



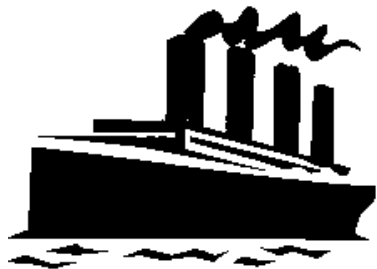
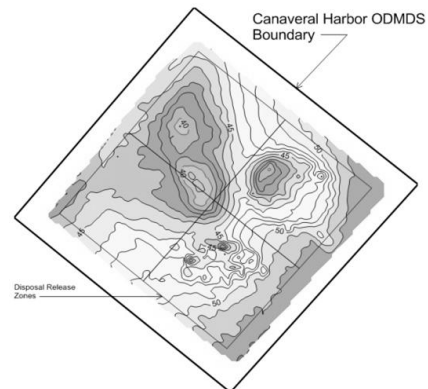
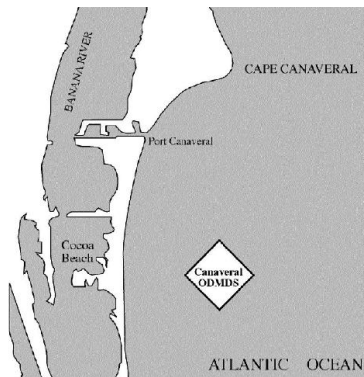
CANAVERAL HARBOR OCEAN DREDGED MATERIAL DISPOSAL SITE



U.S. Army Corps
of Engineers
Jacksonville District

SITE MANAGEMENT AND MONITORING PLAN

March 2022



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The following Site Management and Monitoring Plan (SMMP) for the Canaveral Harbor 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 Canaveral Harbor SMMPs.

_____	_____	_____	_____
Colonel James L. Booth District Commander Jacksonville District U.S. Army Corps of Engineers Jacksonville, Florida	Date	Daniel Blackman Regional Administrator U.S. Environmental Protection Agency Region 4 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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**CANAVERAL HARBOR
OCEAN DREDGED MATERIAL DISPOSAL SITE
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). The 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 the EPA review and written concurrence. The EPA may concur with or without conditions or decline to concur (i.e., non-concur) on the permit or Federal project. If the EPA concurs with conditions, the final permit or the terms of the Federal project must include those conditions. If the EPA declines to concur on an ocean dumping permit or Federal project, the 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 the 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, the 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. The 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. The 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)).

The EPA shares the responsibilities of conducting management and monitoring activities at

EPA-designated ODMDSs with the USACE. Under MPRSA Section 102, the EPA, in conjunction with the 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 the EPA in conjunction with the 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 Canaveral Harbor ODMDS including monitoring and management activities by the federal agencies. This SMMP also includes template provisions for the USACE to include in future permits issued for disposal at this site (Appendix B) and the 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 the USACE directly. However, where the regulation designating the ODMDS requires compliance with the conditions set forth in an approved SMMP, the failure to follow any minimum or mandatory conditions in the SMMP constitutes a violation of Section 1411(a) of MPRSA.

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. The EPA can ensure implementation of the template provisions in Appendix B and C as necessary through the EPA's concurrence actions.

A SMMP was originally developed as part of the designation process and was published in August 1990 as part of, *Final EIS Canaveral Harbor, Florida Ocean Dredged Material Disposal Site Designation* (EPA, 1990), with SMMP revisions in 2001 and 2012. The 2022 revision to the Canaveral Harbor ODMDS SMMP incorporates monitoring results from the last 10 years and updates management strategies for the ODMDS based on those results. This current revision to the Canaveral Harbor 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 2001, an interagency SMMP team was established to assist the EPA and the USACE in developing and revising the Canaveral Harbor ODMDS SMMP. The team consisted of the following agencies:

- Jacksonville District of the USACE
- EPA Region 4
- Canaveral Port Authority
- State of Florida (Coastal Zone Management Office)
- National Marine Fisheries Service (NMFS)
- U.S. Coast Guard, Station Fort Lauderdale
- U.S. Navy

The EPA and the USACE will continue to consult with these Florida and Federal agencies as appropriate to assess the need for future revisions to the Canaveral Harbor ODMDS SMMP. The other agencies have, in the past, assisted the EPA and the 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 the EPA and the Jacksonville District Corps of Engineers include the following:

- The EPA is responsible for designating/modifying/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, the 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.
- The 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 the 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 the USACE to include in subsequently issued permits (see Appendix B) or in the transportation and disposal requirements

for a Federal project (see Appendix C). The EPA can ensure implementation of the template provisions as necessary through their inclusion as conditions in the 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.

2.0 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 designation of the Canaveral Harbor ODMDS can be found in 40 CFR 228.15(h)(10), where the coordinates are expressed using the North American Datum of 1927 (NAD 27). The coordinates in this document are expressed using the North American Datum of 1983 (NAD 83).

The Canaveral Harbor ODMDS is a 2 nautical mile (nmi) by 2 nmi area centered at 28° 18.750'N latitude and -80° 30.986'W longitude (NAD 83) or state plane coordinates 1,446,630 ft N and 811,757 ft E (NAD83). The site coordinates are as follows:

Table 1. Canaveral ODMDS Corner Coordinates

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Northing	Easting
North	28 ° 20.267'N	-80 ° 31.170'W	1,455,819 N	810,734 E
East	28 ° 18.867'N	-80 ° 29.236'W	1,447,378 N	821,139 E
South	28 ° 17.234'N	-80 ° 30.870'W	1,437,446 N	812,416 E
West	28 ° 18.617'N	-80 ° 32.736'W	1,445,788 N	802,376 E

The site (see Figure 1) lies in the Canaveral Bight on the shallow continental shelf, centered 4.5 nmi offshore Cocoa Beach, Florida, has a depth range of 12 meters (39 feet) to 17 meters (54 feet), and has an area of 4 nmi². Physical and biological conditions at the ODMDS are described in, Final Environmental Impact Statement Canaveral Harbor, Florida Ocean Dredged Material Disposal Site Designation (EPA, 1990).

