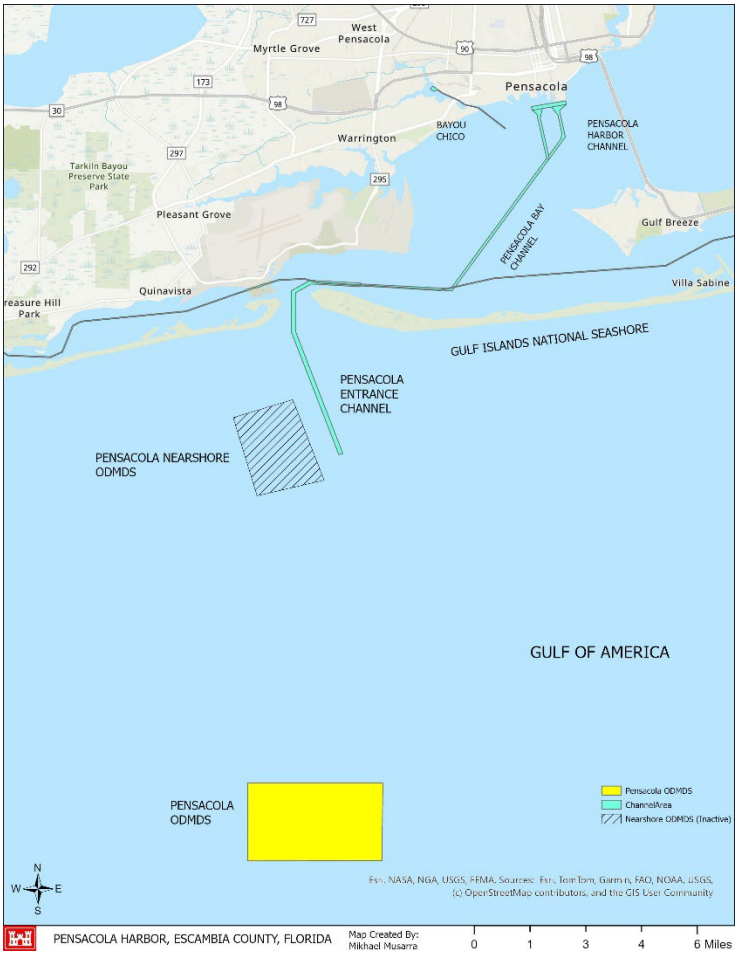
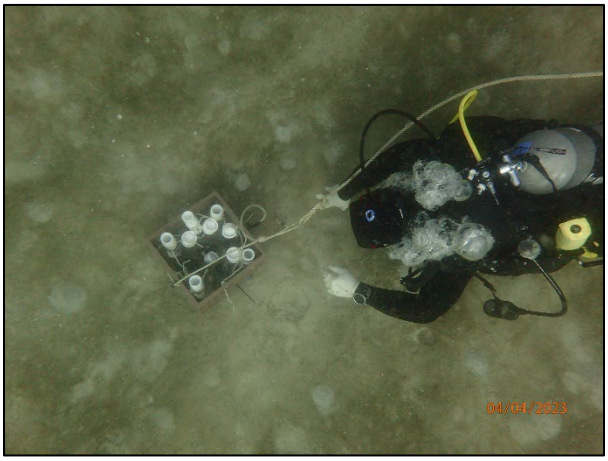
PENSACOLA OCEAN DREDGED MATERIAL DISPOSAL SITE

SITE MANAGEMENT AND MONITORING PLAN

January 2026

US Army Corps of Engineers®





The following Site Management and Monitoring Plan (SMMP) for the Pensacola Ocean Dredged Material Disposal Site (ODMDS) has been revised to comply with Section 102(c)(3) of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended (33 U.S.C. Section 1412(c)), and has been approved by the following officials of the U.S. Environmental Protection Agency Region 4 and the U.S. Army Corps of Engineers, Mobile District. This SMMP supersedes all prior Pensacola ODMDS SMMP's.

