure 5). Surveys have shown that the native benthic community has been able to initiate recolonization in areas that had been disturbed by dredged material disposal, where fine materials exist (Figure 6).

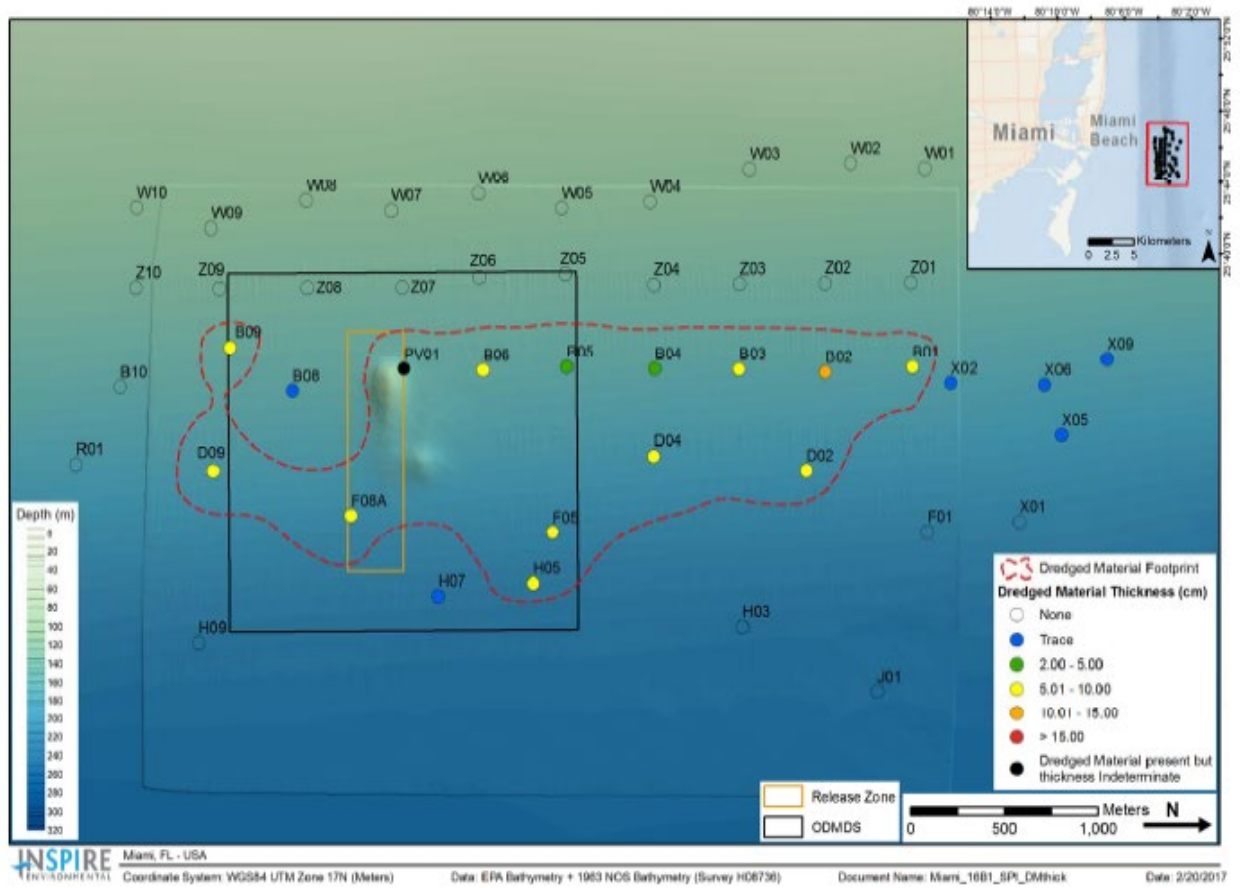


Figure 5. Distribution of dredged material by SPI, 2016

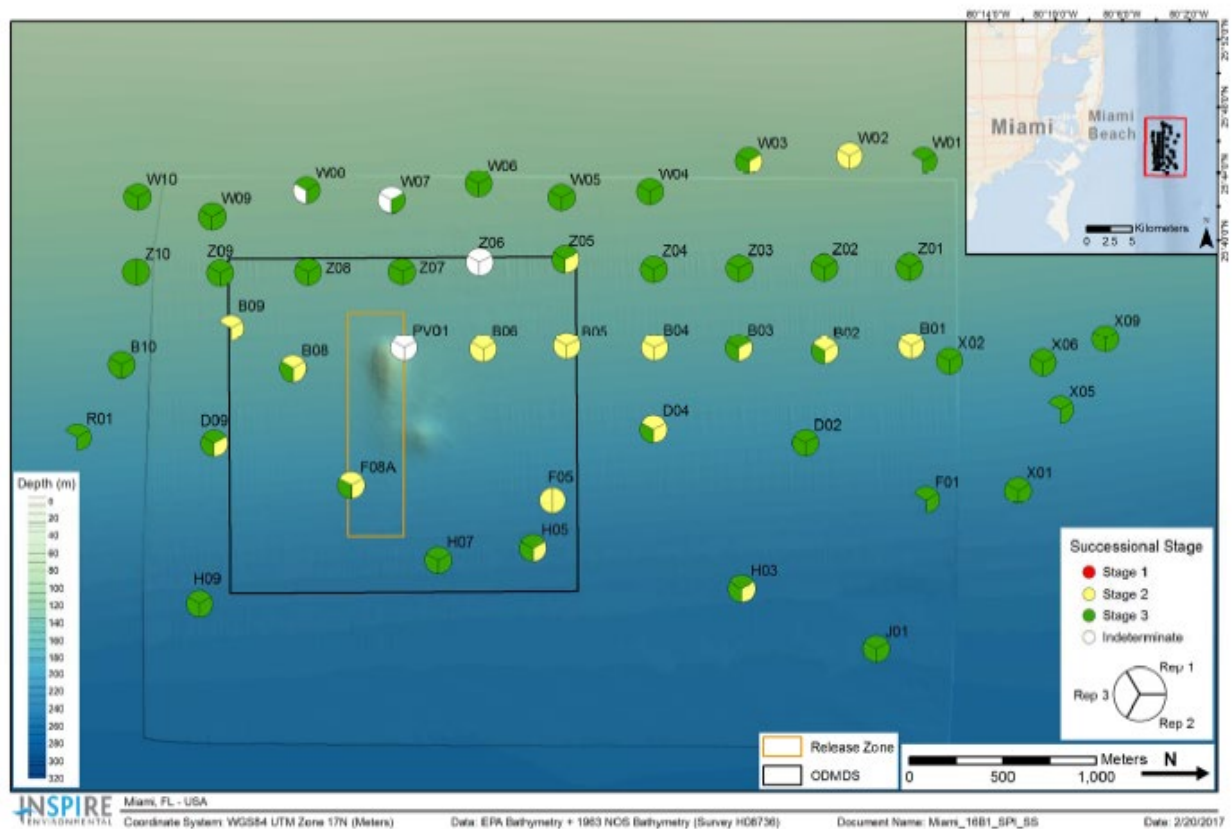


Figure 6. Infaunal successional stages at the Miami ODMDS; 2016

3.5 Future Monitoring Surveys

Based on the type and volume of material disposed and impacts of concern, various monitoring surveys can be used to examine if and the direction the disposed dredged material is moving, and what environmental effect the material is having on the site and adjacent areas.

