

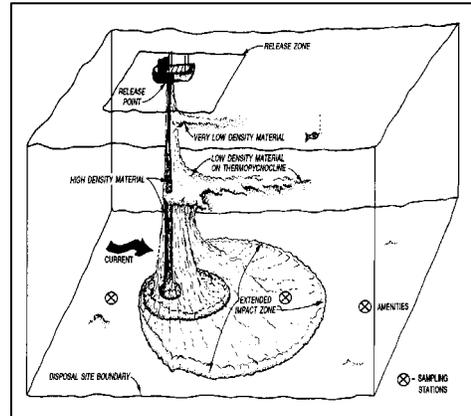
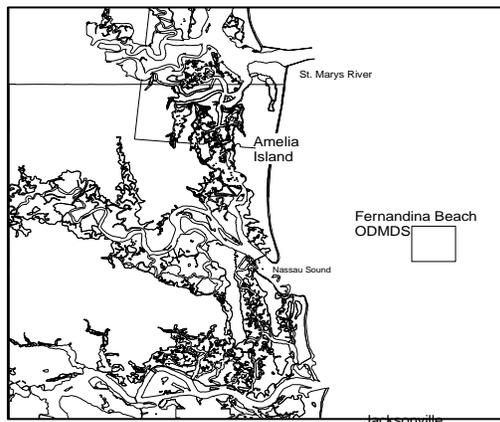
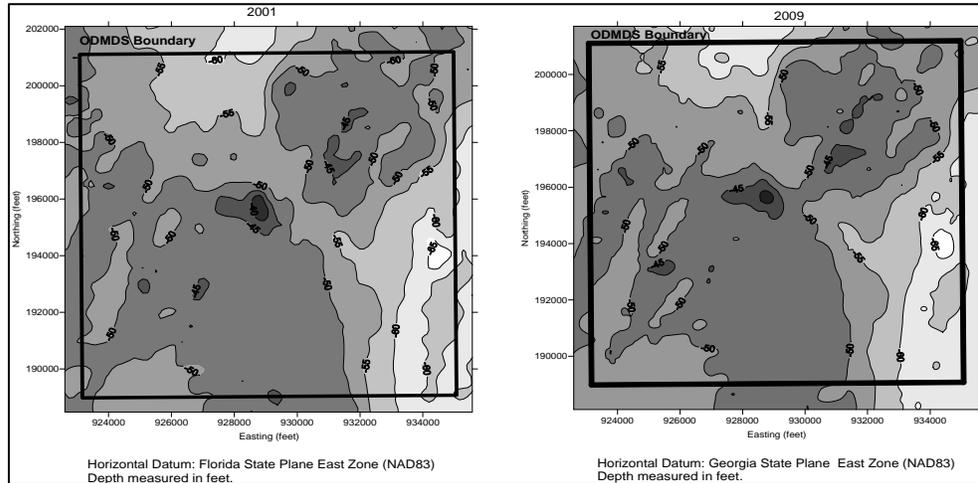


# FERNANDINA BEACH OCEAN DREDGED MATERIAL DISPOSAL SITE



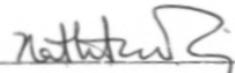
U.S. Army Corps  
of Engineers

# SITE MANAGEMENT AND MONITORING PLAN



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

		
<u>4-5-2010</u>		<u>2-18-2016</u>
Date	A. Stanley Meiburg	Date
	Acting Regional Administrator	
	U.S. Environmental Protection Agency	
	Region 4	
	Atlanta, Georgia	

For Colonel Alfred A. Pantano  
District Commander  
Jacksonville District  
U.S. Army Corps of Engineers  
Jacksonville, Florida

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

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## Fernandina Beach ODMDS Site Management and Monitoring Plan

### 1.0 INTRODUCTION

It is the responsibility of the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) under the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 to manage and monitor each of the Ocean Dredged Material Disposal Sites (ODMDSs) designated by the EPA pursuant to Section 102 of MPRSA. Section 102(c)(3) of the MPRSA requires development of a Site Management and Monitoring Plan (SMMP) for each ODMDS and review and revision of the SMMP not less frequently than every 10 years. The 1996 document, *Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites* (EPA/USACE, 1996) and the EPA, Region 4 and USACE South Atlantic Division Memorandum of Understanding (EPA/USACE, 2007) have been used as guidance in developing this SMMP.

A SMMP was first developed for the Fernandina Beach ODMDS in December 1998. An addendum to the SMMP was issued in October 2001. This revision to the Fernandina Beach ODMDS SMMP supersedes the 1998 SMMP. Upon finalization of this revised SMMP, the SMMP provisions shall be requirements for all dredged material disposal activities at the site. All Section 103 (MPRSA) ocean disposal permits or contract specifications shall be conditioned as necessary to assure consistency with the SMMP.

1.1 Site Management and Monitoring Plan Team. An interagency SMMP team was established to assist EPA and USACE in developing the 1998 Fernandina Beach ODMDS SMMP. The team consisted of the following agencies and their respective representatives:

- Jacksonville District Corps of Engineers
- Florida Department of Environmental Protection - Office of Intergovernmental Programs
- State of Georgia
- EPA Region 4
- U.S. Navy
- Fernandina Ocean Highway and Port Authority
- National Marine Fisheries Service (NMFS)

These agencies will continue to be consulted by EPA and the USACE in revisions to the Fernandina Beach ODMDS SMMP. The team will assist EPA and USACE on deciding on appropriate disposal practices, appropriate monitoring techniques, the level of monitoring, the significance of results and potential management options.

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

EPA: EPA is responsible for designating/designating MPRSA Section 102 Ocean Dredged Material Disposal Sites, for evaluating environmental effects of disposal of dredged material at these sites and for reviewing and concurring on dredged material suitability determinations.

USACE: The USACE is responsible for evaluating dredged material suitability, issuing MPRSA Section 103 permits, regulating site use and developing and implementing disposal monitoring programs.

## 2.0 SITE MANAGEMENT

Section 228.3 of the Ocean Dumping Regulations (40 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 studies; and recommending modifications in site use and/or designation."

### 2.1 Disposal Site Characteristics

The designation of the Fernandina Beach ODMDS can be found in 40 CFR 228.15(h)(8). It was designated by EPA through promulgation of a final rule on February 23, 1987, effective March 25, 1987. The Fernandina Beach ODMDS is an approximately 2 nautical mile (nmi) by 2 nmi square area centered at the coordinates 30°32.00'N latitude and 81°18.00'W longitude (NAD 27). The site coordinates are provided in Table 1.

Table 1: Fernandina Beach ODMDS Site Location Coordinates

	Geographic (NAD27) <sup>1</sup>		Geographic (NAD83) <sup>2</sup>	
	Latitude	Longitude	Latitude	Longitude
Center	30°32.0000'N	81°18.0000'W	30°32.0144'N	81°17.9884'W
NW Corner	30°33.0000'N	81°19.1333'W	30°33.0144'N	81°19.1218'W
NE Corner	30°33.0000'N	81°16.8667'W	30°33.0144'N	81°16.8550'W
SW Corner	30°31.0000'N	81°19.1333'W	30°31.0144'N	81°19.1218'W
SE Corner	30°31.0000'N	81°16.8667'W	30°31.0144'N	81°16.8550'W
	State Plane (FL East 0901 Ft NAD83)		State Plane (GA East 1001 Ft NAD83) <sup>3</sup>	
	Y-Northing	X-Easting	Y-Northing	X-Easting
Center	2254105 N	561778 E	195092 N	929074 E
NW Corner	2260183 N	555848 E	201108 N	923081 E
NE Corner	2260152 N	567740 E	201200 N	934973 E
SW Corner	2248060 N	555814 E	188985 N	923172 E
SE Corner	2248028 N	567710 E	189076 N	935069 E

<sup>1</sup> The Fernandina ODMDS Site Designation (40 CFR §228.15(h)(8)) utilizes the North American Datum of 1927 (NAD 27).

<sup>2</sup> GPS is referenced to the World Geodetic System 1984 (WGS 84) and ninety-nine percent of NOAA nautical charts are on the North American Datum of 1983 which, for charting purposes, is considered equivalent to WGS 84. The NAD27 positions were transformed to NAD83(86) using the National Geodetic Survey program NADcon.

<sup>3</sup> Surveys conducted for the Kings Bay Entrance Channel dredging are typically performed using the Georgia East Zone coordinate system

The site is 7.1 nmi (13.2 km) offshore (as measured to the center) and 11.8 nmi (21.9 km) from the entrance to the St. Marys River. It has an area of approximately 4 nmi<sup>2</sup> (13.7km<sup>2</sup>). Figure 1 shows the location of the Fernandina Beach ODMDS. As of 2009, it had a depth range of 37 to 69 feet (11.4 to 21.2) meters, with an average depth of 53 feet (16.2 meters). Figure 2 shows the most recent bathymetry of the Fernandina Beach ODMDS. There is a small mound in the center of the site with the deepest portions of the site to the southeast consisting of a north/south oriented depression. The benthos consists mostly of sands with some areas of gravel.