Kevin J. McOmber

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

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1 INTRODUCTION

The Marine Protection, Research, and Sanctuaries Act (MPRSA), also referred to as the “Ocean Dumping Act”, regulates the transportation and dumping of any material into ocean waters. The MPRSA applies to all ocean waters that are seaward of the baseline from which the territorial sea is measured. Under the MPRSA, no permit or authorization 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.

In the case of dredged material, the United States Army Corps of Engineers (USACE) is responsible for issuing ocean dumping permits and authorizing or conducting federal projects involving ocean dumping of dredged material (33 U.S.C. Section 1413, MPRSA Section 103). The USACE applies the United States Environmental Protection Agency (EPA) marine protection criteria established pursuant to Section 102 of the MPRSA when evaluating permit or authorization 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 EPA concurs with conditions, the final permit or the terms of the federal project authorization 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 authorize 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 C.F.R. 325.6, MPRSA permits for and federal projects involving the transportation of dredged material for the purpose of dumping into ocean waters may not exceed three years.

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 C.F.R. Part 228 establish procedures for the designation and management of ocean disposal sites. Management of an ocean disposal 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 C.F.R. 228.3(a)).

The EPA shares the responsibilities of conducting management and monitoring activities at the EPA-designated Ocean Dredged Material Disposal Sites (ODMDSs) with the USACE. Under MPRSA Section 102(c), 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. 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 at least every 10 years, whichever is sooner. The MPRSA provides that the SMMP shall include, but is not 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 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 Pensacola ODMDS, including monitoring and management activities by the federal agencies. This SMMP also includes water quality modeling input parameters for disposal (Appendix A), template provisions for the USACE to include in future permits issued for disposal at this site (Appendix B), as well as the USACE template contract conditions (Appendix C). References in this SMMP to matters that “should be required” refer to implementation in a subsequent proceeding to authorize disposal of dredged material, whether in a permit, in a contract or other federal

project specification for the transportation and disposal of dredged material, or by the USACE directly. Other than the regulatory text copied below, this SMMP does not itself impose binding requirements or obligations, though terms and conditions from the SMMP will be incorporated into other documents (e.g., permits and federal project documents that authorize transportation and disposal of dredged material at the ODMDS) that will then impose binding rights and obligations on persons responsible for the authorized transportation and disposal.

Matters that "should be required" are implemented through application of the template language included in Appendices B and C, though the language may vary from the terms of the Appendices as necessary and appropriate. If the translation of template terms by the USACE warrants further clarification, the EPA can ensure implementation of the template provisions in Appendix B and C as necessary through the EPA's concurrence actions.

1.1 DEFINITIONS

For the purposes of this document the following definitions apply:

"*Authorization document"* means any permit issued pursuant to MPRSA and/or authorizations from the USACE 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 USACE 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.

"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.

1.2 ROLES AND RESPONSIBILITIES

An interagency SMMP team was established to assist the EPA and the USACE in developing Pensacola ODMDS SMMP in 2015. The team consisted of the following agencies and their

respective representatives:

- USACE Mobile District
- USACE Jacksonville District, Regulatory
- Florida Department of Environmental Protection (FDEP)
- National Oceanic and Atmospheric Administration (NOAA)
- Environmental Protection Agency
- Port of Pensacola
- United States Coast Guard (U.S. Coast Guard)
- United States Navy (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 Pensacola ODMDS SMMP. The other agencies have, in the past, assisted the EPA and the USACE with deciding appropriate dumping practices, monitoring techniques, the level of monitoring, the significance of results, and potential management options.