It is expected that changes in sediment composition within the ODMDS due to disposed dredged material will likely alter the benthic community structure. However, based on previous benthic studies, it is unlikely that permanent or long-term adverse impacts will result due to changes in sediment composition (see section 3.4).

Additionally, a Sediment Profile Imaging study will be conducted following the next major new work project to evaluate the effectiveness of the new work release zone on maintaining material within the ODMDS.

Table 6. Miami ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Responsible Party	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Site Capacity	Modeling with field verification/calibration	USACE	Estimate extent of benthic impact	Prior to New Work Project	New Work Volumes exceed estimated capacity	Continue to use site without further restrictions	-Enlarge site or designate additional site for new work (pursuant to Section 102 or 103 of the MPRSA) -Restrict disposal volumes -Modify disposal method/placement
	Sediment Profile Imaging	USACE/ EPA	Confirm extent of disposal mound (apron) and benthic impact	Following New Work Project	Disposal mound footprint occurs outside ODMDS boundaries (> 5cm)		-Restrict disposal volumes -Modify disposal method/placement -Institute Environmental Effects Monitoring
Monitor Bathymetric Trends	Bathymetry	Site User	Determine the extent of the disposal mound and major bathymetric changes	Pre and post disposal for significant projects (>100,000cy)	Disposal mound occurs outside ODMDS boundaries	Continue Monitoring	-Modify disposal method/placement -Restrict Disposal Volumes
Trend Assessment Survey	Water and Sediment Quality, Benthic Community Analysis (40 CFR 228.13)	EPA	Periodically evaluate the impact of disposal on the marine environment (40 CFR 228.9)	Approximately every 10 years as resources allow.	-Absence from the site of pollution sensitive biota. - In water or sediment quality. Significant difference inside and outside benthos/chemistry or between	Continue Monitoring	-Conduct Environmental Effects Monitoring or Advanced Environmental Effects Monitoring -Review dredged material evaluation procedures -Consider isolating dredged material (capping) -Revise this SMMP as appropriate

					years		
Environmental Effects Monitoring	Chemical Monitoring	EPA/ USACE	Determine if chemical contaminants are significantly elevated ¹ within and outside of site.	Implement if disposal footprint extends beyond the site boundaries or if Trend	Contaminants are found to be elevated ¹	Discontinue monitoring.	<ul style="list-style-type: none"> - Institute Advanced Environmental Effects Monitoring - Implement case specific management options (ie. Remediation, limits on quantities or types of material).
	Benthic Monitoring & Sediment Profile Imaging	EPA/ USACE	Determine whether there are adverse changes in the benthic populations outside of the site and evaluate recovery.	Assessment results warrant.	Adverse changes observed outside of the site that may endanger the marine environment		
Advanced Environmental Effects Monitoring	Tissue Chemical Analysis	EPA/ USACE	Determine if the site is a source of adverse bioaccumulation which may endanger the marine environment	Implement if Environmental Effects Monitoring warrants.	Benthic body burdens and risk assessment models indicate potential for food chain impacts.	Discontinue monitoring	<ul style="list-style-type: none"> - Discontinue site use - Implement case specific management options (ie. Remediation, limits on quantities or types of material).
	Benthic Monitoring		Determine if adverse sub-lethal ² changes in benthic organisms which may endanger the marine environment		Sub-lethal effects are unacceptable.		

Compliance	Disposal Site Use Records in EPA Region 4's XML format	Site User	-Ensure management requirements are being met -To assist in site monitoring	Daily during the project	Disposal records required by SMMP are not submitted or are incomplete	Continue Monitoring	-Restrict site use until requirements are met
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¹ 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

² Examples of sub-lethal effects include without limitation the development of lesions, tumors, development abnormality, and/or decreased fecundity.

4.0 CONDITIONS FOR USE OF THE MIAMI ODMDS

4.1 Standard Conditions for use of the Miami ODMDS

4.1.1 Prohibition on Trash and Debris

Only dredged material determined in advance by EPA and USACE to be suitable for ocean disposal may be discharged at the Miami ODMDS. Disposal shall be limited to suitable dredged material per the 40 CFR 228 (h)(19). Uncharacterized dredged material, vessels, trash, and other debris are prohibited from being dumped at the site.

4.1.2 Prohibition on Leaking or Spilling During Transport

No more than de minimis amounts of dredged material may leak or spill from disposal vessels during transit to the ODMDS while west of the sea buoy (G'1) (the area of highly sensitive protected resources including corals), and any leakage or spillage west of this buoy that is more than ½ foot (6 inches) must immediately be reported by the Contractor to USACE and forwarded to EPA. Problematic scows shall be taken out of service until the following actions (a. through e.) have been completed. A problematic scow is any scow having reporting requirements triggered in multiple trips for the same event type. Further definition of problematic may be included in USACE dredging specifications.

- a. The Contractor has notified USACE who will forward to EPA a report of the event.
- b. An assessment and explanation of the event has been provided to USACE and forwarded to EPA.
- c. The scow has been inspected and the results of that inspection have been provided to USACE and a copy forwarded to EPA.
- d. Necessary repairs or other corrective actions completed, and the results provided to USACE and forwarded to EPA.
- e. A draft stabilization (scow leak prevention) protocol has been instituted. The purpose of the protocol is to document that excessive leakage is not occurring prior to departing the dredging area for the ODMDS.

For problematic scows, a draft stabilization protocol shall be instituted prior to the next transit utilizing the scow and implementation of the protocol will be required for all future transits for that scow. The protocol will need to ensure that measurement of the draft of the scow over a sufficient period to document that leakage is not occurring. During this time, draft measurements shall be provided in the Daily Quality Control Report. No disposal vessel trips may transit to the site with a problematic scow until the protocol's draft change thresholds have been instituted by the Contractor and documented in the Daily Quality Control Report.