2.2 Management Objectives. Appropriate management of an ODMDS is aimed at assuring that disposal activities will not unreasonably degrade or endanger human health, welfare, the marine environment or economic potentialities (MPRSA §103(a)). The primary objectives in the management of the Fernandina Beach ODMDS are:

- Protection of the marine environment;
- Documentation of disposal activities and compliance; and
- Maintenance of a long term disposal alternative for dredged material generated in the Northeast Florida vicinity.

The following sections provide the framework for meeting these objectives to the extent possible.

2.3 Disposal History and Dredged Material Volumes. The Fernandina Beach ODMDS has been used for the ocean disposal of dredged material since 1987. Material disposed prior to 1987 was disposed at an interim site located north of the Fernandina Beach ODMDS, near the St. Mary's Entrance Channel. The interim site designation was canceled by the designation of the current ODMDS on March 25, 1987. Table 2 outlines the history of disposal of material from Fernandina Harbor and Kings Bay Entrance Channel at the Fernandina Beach ODMDS. Material from the Kings Bay Entrance Channel is a combination of a civil works project and U.S. Navy permitted work. Fernandina Harbor is a civil works project. A total of approximately 20 million cubic yards of dredged material has been disposed at the Fernandina Beach ODMDS. Most of the material is maintenance material from the Kings Bay Entrance Channel which averages 626,000 cubic yards of silty dredged material per year.

The Jacksonville District Corps of Engineers has projected disposal on the average of 600,000 cubic yards of dredged material every year from maintenance of the Kings Bay Entrance Channel, and up to 1 million cubic yards per dredging event from the Inner Channel and Turning Basin. Dredging from the Inner Channel and Turning Basin is infrequent. In addition, the U.S. Navy is proposing to dispose of approximately 3.2 million cubic yards of new work dredged material from Naval Station Mayport. Additional potential projects that could utilize the ODMDS as a disposal site include the berthing areas adjacent to the federal project maintained by the Fernandina Ocean & Highway Port Authority or the Fernandina Beach City Marina.