The EPA and the USACE work together to implement the site monitoring program for the Pensacola ODMDS. Specific responsibilities of the EPA and the USACE are as follows:

EPA: The EPA is responsible for designating, modifying, and de-designating/cancelling ODMDSs under MPRSA Section 102, managing these sites by regulating site use, developing and implementing site monitoring programs (including compliance monitoring), evaluating environmental effects of dumping of dredged material at the sites, reviewing for concurrence on dredged material suitability determinations, and reviewing for compliance with the MPRSA criteria, conditions, and restrictions for MPRSA Section 103 permits or federal projects authorizing the ocean dumping of dredged material.

Under MPRSA Sections 1411 and 1415(a) , the EPA has broad authority to assess civil penalties and seek injunctive remedies for unauthorized transport of material for the purpose of dumping it into ocean waters, including deviations from transportation-related and dumping-related conditions required by a regulation establishing the ODMDS or deviations from transportation-related and disposal-related conditions required or authorized by the USACE in a Dredged Material Permit (as defined in 40 C.F.R. 220.2(h)) or construction contract. All activities associated with MPRSA Section 102 and Section 103 for the Pensacola ODMDS are handled by EPA Region 4 in

consultation with EPA Headquarters.

USACE: The USACE is responsible for evaluating dredged material suitability and compliance with the MPRSA marine protection criteria, conditions, and restrictions, issuing MPRSA Section 103 permits and project authorizations, and, in conjunction with the EPA, regulating site use and developing and implementing site monitoring programs (including compliance monitoring) through development and use of the SMMP. The USACE also has a contract remedy process to enforce conditions related to ocean dumping with a contractor for a federal project. The USACE contract remedies are separate and distinct from statutory remedies under the MPRSA. All of the above activities, with the exception of issuing MPRSA Section 103 permits, are handled by the USACE Mobile District. Permitting activities for this part of Florida are handled by the USACE Jacksonville District.

The SMMP provisions apply to all dredged material transportation to and dumping 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 or in the transportation and disposal requirements for a federal project (see Appendix B). 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 permits, or contract specifications for ocean dumping of dredged material shall ensure compliance with the conditions of the SMMP.

2 SITE DESCRIPTION

The following Sections 2.1 through 2.5 are a summary of site-specific information used in the development of this SMMP.

2.1 SITE HISTORY AND DESIGNATION

The Pensacola ODMDS was designated by the EPA, Region 4 in September 1988 for fine-grained material dredged from the Pensacola area (Figure 1). The USACE and the U.S. Navy were cooperating agencies of the September 1988 Final Environmental Impact Statement (FEIS) for site designation. The SMMP has been updated several times, with the most recent iterations in 2005 and 2015. Physical, chemical, and biological conditions of dredged material to be disposed of in the Pensacola ODMDS were most recently described in the Pensacola Harbor Operations

and Maintenance Dredged Material 103 Evaluation (April 2025).

The Navy conducted dredging activities in 1989 through 1990 from the Gulf of America through Pensacola Pass to the turning basin located adjacent to Pensacola Naval Air Station (NAS) as part of the Navy Gulf Coast Strategic Homeporting. In August 2004, dredging of the eastern leg of the Pensacola Inner Harbor Channel was conducted. Prior to this dredging event, the inner harbor and bay portions of the Pensacola Harbor navigation channel had not been maintained since 1973. In 2005, 2013, and 2014, maintenance material from the rest of the Pensacola Harbor navigation channel was placed in the ODMDS. The most recent disposals of maintenance material from the navigation channel occurred in 2022. Disposal events associated with the Pensacola ODMDS are summarized in Table 3.