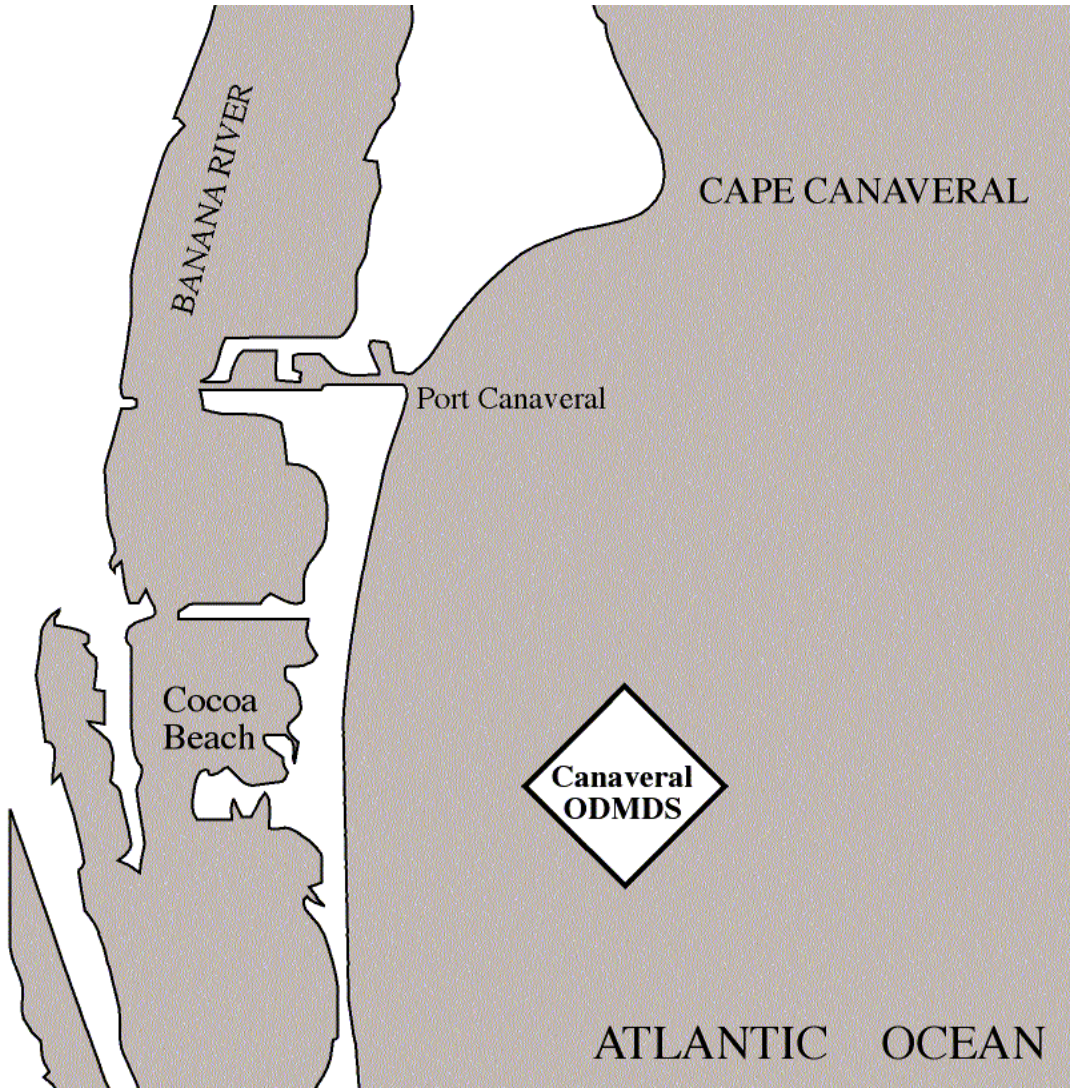


Figure 1. Canaveral Harbor ODMDS Location Map.

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 MPRSA 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 the EPA and the 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, the 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 the EPA and the USACE will consider for management of Canaveral Harbor ODMDS as described in 40 CFR 228.15(h)(10).

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

Section 103 permits or in contract documents.

The 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

It is intended that the Canaveral Harbor ODMDS will be used for dredged material from the greater Canaveral, Florida, vicinity (40 CFR 228.15 (h)(10)). The three primary users of the Canaveral Harbor ODMDS are:

- U.S. Army Corps of Engineers for Civil Works (West and Middle Turning Basins, Entrance Channel (Cut 1), Inner Channel (Cuts 2 and 3), and the Barge Canal)
- U.S. Navy (Trident Access Channel and Turning Basin, Cut 1A, Entrance Channel Widener)
- Canaveral Port Authority (West and Middle Turning Basins and Berthing Areas, Sand Trap)

Since 1974, approximately 31 million cubic yards of dredged materials have been disposed in the Canaveral Harbor ODMDS. Since 1990 (the date of site designation), approximately 17.3 million cubic yards of dredged materials have been disposed in the Canaveral Harbor ODMDS. Between 1974 and 1990, the average annual volume of dredged material disposed in the ocean was about 943,000 cubic yards, and between 1990 and 2000 the average annual disposal volume was about 847,000 cubic yards. From 2002-2011, the annual average decreased to 550,000 cubic yards per year, and from 2012- 2019 averaged 646,281 cubic yards per year. The reduction in annual volumes is due to a lack of significant construction dredging projects, beneficial use of material at the nearshore site and sand tightening of the north jetty structure, which has resulted in a reduction in the amount of shoaling. Tables 2 and 3 shows the annual disposal volumes from 2002-2019. Table 4 shows the projected 2022- 2032 disposal volumes a total 5.14 million cubic yards over ten years.

Table 2. Dredged Material Disposal Projects placed into the ODMDS (2002-2019)

Dates	Dredging Area	Permittee	Permit No.	Characteristics	Maintenance/ New Work	Volume Disposed Per Zone				ODMDS Total
						North	South	East	West	
8/25/02-9/14/02	CT5,CT10,NCP1-2,NCP4,SCP1-2,WTB	CPA	200005030	silt with sand	Maintenance		91,079			91,079
6/15/02-8/28/02	Cuts2b&2c,MTB-4	CW/Navy	199904378		Maintenance			665,396		665,396
6/27/03-7/23/03	WTB,MTB,TAC,CT8	CPA	200005030	silt/clay/sand	Maintenance		133,804			133,804
5/11/03-6/26/03	Cut1,WTB,WAC,Cut 2b	CW/Navy	199904378	silt/clay/sand	Maintenance			526,500		526,500
6/15/04-8/1/04	Cut2,Cut1,TAC,TTB	CW/Navy	199904378	silt/clay	Maintenance			263,643		263,643
12/21/04-12/22/04	NCP3,CT8	CPA	200005030	silt/clay/sand	Maintenance		10,565			10,565
6/15/05-10/29/05	Cut2,Cut1	CW/Navy	199904378	silt/clay	Maintenance			417,995		417,995
6/20/06-11/11/06	Cuts1b&1&2&3,MT B	CW		silts/clays/sand	Maintenance			378,060		378,060
9/10/06-11/2/06	WTB,CT8,CT10,CT5,NCP1/2	CPA	200005030		Maintenance	104,471				104,471
5/1/07-7/9/07	South Jetty Sediment Trap	CPA	2005-3195		New Work		368,160			368,160
11/5/07-11/26/07	CT6/7,CT10,NCP3/4	CPA	200005030	mud		124,756				124,756
6/30/07-2/6/08	EC,TAC,TTB,MTB	CW/Navy			Maintenance			436,627		436,627
					Maintenance			286,230		286,230
7/17/2008-10/6/08	Cuts1b&1&2,TAC,TB,Poseidon Wharf	CW/Navy	20075637	mud,sand,clay ,soft clay						
2/11/09-2/28/09	WTB	CPA	200005030		Maintenance			92,160		92,160
2/28/09-4/4/09	ICCO	CPA	19871217		New Work		239,714			239,714
5/12/10-8/5/10	Cuts1,&2,TAC,TTB	CW/Navy	20075637	mud,clay,sand ,soft-clay	Maintenance			1,170,762		1,170,762
5/14/11-6/14/11	South Jetty Sediment Trap	CPA	2005-3195	Sand,silt,clay	Maintenance	172,130				172,130
5/27/11-9/3/2011	WTB CCO Phase 2	CPA	19871217	Silt,clay,silty sand	New Work		322,580			322,580
5/10/12 – 7/20/12	Cuts1,&2,TAC,TTB	CW/Navy		Sand,silt,clay	Maintenance			579,144	579,144	1,158,288
5/2/16 – 6/23/16	Cuts1,&2,TAC,TTB	CW/Navy		Sand,silt,clay	Maintenance			478,233	478,233	956,467

5/10/19 – 7/29/19	Cuts1,&2,TAC,TTB	CW/Navy		Sand,silt,clay	Maintenance			323,131	323,131	646,263
Total						401,357	1,165,902	5,617,881	1,380,508	8,565,651

Table 3. Annual Disposal Volumes 2002-2019

Year	CPA	CW	Navy	Total
2002	91,079	624,407	40,989	756,475
2003	133,804	526,500	-	660,304
2004	10,565	238,162	25,481	274,208
2005	-	416,257	1,738	417,995
2006	104,471	378,060	-	482,531
2007	492,916	305,535	131,092	929,543
2008	-	263,683	22,547	286,230
2009	331,874	-	-	331,874
2010	-	1,152,022	18,740	1,170,762
2011	494,710	-	-	494,710
2012		1,158,289		1,158,289
2015		956,467		956,467
2019		646,263		646,263
Total	1,659,419	6,665,645	240,587	8,565,651
Percent	19%	77%	4%	100%

Future volumes and rates of disposal, from both Federal and non-federal applicants, are expected to average around 514,000 cubic yards per year. Civil works projects for Canaveral Harbor are anticipated to account for a majority of the total volume of material to be disposed at the ODMDS.

Table 4. Projected Volume of Dredged Material Disposed in the Canaveral Harbor ODMDS (10 year)

Year	Type of Action	Source	Volume ¹ (yd ³)	Sponsor ²	Composition
2022-2032	MD	Entrance Channel, West and Middle Turning Basins, Inner Channel and Barge Canal	364,000 per year	Civil Works	Silt and Fine Sand
2022-2032	MD	Entrance Channel Widener, Cut 1A & Trident Access Channel and Turning Basin	26,000 per year	Navy	Silt and Fine Sand
2022-2032	MD	Berthing Areas	74,000 per year	CPA	Silt and Fine Sand
2022-2032	MD	S. Jetty Sed. Trap	50,000 per year	CPA	Silt and Fine Sand

¹ *In situ*

² NW: New Work; MD: Maintenance Dredging; CPA: Canaveral Port Authority.