Excessive leakage/spillage or other loss of material, east of the sea buoy, means an apparent loss of dredged material greater than limits established in the most current Section 103 Concurrence, Section 103 permit, and/or described within USACE contract specifications (in any event loss of dredged material east of the sea buoy (in open water) is not to exceed 1.5 feet. Transportation of dredged material to the ODMDS may not begin or continue when weather and sea state

conditions interfere with safe transportation and create risk of spillage, leaks, or other loss of dredged material during transit. Disposal vessels will not be authorized to load beyond a level at which dredged material would be expected to be spilled in transit under anticipated sea state conditions. Due to the presence of sensitive coral reefs adjacent to the channel, these loading and transportation restrictions are critical for preventing impact from dredged materials lost during transit.

4.1.3 Quality Control Inspector, and Scow Certification Checklist

Before any disposal vessel departs for the Miami ODMDS, a dedicated quality control inspector, identified and appointed by the dredging contractor, shall certify in writing that the disposal vessel is not overloaded and otherwise meets the conditions and requirements of a Scow Certification Checklist that contains all of the substantive elements found in the example provided in this SMMP. If alternate versions of the Scow Certification Checklist (Appendix D) is utilized, EPA and USACE must approve the proposed Scow Certification Checklist prior to the commencement of ocean disposal operations. As indicated in USACE dredging specifications, no ocean disposal trip may be initiated until both the towing vessel captain and the quality control inspector have signed all relevant entries on the Scow Certification Checklist. The inspector shall provide a summary of any discrepancies or inaccuracies on the Checklist in the site user's report to EPA and USACE.

4.1.4 Disposal Release Zone

When dredged material is discharged within the ODMDS, no portion of the vessel from which the materials are released (e.g. hopper dredge or towed barge or scow) may be outside of the disposal release zone (see Table 3).

4.1.5 Closed Door Hull Status

Doors shall be in the closed state on any disposal vessel and discharges complete before exiting the boundaries of the ODMDS (Table 1). "Closed state" means having both fully and physically closed doors and a properly functioning hull status sensor indicating that the doors are fully closed. In the event that doors are not closing sufficiently, the vessel operator will need to implement a procedure to verify dredged material has been disposed of in the authorized release zone. One such practice is to circle within the ODMDS three times before exiting. Visual verification via remote camera is another option. All such incidents shall be reported to USACE and EPA within 24 hours and the vessel in which the malfunction occurred shall be repaired and verified as functional before returning to service.

4.1.6 Twenty-Four (24) Hour Notification Requirement for Potential Leaks, Mis-Dumps, or Other Violations

The site user shall report (refer to section 4.1.2) any anticipated, potential, or actual variances from compliance with these ocean dumping conditions, and any additional project-specific special conditions, to USACE and EPA within 24 hours of discovering such a situation. A message from an operational "e-mail alert" system, will be considered as fulfilling this 24-hour

notification requirement when it includes the following information: description of the cause(s) of the problems, any steps taken to rectify the problems, and whether the problems occurred on subsequent disposal trips.

4.2 Additional Project-Specific Conditions

Additional project-specific conditions or modifications to the standard conditions specified above may be required in the Dredged Material Permit if USACE or EPA determine additional or more specific conditions are necessary to facilitate safe use or accurate monitoring of the disposal site, or to prevent potential harm to the environment, including conditions specifying the timing of operations or methods of transportation and disposal.

4.3 Alternative Permit/Project Conditions

Project-specific alternatives or modifications to the Standard and/or Project-Specific conditions specified above may be authorized in advance by EPA and USACE at their discretion, at the request of the site user. In such cases the site user must demonstrate to the satisfaction of EPA and USACE that:

- the alternative conditions are sufficient to accomplish the specific intended purpose of the original permit condition;
- disposal will not increase the risk of harm to the environment or the health or safety of persons; and
- the site user will not impede monitoring of compliance with the MPRSA, regulations promulgated under the MPRSA, or the permit or authorization issued under the MPRSA.

4.4 Reporting and Data Formatting

4.4.1 Project Initiation and Violation Reporting

USACE or other site user should notify EPA 15 days prior to the beginning of a dredging cycle or project disposal. The user is also required to notify USACE and the EPA within 24 hours if a specified violation of the authorization documents and/or Dredged Material Permit occurs during transportation and disposal operations, including details and proposed corrective actions.

4.4.2 Disposal Monitoring Data

Disposal monitoring data shall be provided to EPA Region 4 electronically on a daily basis. Data shall be provided to EPA Region 4 in XML format and delivered as an attachment to an email to DisposalData.R4@epa.gov. The XML format is available from EPA Region 4.

4.4.3 Post Disposal Summary Reports

USACE shall provide a Post Disposal Summary Report to EPA within 90 days after project completion. Necessary report elements include: dredging project title; permit number and expiration date (if applicable); contract number; name of contractor(s) conducting the work,

name and type of vessel(s) disposing material in the ODMDS; disposal time from each vessel; volume disposed at the ODMDS (as paid *in situ* volume, total paid and un paid *in situ* volume, and gross volume reported by dredging contractor), number of loads to ODMDS, type of material disposed at the ODMDS; identification by load number of any misplaced material; dates of pre and post disposal bathymetric surveys of the ODMDS and a narrative discussing any violation(s) of the 103 concurrency and/or permit (if applicable). The narrative should include a description of the violation, indicate the time it occurred and when it was reported to the EPA and USACE, discuss the circumstances surrounding the violation, and identify specific measures taken to prevent reoccurrence. The Post Disposal Summary Report must be accompanied by the bathymetry survey results (plot and X,Y,Z ASCII data file, optionally a GIS shapefile), a summary scatter plot of all disposal start locations, and a summary table of the trip information required by Section 3.2 with the exception of the disposal completion data. If all data is provided in the required XML format, scatter plots and summary tables will not be necessary.

4.4.4 Environmental Monitoring Data Availability

Material tracking, disposal effects monitoring, and other data collected by EPA will be coordinated with and provided to SMMP team members and federal and state agencies as appropriate by EPA and/or USACE. EPA acquired data will be provided to other interested parties requesting such data to the extent possible. Data will be provided for all surveys in a report generated by the action agency. The report should indicate how the survey relates to the SMMP and previous surveys at the Miami ODMDS and should provide data interpretations, conclusions, and recommendations, and should project the next phase of the SMMP. Monitoring results will be summarized in subsequent modifications to the SMMP posted to EPA's website (<https://www.epa.gov/ocean-dumping>.)

5.0 MODIFICATION OF THE MIAMI ODMDS SMMP

Should the results of the monitoring surveys or reports from other sources indicate that continued use of the ODMDS would lead to unacceptable effects, EPA, in conjunction with USACE, will modify the ODMDS SMMP to mitigate the adverse impacts. EPA will review the SMMP every ten years and revise as necessary, for example, if site use changes significantly. The SMMP also may be revised if the quantity or type of dredged material placed at the site changes significantly or if conditions at the site indicate a need for revision.