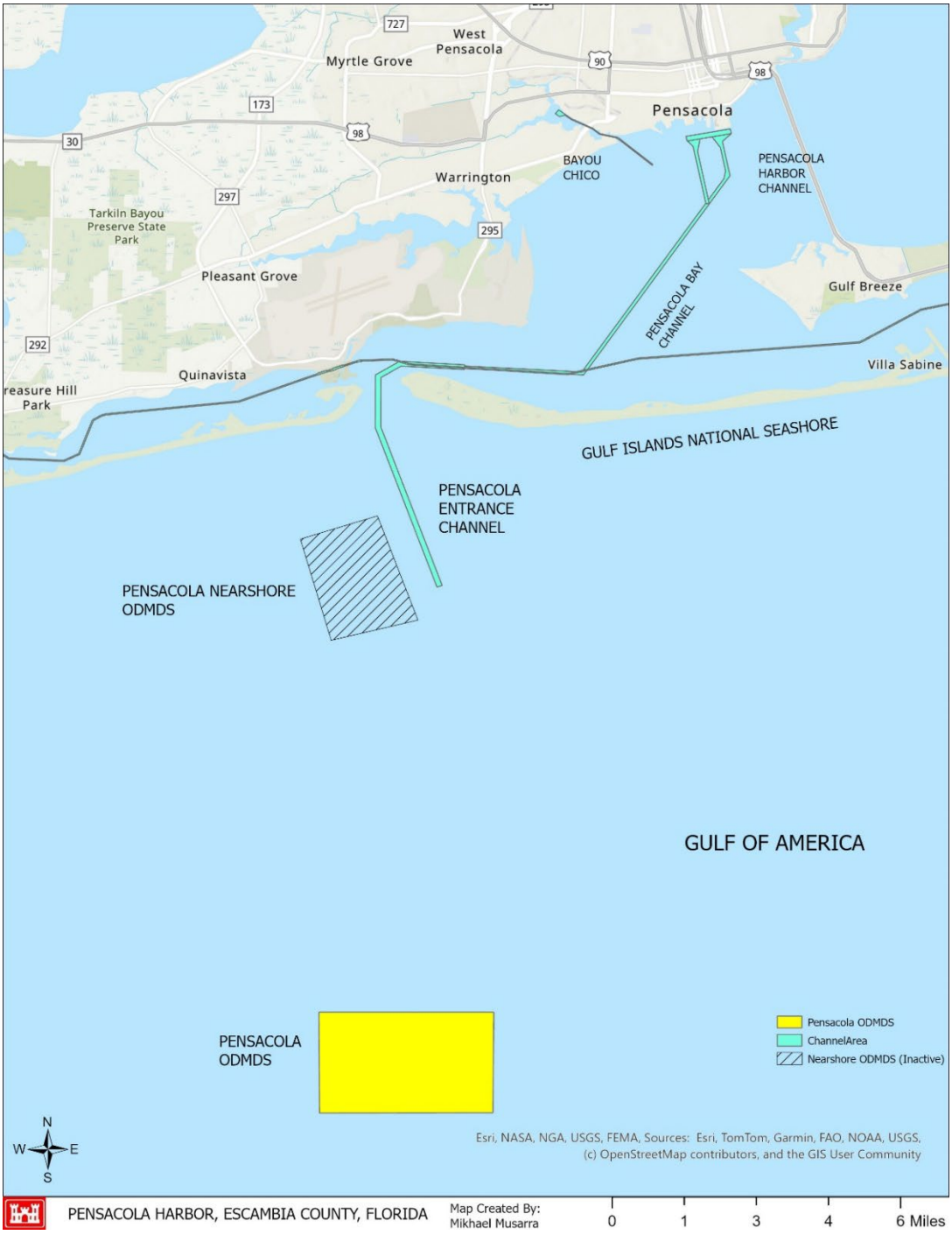
Future volumes and rates of disposal, from both federal and private applicants, are expected to range on the order of approximately 350,000 Cubic Yards (CYS) per dredging and disposal event on a two-to-three-year cycle. Future use of the Pensacola ODMDS is projected to occur from dredging the federally authorized Pensacola Harbor channels, and private users such as the Port of Pensacola or Pensacola Naval Air Station.