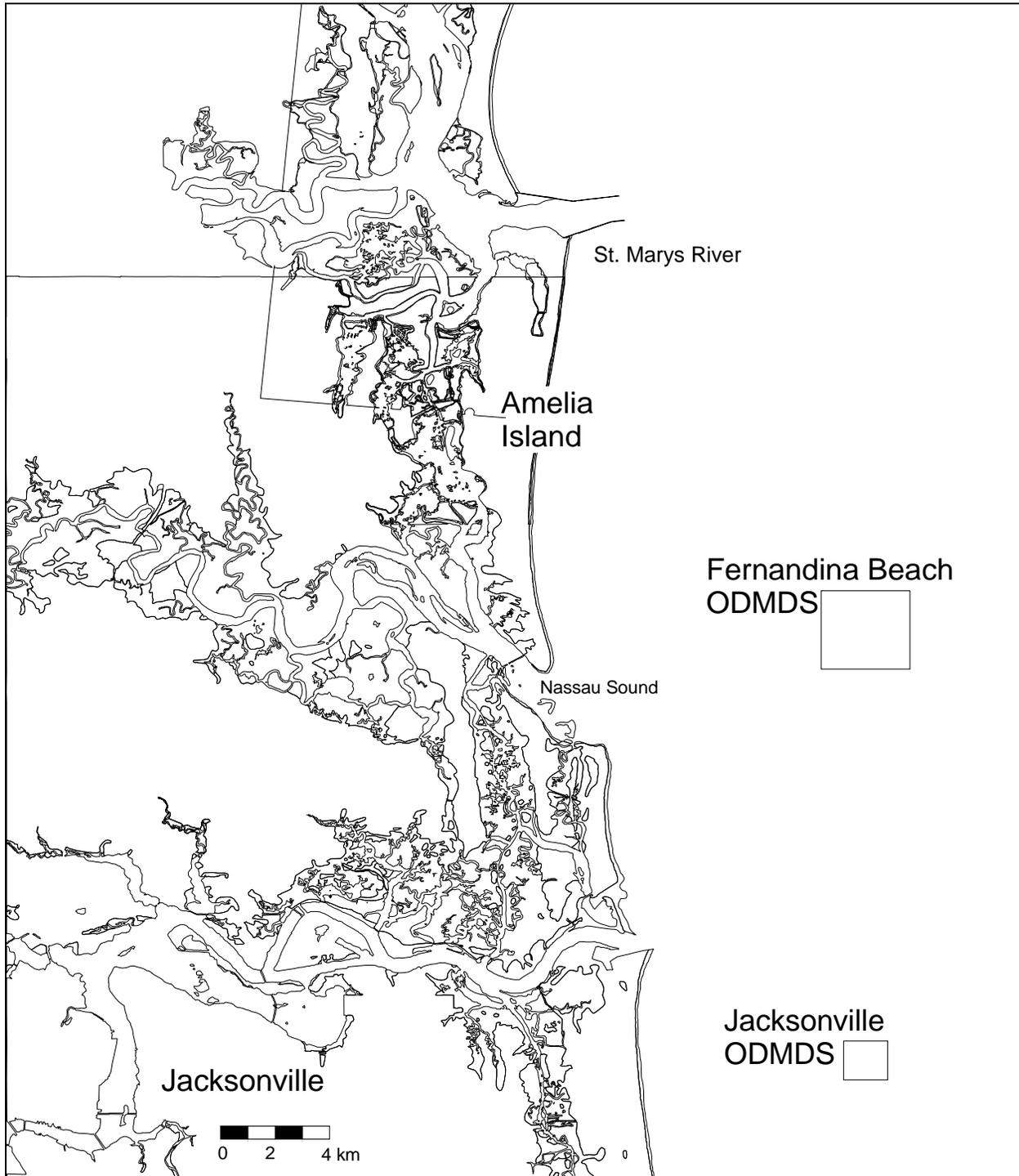


Figure 1: Fernandina Beach ODMDS Location Map

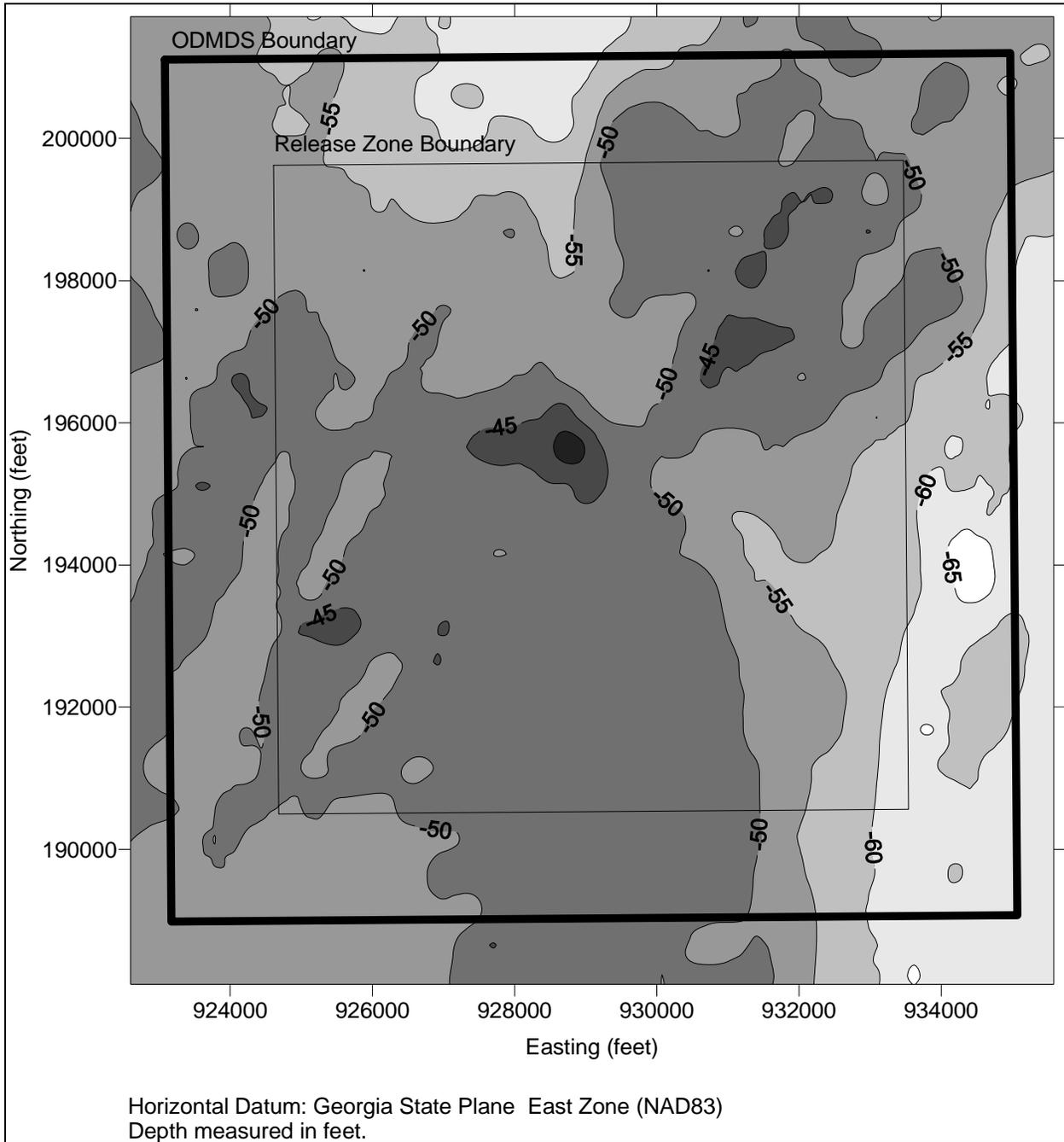


Figure 2: Fernandina Beach 2009 ODMDS Bathymetry

**Table 2: Disposal History at the Fernandina Beach ODMDS**

DREDGED MATERIAL DISPOSAL QUANTITY – CUBIC YARDS (paid <i>in situ</i> volume)				
Year	FERNANDINA HARBOR Inner Channel & Turning Basin	KINGS BAY Entrance Channel	YEAR TOTAL	Notes
1988		5,600,000 (NW) 720,029 (M)	6,320,029	silt
1989		156,425 (M)	156,425	Cut 1N, silt
1990		1,364,387 (M)	1,364,387	Cut 1N, silt
1991		640,237 (M)	640,237	Cut 1N, silt
1992		36,000 (M)	36,000	Cut 1N, silt
1993		672,645 (M)	672,645	Cut 1N, silt
1994	943,183 (M)	350,550 (M)	1,293,733	E.C.: Cut 1N, silt
1995		183,360 (M)	183,360	Cut 1N, silt
1996		915,510 (M)	915,510	Cut 1N, silt
1997		420,581 (M)	420,581	Cut 1N, silt
1998		805,376 (M)	805,376	Cut 1N, silt
1999		766,662 (M) <sup>1</sup>	766,662	Entrance Channel
2000	298,845 (M) <sup>1</sup>	831,590 (M) <sup>1</sup>	1,130,435	Entrance Channel & Inner Channel
2001		771,887 (M) <sup>1</sup>	771,887	Entrance Channel
2002		761,486 (M) <sup>1</sup>	761,486	Entrance Channel
2003		750,530 (M) <sup>2</sup>	750,530	Cut 1N, silts and clays
2004		850,792 (M) <sup>2</sup>	850,792	Cut 1N, silts and clays
2005		447,273 (M) <sup>2</sup>	447,273	Cut 1N, silts, clays and shell
2006		368,209 (M) <sup>2</sup>	368,209	Cut 1N, silts and clays
2007		578,311 (M) <sup>2</sup>	578,311	Cut 1N, silts, clays, sand and shell
2008		752,479 (M) <sup>2</sup>	752,479	Cut 1N, silts and sands
2009				
Total	1,887,028 (M)	13,144,319 (M) <u>5,600,000 (NW)</u> 18,744,319 cy	20,631,347	

M/NW: M=maintenance material; NW=new work material

Volumes from 1988 through 1998 were reported in the 1998 SMMP as hauled volumes. For consistency, all volumes are now reported as paid *in situ* volumes.

<sup>1</sup> from USACE SAJ Post Disposal Summary Report

<sup>2</sup> from 2009 emails from Katherine Roark, USACE SAJ

The U.S. Navy estimated the remaining volume of the Fernandina Beach ODMDS at 65 million cubic yards (U.S. Navy, 2008). Although this is a rough estimate, it shows that site capacity is not currently a concern and no disposal volume restrictions are warranted at this time. Site capacity should continue to be re-evaluated with each review and revision to this SMMP.

2.4 Dredged Material Characteristics. The composition of dredged material dumped at the Fernandina Beach ODMDS has consisted mostly of silty sediments as shown in Table 2 above. Material from the project areas are described as follows: 1) Fernandina Harbor Inner Channel & Turning Basin--predominantly gray slightly silty fine sand and gray silty fine sand; 2) Kings Bay Entrance Channel--predominantly dark brown and brown/gray slightly silty fine brown sand with some shells. Should new work material from deepening of Naval Station Mayport be disposed in the site, the material would likely primarily consist of silt (41%) and clay (29%) with the remainder consisting of sand (30%). (2008, USACE)

The disposition of any significant quantities of beach compatible sand from future projects will be determined during permitting activities for any such projects. It is expected that the States of Florida and Georgia will exercise their authority and responsibility, regarding beach nourishment, to the full extent during any future permitting activities. Utilization of any significant quantities of beach compatible dredged material for beach nourishment is strongly encouraged and supported by EPA. Disposal of non-beach quality sand should be planned to allow the material to be placed so that it will be within or accessible to the sand-sharing system, to the maximum extent practical, and following the provisions of the Clean Water Act. Disposal of coarser material, such as boulders, should be coordinated with the local agencies, the States of Florida and Georgia and EPA to promote possible beneficial uses of the material.

The suitability of dredged material for ocean disposal must be verified by the USACE and agreed to (concurred) by EPA prior to disposal. Verification will be valid for three years from the time last verified. Verification will involve: 1) a case-specific evaluation against the exclusion criteria (40 CFR 227.13(b)), 2) a determination of the necessity for testing including bioassays (toxicity and bioaccumulation) for non-excluded material based on the potential for contamination of the sediment since last tested, and 3) carrying out the testing (where needed) and determining that the non-excluded, tested material is suitable for ocean disposal.

Documentation of suitability will be completed prior to use of the site. Documentation will be in the form of a MPRSA Section 103 Evaluation. The Evaluation and any testing will follow the procedures outlined in the 1991 EPA/USACE Dredged Material Testing Manual and the 2008 Southeast Regional Implementation Manual (SE RIM). This includes how dredging projects will be subdivided into project segments for sampling and analysis. The MPRSA Section 103 Evaluation will be in the form outlined in Appendix B of the SE RIM. Water Quality Compliance determinations should be made using the STFATE (ADDAMS) model and the input parameters provided in Appendix A or approved modifications. Only material determined to be

suitable through the verification process by the USACE and EPA, Region 4 will be placed at the Fernandina Beach ODMDS.

2.5 Time of disposal. At present no restrictions have been determined to be necessary for disposal related to seasonal variations in ocean current or biotic activity. Dredging is typically restricted to the winter months due to hopper dredging sea turtle restriction. During the winter, precautions necessary to protect North Atlantic Right Whales (NARW), as described in the next paragraph are required. It is expected that the proposed disposal activities from the deepening of Naval Station Mayport will not occur during the NARW calving season (November 15 through April 15) [U.S. Navy, 2009].

2.6 Disposal Technique and Route. No specific disposal technique is required for this site. However, in order to protect NARW, 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.

2.7 Disposal Location. Disposal shall occur no less than 1,500 feet inside the site boundaries. This buffer is defined by the coordinates provided in Table 3 (multiple datums and coordinate systems are provided for completeness):

**Table 3: Disposal Release Zone**

	Geographic (NAD27) <sup>1</sup>		Geographic (NAD83) <sup>2</sup>	
NW Corner	30°32.7526'N	81°18.8475'W	30°32.7670'N	81°18.8359'W
NE Corner	30°32.7526'N	81°17.1526'W	30°32.7670'N	81°17.1409'W
SW Corner	30°31.2475'N	81°18.8475'W	30°31.2619'N	81°18.8359'W
SE Corner	30°31.2475'N	81°17.1525'W	30°31.2619'N	81°17.1408'W
	State Plane (FL East 0901 Ft NAD83)		State Plane (GA East 1001 Ft NAD83) <sup>3</sup>	
	Y-Northing	X-Easting	Y-Northing	X-Easting
NW Corner	2258679 N	557344 E	199620 N	924592 E
NE Corner	2258656 N	566237 E	199688 N	933485 E
SW Corner	2249556 N	557319 E	190496 N	924661 E
SE Corner	2249532 N	566214 E	190565 N	933557 E

<sup>1</sup> The Fernandina ODMDS Site Designation (40 CFR §228.15(h)(8) ) utilizes the North American Datum of 1927 (NAD 27).