6.0 IMPLEMENTATION OF THE MIAMI ODMDS SMMP

This plan is effective from the date of signature. EPA, in conjunction with USACE, will review and revise more frequently if site use and conditions at the site indicate a need for revision. EPA and USACE share responsibility for implementation of the SMMP. Site users may be required to undertake monitoring activities as a condition of their permit. USACE and any USACE contractor remain responsible for implementation of the SMMP for Federal new work and maintenance projects.

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U.S. Environmental Protection Agency Region 4 *Miami, FL Ocean Dredge Material Disposal Site (ODMDS) Post Disposal PCB Study Final Report and Analysis of Sediment-Profile and Plan-View Images from the EPA-Designated Miami Ocean Dredged Material Disposal Site Survey (Battelle)*, 2016.

APPENDIX A

STFATE WATER QUALITY MODEL STANDARD INPUT PARAMETERS

Water Column Evaluations: Numerical Model Input Parameters for Miami ODMDS (STFATE)

SITE DESCRIPTION

Parameter	Value	Units
Number of Grid Points (left to right)	80	
Number of Grid Points (top to bottom)	80	
Spacing Between Grid Points (left to right)	250	ft
Spacing Between Grid Points (top to bottom)	250	ft
Constant Water Depth	570	ft
Roughness Height at Bottom of Disposal Site	.005 ¹	ft
Slope of Bottom in X-Direction	-0.4	deg.
Slope of Bottom in Z-Direction	3.3	deg.
Number of Points in Ambient Density Profile ² Point	5	
Ambient Density at Depth = 0 ft	1.0224	g/cc
Ambient Density at Depth = 164 ft	1.0232	g/cc
Ambient Density at Depth = 328 ft	1.0256	g/cc
Ambient Density at Depth = 492 ft	1.0268	g/cc
Ambient Density at Depth = 570 ft	1.0274	g/cc

AMBIENT VELOCITY DATA³

Parameter	Value	Units
Profile	2-Point at constant depth	
X-Direction Velocity at Depth = 65 feet	-2.5	ft/sec
Z-Direction Velocity at Depth = 65 feet	+0.5	ft/sec
X-Direction Velocity at Depth = 164 feet	-2.3	ft/sec
Z-Direction Velocity at Depth = 164 feet	+0.5	ft/sec

DISPOSAL OPERATION DATA

Parameter	Value	Units
Location of Disposal Point from Top of Grid	15,740	ft
Location of Disposal Point from Left Edge of Grid	10,000	ft
Dumping Over Depression	0	

INPUT, EXECUTION AND OUTPUT

Parameter	Value	Units
Location of the Upper Left Corner of the Disposal Site - Distance from Top Edge	11,000	ft
Location of the Upper Left Corner of the Disposal Site - Distance from Left Edge	7,000	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Top Edge	17,000	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Left Edge	13,000	ft
Duration of Simulation	14,400	sec
Long Term Time Step	600	sec

COEFFICIENTS

Parameter	Keyword	Value
Settling Coefficient	BETA	0.000 ¹
Apparent Mass Coefficient	CM	1.000 ¹
Drag Coefficient	CD	0.500 ¹
Form Drag for Collapsing Cloud	CDRAG	1.000 ¹
Skin Friction for Collapsing Cloud	CFRIC	0.010 ¹
Drag for an Ellipsoidal Wedge	CD3	0.100 ¹
Drag for a Plate	CD4	1.000 ¹
Friction Between Cloud and Bottom	FRICTN	0.010 ¹
4/3 Law Horizontal Diffusion Dissipation Factor	ALAMDA	0.001 ¹
Unstratified Water Vertical Diffusion Coefficient	AKYO	Pritchard Expression
Cloud/Ambient Density Gradient Ratio	GAMA	0.250 ¹
Turbulent Thermal Entrainment	ALPHAO	0.39 ⁴
Entrainment in Collapse	ALPHAC	0.100 ¹
Stripping Factor	CSTRIP	0.003 ¹

¹ Model default value

² Profiles from EPA 2007 Status and Trends Survey

³ Velocity data represents median conditions. Determined from EPA/NOAA analysis of ADCP data collected at and near the Miami ODMDS 1995-2000.

⁴ Calculated from NOAA field work at Miami (1991)

Dilution Rates for Generic Material (4,000 cy):

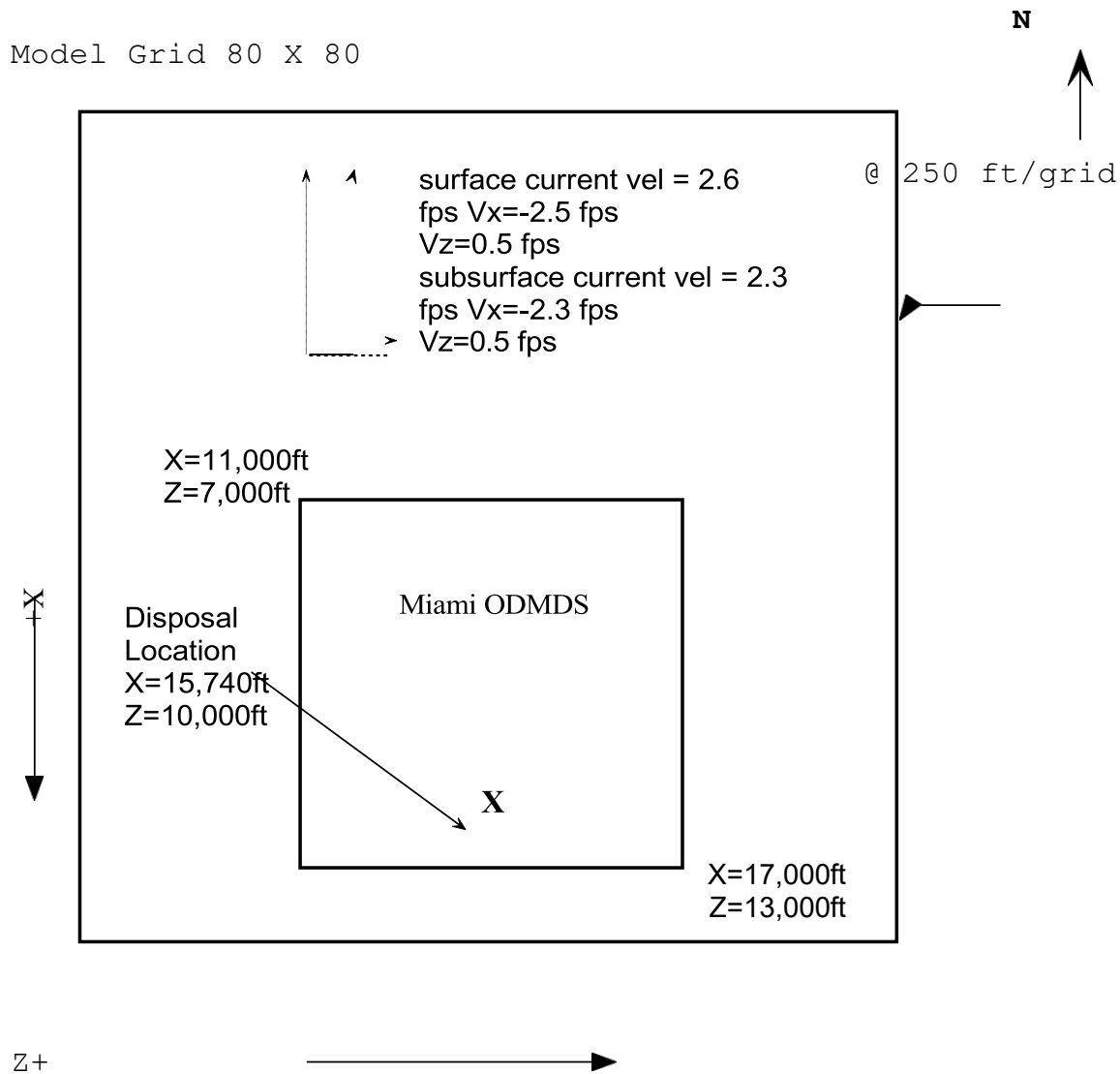
Minimum dilution outside disposal site: 64,500 to 1; minimum dilution after 4 hours: 3,875 to 1