2.1.1 Final Rule Text from 40 C.F.R. 223.15(h)(13)

The official Pensacola ODMDS designation is published at 40 C.F.R. 228.15(h)(13):

> Pensacola (Offshore), FL Ocean Dredged Material Disposal Site.
>
> **(i)** ***Location:*** 30°08’50” N., 87°19’30” W.; 30°08’50” N., 87°16’30” W.; 30°07’05”” N., 87°16’30” W.; 30°07’05” N., 87°19’30” W.
>
> **(ii)** ***Size:*** Approximately six square statute miles.
>
> **(iii)** ***Depth:*** Ranges from 65 to 80 feet. (18 to 24 meters).
>
> **(iv)** ***Primary use:*** Dredged material.
>
> **(v)** ***Period of use:*** Continuing use.
>
> **(vi)** ***Restrictions:*** Disposal is restricted to predominantly fine-grained dredged material from the greater Pensacola, Florida, area that meets the Ocean Dumping Criteria but is not suitable for beach nourishment or disposal at the existing EPA designated Pensacola (Nearshore) ODMDS (§228.15(h)(12)). The Pensacola (Nearshore) ODMDS is restricted to suitable dredged material with a median grain size of >0.125 mm and a composition of <10% fines.

Figure 1. Pensacola Harbor Channel and ODMDS Map. (Nearshore ODMDS, which is hashed below, is Inactive)



2.2 SITE LOCATION

The Pensacola ODMDS is located in the Gulf of America approximately 11 miles south of Pensacola Pass (Figure 1). The site covers an approximately six-square mile rectangular area; coordinates of the Pensacola ODMDS are defined Table 1.

Table 1. Pensacola ODMDS Corner Coordinates.

Vertices[1]	Geographic (NAD83)		State Plane (FL North 0903 Ft NAD83)	
NW Corner (A)	30°08'50" N	87° 19'30" W	428347.51 N	1075701.81 E
NE Corner (B)	30°08'50" N	87°16'30" W	427959.37 N	1091501.16 E
SE Corner (C)	30°07'05" N	87°16'30" W	417355.53 N	1091243.06 E
SW Corner (D)	30°07'05" N	87°19'30" W	417743.77 N	1075439.07 E

[1] SEE FIGURE 1.

2.3 SITE USE

Disposal history can be found at the Ocean Disposal Database maintained by the USACE (https://odd.el.erdc.dren.mil/). The Pensacola ODMDS has been used for disposal of approximately 5,150,000 cys from the Pensacola Pass, entrance channel, federal channel, turning basin and inner bays. A U.S. Navy widening and deepening project proposed in the mid-2000s was never constructed and recently dredged material has either been disposed of within the entrance channel or placed within the littoral zone of Perdido Key (FDEP, 2024). Generally, material that is fine grained, non-beach quality may pursue disposal at the Pensacola ODMDS.

Table 2. Pensacola ODMDS disposed material volumes.

Date	Quantity in Cubic Yards
1988	4,100,000
2005	63,000
2013	355,000
2014	420,817
2022	210,865

2.4 PAST MONITORING ACTIVITIES

Baseline assessments and monitoring provide an important record of changes or impacts that have occurred during the use of the site. Bathymetric surveys may be conducted before and after each disposal event. All monitoring activities completed at Pensacola ODMDS are outlined in Table 3. Data collected during these surveys are used to inform future monitoring activities and site disposal activity.

Table 3. List of Surveys and studies conducted at, or in the vicinity of, the Pensacola ODMDS.