The Canaveral Harbor ODMDS has been determined to be a dispersive site (EPA, 1990). However, the dispersiveness of the site and consequently the long-term capacity of the ODMDS has yet to be determined. Capacity estimates based on the available fill volume using existing bathymetry and a maximum depth of –40 feet MLLW have been conducted for each release zone (see Table 5). Dispersion and consolidation of the disposed dredged material was not considered, nor was the need for side-slopes of the disposal mound. Therefore, use of these estimates for long range planning purposes should be cautioned. The remaining capacity, to a depth of –40 feet MLLW, is estimated at 15.4 million cubic yards *in situ* based on a bulking factor of 1.3 (Hensch, 2011).

Table 5. Capacity Estimates Based on Existing Bathymetry and a Minimum Allowable Depth of -40 feet (MLLW)

Release Zone	Capacity (million cubic yards)	<i>In Situ</i> Capacity (million cubic yards)
North	3.6	2.8
East	5.8	4.5
West	2.5	1.9
South	8.2	6.3
Total	20.1	15.4

Until the capacity of the ODMDS has been determined utilizing USACE approved models, use of the ODMDS should not exceed half the estimated remaining site capacity (7.7 million cubic yards). This will allow sufficient time for a more detailed assessment of site capacity, implementation of management options, or environmental studies for site expansion to be conducted if necessary, without adversely impacting maintenance dredging of the Port. Based on current estimates, exceedance of this volume is not anticipated. Should the approval of any project cause the exceedance of this value, an analysis of the remaining capacity of the ODMDS will have to be conducted by the USACE or permit applicant, as the case may be, prior to approval for ocean disposal of the project. The analysis should demonstrate that more than half the remaining capacity will not be consumed within the next ten years from the date of the analysis.

2.4 Dredged Material Characteristics

2.4.1 Previously Disposed Materials

Materials disposed in the Canaveral Harbor ODMDS have historically consisted of silty sand, and silts and clay. Since 1992, most dredged material with less than 20 percent silt has been placed in a nearshore area rather than the ODMDS.

2.4.2. Anticipated Materials

Two basic sources of material are expected to be placed at the site: new work dredged material and maintenance material. These materials will consist of mixtures of silt, clay, and sand in varying percentages. Dredged material with less than 20 percent silt will be considered for placement at the nearshore area rather than the ODMDS, to the maximum extent practicable.

2.4.3 Associated Beach Quality Materials

The disposition of any beach compatible sand from future projects will be determined during state and local permitting activities for any such projects. Disposal of coarser material, such as rubble, should be coordinated during the applicable permitting activities. The USACE and the 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, the USACE verifies the suitability of dredged material for ocean disposal and the EPA must concur in writing (with or without conditions). Pursuant to the terms of 33 CFR 325.6(c), the EPA concurs on sediment disposal at the ODMDS for a period up to three years on a project specific basis.

The sediment quality verification process includes the following steps:

- 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 the 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 the 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. During the winter, precautions necessary to protect whales, as described in Section 2.6, are 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. However, in order to protect North Atlantic right whales, disposal vessel (either hopper dredge or tug and scow) speed and operation will be restricted in accordance with the most recent USACE South Atlantic Division Endangered Species Act Section 7 Consultation Regional Biological Opinion for Dredging of Channels and Borrow Areas in the Southeastern United States. In addition, the disposal vessel's captain should be aware of the vessel approach restrictions in 50 CFR §224.103 which at the time of this SMMP prohibits approach within 500 yards of a right whale by vessel, aircraft, or any other means. Standard surveillance and evasive measures to protect sea turtles and marine mammals shall also be employed during all disposal operations at the ODMDS.

2.7 Disposal Route

No specific disposal route is required for this site.

2.8 Disposal Location

Disposal release zone will be specified by the EPA and the 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 1). 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. Release zones have been established to satisfy this criterion as well as manage dredged material disposal and contain impacts to within the ODMDS boundaries. The release zones are described below in Table 6 and shown in Figure 2. The release zones will be specified as part of the dredged material quality verification process and included in the EPA's MPRSA Section 103 concurrence letter. Dredged material shall be disposed so that at no point will depths less than -40 feet Mean Lower Low Water (MLLW) occur (i.e., a clearance of 40 feet above the bottom will be maintained) until further studies have been completed (see Section 2.3).

Table 6. Canaveral Harbor ODMDS Disposal Release Zones

North Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28° 19.921'N	-80° 31.133'W	810,940 E	1,453,721 N
East	28° 19.380'N	-80° 30.386'W	814,961 E	1,450,458 N
South	28° 18.746'N	-80° 31.003'W	811,666 E	1,446,607 N
West	28° 19.284'N	-80° 31.738'W	807,714 E	1,449,851 N

The north zone is for disposal of material from the Canaveral Port Authority maintenance projects.

South Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28° 18.746'N	-80° 31.003'W	811,666 E	1,446,607 N
East	28° 18.208'N	-80° 30.269'W	815,618 E	1,443,364 N
South	28° 17.578'N	-80° 30.899'W	812,525 E	1,439,532 N
West	28° 18.113'N	-80° 31.620'W	808,372 E	1,442,757 N

The south zone is for disposal of material from the Canaveral Port Authority construction projects and any civil works construction projects such as the proposed port widening and deepening.

East Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28° 19.380'N	-80° 30.386'W	814,961 E	1,450,458 N
East	28° 18.839'N	-80° 39.638'W	818,982 E	1,447,196 N
South	28° 18.208'N	-80° 30.269'W	815,618 E	1,443,364 N
West	28° 18.746'N	-80° 31.003'W	811,666 E	1,446,607 N

The east zone is for disposal of material from the U.S. Navy and the USACE Civil Works maintenance projects.

West Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28° 19.284'N	-80° 31.738'W	807,714 E	1,449,851 N
East	28° 18.746'N	-80° 31.003'W	811,666 E	1,446,607 N
South	28° 18.113'N	-80° 31.620'W	808,372 E	1,442,757 N
West	28° 18.648'N	-80° 32.342'W	804,488 E	1,445,982 N

The west zone is for disposal of material from the U.S. Navy and the USACE Civil Works maintenance projects.