<sup>2</sup> GPS is referenced to the World Geodetic System 1984 (WGS 84) and ninety-nine percent of NOAA nautical charts are on the North American Datum of 1983 which, for charting purposes, is considered equivalent to WGS 84. The NAD27 positions were transformed to NAD83(86) using the National Geodetic Survey program NADcon.

<sup>3</sup> Surveys conducted for the Kings Bay Entrance Channel dredging are typically performed using the Georgia East Zone coordinate system

Modeling efforts have shown that this buffer will contain the initial disposal mound within the site boundaries for projects up to 5.7 million cubic yards *in situ* (U.S. Navy, 2008). Projects greater than this amount are not expected, however, if proposed, modeling will be required to determine an appropriate buffer to contain the initial disposal mound within the ODMDS boundaries.

Placement methods which prevent mounding of dredged materials from becoming an unacceptable navigation hazard will be used. Dredged material shall be placed so that at no point with depths less than -25 feet Mean Lower Low Water (m.l.l.w.) occur (i.e., a clearance of 25 feet above the bottom will be maintained). To maximize the ODMDS capacity and minimize mounding of material, the dumps shall be scattered throughout specified disposal zones and not place repeatedly at one location. When necessary, the Corps of Engineers in consultation with EPA Region 4 will specify zones with the ODMDS for dredged material from each specific ocean dumping activity. Depths at the time of disposal will be monitored to detect if adjustments of disposal methods is needed to prevent unacceptable mounding.

Disposal shall be initiated within the disposal release zone and shall be completed (doors closed) prior to departing the ODMDS.

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

**Table 4.** Summary of Permit and Contract Conditions

Condition	Reference
Dredged Material Suitability and Term of Verification	Fernandina Beach ODMDS SMMP page 7 Regional Implementation Manual
Disposal Release Zone	Fernandina Beach ODMDS SMMP page 8
Post Bathymetric Surveys	Fernandina Beach ODMDS SMMP page 14
Disposal Monitoring	Fernandina Beach ODMDS SMMP page 14
Reporting Requirements	Fernandina Beach ODMDS SMMP page 17-20

2.9 Permit Process. All 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: [http://www.epa.gov/region4/water/oceans/Dredged\\_Material\\_Permit\\_Process.htm](http://www.epa.gov/region4/water/oceans/Dredged_Material_Permit_Process.htm).

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

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

In an attempt to streamline data sharing, EPA Region 4 and USACE South Atlantic Division have agreed on an eXtensible Markup Language (XML) standard for sharing of disposal monitoring data (see also Section 3.6). 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

The MPRSA establishes the need for including a monitoring program as part of the Site Management Plan. Site monitoring is conducted to ensure the environmental integrity of a disposal site and the areas surrounding the site and to verify compliance with the site designation criteria, any special management conditions, and with permit requirements. Monitoring programs should be flexible, cost effective, and based on scientifically sound procedures and methods to meet site-specific monitoring needs. The intent of the program is to provide the following:

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

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 changed to avoid significant adverse impacts on the marine environment.

3.1 Baseline Monitoring. Site characterization surveys of the ODMDS have been conducted by EPA and the USACE as part of the designation process prior to use of the site. They are available in the designation Supplemental Environmental Impact Statement appendices A through E. (EPA, 1986). These surveys and subsequent surveys summarized in Table 5 will serve as the main body of data for future monitoring of the impacts associated with the use of the Fernandina Beach ODMDS.

**Table 5.** Surveys Conducted at the Fernandina Beach ODMDS

Survey Title	Conducted by	Date	Purpose	Conclusion
<i>Field Survey of the Fernandina Candidate Ocean Dredged Material Disposal Site</i>	Continental Shelf Associates, Inc. USACE-SAJ	1986	Physical, Chemical and Biological Characterization of the ODMDS.	Included physical and chemical analysis of the sediments; chemical analysis of the water column; characterization of the benthic macroinvertebrates, meiofauna and macroepifauna; chemical analysis of fish and invertebrate tissue samples. A video survey and bathymetry of the site was also completed.
<i>Final Gamma Radiation Surveillance of Dredged Spoil Site Sediments at Fernandina Beach</i>	U.S. EPA Region 4 and Center for Applied Isotope Studies	1987	Baseline for future surveys.	No significant difference between stations inside site boundaries and stations outside site boundaries.
<i>Post disposal Areal Mapping of Sediment Chemistry at the Fernandina ODMDS</i>	U.S. EPA Region 4 and Center for Applied Isotope Studies	1989	Conduct sediment mapping of site to determine location of dredged material.	Identified two mounds in eastern half of ODMDS as dredged material.
<i>Fernandina Harbor, Florida, ODMDS, Benthic Communities</i>	U.S. EPA Region 4 and Vittor & Associates	1989	Benthic infaunal survey.	Infaunal communities were generally similar in 1985 and 1989, although species abundance was generally higher. Some changes occurred in the relative abundance of dominant taxa, but most taxa that were dominant in 1985 were also dominant in 1989.
<i>Bathymetry Survey</i>	USACE SAJ	Feb. 1999	Monitor bathymetric trends.	Minimum depth of 40.5 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	Apr. 2001	Monitor bathymetric trends.	Minimum depth of 33.7 feet mllw.

**Table 5 (Continued).** Surveys Conducted at the Fernandina Beach ODMDS

Survey Title	Conducted by	Date	Purpose	Conclusion
<i>Bathymetry Survey</i>	USACE SAJ	Mar. 2002	Monitor bathymetric trends.	Minimum depth of 33.3 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	Nov. 2004	Monitor bathymetric trends.	Minimum depth of 40.0 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	May 2005	Monitor bathymetric trends.	Minimum depth of 38.2 feet mllw.
<i>Post Disposal Status &amp; Trends Survey of the Miami ODMDS</i>	EPA Region 4 and Barry Vittor and Associates	Aug. 2005	Assess the extent and trends of environmental impact.  (Includes assessment of the macroinfaunal communities within and outside of the ODMDS, sediment grain size, sediment chemistry and water quality)	Water column is well mixed with no elevations in chemical concentrations and no indication of low dissolved oxygen. No significant increase in fines within the ODMDS detected. No increase in sediment chemistry inside the site compared to outside the site. Benthic macroinfauna is similar inside the site to that outside the site.
<i>Post Disposal Bathymetry Survey</i>	USACE SAJ	Mar. 2006	Monitor bathymetric trends.	Minimum depth of 36.3 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	Jun. 2007	Monitor bathymetric trends.	Minimum depth of 36.9 feet mllw.
<i>Ocean Current &amp; Wave Measurements</i>	EPA Region 4	Aug. 2006 – Sept. 2007	Determine wave and current climate for water quality modeling and capacity modeling.	Currents dominated by tides in the nnw and sse direction. Median surface current=17cm/s. Median bottom current=10cm/sec. Median wave height=0.8m.
<i>Bathymetry Survey</i>	USACE SAJ	Mar. 2008	Monitor bathymetric trends.	Minimum depth of 36.3 feet mllw.
<i>Bathymetry Survey</i>	USACE SAJ	Apr. 2009	Monitor bathymetric trends.	Minimum depth of 37.3 feet mllw.

3.2 Disposal Monitoring. For all disposal activities, an electronic tracking system (ETS) must be utilized. The ETS will provide surveillance of the transportation and disposal of dredged material. The ETS will be maintained and operated to continuously track the horizontal location and draft condition (nearest 0.5 foot) of the disposal vessel (ie. 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 500 feet during travel to and from the ODMDS and every minute or every 200 feet of travel, whichever is smaller, while approaching within 1,000 feet and within the ODMDS. In addition to the continuous tracking data, the following trip information shall be electronically recorded for each disposal cycle:

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

It is expected that disposal monitoring will be conducted utilizing the Silent Inspector (SI) system for Civil Works projects [see <http://si.usace.army.mil>]. Disposal monitoring and ETS data will be reported to EPA Region 4 on a daily basis utilizing the eXtensible Markup Language (XML) specification and protocol per Section 3.6 regardless of the system used. EPA Region 4 and the USACE District shall be notified within 24 hours if disposal occurs outside of the ODMDS or specified disposal zone or if excessive leakage occurs.

3.3 Post Discharge Monitoring. Bathymetric surveys will be used to monitor the disposal mound to insure a navigation hazard is not produced, to assist in verification of material placement, to monitor bathymetry changes and trends and to insure that the site capacity is not exceeded, i.e., the mound does not exceed the site boundaries. The USACE or other site user will conduct a bathymetric survey within 60 days after disposal project completion. Surveys will not be required for projects of less than 50,000 cubic yards. Surveys will conform to the minimum performance standards for Corps of Engineers Hydrographic Surveys for "Other General Surveys & Studies" as described in the USACE Engineering Manual, EM1110-2-1003, *Hydrographic Surveying* dated January 1, 2002 [<http://140.194.76.129/publications/engineering-manuals/em1110-2-1003/toc.htm>]. The number and length of transects required will be sufficient to encompass the ODMDS and a 500 foot wide area around the site. The surveys will be taken along lines spaced at 500-foot intervals or less. The minimum performance standards from table 3-1 in *Hydrographic Surveying* shall be followed. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing a differential global positioning system. The vertical datum will be referenced to prescribed

NOAA Mean Lower Low Water (MLLW) datum. The horizontal datum should be referenced to the local State Plane Coordinate System (SPCS) for that area or in Geographical Coordinates (latitude-longitude). The horizontal reference datum should be the North American Datum of 1983 (NAD 83).