Date	Survey Title	Conducted by	Purpose	Conclusion
July 1998	Summary of Currents off Pensacola, FL	Physical Oceanography Division, Naval Ocean Research & Development Activity	Document currents in the potential dredged material disposal site as part of Navy homeport project	Currents were non-tidal, wind driven, westward and parallel to the coast.
Nov. 1986, April 1987, & July 1987	Water Quality and Sediment Data	EPA	Determine water quality and sediment characteristics at the Pensacola ODMDS	Predominantly medium and coarse sands at the ODMDS. Sediments analyzed for metals, nutrients, oil and grease, pesticides and PCBs were either below MDLs or in very low concentrations. Salinity, temp, DO, and %light transmission were normal for water quality parameters.
Nov. 1986 & April 1987	Pensacola Offshore ODMDS Benthic Communities Study		Benthic community characterization	Infaunal communities characteristic of medium and coarse grain sediments of the northern Gulf of America; dominated by polychaetes.
Aug. 1988	Characteristics of Dredged Material Proposed for Disposal	Dredged Materials Research Team, EPA	Determine effects of dredged material on representative marine organisms	Proposed dredge material was not acutely toxic nor were chemicals in them bio-available for accumulation to concentrations of concern.
1989	Video, Still Photography and Side Scan Sonar			No live/hard bottoms detected.
1989	Bathymetric Survey	USACE	Monitor bathymetry changes	Depths at the ODMDS range from -60 to -95 feet with an average of-76 feet mean lower low waterline (MLLW).

Date	Survey Title	Conducted by	Purpose	Conclusion
1989 – 1990	Disposal Monitoring	Navy	Compliance	Insured dredged material was placed within the ODMDS in specified area.
1990	Post Disposal Bathymetric Survey	USACE	Monitor bathymetry changes	Dredged material was placed within designated area and berm was verified.
April & Oct. 1990; Oct. 1993	Post Disposal Sediment Mapping	EPA	Map sediment distribution patterns	Dredged material was distinguishable from bottom sediment; migration was as predicted.
Oct. 1990 &1993	Post Disposal Benthic Communities assessment	EPA	Evaluate benthic community parameters within and outside of dredged material influences	No adverse impacts to benthic communities as a result of dredged material disposal.
2001	Bathymetric Survey	EPA	Monitor bathymetry changes	Berm still distinguishable. Disposed material within ODMDS.
2002	Evaluation of Dredged Material from Pensacola Harbor, Escambia County, Florida	USACE	Evaluate suitability of proposed dredged material for ocean disposal	Proposed dredged material is primarily silts and clays. Bulk sediment analysis, elutriate testing, water column bioassays, whole sediment bioassays, and bioaccumulation studies resulted in acceptable levels for ocean disposal.
2003	Bathymetric Survey	USACE	Monitor bathymetry changes	Berm still distinguishable. Disposed material within ODMDS. Collect bathymetric data to evaluate site for determining future disposal areas within ODMDS.
2004	Bathymetric Survey	USACE	Post-disposal surveys. O&M dredging of Pensacola Harbor.	Material from dredging of Pensacola Harbor placed within ODMDS. Site features remain distinguishable.

Date	Survey Title	Conducted by	Purpose	Conclusion
2012	Evaluation of Dredged Material from Lower Pensacola Harbor Post Deepwater Horizon Oil Spill	USACE	Evaluate suitability of proposed dredged material for ocean disposal post oil spill.	Results of PAH and TPH testing of surface sediments showed no discernible evidence that sediment quality had been impacted by the Deepwater Horizon Oil spill.
2013	Evaluation of Dredged Material from Pensacola Harbor, Escambia County, Florida	USACE	Evaluate suitability of proposed dredged material for ocean disposal.	Proposed dredged material is primarily silts and clays. Bulk sediment analysis, elutriate testing, water column bioassays, whole sediment bioassays, and bioaccumulation studies resulted in acceptable levels for ocean disposal.
2013	Status and Trends Assessment (40 C.F.R. §228.13)	EPA	To determine the physical, chemical, geological, and biological structure of the ODMDS	Benthic community is viable and healthy and in recovery with no adverse effects of disposal of dredged material.
2014	Bathymetric Survey	USACE	Post-disposal surveys. O&M dredging of Pensacola Harbor.	Material from O&M dredging of Pensacola Harbor placed within ODMDS. Site features remain distinguishable.
2024	Status and Trends Assessment (40 C.F.R. §228.13)	EPA	To determine the physical, chemical, geological, and biological structure of the ODMDS	Benthic community is viable and healthy and in recovery with no adverse effects of disposal of dredged material.