Chemicals of Concern	Background Concentration Levels (µg/l)
Arsenic	1.34 ¹
Cadmium	0.014 ¹
Chromium (VI)	0.210 ¹
Copper	0.182 ¹
Lead	0.061 ¹
Mercury	0.002 ¹
Nickel	0.264 ¹
Selenium	0.2 ^{1,3}
Silver	0.003 ^{1,3}
Zinc	0.770 ¹
Ammonia	2.5 ^{2,3}
Cyanide	2.0 ^{2,3}
Tributyltin (TBT)	0.025 ^{1,3}
Aldrin	0.005 ^{2,3}
Chlordane	0.005 ^{2,3}
DDT	0.005 ^{2,3}
Dieldrin	0.005 ^{2,3}
alpha - Endosulfan	0.005 ^{2,3}
beta - Endosulfan	0.005 ^{2,3}
Endrin	0.005 ^{2,3}
gamma-BHC (Lindane)	0.005 ^{2,3}
Heptachlor	0.005 ^{2,3}
Heptachlor Epoxide	0.005 ^{2,3}
Toxaphene	0.245 ^{2,3}
Parathion	No Data
Pentachlorophenol	5.0 ^{1,3}

- 1 2007 EPA Status and Trends Survey at the Miami ODMDS
- 2 Reference site water collected as part of the 2002 Miami Harbor Dredged Material 103 Evaluation.
- 3 Analyte not detected. Value based on one half the reporting limit.

Miami ODMDS STFATE Input Parameters

Model Grid 80 X 80



APPENDIX B

GENERIC SPECIAL CONDITIONS FOR MPRSA SECTION 103 PERMITS

1. DISPOSAL OPERATIONS

- A. For this permit, the term disposal operations shall mean: navigation of any vessel used in disposal of operations, transportation of dredged material from the dredging site to the Miami ODMDS, proper disposal of dredged material at the disposal area within the Miami ODMDS, and transportation of the hopper dredge or disposal barge or scow back to the dredging site.
- B. The Miami ODMDS is defined as the rectangle with center coordinates of 25°45.00'N latitude and -80°03.37'W longitude (NAD 27) or state plane coordinates 516,078 N and 966,926 E (NAD83). The site coordinates are as follows:

Vertices	Geographic (NAD27)		Geographic (NAD83)		State Plane (FL East 0901 Ft NAD83)	
	Latitude	Longitude	Latitude	Longitude	North	East
Center	25°45.00'N	-80°03.37'W	25°45.02'N	-80°03.35'W	516,078 N	966,926 E
NW Corner	25°45.50'N	-80°03.90'W	25°45.52'N	-80°03.89'W	519,086 N	963,978 E
NE Corner	25°45.50'N	-80°02.83'W	25°45.52'N	-80°02.82'W	519,128 N	969,829 E
SW Corner	25°44.50'N	-80°03.90'W	25°44.52'N	-80°03.89'W	513,028 N	964,021 E
SE Corner	25°44.50'N	-80°02.83'W	25°44.50'N	-80°02.82'W	513,070 N	969,874 E

- C. No more than [NUMBER] cubic yards of dredged material excavated at the location defined in [REFERENCE LOCATION IN PERMIT] are authorized for disposal at the Miami ODMDS.
- D. The permittee shall use an electronic positioning system to navigate to and from the Miami ODMDS. For this section of the permit, the electronic positioning system is defined as: a differential global positioning system or a microwave line of site system. Use of LORAN-C alone is not an acceptable electronic positioning system for disposal operations at the Miami ODMDS. If the electronic positioning system fails or navigation problems are detected, all disposal operations shall cease until the failure or navigation problems are corrected.

- E. The permittee shall certify the accuracy of the electronic positioning system proposed for use during disposal operations at the Miami ODMDS. The certification shall be accomplished by direct comparison of the electronic positioning system's accuracy with a known fixed point.

The permittee shall not allow no more than de minimis amounts of dredged material to leak or spill from disposal vessels during transit to the ODMDS while west of the sea buoy (G'1) (the area of highly sensitive protected resources including corals), and any leakage or spillage west of this buoy that is more than ½ foot (6 inches) must immediately be reported by the Contractor to USACE and forwarded to EPA. to leak or spill from disposal vessels during transit to the ODMDS while west of the sea buoy (G'3) (the area of highly sensitive protected resources including corals), and any leakage or spillage west of this buoy that is more than ½ foot (6 inches) must immediately be reported by the Contractor to USACE and forwarded to EPA.

- a. The Contractor has notified USACE who will forward to EPA a report of the event.
- b. An assessment and explanation of the event has been provided to USACE and forwarded to EPA.
- c. The scow has been inspected and the results of that inspection have been provided to USACE and a copy forwarded to EPA.
- d. Necessary repairs or other corrective actions completed, and the results provided to USACE and forwarded to EPA.
- e. A draft stabilization (scow leak prevention) protocol has been instituted. The purpose of the protocol is to document that excessive leakage is not occurring prior to departing the dredging area for the ODMDS.

For problematic scows, a draft stabilization protocol shall be instituted prior to the next transit utilizing the scow and implementation of the protocol will be required for all future transits for that scow. The protocol will need to ensure that measurement of the draft of the scow over a sufficient period to document that leakage is not occurring. During this time, draft measurements shall be provided in the Daily Quality Control Report. No disposal vessel trips may transit to the site with a problematic scow until the protocol's draft change thresholds

have been instituted by the Contractor and documented in the Daily Quality Control Report.