3.4 Summary of Results of Past Monitoring Surveys. Surveys conducted at the Fernandina Beach ODMDS are listed in Table 5. Although there has been a significant and relatively constant quantity of dredged material disposed at the site, little significant change in bathymetry has been shown. Minimum depths have only decreased by approximately two feet. Most measurable accretion has occurred in the northern half of the ODMDS where most disposal takes place. Limited bathymetry changes are probably due to the silty nature of the dredged material disposed at the site. This material is probably easily removed from the site by currents and waves. The physical properties of the substrate have changed little since designation. The bottom remains sandy with some areas of gravel. There is no indication of any increases in any chemical constituent in the sediments. The benthic macroinvertebrate community continues to be dominated by polychaetes. No significant changes in the benthic macroinvertebrate community have been observed.

Currents in the vicinity of the Fernandina Beach ODMDSs tend to have a significant tidal component with predominate currents flowing to the north-northwest and south-southeast (see Figure 3). There are no strong seasonal trends in the data. Surface currents exceeded 40 cm/sec (1.3 ft/sec) five percent of the time. The median surface current at both sites was 17 cm/sec (0.6 ft/sec) whereas the median bottom current was 10 cm/sec (0.3 ft/sec). Waves in the vicinity of the Fernandina Beach ODMDSs are out of the east-southeast. Median wave heights were 0.80 meters (2.6 feet) at the Jacksonville ODMDS and 0.78 meters (2.6 feet) at the CDIP location north of the Fernandina Beach ODMDS. The highest measured waves were in excess of 3 meters (9.8 feet) at both sites and occurred in June. The most frequent wave period was 10 seconds. Based on linear wave theory, wave periods in excess of 4 seconds are of sufficient length to influence bottom velocities at the depths of the ODMDS and therefore waves are likely to affect resuspension and transport of dredged material at the ODMDS. Using the equations for wave related shear stress, wave conditions are such that the critical shear stress would be exceeded due to waves 89% of the time at the Fernandina Beach ODMDS. Waves are therefore the primary factor influencing resuspension of disposed dredged material at the ODMDS, whereas currents probably affect the direction and magnitude of transport. (EPA, 2009)

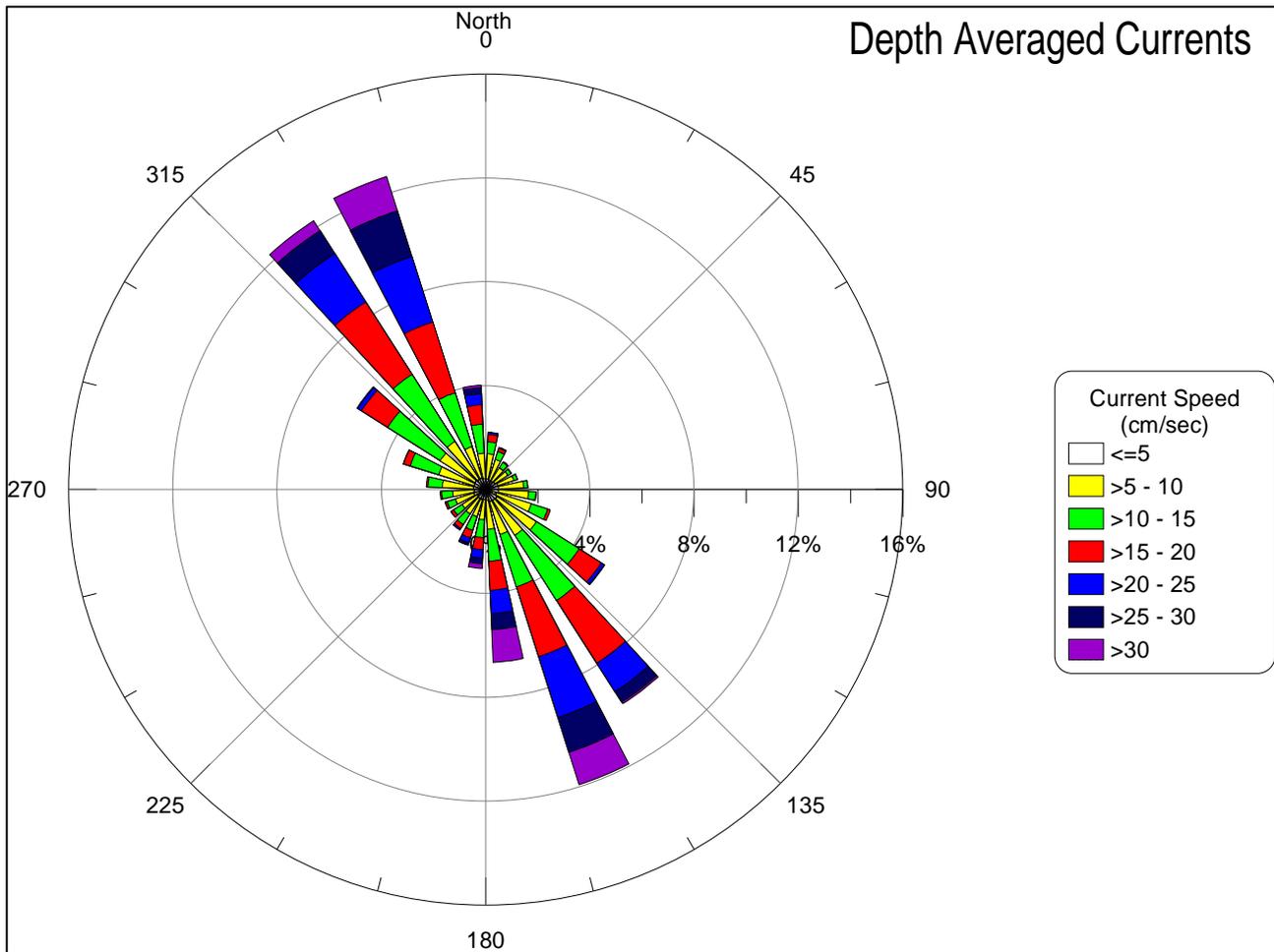


Figure 3. Fernandina Beach ODMDS Current Rose

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 determine if and where the disposed material is moving, and what environmental effect the material is having on the site and adjacent areas.

Changes in bathymetry at the ODMDS will continue to be monitored in accordance with section 3.3. Should material from the U.S. Naval Station Mayport Homeporting Deepening Project be placed at the ODMDS, it is recommended that a pre- and post- sediment profile imaging survey (SPI) be conducted. SPI is a rapid reconnaissance tool for characterizing physical, chemical, and biological seafloor processes. Material from Mayport will be significantly different than the silty material currently being disposed at the site and should be monitored for its separate effects. The SPI technology can be used to evaluate the effectiveness of the buffer at containing the material within the ODMDS boundaries and away from nearby hard bottom resources. SPI technology can also be used to document changes in grain size on the seafloor, dredged material thickness, and the marine infaunal succession stage. Additionally, trend assessment surveys of the benthos and water column will continue to be performed periodically (approximately every 10 years) as resources allow. A summary of the monitoring strategies for the Fernandina Beach ODMDS and thresholds for management actions are presented in Table 6.

Should future disposal at the Fernandina Beach 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 presented may require revision based on the outcome of any monitoring program.

### 3.6 Reporting and Data Formatting.

3.6.1 Project Initiation and Violation Reporting. The USACE or other site user should notify EPA 15 days prior to the beginning of a dredging cycle or project disposal. The user is also required to notify the USACE and the EPA within 24 hours if a violation of the permit and/or contract conditions related to MPRSA Section 103 or SMMP requirements occur during disposal operations.

3.6.2 Disposal Monitoring Data. Disposal monitoring data shall be provided to EPA Region 4 electronically on a weekly basis. Data shall be provided per the EPA Region 4 XML format and delivered as an attachment to an email to [DisposalData.R4@epa.gov](mailto:DisposalData.R4@epa.gov). The XML format is available from EPA Region 4.