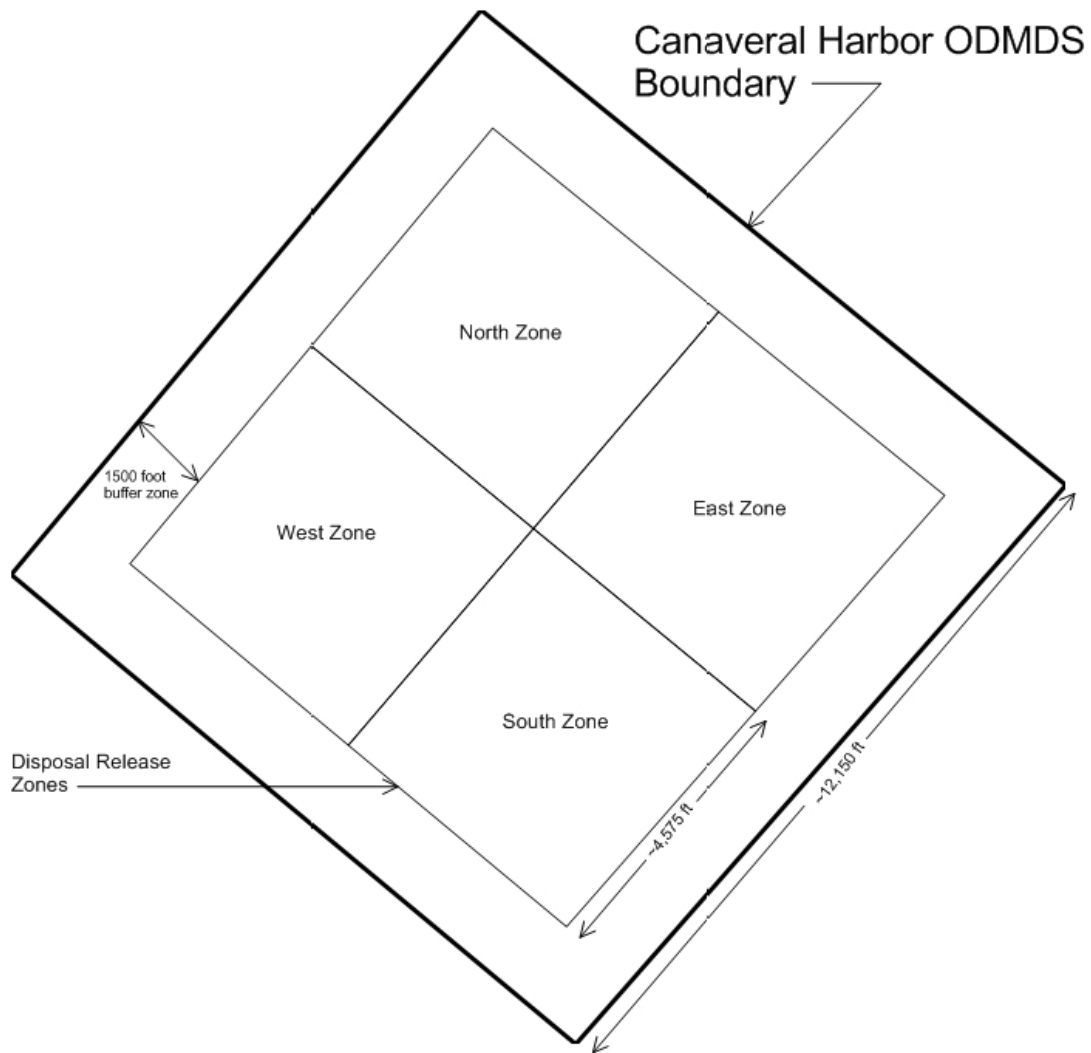


Figure 2 Canaveral Harbor ODMDS Disposal Release Zones

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 7. Template language to be used is included in appendices (see Appendices B and C).

Table 7. Summary of Permit and Contract Conditions

Condition	Reference
Dredged Material Suitability and Term of Verification	Canaveral Harbor ODMDS SMMP (2.4.4) Southeast Regional Implementation Manual
Disposal Release Zone	Canaveral Harbor ODMDS SMMP (4.1.4)
Pre- and Post-Bathymetric Surveys	Canaveral Harbor ODMDS SMMP (3.4 & 3.5)
Disposal Monitoring	Canaveral Harbor ODMDS SMMP (3.2)
Reporting Requirements	Canaveral Harbor 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 the 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 Canaveral Harbor 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 including:

- 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 the 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:

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

Disposal has occurred at the present site since 1974 and predates any data gathering at the site. Therefore, no true baseline information has or can be collected. The results of investigations presented in the designation EIS (See FEIS Appendices A, B, C, D, F, and G) and subsequent surveys listed in Table 8 will serve as the main body of data for the monitoring of the impacts associated with the use of the Canaveral Harbor ODMDS.

Table 8. Surveys and Studies Conducted at the Canaveral Harbor ODMDS (2001-present)

Survey/Study Title	Conducted By:	Date	Purpose	Results
Canaveral Harbor ODMDS Dredged Material Erosion Rate Analysis	EPA Region 4 / Sandia National Laboratories	2001	Determine erosive properties of dredged material as a function of density, consolidation and shear stress as input to long term fate models.	-Disposed dredged material reaches full consolidation within 2 months. - Disposed dredged material is susceptible to erosion until full consolidation. -Parameters for LTFATE model calculated
Spatial Analysis of Sediment Grain Size in the Vicinity of the Canaveral Harbor ODMDS	EPA Region 4	2003	Determine extent of physical impact due to dredged material disposal as determined by changes in grain size distribution.	-fine grain material in the vicinity of the Canaveral Harbor ODMDS does not appear to be originating from the ODMDS.
Ocean Current & Wave Measurements at the Canaveral Harbor ODMDS	EPA	2004	Determine site specific wave and current parameters for long and short term dredged material fate models.	-Currents are predominately northerly directed & of sufficient magnitude to initiate mound erosion 20% of the time. -Highest waves occur during late hurricane season and winter and are in excess of 3 meters. -Median wave height: 0.75 meters -Median wave period: 8.5 seconds -Wave periods are of sufficient length to influence near bottom currents.

Survey/Study Title	Conducted By:	Date	Purpose	Results
Trend Assessment Survey at the Canaveral Harbor ODMDS	EPA Region 4	2007	Periodically evaluate the impact of disposal on the marine environment (40CFR 228.9)	-Organic tins elevated in northern disposal zone. - No significant differences identified between biological stations inside and outside the ODMDS. -Lower number of taxa and density of organisms in active disposal zones (north & east zones).
Cape Canaveral Tributyltin Study	EPA Region 4	2010	Determine bioavailability of organic tin through measurement of pore water concentrations.	-Organic tins not detected in the pore water. - Organic tins no longer elevated in the sediments in north disposal zone.
Post Disposal Bathymetry Surveys	USACE, Canaveral Port Authority	Annually 2001-2019	-Insure safe navigation depth. -Monitor bathymetric trends. -Determine the aerial extent of the disposal mounds.	-Minimum depth has increased at center of ODMDS from -30.5 feet (2000) to -39.3 feet (2010) -Mounds approaching -40 feet in north and east zones. -see Figure 3.
Trend Assessment Survey at the Canaveral Harbor ODMDS	EPA Region 4	2017	Periodically evaluate the impact of disposal on the marine environment (40CFR 228.9)	- Sediment grain size had a general shift towards sand but the larger change outside of the disposal site suggests it is not related to disposal activities. - Statistically significant increases were observed in mean taxa richness and density within the site.

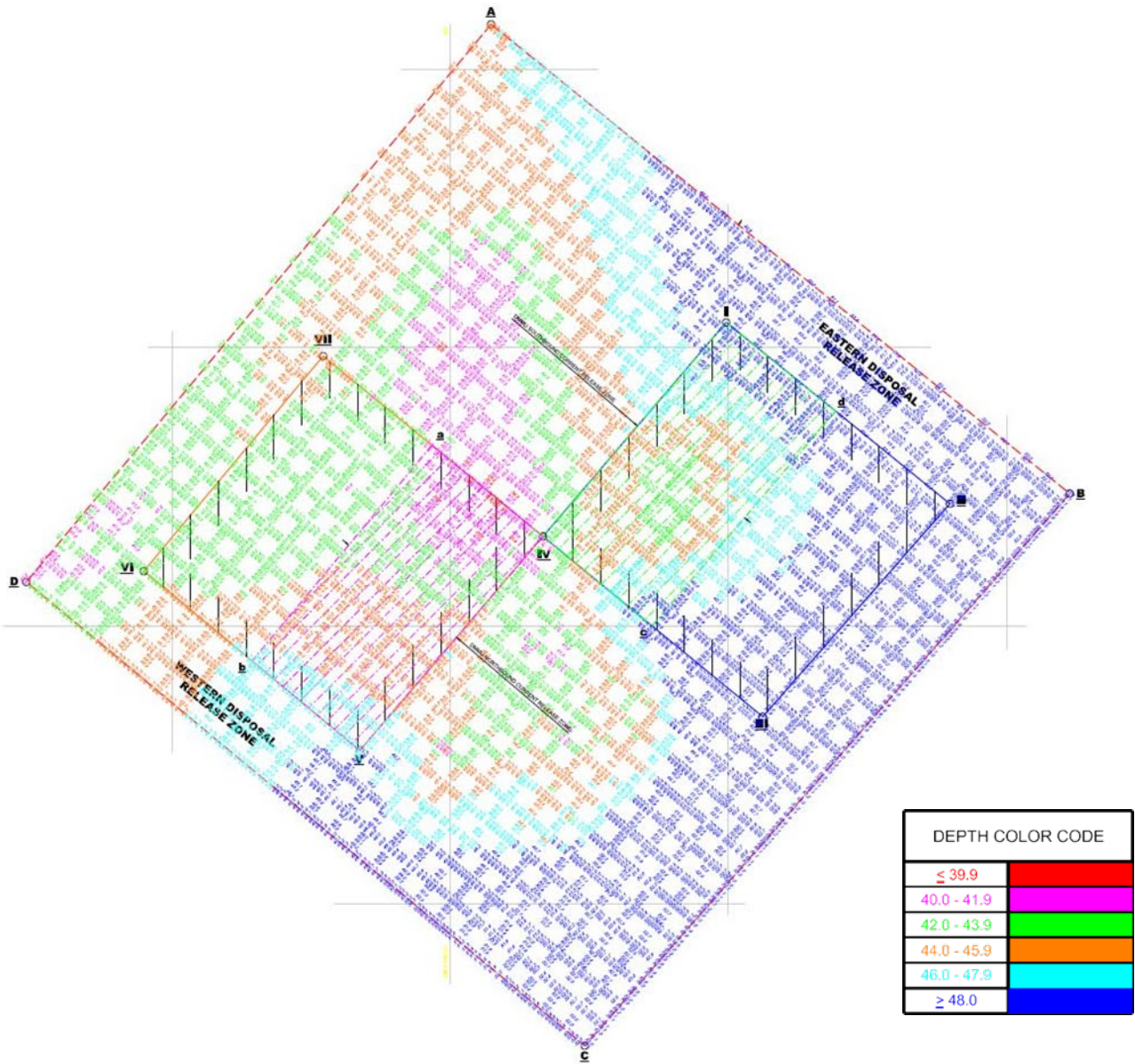


Figure 3 Canaveral Harbor ODMDS October 2019 Bathymetry

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:

- Load Number
- Disposal Vessel Name and Type (e.g. scow)
- Estimated volume of Load
- Description of Material Disposed
- Source of Dredged Material
- 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 3.2. EPA Region 4 and the 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, or other violation of the conditions in this SMMP occur. Excessive leakage is defined as more than 1.5 feet of draft loss during transit to the ODMDS averaged between forward and aft sensors. 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

The 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 the 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

Table 8 lists the past surveys at the Canaveral Harbor ODMDS. In general, the surface of the site is covered by rippled very fine sand below which fine grained mud exists. The surface sands probably represent *in-situ* washing of the sediment with removal of fines from the upper surface. However, it is difficult to determine if the observed sand-over-mud stratigraphy is: 1) uniquely related to surficial washing of muddy dredged materials; 2) a natural phenomenon reflecting existing sedimentation of fines derived from coastal erosion or riverine input; 3) a result of reworking of ancient muddy sediments; or 4) a reflection of all of the above sources.

The surveys/studies listed in table 8 have indicated that the ODMDS is a dispersive site for fine grained material and as a result dredged material may extend beyond the designated site boundaries. Indicators of dredged material (from the sediment mapping, REMOTS, sidescan sonar and bathymetric surveys) appear within the ODMDS and to the northwest. Dredged material to the northwest of the site is likely either a result of offsite transport or historic short dumping. Current measurements indicate predominate currents are to the north. Erosion of fine-grained material from the bottom appears to be taking place within the center of the disposal site and is apparently related to the presence of dredged material deposits over consolidated clays. A bathymetric survey conducted in January 2000 indicated significant mounding occurring near the center of the ODMDS. Since 2000, the mound height has decreased by nine feet as disposal has been diverted from this location. However, a mound with a relief of approximately 7 feet has developed in the northwest portion of the east release zone. See figure 3 for the most recent site bathymetry.

Erosion rate analysis has indicated that disposed dredged material is most susceptible to erosion within 60 days following disposal. Currents in the vicinity of the Canaveral Harbor ODMDS tend to the north-northeast paralleling the coast. Maximum surface currents exceeded 40 cm/sec. The median surface current was 10 cm/sec whereas the median bottom current was 6 cm/sec. The depth averaged median current was 7 cm/sec. Currents are not dominated by tides although there exists a tidal component. Velocities on the order of 16 cm/sec are needed to initiate erosion of Canaveral Harbor dredged material. Near bottom currents of this magnitude or greater occur approximately 20 percent of the time. If storms or other high current/wave events occur shortly after disposal, offsite transport of disposed dredged material is likely to occur.

A 2007 Trend Assessment Study of the Canaveral Harbor ODMDS indicated elevated organic tins in the sediments within the north release zone. Concentrations of tributyltin were as high as 57 μ g/kg compared to background levels of less than 0.7 μ g/kg. All other analytes were at background levels. There were no significant differences identified between biological stations inside and outside the ODMDS. However, there were a lower number of taxa and density of organisms observed in the active release zones (North and East).

As a follow-up to the 2007 Trend Assessment Study, a study of the pore water concentration of organic tins was conducted in 2010. Organic tin partitioning is highly complex and the

relationship between concentrations and observed effects is much stronger for pore water. Five sediment samples and five pore water samples were collected within the north release zone. Organic tins were not detected in either the pore water or sediment samples indicating that organic tin levels are no longer elevated due to degradation, dispersion or burial.

The most recent Trend Assessment Study was done in 2017. Results from the sediment grain size analyses indicated that sediments within and outside of the disposal site boundaries, did not reveal any remarkable differences and the area consists of primarily fine sands. The similarities in grain size suggest that conditions across the study are relatively consistent, and that disposal activities are not altering conditions within the site compared to surrounding natural conditions. Results also showed that sediment grain size had a general shift towards sand from 2007 to 2017 at sampling stations both inside the disposal site boundaries (71% to 78%) and outside the disposal site boundaries (53% to 76%). This could suggest a systemic change in sediment composition, but the larger change outside of the disposal site suggests it is not related to disposal activities.

Chemical analyses of the sediment samples showed that 5 of the 12 metals analyzed were present in concentrations that were either at or below detectable levels. The metals aluminum, arsenic, chromium, iron, lead, nickel, and zinc, while detected, were measured at concentrations below that which would cause concern. All SVOA, pesticides, and PCBs, if present at all, were at levels too low to be detected by the methods used in these analyses, falling below the minimum reporting limits (MRL).

There was no statistical difference in mean macroinvertebrate taxa richness, density, diversity, or evenness between stations inside and outside the ODMDS (Barry Vittor and Assoc., 2017). This suggests that dumping activities are managed in such a way that macroinvertebrate populations are not adversely affected by disposal activities. Also, results from the water column profile revealed the presence of a slight thermocline at approximately 9.5 meters, however dissolved oxygen and salinity were measured at similar concentrations throughout the water column. These results suggest that there are no effects of dumping activities on water quality.

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.

At the current time, no nearby biological resources have been identified that are of concern for potential impact. The Canaveral Harbor ODMDS is at least one nautical mile from all known fish havens, artificial reefs, and fishing areas. The site has been identified as partially dispersive. This means that it is expected that material will be moved outside the site boundaries. It is also expected that this material will not move in distinct mounds, but instead will blend with the surrounding environment causing a progressive transition to sediments containing a higher

percentage of silt and clay. Changes in sediment composition 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.

Concern has been raised regarding the potential for disposed dredged material impacting offshore sand sources and the magnitude and extent of disposed dredged material dispersal outside of the ODMDS boundaries. Additionally, mounding at the site has raised capacity concerns. Future surveys as outlined in Table 9 will focus on monitoring for adverse environmental effects and determining the rate and direction of disposed dredged material dispersal and the capacity of the ODMDS. Should future disposal at the Canaveral Harbor ODMDS result in unacceptable adverse impacts, further studies may be required to determine the persistence of these impacts, the extent of the impacts within the marine system, and/or possible means of mitigation. In addition, the management plan resented may require revision based on the outcome of any monitoring program.

Table 9. Canaveral Harbor ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Trend Assessment	Water and Sediment Quality, Benthic Community Analysis (40CFR228.13)	U.S. EPA	Periodically evaluate the impact of disposal on the marine environment (40CFR 228.9)	Approximately every 10 years.	-Absence from the site of pollution sensitive biota -Progressive non-seasonal changes in water or sediment quality	Continue Monitoring	-Conduct Environmental Effects Monitoring or Advanced Environmental Effects Monitoring -Review dredged material evaluation procedures
Environmental Effects Monitoring	Chemical Monitoring	EPA/USACE	Determine if chemical contaminants are significantly elevated ¹ within and outside of site boundaries	Implement if disposal footprint extends beyond the site boundaries or	Contaminants are found to be elevated ¹	Discontinue monitoring.	- Institute Advanced Environmental Effects Monitoring - Implement case

	Benthic Monitoring	EPA/USACE	Determine whether there are adverse changes in the benthic populations outside of the site and evaluate recovery rates	if Trend Assessment results warrant.	Adverse changes observed outside of the site that may endanger the marine environment		specific management options (ie. Remediation, limits on quantities or types of material). -Consider isolating dredged material (capping)
<p>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.</p> <p>² Examples of sub-lethal effects include without limitation the development of lesions, tumors, development abnormality, and/or decreased fecundity.</p>							

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
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	-Discontinue site use - Implement case specific management options (i.e.