Excessive leakage/spillage or other loss of material, east of the sea buoy, means an apparent loss of dredged material greater than limits established in the most current Section 103 Concurrence, Section 103 permit, and/or described within USACE contract specifications (in any event loss of dredged material east of the sea buoy (in open water) is not to exceed 1.5 feet. Transportation of dredged material to the ODMDS may not begin or continue when weather and sea state conditions interfere with safe transportation and create risk of spillage, leaks, or other loss of dredged material during transit. Disposal vessels cannot be loaded beyond a level at which dredged material would be expected to be spilled in transit under anticipated sea state conditions. Due to the presence of sensitive coral reefs adjacent to the channel, these loading and transportation restrictions are critical for preventing impact from dredged materials lost during transit.

F. A disposal operations inspector and/or captain of any tugboat, hopper dredge or other vessel used to transport dredged material to the Miami ODMDS shall ensure compliance with disposal operation conditions defined in this permit.

1. If the disposal operations inspector or the captain detects a violation, he shall report the violation to the permittee immediately.
2. The permittee shall contact the U.S. Army Corps of Engineers, Jacksonville District's Regulatory Branch [TELEPHONE NUMBER] and EPA Region 4 via email and at (404) 562-xxxx to report the violation within twenty-four (24) hours after the violation occurs. A complete written explanation of any permit violation shall be included in the disposal summary report.

G. When dredged material is disposed, no portion of the hopper dredge or disposal barge or scow shall be outside of the boundaries of the Miami ODMDS as defined in Special Condition B. Additionally, disposal shall be initiated within the designated disposal release zone defined below. Material must be distributed throughout the disposal zone evenly to prevent mounding.

Release Zone Point	Geographic (NAD83)	State Plane (FL East 0901 NAD83)
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Vertices	Latitude	Longitude	X (Easting)	Y (Northing)
NW Corner (A)	25° 45.02'	-80° 03.53'	965,969	516,071
NE Corner (B)	25° 45.02'	-80° 03.00'	968,865	516,092
SW Corner (C)	25° 44.86'	-80° 03.00'	968,872	515,123
SE Corner (D)	25° 44.86'	-80° 03.53'	965,976	515,102

H. During transit to and from the Miami ODMDS, the hopper dredge or disposal barge or scow shall remain within the navigation channel until east of the buoy G"1".

I. The permittee shall use an electronic tracking system (ETS) that will continuously track the horizontal location and draft condition of the disposal vessel (hopper dredge or disposal barge or scow) to and from the Miami ODMDS. Data shall be collected at least every 500 feet during travel to and from the ODMDS and every minute or every 200 feet of travel, whichever is smaller, while approaching within 1,000 feet and within the ODMDS. The permittee shall use Florida State Plane or latitude and longitude coordinates (North American Datum 1983). State Plane coordinates shall be reported to the nearest foot and latitude and longitude coordinates shall be reported as decimal degrees out to 6 decimals. Westerly longitudes are to be reported as negative. Draft readings shall be recorded in feet out to 2 decimals.

The permittee shall record electronically, for each load, the following information:

- a. Load Number
- b. Disposal Vessel/Scow Name
- c. Tow-Vessel Name (if used)
- d. Captain of Vessel
- e. Estimated Volume of Load
- f. Description of Material Disposed
- g. Source of Dredged Material
- h. Date, Time, and Location at State of Initiation of Disposal and Completion of Disposal Event
- i. The ETS data required by Special Condition I

- J. The permittee shall conduct a bathymetric survey of the Miami ODMS within 3 months prior to project disposal and within 60 days following project completion.

The number and length of the survey transects shall be sufficient to encompass the Miami ODMS and a 500-foot-wide border around the site. The transects shall be spaced at 500-foot intervals or less.

Vertical accuracy of the survey shall be ± 0.5 feet. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing either microwave line of sight system or differential global positioning system. The vertical datum shall be mean lower low water (m.l.l.w) and the horizontal datum shall use Florida State Plane or latitude and longitude coordinates (North American Datum 1983). State Plane coordinates shall be reported to the nearest 0.10 foot and latitude and longitude coordinates shall be reported as decimal degrees to 6 decimal points.

- K. The permittee shall abide by the applicable National Marine Fisheries Service (NMFS) Biological Opinion (BO), either the South Atlantic Regional Biological Opinion (SARBO 2020) for Operations and Maintenance activities, or the project specific BO for deepening and new construction projects. The BO covers 25 listed species including swimming sea turtles, whales, corals, and sturgeon. The RBO contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the RBO. Your authorization under the Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with the incidental take of the attached RBO, which terms and conditions are incorporated by reference in the permit. Failure to comply with the terms and conditions associated with the incidental take of the RBO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. However, depending on the affected species NMFS is the appropriate authority to determine compliance with the terms and conditions of its RBO and with the Endangered Species Act (ESA). For further clarification on this point, you should contact the appropriate agency. Should they determine that the conditions of the RBO have been violated; normally they will enforce the violation of the ESA, or refer the matter to the Department of Justice.

2. REPORTING REQUIREMENTS

- A. All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following addresses: U.S. Army Corps of Engineers (Corps), Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, Florida 32232-0019 and U. S. Environmental Protection Agency (EPA) Region 4's Wetlands, Coastal and Oceans Branch, 61 Forsyth Street, Atlanta, GA 30303. The Permittee shall reference this permit number, [INSERT PERMIT NUMBER], on all submittals.
- B. At least 15 days before initiating any dredging operations authorized by this permit, the Permittee shall provide to the Corps and EPA a written notification of the date of commencement of work authorized by this permit.
- C. Electronic data required by Special Conditions I.J and I.K shall be provided to EPA Region 4 on a daily basis. Data shall be submitted as an eXtensible Markup Language (XML) document via Internet e-mail to DisposalData.R4@epa.gov. XML data file format specifications are available from EPA Region 4.
- D. The permittee shall send one (1) copy of the disposal summary report to the Jacksonville District's Regulatory Branch and one (1) copy of the disposal summary report to EPA Region 4 documenting compliance with all general and special conditions defined in this permit. The disposal summary report shall be sent within 90 days after completion of the disposal operations authorized by this permit. The disposal summary report shall include the following information:
- a. The report shall indicate whether all general and special permit conditions were met. Any violations of the permit shall be explained in detail.
 - b. The disposal summary report shall include the following information: dredging project title; dates of disposal; permit number and expiration date; name of contractor(s) conducting the work, name and type of vessel(s) disposing material in the ODMDS; disposal timeframes for each vessel; volume disposed at the ODMDS (as paid *in situ* volume, total paid and un paid

in situ volume, and gross volume reported by dredging contractor), number of loads to ODMDS, type of material disposed at the ODMDS; identification of any misplaced material (outside disposal release zone or the ODMDS boundaries); dates of pre and post disposal bathymetric surveys of the ODMDS and a narrative discussing any violation(s) of the 103 permit. The disposal summary report should be accompanied by the bathymetry survey results (plot and X, Y, Z ASCII data file).