**Table 6.** Fernandina Beach ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Short & Long-term Fate of Disposed Dredged Material	Sediment Profile Imaging	Site User /EPA	Confirm aerial extent of disposal mound (apron) and benthic impact. Confirm not impacting benthic communities outside of the ODMDS	Following major New Work Project	Disposal mound footprint occurs outside ODMDS boundaries (5cm)	Continue to use site without further restrictions	-Restrict disposal volumes -Modify disposal zones -Institute Environmental Effects Monitoring
Monitor Bathymetric Trends	Bathymetry	Site User	Determine the extent of the disposal mound and major bathymetric changes	Post disposal (60 days) for significant projects (>50,000cy)	Disposal mound occurs outside ODMDS boundaries	Continue Monitoring	-Modify disposal method/placement -Restrict Disposal Volumes
Insure Safe Navigation Depth	Bathymetry	Site User	Determine height of mound and any excessive mounding	Post disposal for significant projects (>50,000cy)	Mound height > -30 feet mllw.	Continue Monitoring	-Modify disposal method/placement -Direct disposal operators to avoid areas shallower than 30 feet.
					Mound height > -25 feet mllw	Continue Monitoring	-Physically level material shallower than 25 feet -Notify mariners of mound location and depth -Further restrict disposal volumes.
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 as resources allow.	-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 -Consider isolating dredged material (capping)

**Table 6 (Continued).** Fernandina Beach ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Environmental Effects Monitoring	Chemical Monitoring	EPA/USACE	Determine if chemical contaminants are significantly elevated <sup>1</sup> within and outside of site boundaries	Implement if disposal footprint extends beyond the site boundaries or if Trend Assessment results warrant.	Contaminants are found to be elevated <sup>1</sup>	Discontinue monitoring.	<ul style="list-style-type: none"> <li>- Institute Advanced Environmental Effects Monitoring</li> <li>- Implement case specific management options (ie. Remediation, limits on quantities or types of material).</li> </ul>
	Benthic Monitoring	EPA/USACE	Determine whether there are adverse changes in the benthic populations outside of the site and evaluate recovery rates		Adverse changes observed outside of the site that may endanger the marine environment		
Advanced Environmental Effects Monitoring	Tissue Chemical Analysis	EPA/USACE	Determine if the site is a source of adverse bioaccumulation which may endanger the marine environment	Implement if Environmental Effects Monitoring warrants.	Benthic body burdens and risk assessment models indicate potential for food chain impacts.	Discontinue monitoring	<ul style="list-style-type: none"> <li>-Discontinue site use</li> <li>- Implement case specific management options (ie. Remediation, limits on quantities or types of material).</li> </ul>
	Benthic Monitoring		Determine if the site is a source of adverse sub-lethal <sup>2</sup> changes in benthic organisms which may endanger the marine environment		Sub-lethal effects are unacceptable.		
Compliance	Disposal Site Use Records in EPA Region 4's XML format	Site User	<ul style="list-style-type: none"> <li>-Insure management requirements are being met</li> <li>-To assist in site monitoring</li> </ul>	Daily during the project	Disposal records required by SMMP are not submitted or are incomplete	Continue Monitoring	-Restrict site use until requirements are met

<sup>1</sup> 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

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

3.6.3 Post Disposal Summary Reports. A Post Disposal Summary Report shall be provided to EPA within 90 days after project completion. These reports should 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 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 by load number of any misplaced material; dates of pre and post disposal bathymetric surveys of the ODMDS and a narrative discussing any violation(s) of the 103 concurrency and/or permit (if applicable). The narrative should include a description of the violation, indicate the time it occurred and when it was reported to the EPA and USACE, discuss the circumstances surrounding the violation, and identify specific measures taken to prevent reoccurrence. The Post Disposal Summary Report should be accompanied by the bathymetry survey results (plot and X,Y,Z ASCII data file), 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.

3.6.4 Environmental Monitoring. Material tracking, disposal effects monitoring and any other data collected shall be coordinated with and provided to SMMP team members and federal and state agencies as appropriate. Data will be provided to other interested parties requesting such data to the extent possible. Data will be provided for all surveys in a report generated by the action agency. The report should indicate how the survey relates to the SMMP and previous surveys at the Fernandina Beach 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.

#### 4.0 MODIFICATION OF THE FERNANDINA BEACH 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 ODMDS SMMP will be modified to mitigate the adverse impacts. The SMMP will be reviewed and revised at a minimum of every ten years. The SMMP will be reviewed and updated as necessary if site use changes significantly. For example, the SMMP will be reviewed 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.

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U.S. Environmental Protection Agency (EPA), 2009. *Ocean Current and Wave Measurements at the Jacksonville and Fernandina Beach Ocean Dredged Material Disposal Sites*. EPA-904-R-09-001. January 2009

U.S. Navy, 2008. Final EIS for the Proposed Homeporting of Additional Surface Ships at Naval Station Mayport, FL. November 2008.

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## APPENDIX A

### WATER COLUMN EVALUATIONS NUMERICAL MODEL (STFATE) INPUT PARAMETERS

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Water Column Evaluations  
 Numerical Model (STFATE) Input Parameters  
 Fernandina Beach ODMDS

**SITE DESCRIPTION**

<b>Parameter</b>	<b>Value</b>	<b>Units</b>
Number of Grid Points (left to right)	70	
Number of Grid Points (top to bottom)	70	
Spacing Between Grid Points (left to right)	225	ft
Spacing Between Grid Points (top to bottom)	225	ft
Constant Water Depth	53	ft
Roughness Height at Bottom of Disposal Site	.005 <sup>1</sup>	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 <sup>2</sup>	3	
Ambient Density at Depth = 0 ft	1.0214	g/cc
Ambient Density at Depth = 40 ft	1.0232	g/cc
Ambient Density at Depth = 53 ft	1.0232	g/cc

**AMBIENT VELOCITY DATA**

<b>Parameter</b>	<b>Value</b>	<b>Units</b>
Water Depth	53	ft
Profile <sup>3</sup>	2 Point	
X-Direction Velocity at depth = 8.2 feet	-0.50	ft/sec
Z-Direction Velocity at depth = 8.2 feet	-0.20	ft/sec
X-Direction Velocity at depth = 42.3 feet	-0.32	ft/sec
Z-Direction Velocity at depth = 42.3 feet	-0.13	ft/sec

**DISPOSAL OPERATION DATA**

<b>Parameter</b>	<b>Value</b>	<b>Units</b>
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**

<b>Parameter</b>	<b>Value</b>	<b>Units</b>
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	0.000 <sup>1</sup>
Apparent Mass Coefficient	CM	1.000 <sup>1</sup>
Drag Coefficient	CD	0.500 <sup>1</sup>
Form Drag for Collapsing Cloud	CDRAG	1.000 <sup>1</sup>
Skin Friction for Collapsing Cloud	CFRIC	0.010 <sup>1</sup>
Drag for an Ellipsoidal Wedge	CD3	0.100 <sup>1</sup>
Drag for a Plate	CD4	1.000 <sup>1</sup>
Friction Between Cloud and Bottom	FRICTN	0.010 <sup>1</sup>
4/3 Law Horizontal Diffusion Dissipation Factor	ALAMDA	0.001 <sup>1</sup>
Unstratified Water Vertical Diffusion Coefficient	AKYO	Pritchard Expression
Cloud/Ambient Density Gradient Ratio	GAMA	0.250 <sup>1</sup>
Turbulent Thermal Entrainment	ALPHAO	0.235 <sup>1</sup>
Entrainment in Collapse	ALPHAC	0.100 <sup>1</sup>
Stripping Factor	CSTRIP	0.003 <sup>1</sup>