2.5 SITE CHARACTERIZATION

Site characterization is based primarily on studies performed as part of designation, bathymetric surveys associated with site use, and the EPA trend assessment surveys consistent with the requirements of 40 C.F.R. 228.9 (Table 3).

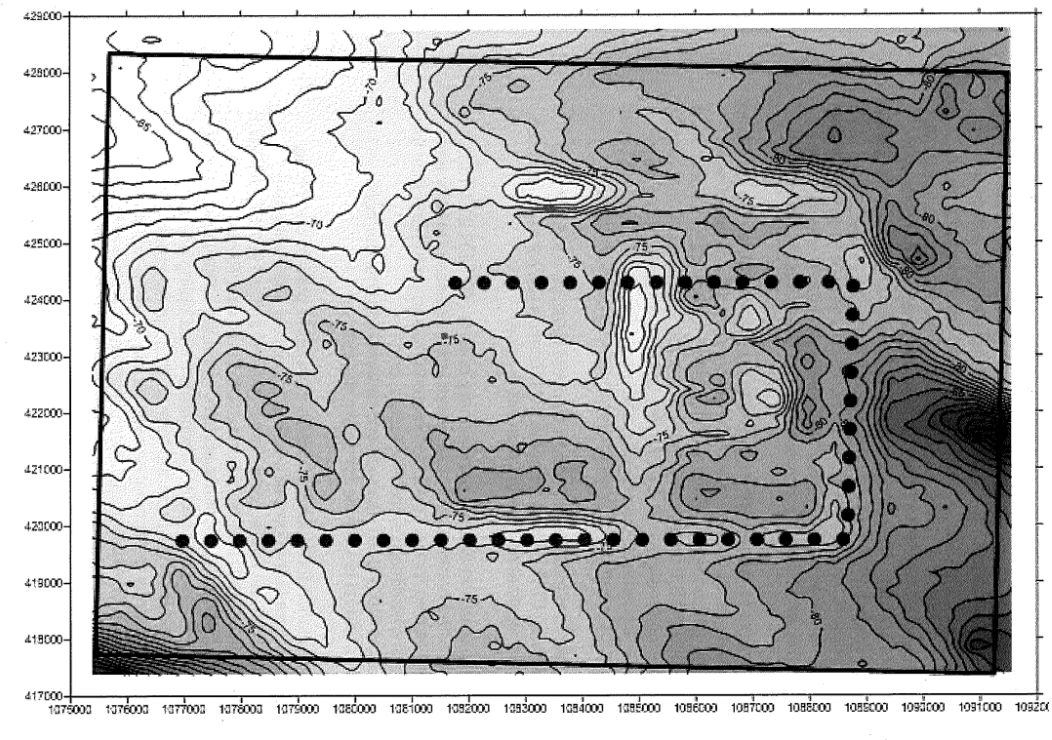
2.5.1 Physical Characterization

The Pensacola ODMDS consists of medium to coarse sand substrate with varying amounts of shell fragments, with a bottom surface that generally declines in an easterly/southeasterly direction at elevations ranging from -63 to -93 feet Mean Lower Low Water (MLLW). Due to the predominant western current in the area, the site is dispersive for the less-dense disposed material. To reduce dispersion and possible associated adverse impacts a horseshoe-shaped, submerged berm structure was constructed during the site's initial use in 1988-89 to be open on the western end, with fine-grained material placed in the eastern midsection of the horseshoe (USEPA, 2005). The following is the original design information for the bermed area:

- Crest elevation -70 feet MLLW;
- Distance between crests of the north and south berms approximately 6050 feet;
- East-west extent of the area from the crest of the east berm to high ground varied from 6000 to 11,000 feet;
- East berm alignment along longitude 87° 17' 00" W from latitude 30° 07’ 28” N to 30° 08' 13" N; and
- South and north berm alignments 30° 07’ 28” N to 30° 08’ 13” N, respectively.