APPENDIX C

TYPICAL CONTRACT LANGUAGE FOR IMPEMENTING SMMP REQUIREMENTS

DISPOSAL OF DREDGED MATERIAL

A. General

All material dredged shall be transported to and deposited in the disposal area(s) designated on the drawings. The approximate maximum and average distance to which the material will have to be transported are as follows:

Disposal Area	Maximum Distance Statute Miles	Average Distance Statute Miles
Miami ODMDS		
[INSERT DISPOSAL AREA 2]	[XX miles]	[XX miles]

[IF MATERIAL FROM DIFFERENT PROJECT AREAS GO TO DIFFERENT DISPOSAL AREAS, IT SHOULD BE SPECIFIED HERE]

B. Ocean Disposal Notification

a. The Corps or the contractor shall notify EPA Region 4 's Oceans, Wetlands, and Stream Protection Branch (61 Forsyth Street, Atlanta, GA 30303) at least 15 calendar days and the local Coast Guard Captain of the Port at least 5 calendar days prior to the first ocean disposal. The notification will be by certified mail with a copy to the Contracting Officer. The following information shall be included in the notification:

1. Project designation; Corps of Engineers' Contracting Officer's name and contract number; and, the Contractor's name, address, and telephone number.
2. Port of departure.
3. Location of ocean disposal area (and disposal zone(s)).
4. Schedule for ocean disposal, giving date and time

proposed for first ocean disposal.

C. Ocean Dredged Material Disposal Sites (ODMDS)

The material excavated shall be transported to and deposited in the Miami ODMDS as shown on the drawings. When dredged material is disposed, no portion of the hopper dredge or disposal barge or scow shall be outside of the boundaries of the Miami ODMDS. Additionally, disposal shall be initiated within the disposal release zone and spread throughout the zone in order to prevent mounding, defined by the following coordinates:

Release Zone Point	Geographic (NAD83)		State Plane (FL East 0901 NAD83)	
	Latitude	Longitude	X (Easting)	Y (Northing)
NW Corner (A)	25° 45.02'	-80° 03.53'	965,969	516,071
NE Corner (B)	25° 45.02'	-80° 03.00'	968,865	516,092
SW Corner (C)	25° 44.86'	-80° 03.00'	968,872	515,123
SE Corner (D)	25° 44.86'	-80° 03.53'	965,976	515,102

During transit to and from the Miami ODMDS, the disposal vessel shall remain within the navigation channel until east of the buoy G"1". The hopper dredge or disposal barge or scow shall not transit the Particularly Sensitive Sea Area during transit to or from the ODMDS.

D. Logs

The Contractor shall keep a log for each load placed in the Miami ODMDS. The log entry for each load shall include:

- a. Load Number
- b. Disposal Vessel or Scow Name
- c. Tow-Vessel Name (if used)
- d. Captain of Vessel
- e. Estimated Volume of Load
- f. Description of Material Disposed
- g. Source of Dredged Material
- h. Date, Time, and Location at State of Initiation of Disposal and Completion of Disposal Event
- i. The ETS data required by Special Condition I

At the completion of dredging and at any time upon request, the

log(s) shall be submitted in paper and electronic formats to the Contracting Officer for forwarding to the appropriate agencies.

E. Overflow, Spills and Leaks

No more than de minimis amounts of dredged material may leak or spill from disposal vessels during transit to the ODMDS while west of the sea buoy (G'1) (the area of highly sensitive protected resources including corals), and any leakage or spillage west of this buoy that is more than ½ foot (6 inches) must immediately be reported by the Contractor to USACE and forwarded to EPA. Water and dredged material overflow during loading of scows must conform to applicable Biological Opinion and any violation during loading must be reported by the contractor to USACE and forwarded to EPA. If alternate versions of the Scow Certification Checklist (Appendix D) is utilized, EPA and USACE must approve the proposed Checklist prior to the commencement of ocean disposal operations. Problematic scows shall be taken out of service until the following actions (a. through e.) have been completed. A problematic scow is any scow having reporting requirements triggered in multiple trips for the same event type. Further definition of problematic may be included in USACE dredging specifications.

- a. The Contractor has notified USACE who will forward to EPA a report of the event.
- b. An assessment and explanation of the event has been provided to USACE and forwarded to EPA.
- c. The scow has been inspected and the results of that inspection have been provided to USACE and a copy forwarded to EPA.
- d. Necessary repairs or other corrective actions completed, and the results provided to USACE and forwarded to EPA.
- e. A draft stabilization (scow leak prevention) protocol has been instituted. The purpose of the protocol is to document that excessive leakage is not occurring prior to departing the dredging area for the ODMDS.

F. Electronic Tracking System (ETS) for Ocean Disposal Vessels

The Contractor shall furnish an ETS for surveillance of the movement and disposition of dredged material during dredging and ocean disposal. This ETS shall be established, operated and maintained by the Contractor to continuously track in real-time the horizontal location and draft condition of the disposal vessel (hopper dredge or disposal barge or scow) for the entire

dredging cycle, including dredging area and disposal area. The ETS shall be capable of displaying and recording, in real-time, the disposal vessel's draft, speed, and location.

----- [USE LANGUAGE BELOW FOR NON DQM PROJECTS]

G. ETS Standards

The Contractor shall provide automated (computer) system and components to perform in accordance with COE EM 1110-1-2909. A copy of the EM can be downloaded from the following web site: <http://www.usace.army.mil/inet/usace-docs/eng-manuals/em.htm>. Horizontal location shall have an accuracy equal to or better than a standard DGPS system, equal to or better than plus/minus 10 feet (horizontal repeatability). Vertical (draft) data shall have an accuracy of plus/minus 0.5 foot. Horizontal location and vertical data shall be collected in sets and each data set shall be referenced in real-time to date and local time (to nearest minute), and shall be referenced to the same state plane coordinate system used for the survey(s) shown in the contract plans. The ETS shall be calibrated, as required, in the presence of the Contracting Officer at the work location before disposal operations have started, and at 30-day intervals while work is in progress. The Contracting Officer shall have access to the ETS in order to observe its operation. Disposal operations will not commence until the ETS to be used by the Contractor is certified by the Contracting Officer to be operational and within acceptable accuracy. It is the Contractor's responsibility to select a system that will operate properly at the work location. The complete system shall be subject to the Contracting Officer's approval.