<sup>1</sup>Model Default Value

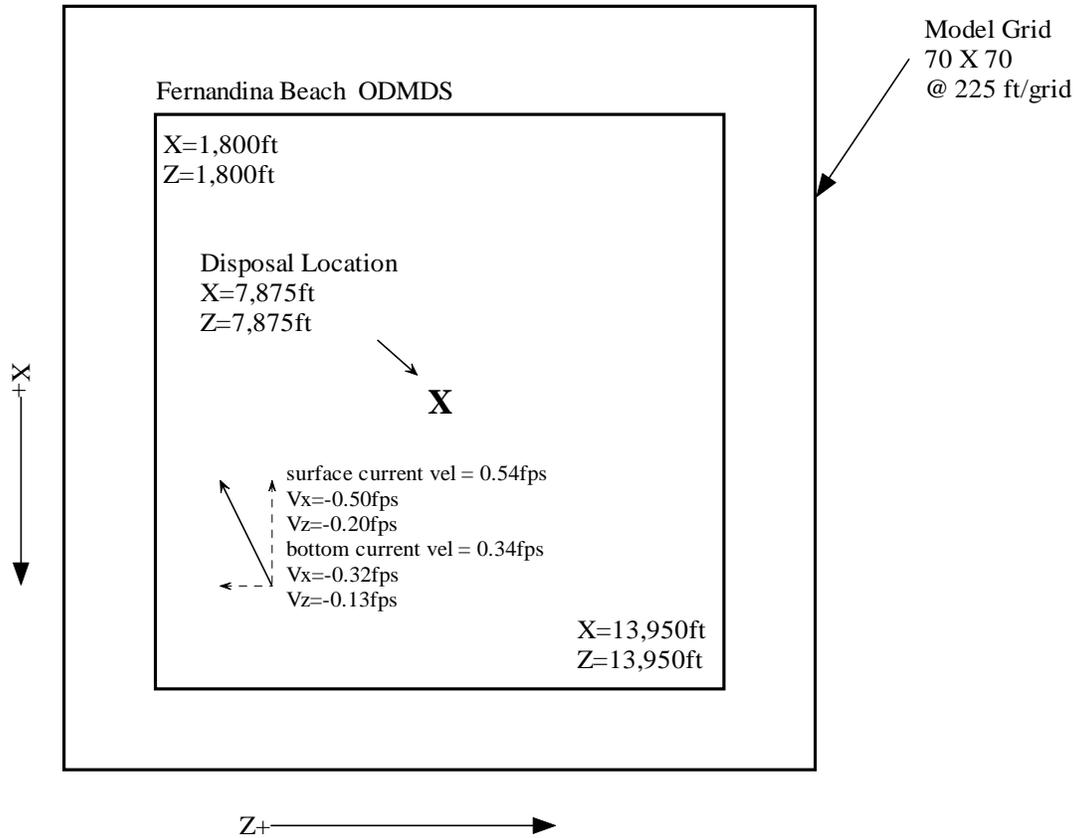
<sup>2</sup> EPA 2005 Trend Assessment Survey (EPA, 2006)

<sup>3</sup>From measurements at the Fernandina Beach ODMDS (EPA, 2009)

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

Minimum dilution outside of disposal site: 800 to 1; Minimum dilution after 4 hours: 5000 to 1.

# Fernandina Beach ODMDS STFATE Input Parameters



<b>Fernandina Beach ODMDS Background Water Concentration.</b>	
<b>Chemicals of Concern</b>	<b>Background Concentration Levels (µg/l)</b>
Arsenic	1.36 <sup>1</sup>
Cadmium	0.008 <sup>1</sup>
Chromium (VI)	0.025 <sup>2,3,4</sup>
Copper	0.34 <sup>1</sup>
Lead	0.5 <sup>3,4</sup>
Mercury	0.1 <sup>2,3,4</sup>
Nickel	0.57 <sup>2</sup>
Selenium	No Data
Silver	0.009 <sup>1</sup>
Zinc	2.33 <sup>1</sup>
Ammonia	25 <sup>5</sup>
Cyanide	1.0 <sup>3,4</sup>
Tributyltin (TBT)	0.01 <sup>3,4</sup>
Aldrin	0.01 <sup>2,4</sup>
Chlordane	0.015 <sup>2,3,4</sup>
DDT	0.01 <sup>2,4</sup>
Dieldrin	0.01 <sup>2,4</sup>
alpha - Endosulfan	0.01 <sup>2,4</sup>
beta - Endosulfan	0.01 <sup>2,4</sup>
Endrin	0.01 <sup>2,4</sup>
gamma-BHC (Lindane)	0.01 <sup>2,4</sup>
Heptachlor	0.01 <sup>2,4</sup>
Heptachlor Epoxide	0.01 <sup>2,4</sup>
Toxaphene	.015 <sup>2,4</sup>
Parathion	No Data
Pentachlorophenol	No Data

<sup>1</sup> 2007 EPA Status and Trends Survey at the Canaveral ODMDS

<sup>2</sup> Reference Station Water from the 2004 Jacksonville Harbor 103 Evaluation

<sup>3</sup> Reference Station Water from the 2006 Mayport Harbor 103 Evaluation

<sup>4</sup> Analyte not detected. Value based on one half the reporting limit.

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**APPENDIX B**

**TEMPLATE  
GENERIC SPECIAL CONDITIONS  
FOR MPRSA SECTION 103 PERMITS**

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**GENERIC SPECIAL CONDITIONS  
FOR MPRSA SECTION 103 PERMITS**

**I. 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 Fernandina Beach ODMDS, proper disposal of dredged material at the disposal area within the Fernandina Beach ODMDS, and transportation of the hopper dredge or disposal barge or scow back to the dredging site.

B. The Fernandina Beach ODMDS is defined as the rectangle with center coordinates of 30° 32.00'N latitude and 81° 18.00'W longitude (NAD 27). The site coordinates are as follows:

	Geographic (NAD27)		Geographic (NAD83)	
Center	30°32.000'N	81°18.000'W	30°32.014'N	81°17.988'W
NW Corner	30°33.000'N	81°19.133'W	30°33.014'N	81°19.122'W
NE Corner	30°33.000'N	81°16.867'W	30°33.014'N	81°16.855'W
SW Corner	30°31.000'N	81°19.133'W	30°31.014'N	81°19.122'W
SE Corner	30°31.000'N	81°16.867'W	30°31.014'N	81°16.855'W
	State Plane (FL East 0901 Ft NAD83)		State Plane (GA East 1001 Ft NAD83)	
Center	2254105 N	561778 E	195092 N	929074 E
NW Corner	2260183 N	555849 E	201108 N	923081 E
NE Corner	2260152 N	567741 E	201200 N	934973 E
SW Corner	2248060 N	555814 E	188985 N	923172 E
SE Corner	2248028 N	567710 E	189076 N	935069 E

C. No more than [NUMBER] cubic yards of dredged material excavated at the location defined in [REFERENCE LOCATION IN PERMIT] are authorized for disposal at the Fernandina Beach ODMDS.

D. The permittee shall use an electronic positioning system to navigate to and from the Fernandina Beach 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 Fernandina Beach 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 Fernandina Beach ODMDS. The certification shall be accomplished by direct comparison of the electronic positioning system's accuracy with a known fixed point.

F. 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 Fernandina Beach ODMDS.

G. A disposal operations inspector and/or captain of any tug boat, hopper dredge or other vessel used to transport dredged material to the Fernandina Beach ODMDS shall insure compliance with disposal operation conditions defined in this permit.

1. If the disposal operations inspector or the captain detects a violation, he shall report the violation to the permittee immediately.

2. The permittee shall contact the U.S. Army Corps of Engineers, Jacksonville District's Regulatory Branch [TELEPHONE NUMBER] and EPA Region 4 at (404) 562-9391 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.

H. When dredged material is disposed, no portion of the hopper dredge or disposal barge or scow shall be outside of the boundaries of the Fernandina Beach ODMDS as defined in Special Condition B. Additionally, disposal shall be initiated at least 1,500 feet inside the site boundaries defined by the following coordinates:

Geographic (NAD 27)		Geographic (NAD 83)	
Latitude	Longitude	Latitude	Longitude
30°32.750'	81°18.850'	30°32.767'	81°18.833'
30°32.750'	81°17.150'	30°32.767'	81°17.150'
30°31.250'	81°17.150'	30°31.267'	81°17.150'
30°31.250'	81°18.850'	30°31.267'	81°18.833'
State Plane (Florida East Zone - NAD 83)		State Plane (Georgia East Zone - NAD 83)	
Y	X	Y	X
2258681	557361	199621	924609
2258657	566219	199689	933467
2249531	566197	190564	933539
2249555	557336	190496	924679

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

negative. Draft readings shall be recorded in feet out to 2 decimals.

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

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

K. The permittee shall conduct a bathymetric survey of the Fernandina Beach ODMDS within 3 months prior to project disposal and within 60 days following project completion.

1. The number and length of the survey transects shall be sufficient to encompass the Fernandina Beach ODMDS and a 500 foot wide area around the site. The transects shall be spaced at 500-foot intervals or less.

2. Vertical accuracy of the survey shall be  $\pm 0.5$  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.

L. Enclosed is the Regional Biological Opinion (RBO) dated [INSERT DATE], for swimming sea turtles, whales, 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.

## II. REPORTING REQUIREMENTS

A. All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following addresses: U.S. Army Corps of Engineers (Corps), Regulatory Division, Enforcement Section, P.O. Box 4970, Jacksonville, Florida 32232-0019 and U. S. Environmental Protection Agency (EPA) Region 4's Wetlands, Coastal and Oceans Branch, 61 Forsyth Street, Atlanta, GA 30303. The Permittee shall reference this permit number, [INSERT PERMIT NUMBER], on all submittals.

B. At least 15 days before initiating any dredging operations authorized by this permit, the Permittee shall provide to the Corps and EPA a written notification of the date of commencement of work authorized by this permit.