	Benthic Monitoring		Determine if the site is a source of adverse sub-lethal ² changes in benthic organisms which may endanger the marine environment		Sub-lethal effects are unacceptable.		Remediation, limits on quantities or types of material).
Monitor Bathymetric Trends	Bathymetry	USACE	Determine the extent of the disposal mound and major bathymetric changes	Every 2 years	Disposal mound occurs outside ODMDS boundaries	Continue Monitoring	-Modify disposal method/placement -Restrict disposal volumes -Enlarge site
Insure Safe Navigation Depth	Bathymetry	Site User	Determine height of mound and any excessive mounding	Post disposal for projects greater than 100,000 cy	Mound height > -40 feet mean lower low water (MLLW)	Continue Monitoring	-Modify disposal method/placement -Restrict disposal volumes
					Mound height > -30 feet MLLW	Continue Monitoring	- Physically level material

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Long-term Fate	LTFATE Modeling	CPA/USACE	Determine dispersiveness of site and potential aerial extent of impact	-As resources allow	Measurable deposition (>5cm) outside of site boundaries	-Reduce buffer size to increase capacity -Continue site use without restrictions	-Increase buffer as needed. -Restrict disposal volumes.
	Regional Grain Size Analysis or SPI	CPA/USACE	Determine if site use if affecting grain size outside of the ODMDS	10 years	Significant decrease in mean grain size outside of ODMDS	Continue site use without restrictions	-Create sand berms to retard dredged material transport.
Site Capacity	MDFATE Modeling	CPA/USACE	Determine capacity of the site	-As resources allow - See section 2.3	Volumes exceed estimated capacity	Continue to use site without restrictions	-Enlarge site or designate new site. -Decrease depth restriction to -30 feet.
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	Weekly during the project	Disposal records required by SMMP are not submitted or are incomplete	Continue Monitoring	-Restrict site use until requirements are met

4.0 CONDITIONS FOR USE OF THE CANAVERAL HARBOR ODMDS

4.1 Standard Conditions for use of the Canaveral Harbor ODMDS

4.1.1 Prohibition on Trash and Debris

Only dredged material determined in advance by the EPA and the USACE to be suitable for ocean disposal may be discharged at the Canaveral Harbor ODMDS. Disposal shall be limited to suitable dredged material per the 40 CFR 228 (h)(10). 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

Excessive leakage/spillage or other loss of material 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 the USACE contract specifications (in any event loss of dredged material during transit to the ODMDS (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.

4.1.3 Quality Control Inspector, and Scow Certification Checklist

Before any disposal vessel departs for the *Canaveral Harbor 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 an alternate version of the Scow Certification Checklist (Appendix D) is utilized, the EPA and the USACE must approve the proposed Scow Certification Checklist prior to the commencement of ocean disposal operations. As indicated in the 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 the EPA and the 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 6).

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 the USACE and the 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 the USACE and the 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 the USACE or the 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 the EPA and the USACE at their discretion, at the request of the site user. In such cases the site user must demonstrate to the satisfaction of the EPA and the 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

The USACE or other site user should notify the EPA 15 days prior to the beginning of a dredging cycle or project disposal. The user is also required to notify the 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 weekly 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

The USACE shall provide a Post Disposal Summary Report to the 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 the 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

Field monitoring data collected by the EPA such as material tracking, disposal effects monitoring, and other site-specific parameters will be coordinated with and provided to SMMP team members, federal and state agencies, and other interested parties as appropriate by the EPA and/or the USACE. Data will be provided for all surveys in a report generated by the EPA. The report should indicate how the survey relates to the SMMP and previous surveys at the Canaveral Harbor 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 the EPA's website (<https://www.epa.gov/ocean-dumping>.)

5.0 MODIFICATION OF THE CANAVERAL HARBOR 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, the EPA, in conjunction with the USACE, will modify the ODMDS SMMP to mitigate the adverse impacts. The 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 CANAVERAL HARBOR ODMDS SMMP

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

REFERENCES

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- Messing, Charles G., Moyer, R., Gilliam, D.S., Walker, B.K., Dodge, R.E., 2003. *Deep-water biological habitat survey report for the Tractebel Calypso natural gas pipeline extension of existing survey to 200m depth*. Submitted to URS Corporation. June 2003.
- Pequegnat, Willis E., Gallaway, Benny J., and Wright, Thomas D., 1990. *Revised Procedural Guide for Designation Surveys of Ocean Dredged Material Disposal Sites*, Technical Report D-90-8, US Army Engineer Waterways Experiment Station, Vicksburg, MS.
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- U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 1996. *Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites*, February 1996. Prepared by Environmental Protection Agency Office of Water and Department of Army United States Army Corps of Engineers.
- U.S. Environmental Protection Agency, Region 4 and U.S. Army Corps of Engineers, South Atlantic Division, 2017. *Memorandum of Understanding Between U.S. Army Corps of Engineers, South Atlantic Division and U.S. Environmental Protection Agency, Region, 4 on Ocean Dredged Material Disposal*, May 2017.

U.S. Environmental Protection Agency, Region 4 and U.S. Army Corps of Engineers, South Atlantic Division, 2008. *Southeast Regional Implementation Manual (SERIM) Requirements and Procedures for Evaluation of the Ocean Disposal of Dredged Material in Southeastern Atlantic and Gulf Coastal Waters*, August 2008.

APPENDIX A

WATER COLUMN EVALUATIONS NUMERICAL MODEL (STFATE) INPUT PARAMETERS

Canaveral Harbor ODMDS

Site Description

Parameter	Value	Units
Number of Grid Points (left to right)	45	
Number of Grid Points (top to bottom)	45	
Spacing Between Grid Points (left to right)	350	ft
Spacing Between Grid Points (top to bottom)	350	ft
Constant Water Depth	47	ft
Roughness Height at Bottom of Disposal Site	.0051	ft
Slope of Bottom in X-Direction	0	Deg.
Slope of Bottom in Z-Direction	0	Deg.
Number of Points in Ambient Density Profile Point	3	
Ambient Density at Depth = 3 ft	1.0257	g/cc
Ambient Density at Depth = 26 ft	1.0257	g/cc
Ambient Density at Depth = 47 ft	1.0259	g/cc

Ambient Velocity Data

Parameter	Value	Units
Profile	2-Point at constant depth	
X-Direction Velocity = 8 feet	-0.17	ft/sec
Z-Direction Velocity = 8 feet	0.29	ft/sec
X-Direction Velocity = 38 feet	-0.17	ft/sec
Z-Direction Velocity = 38 feet	0.11	ft/sec

Disposal Operation Data

Parameter	Value	Units
Location of Disposal Point from Top of Grid	7,875	ft
Location of Disposal Point from Left Edge of Grid	7,875	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	1,800	ft
Location of the Upper Left Corner of the Disposal Site -Distance from Left Edge	1,800	ft
Location of the Lower Right Corner of the Disposal Site -Distance from Top Edge	13,950	ft
Location of the Lower Right Corner of the Disposal Site -Distance from Left Edge	13,950	ft
Duration of Simulation	14,400	sec
Long Term Time Step	600	sec