ETS Data Requirements and Submissions

- a. The ETS for each disposal vessel shall be in operation for all dredging and disposal activities and shall record the full round trip for each loading and disposal cycle. (NOTE: A dredging and disposal cycle constitutes the time from commencement of dredging to complete discharge of the material.) The Contracting Officer shall be notified immediately in the event of ETS failure and all dredging operations for the vessel shall cease until the ETS is fully operational. Any delays resulting from ETS failure shall be at the Contractor's expense.
- b. Data shall be collected, during the dredging and disposal

cycle, every 500 feet (at least) during travel to the disposal area, and every minute or every 200 feet, whichever is smaller, while approaching within 1,000 feet and within the disposal area.

c. Plot Reporting (2 types):

1. Tracking Plot - For each disposal event, data collected while the disposal vessel is in the vicinity of the disposal area shall be plotted in chart form, in 200-foot intervals, to show the track and draft of the disposal vessel approaching and traversing the disposal area. The plot shall identify the exact position at which the dump commenced. A sample Track and Draft Plot Diagram is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.
2. Scatter Plot - Following completion of all disposal events, a single and separate plot will be prepared to show the exact disposal locations of all dumps. Every plotted location shall coincide with the beginning of the respective dump. Each dump shall be labeled with the corresponding Trip Number and shall be at a small but readable scale. A sample Scatter Plot Diagram is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.
3. Summary Table - A spreadsheet which contains all of the information in the log(s) above shall be prepared and shall correspond to the exact dump locations represented on the Scatter Plot. A sample Summary Table spreadsheet is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

- d. ETS data and log data required by Section 3.2 shall be provided to EPA Region 4 on a daily or more frequent basis. Data shall be submitted to EPA Region 4 as an eXtensible Markup Language (XML) document via Internet e-mail to DisposalData.R4@epa.gov. XML data file format specifications are available from EPA Region 4. All digital ETS data shall be furnished to the Contracting Officer within 24 hours of collection. The digital plot files should be in an easily readable format such as Adobe Acrobat PDF file, Microstation DGN file, JPEG, BMP, TIFF, or similar. The hard copy of the ETS data and

tracking plots shall be both maintained onboard the vessel and submitted to the Contracting Officer on a weekly basis.

----- [FOR DQM
PROJECTS]

See: <http://dqm.usace.army.mil/Specifications/Index.aspx>

For scows, the monitoring profile, TDS profile or Ullage profile shall be used.

H. Misplaced Materials

For civil works projects, materials deposited outside of the disposal release zone specified in 3.3.3 will be classified as misplaced material and will result in a suspension of dredging operations. Redredging of such materials will be required, where applicable, as a prerequisite to the resumption of dredging unless the Contracting Officer, at his discretion, determines that redredging of such material is not practical. If redredging of such material is not required, then the quantity of such misplaced material may be deducted from the Contractor's pay quantity. If the quantity for each misplaced load to be deducted cannot initially be agreed to by both the Contractor and Contracting Officer, then an average hopper/scow load quantity for the entire contract will be used in the determination. Both regulatory and civil works projects misplaced loads may be subject to penalty under the Marine, Protection, Research and Sanctuaries Act. Materials deposited above the maximum indicated elevation or outside of the disposal area template shown will require the redredging, relocation, or removal of such materials. In addition, the Contractor must notify USACE Contracting Officer and the Environmental Protection Agency Region 4 within 24 hours of a misplaced dump or any other violation of the Site Management and Monitoring Plan for the Miami ODMDS. Corrective actions must be implemented prior to the next dump and the Contracting Officer must be informed of actions taken.

APPENDIX D

Scow Certification Template

SCOW CERTIFICATION CHECKLIST		USACE PERMIT or CONTRACT #		4/17/2015
[PROJECT NAME]		DATE:		
CHECKLIST ITEM	RECORD DATA		INITIALS	
	TO BE FILLED OUT AND SIGNED WITHIN 1 HOUR PRIOR TO DEPARTURE TIME IN NO. 3.		CONTRACTOR	Permittee or Authorized Representative
1. OCEAN DISPOSAL TRIP NUMBER				
2. DEPARTURE DATE TO ODMDS				
3. DEPARTURE TIME TO ODMDS				
4. DEPARTURE LOCATION (dredge, berth, etc.)				
5. SCOW NAME				
6. SCOW CAPACITY (CY)				
7. TUG NAME				
8. TUG CAPTAIN'S NAME				
9. DREDGED MATERIAL SOURCE (area, reach, berth, etc.)				
10. CUBIC YARDS HAULED				
11. SCOW FORE DRAFT / AFT DRAFT / AVG AND TIME				
12. SCOW FORE DRAFT / AFT DRAFT / AVG AND TIME (must be at least one hour prior to time in No. 11)				
13. DRAFT CHANGE (No 12 - No. 11)				
14. FREEBOARD OF MATERIAL AND/OR WATER SURFACE				
15. NWS COASTAL MARINE FORECAST (out to 20 nm)	DATE / TIME OF REPORT			
[area]	WAVE HT (FT)			
WRITE-IN APPROPRIATE FORECAST PERIODS (ie, TODAY, TONIGHT, TOMORROW)	WIND SPEED (KTS)			
	PERIOD (SEC)			
	COMMENTS:			
16. SCOW TRACKING SYSTEM FUNCTIONING?	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
17. HELMSMAN DISPLAY FUNCTIONING ON TUG?	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
18. GPS FUNCTIONING ON TUG?	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
19. COMMENTS				
20. CONTRACTOR'S SIGNATURE	PRINT NAME:		TIME / DATE:	
21. PERMITTEE/REPRESENTATIVE'S SIGNATURE	PRINT NAME:		TIME / DATE:	
22. THE DECISION TO PROCEED TO THE OCEAN DISPOSAL SITE, BASED UPON ALL AVAILABLE DATA INCLUDING THE RECORDING AND CALCULATIONS ON THIS FORM, IS ALSO SUBJECT TO THE PROFESSIONAL JUDGEMENT OF THE TUG CAPTAIN AS TO THE SAFETY OF THE CREW AND VESSEL.				
TUG CAPTAIN'S SIGNATURE:		PRINT NAME:		TIME / DATE:
DATE/TIME OF DUMP: _____				
BARGE X OR LONGITUDE: _____				
BARGE Y OR LATITUDE: _____				
TUG X OR LONGITUDE: _____				
TUG Y OR LATITUDE: _____				
DATE/TIME OF DISPOSAL VESSEL CLOSURE: _____				
BARGE X OR LONGITUDE: _____				
BARGE Y OR LATITUDE: _____				
TUG X OR LONGITUDE: _____				
TUG Y OR LATITUDE: _____				
ADDITIONAL COMMENTS, PROBLEM DESCRIPTIONS, ETC.				