C. Electronic data required by Special Conditions I and J shall be provided to EPA Region 4 on a weekly basis. Data shall be submitted as an eXtensible Markup Language (XML) document via Internet e-mail to [DisposalData.R4@epa.gov](mailto: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 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 THE FERNANDINA BEACH ODMDS SMMP REQUIREMENTS

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TYPICAL CONTRACT LANGUAGE FOR IMPEMENTING SMMP  
REQUIREMENTS

3.3 DISPOSAL OF DREDGED MATERIAL

3.3.1 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
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Fernandina Beach ODMDS

[INSERT DISPOSAL AREA 2]	[XX miles]	[XX miles]
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[IF MATERIAL FROM DIFFERENT PROJECT AREAS GO TO DIFFERENT  
DISPOSAL AREAS, IT COULD BE SPECIFIED HERE]

3.3.2 Ocean Disposal Notification

- a. The contractor shall notify EPA Region 4 's Wetlands, Coastal and Oceans and Branch (61 Forsyth Street, Atlanta, GA 30303) at least 15 calendar days and the local Coast Guard Captain of the Port at least 5 calendar days prior to the first ocean disposal. The notification will be by certified mail with a copy to the Contracting Officer. The following information shall be included in the notification:
  - (1) Project designation; Corps of Engineers' Contracting Officer's name and contract number; and, the Contractor's name, address, and telephone number.
  - (2) Port of departure.
  - (3) Location of ocean disposal area (and disposal zone if required).
  - (4) Schedule for ocean disposal, giving date and time proposed for first ocean disposal.

3.3.3 Ocean Dredged Material Disposal Sites (ODMDS)

The material excavated shall be transported to and deposited in the Fernandina Beach ODMDS] 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 Fernandina Beach ODMDS as shown on the drawings. Additionally, disposal shall be initiated 1,500 within the ODMDS boundaries defined by the following coordinates:

	Geographic (NAD27) <sup>1</sup>		Geographic (NAD83) <sup>2</sup>	
NW Corner	30°32.7526'N	81°18.8475'W	30°32.7670'N	81°18.8359'W
NE Corner	30°32.7526'N	81°17.1526'W	30°32.7670'N	81°17.1409'W
SW Corner	30°31.2475'N	81°18.8475'W	30°31.2619'N	81°18.8359'W
SE Corner	30°31.2475'N	81°17.1525'W	30°31.2619'N	81°17.1408'W
	State Plane (FL East 0901 Ft NAD83)		State Plane (GA East 1001 Ft NAD83) <sup>3</sup>	
	Y-Northing	X-Easting	Y-Northing	X-Easting
NW Corner	2258679 N	557344 E	199620 N	924592 E
NE Corner	2258656 N	566237 E	199688 N	933485 E
SW Corner	2249556 N	557319 E	190496 N	924661 E
SE Corner	2249532 N	566214 E	190565 N	933557 E

Dredged material shall not be placed higher than elevation -25 feet MLLW in the Fernandina Beach ODMDS.

### 3.3.4 Logs

The Contractor shall keep a log for each load placed in the Fernandina Beach ODMDS.

The log entry for each load shall include:

- a. Load Number
- b. Disposal Vessel or Scow Name
- c. Tow Vessel Name (if scow used)
- d. Captain of Disposal or Tow Vessel
- e. Estimated volume of Load
- f. Description of Material Disposed
- g. Source of Dredged Material
- h. Date, Time and Location (coordinates) at Start of Initiation and Completion of Disposal Event

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.

### 3.3.5 Overflow, Spills and Leaks

Water and dredged materials shall not be permitted to overflow or spill out of barges, hopper dredges, or dump scows during transport to the disposal site(s). Failure to repair leaks or change the method of operation which is resulting in overflow of spillage will result in suspension of dredging operations and require prompt repair or change of operation to prevent overflow or spillage as a prerequisite to the resumption of dredging.

### 3.3.6 Electronic Tracking System (ETS) for Ocean Disposal Vessels

The Contractor shall furnish an ETS for surveillance of the movement and disposition of dredged material during dredging and ocean disposal. This ETS shall be established,

operated and maintained by the Contractor to continuously track in real-time the horizontal location and draft condition of the disposal vessel (hopper dredge or disposal barge or scow) for the entire dredging cycle, including dredging area and disposal area. The ETS shall be capable of displaying and recording in real-time the disposal vessel's draft and location.

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[USE LANGUAGE BELOW FOR NON SI PROJECTS]

#### 3.3.6.1 ETS Standards

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

#### 3.3.6.2 ETS Data Requirements and Submissions

- a. The ETS for each disposal vessel shall be in operation for all dredging and disposal activities and shall record the full round trip for each loading and disposal cycle. (NOTE: A dredging and disposal cycle constitutes the time from commencement of dredging to complete discharge of the material.) The Contracting Officer shall be notified immediately in the event of ETS failure and all dredging operations for the vessel shall cease until the ETS is fully operational. Any delays resulting from ETS failure shall be at the Contractor's expense.
- b. Data shall be collected, during the dredging and disposal cycle, every 500 feet (at least) during travel to the disposal area, and every minute or every 200 feet, whichever is smaller, while approaching within 1,000 feet and within the disposal area.
- b. Plot Reporting (2 types):
  - ( 1 ) Tracking Plot - For each disposal event, data collected while the disposal

vessel is in the vicinity of the disposal area shall be plotted in chart form, in 200-foot intervals, to show the track and draft of the disposal vessel approaching and traversing the disposal area. The plot shall identify the exact position at which the dump commenced. A sample Track and Draft Plot Diagram is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.

- (2) Scatter Plot - Following completion of all disposal events, a single and separate plot will be prepared to show the exact disposal locations of all dumps. Every plotted location shall coincide with the beginning of the respective dump. Each dump shall be labeled with the corresponding Trip Number and shall be at a small but readable scale. A sample Scatter Plot Diagram is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.
  - (3) Summary Table – A spreadsheet which contains all of the information in the log(s) [Section 3.3.4] above shall be prepared and shall correspond to the exact dump locations represented on the Scatter Plot. A sample Summary Table spreadsheet is on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below.
- c. ETS data and log data required by Section 3.3.4 shall be provided to EPA Region 4 on a weekly or more frequent basis. Data shall be submitted to EPA Region 4 as an eXtensible Markup Language (XML) document via Internet e-mail to [DisposalData.R4@epa.gov](mailto:DisposalData.R4@epa.gov). XML data file format specifications are available from EPA Region 4. All digital ETS data shall be furnished to the Contracting Officer within 24 hours of collection. The digital plot files should be in an easily readable format such as Adobe Acrobat PDF file, Microstation DGN file, JPEG, BMP, TIFF, or similar. The hard copy of the ETS data and tracking plots shall be both maintained onboard the vessel and submitted to the Contracting Officer on a weekly basis.

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[USE LANGUAGE BELOW FOR SI PROJECTS]

### 3.3.6.3 Silent Inspector – Special Standard of Responsibility

#### 3.3.6.3.1 General

The Silent Inspector (SI) is an automated dredge contract monitoring system comprised of both hardware and software developed by the Army Corps of Engineers (the Corps). The Corps developed the SI as a low cost, repeatable, impartial system for automated dredge monitoring. The SI systems integrate various automated systems to record digital dredging and disposal activities in real-time on a 24 hour/7 days a week basis. Information is recorded to the on-board computer where it is available to the Corps Quality Assurance Representative (QAR) for examination and for periodic download and transmittal via an automated email service for inclusion in the SI database. The dredging

contractor supplies and owns the on-board system and all associated sensors. Additional information about SI and SI specifications can be found at <http://si.usace.army.mil>.

#### 3.3.6.3.2 Requirement

As authorized by FAR 9.104-2, Contracting Officers may establish special standards of responsibility when necessary. The Contracting Officer has determined that use of the SI is necessary for work performed by hopper dredge and disposal scows. Therefore, in order to be considered responsible for performing this contract, the Offeror must establish prior to contract award that any hopper dredge or disposal scows to be used in performance of this contract has been outfitted with the SI system and the system has been certified by the Engineer Research and Development Center (ERDC) within the last year. Disposal scows shall utilize the monitoring or TDS profile. Questions regarding certification should be addressed to the SI support team at 601-634-2923.

#### 3.3.6.3.3 Data Submissions

Scow data shall be transferred by the contractor automatically to the SI database on intervals not to exceed 24 hours. Hopper dredged data shall be transferred in accordance with the Hopper Dredge Specifications found at <http://si.usace.army.mil>.

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#### 3.3.6.4 Misplaced Materials

Materials deposited outside of the disposal 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 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 shall 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. Misplaced loads may also 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 or removal of such materials at the Contractor's expense. In addition, the Contractor must notify the Contracting Officer and the Environmental Protection Agency Region 4 's Wetlands, Coastal and Oceans Branch (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 Fernandina Beach ODMDS. Corrective actions must be implemented by the next dump and the Contracting Officer must be informed of actions taken.