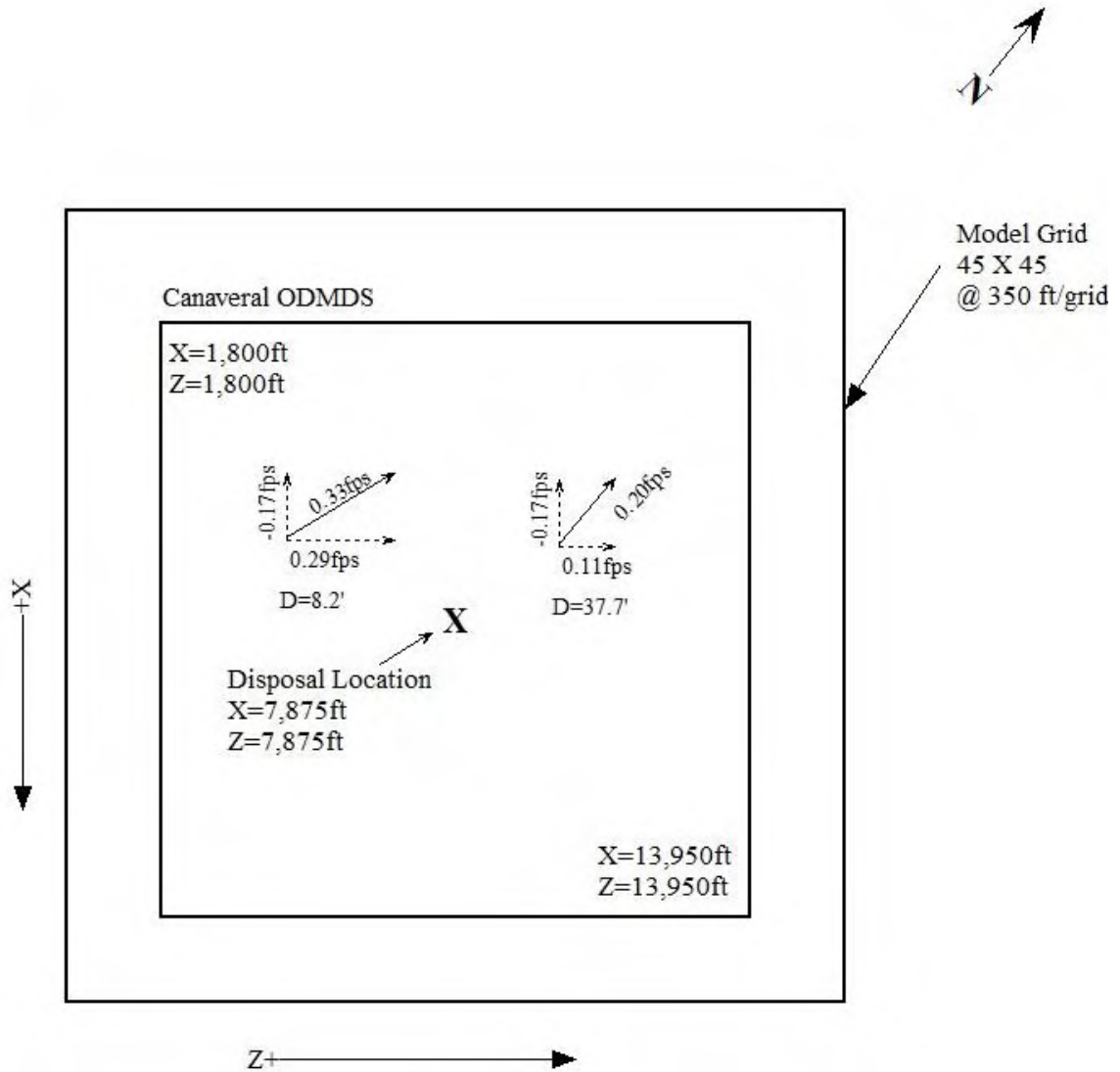
Coefficients

Parameter	Keyword	Value
Settling Coefficient	BETA	0.0001
Apparent Mass Coefficient	CM	1.0001
Drag Coefficient	CD	0.5001
Form Drag for Collapsing Cloud	CDRAG	1.0001
Skin Friction for Collapsing Cloud	CFRIC	0.0101
Drag for an Ellipsoidal Wedge	CD3	0.1001
Drag for a Plate	CD4	1.0001
Friction Between Cloud and Bottom	FRICTN	0.0101
4/3 Law Horizontal Diffusion Dissipation Factor	ALAMDA	0.0011
Unstratified Water Vertical Diffusion Coefficient	AKYO	Pritchard Expression
Cloud/Ambient Density Gradient Ratio	GAMA	0.2501
Turbulent Thermal Entrainment	ALPHAO	0.2351
Entrainment in Collapse	ALPHAC	0.1001
Stripping Factor	CSTRIP	0.0031

¹ Model Default Value

Expected dilution at 4 hours = 2,500:1. Expected dilution at edge of disposal site > 60,000:1 Dilution will be dependent on the characteristics of the dredged material and the size of the disposal vessel. These values are for a very silty material with high water content and a 4,000 cubic yard scow.

Canaveral ODMDS STFATE Input Parameters



Canaveral Harbor ODMDS Background Water Concentration.	
Chemicals of Concern	Background Concentration Levels (µg/l)
Arsenic	1.36 ¹
Cadmium	0.008 ¹
Chromium (VI)	0.29 ²
Copper	0.34 ¹
Lead	0.076 ²
Mercury	0.01 ^{2,4}
Nickel	0.25 ²
Selenium	5.0 ^{1,4}
Silver	0.0091
Zinc	2.331
Cyanide	0 ⁵
Tributyltin (TBT)	0.01 ^{1,4}
Aldrin	0.005 ^{1,4}
Chlordane	0.005 ^{1,4}
DDT	0.012 ^{1,4}
Dieldrin	0.005 ^{1,4}
alpha -Endosulfan	0.005 ^{1,4}
beta -Endosulfan	0.010 ^{1,4}
Endrin	0.010 ^{1,4}
gamma-BHC (Lindane)	0.002 ^{1,4}
Heptachlor	0.004 ^{1,4}
Heptachlor Epoxide	0.005 ^{1,4}
Toxaphene	0 ⁵
Pentachlorophenol	4.85 ^{1,4}

¹ 2007 EPA Status and Trends Survey at the Canaveral ODMDS

² Site Designation Studies for a New Ocean Dredged Material Disposal Site off Jacksonville, Florida: Spring and Fall 2010 Survey Results

³ Reference Station Water from the 2006 Mayport Harbor 103 Evaluation

⁴ Analyte not detected. Value based on one half the reporting limit.

⁵ Analyte detection limits are well above WQC. If analytes are detected in the dredged material elutriate, a concentration of zero will be assumed at the ODMDS.

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 Canaveral Harbor ODMDS, proper disposal of dredged material at the disposal area within the Canaveral Harbor ODMDS, and transportation of the hopper dredge or disposal barge or scow back to the dredging site.

- B. The Canaveral Harbor ODMDS is defined as the rectangle with center coordinates of 28° 18.750'N latitude and -80° 30.986'W longitude (NAD 83) or state plane coordinates 1,446,630 ft N and 811,757 ft E (NAD83). The site coordinates are as follows:

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
NE	26°08.750'N	-80°01.000'W	978,753 E	659,915 N
NW	26°08.750'N	-80°02.578'W	970,124 E	659,851 N
SW	26°06.500'N	-80°02.578'W	970,225 E	646,220 N
SE	26°06.500'N	-80°01.000'W	978,856 E	646,283 N

- 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 Canaveral Harbor ODMDS.

- D. The permittee shall use an electronic positioning system to navigate to and from the Canaveral Harbor 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 Canaveral Harbor 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 Canaveral Harbor ODMDS. The certification shall be accomplished by direct comparison of the electronic positioning system's accuracy with a known fixed point.
- F. Before any disposal vessel departs for the *Canaveral Harbor ODMDS*, a dedicated quality control inspector 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 in Appendix D. If an alternate version of the Scow Certification Checklist (Appendix D) is utilized, the EPA and the USACE must approve the proposed Scow Certification Checklist prior to the commencement of ocean disposal operations. 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 the EPA and the USACE.
- G. The permittee shall not allow any water or dredged material placed in a hopper dredge or disposal barge or scow to flow over the sides or leak from such vessels during transportation to the Canaveral Harbor ODMDS. Excessive leakage/spillage or other loss of material 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 the USACE contract specifications in any event loss of dredged material during transit to ODMDS (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.
- H. A disposal operations inspector and/or captain of any tugboat, hopper dredge or other vessel used to transport dredged material to the Canaveral Harbor 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 USACE, 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.

- I. When dredged material is disposed, no portion of the hopper dredge or disposal barge or scow shall be outside of the boundaries of the Canaveral Harbor ODMDS as defined in Special Condition B. Additionally, disposal shall be initiated within the designated disposal release zone defined below:

Canaveral Harbor ODMDS Disposal Maintenance Material Release Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Northing	Easting
North	28 °20.267'N	-80 °31.170'W	1,455,819 N	810,734 E
East	28 °18.867'N	-80 °29.236'W	1,447,378 N	821,139 E
South	28 °17.234'N	-80 °30.870'W	1,437,446 N	812,416 E
West	28 °18.617'N	-80 °32.736'W	1,445,788 N	802,376 E

North Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28 °19.921'N	-80 °31.133'W	810,940 E	1,453,721 N
East	28 °19.380'N	-80 °30.386'W	814,961 E	1,450,458 N
South	28 °18.746'N	-80 °31.003'W	811,666 E	1,446,607 N
West	28 °19.284'N	-80 °31.738'W	807,714 E	1,449,851 N

The north zone is for disposal of material from the Canaveral Port Authority maintenance projects.

South Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28 °18.746'N	-80 °31.003'W	811,666	1,446,607
East	28 °18.208'N	-80 °30.269'W	815,618	1,443,364
South	28 °17.578'N	-80 °30.899'W	812,525	1,439,532
West	28 °18.113'N	-80 °31.620'W	808,372	1,442,757

The south zone is for disposal of material from the Canaveral Port Authority construction projects and any civil works construction projects such as the proposed port widening and deepening.

East Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28 ° 19.380'N	-80 ° 30.386'W	814,961	1,450,458
East	28 ° 18.839'N	-80 ° 39.638'W	818,982	1,447,196
South	28 ° 18.208'N	-80 ° 30.269'W	815,618	1,443,364
West	28 ° 18.746'N	-80 ° 31.003'W	811,666	1,446,607

The east zone is for disposal of material from the U.S. Navy and the USACE Civil Works maintenance projects.

West Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28 ° 19.284'N	-80 ° 31.738'W	807,714	1,449,851
East	28 ° 18.746'N	-80 ° 31.003'W	811,666	1,446,607
South	28 ° 18.113'N	-80 ° 31.620'W	808,372	1,442,757
West	28 ° 18.648'N	-80 ° 32.342'W	804,488	1,445,982

The west zone is for disposal of material from the U.S. Navy and the USACE Civil Works maintenance projects.

- J. 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.
- K. The permittee shall record electronically, for each load, the following information:
1. Load Number
 2. Disposal Vessel/Scow Name
 3. Tow-Vessel Name (if used) Captain of Vessel
 4. Estimated Volume of Load

5. Description of Material Disposed
 6. Source of Dredged Material
 7. Date, Time, and Location at State of Initiation of Disposal and Completion of Disposal Event
 8. The ETS data required by Special Condition I
- L. The permittee shall conduct a bathymetric survey of the Canaveral Harbor ODMDS within 30 days following project completion.
1. The number and length of the survey transects shall be sufficient to encompass the release zone specified in Special Condition H and a 500-foot-wide border around the site. The transects shall be spaced at 500-foot intervals or less.
 2. 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 site 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.
- M. 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 Environmental Protection Agency Region 4 's Oceans Estuary and Marine Management Section (61 Forsyth Street, Atlanta, GA 30303) and via email at OceandumpingR4@epa.gov . 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 the 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:
1. The report shall indicate whether all general and special permit conditions were met. Any violations of the permit shall be explained in detail.
 2. 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
Canaveral Harbor ODMDS		
[INSERT DISPOSAL ZONES 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

The Corps or the contractor shall notify EPA Region 4 's Oceans, Wetlands, and Stream Protection Branch (61 Forsyth Street, Atlanta, GA 30303) and via email at OceandumpingR4@epa.gov 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:

- Project designation; Corps of Engineers' Contracting Officer's name and contract number; and, the Contractor's name, address, and telephone number.
- Port of departure.
- Location of ocean disposal area (and disposal zone(s)).
- 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 Canaveral Harbor 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 Canaveral Harbor ODMDS. Additionally, disposal shall be initiated within the disposal release zone(s) defined by the following coordinates:

Canaveral Harbor ODMDS Disposal Maintenance Material Release Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Northing	Easting
North	28 ° 20.267'N	-80 ° 31.170'W	1,455,819 N	810,734 E
East	28 ° 18.867'N	-80 ° 29.236'W	1,447,378 N	821,139 E
South	28 ° 17.234'N	-80 ° 30.870'W	1,437,446 N	812,416 E
West	28 ° 18.617'N	-80 ° 32.736'W	1,445,788 N	802,376 E

North Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
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North	28 ° 19.921'N	-80 ° 31.133'W	810,940 E	1,453,721 N
East	28 ° 19.380'N	-80 ° 30.386'W	814,961 E	1,450,458 N
South	28 ° 18.746'N	-80 ° 31.003'W	811,666 E	1,446,607 N
West	28 ° 19.284'N	-80 ° 31.738'W	807,714 E	1,449,851 N

The north zone is for disposal of material from the Canaveral Port Authority maintenance projects.

South Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28 ° 18.746'N	-80 ° 31.003'W	811,666 E	1,446,607 N
East	28 ° 18.208'N	-80 ° 30.269'W	815,618 E	1,443,364 N
South	28 ° 17.578'N	-80 ° 30.899'W	812,525 E	1,439,532 N
West	28 ° 18.113'N	-80 ° 31.620'W	808,372 E	1,442,757 N

The south zone is for disposal of material from the Canaveral Port Authority construction projects and any civil works construction projects such as the proposed port widening and deepening.

East Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28 ° 19.380'N	-80 ° 30.386'W	814,961 E	1,450,458 N
East	28 ° 18.839'N	-80 ° 39.638'W	818,982 E	1,447,196 N
South	28 ° 18.208'N	-80 ° 30.269'W	815,618 E	1,443,364 N
West	28 ° 18.746'N	-80 ° 31.003'W	811,666 E	1,446,607 N

The east zone is for disposal of material from the U.S. Navy and the USACE Civil Works maintenance projects.

West Zone

Vertices	Geographic NAD 83		State Plane (Florida East 0901 U.S. Ft) NAD 83	
	Latitude (North)	Longitude (West)	Easting	Northing
North	28 ° 19.284'N	-80 ° 31.738'W	807,714 E	1,449,851 N
East	28 ° 18.746'N	-80 ° 31.003'W	811,666 E	1,446,607 N
South	28 ° 18.113'N	-80 ° 31.620'W	808,372 E	1,442,757 N
West	28 ° 18.648'N	-80 ° 32.342'W	804,488 E	1,445,982 N

The west zone is for disposal of material from the U.S. Navy and the USACE Civil Works maintenance projects.

During transit to and from the Canaveral Harbor ODMDS, the disposal vessel shall remain within the navigation channel until east of the sea buoy.

D. Logs

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

- Load Number
- Disposal Vessel or Scow Name
- Tow-Vessel Name (if used)
- Captain of Vessel
- Estimated Volume of Load
- Description of Material Disposed

- Source of Dredged Material
- Date, Time, and Location at State of Initiation of Disposal and Completion of Disposal Event
- 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. Scow Checklist

Before any disposal vessel departs for the Canaveral Harbor ODMDS, a dedicated quality control inspector 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 in Appendix D. If an alternate version of the Scow Certification Checklist (Appendix D) is utilized, the EPA and the USACE must approve the proposed Scow Certification Checklist prior to the commencement of ocean disposal operations. 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 the EPA and the USACE.

F. Overflow, Spills, and Leaks

The permittee shall not allow any water or dredged material placed in a disposal vessel (i.e., a hopper dredge, disposal barge or scow) to flow over the sides or leak from such vessels during transportation to the Canaveral Harbor ODMDS. Excessive leakage/spillage or other loss of material 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 the USACE contract specifications. In any event, loss of dredged material during transit to ODMDS (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.

G. 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 (accuracy \pm 0.1 foot) of the disposal vessel (hopper dredge or disposal scow) from the point of dredging to the disposal site and return to the point of dredging. The ETS shall be capable of displaying and recording, in real-time, the disposal vessel's draft, speed, and location. 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.

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

H. 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 and draft condition shall have an accuracy of \pm 0.1 foot. 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:

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

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

1. 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 from the point of dredging to the disposal site and return to the point of dredging.

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.

2. Data shall be collected, during the dredging and disposal cycle (NOTE: A dredging and disposal cycle constitutes the time from commencement of dredging to complete discharge of the material), 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.
3. Plot Reporting (2 types):
 - a. 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.
 - b. 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.
 - c. 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.
4. ETS data and log data required by Section 3.2 shall be provided to EPA Region 4 on a weekly or more frequent basis (within one week of disposal). 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. EPA Region 4 and the 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, or other violation of the conditions in this SMMP occur. Excessive leakage is defined as more than 1.5 feet of draft loss during transit to the ODMDS averaged between forward and aft sensors. 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. 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.

I. 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 the USACE Contracting Officer and the Environmental Protection Agency Region 4 's Oceans Estuary and Marine Management Section (61 Forsyth Street, Atlanta, GA 30303) within 24 hours of a misplaced dump or any other violation of the Site Management and Monitoring Plan for the Canaveral Harbor ODMDS. Corrective actions must be implemented prior to the next dump and the Contracting Officer must be informed of actions taken.