The ODMDS has demonstrated stability over time. Normal currents within the site range from 0.722 feet/second (ft/sec) at a depth of -30 feet MLLW and 0.525 ft/sec at a depth of -56 feet MLLW. The site has weathered many major storms such as Hurricanes Opal (1995), Ivan (2004), Dennis and Katrina (2005), and lesser hurricanes Ida (2009), Isaac (2012), Michael (2018), and Sally (2020). Hydrographic surveys of the Pensacola ODMDS conducted in 2001, 2003, and 2014 indicate that the berm structure still exists within the site (Figure 2). The 2001 and 2003 surveys indicated that the berm heights varied up to eight feet and base widths varied up to 800 feet. The 2014 survey indicated some variation from the original berm design, but that was the last time bathymetry was monitored at the site, given the infrequence site use over the last decade (See Table 3). In 2024 dredged material was dumped in the northwest portion of the site so post bathymetry did not capture the current state of the berm. Given the size of the ODMDS and current depths, no capacity issues are anticipated in the near future.

Figure 2. 2014 hydrographic survey of the Pensacola ODMDS, including berm alignment.



2.5.2 Chemical Characterization

The most recent EPA trend assessment surveys were conducted in 2013 and 2024. During the 2013 study, CTD profiles showed the Pensacola ODMDS to have a poorly mixed water column, though no contaminants were present at levels of concern. Sediments collected in both 2013 and 2024 had low detectable levels of contaminants, observed at stations both within and surrounding the site, but none reached a level of concern (EPA, 2014; EPA, 2023).

2.5.3 Biological Characterization

The ODMDS habitat consists of a sandy bottom dominated by polychaetes. The 2013 EPA trend assessment survey observed similar macroinfaunal assemblages at most stations within and surrounding the ODMDS; the exception were two stations sampled within areas that received dumped dredged material the month previously. The conclusion for these stations is that they had not had sufficient time to recover from the impacts of burial by dredged material. (EPA, 2014)

2.5.4 Discussion of critical amenities

In the 1988 Environmental Impact Statement for the designation of a new ODMDS in Pensacola Florida, a site designation study was conducted using side scan sonar, continuous video recording, and still photography to characterize the bottom and determine the presence of

potential live/hard bottom communities. Side scan sonar revealed no features interpretive of live/hard bottoms. Real time observation of the video and subsequent review of all video recordings revealed the homogeneity of the sites.

Although many threatened and endangered species—including various whales and sea turtles—may be found near or in the ODMDS, no designated or proposed critical habitats are located within its boundaries or nearby. The closest historically or culturally important site, the USS Massachusetts shipwreck, is located roughly nine miles North of the ODMDS border.

3 SITE MANAGEMENT

Appropriate management of an ODMDS assures that disposal activities do not unreasonably degrade or endanger human health, welfare, the marine environment, or economic potentialities as directed under MPRSA Sections 102 and 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 C.F.R. Parts 220 through 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 marine protection criteria established pursuant to Section 102 of the MPRSA. To apply the criteria, the Ocean Testing Manual, sometimes referred to as the Green Book (EPA and USACE, 1991), and the Southeast Regional Implementation Manual (SERIM; EPA and USACE, 2008) provides guidance for sampling, testing, and analysis of water, sediment, and biological tissue to evaluate the environmental acceptability of dredged material proposed for ocean disposal. The criteria prohibit the ocean dumping of uncharacterized materials (40 C.F.R. 227.5(c)).
- Identifying management conditions to be implemented by the EPA and the USACE, as well as conditions that should be required in permits and documents establishing the terms of a federal project applicable to transportation and dumping in ocean waters.

  - For federal projects, the EPA should specify in the MPRSA concurrence letters that the EPA concurrence itself is conditioned on incorporation of the EPA concurrence conditions into any USACE federal contract documents.
- 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 3.1 through 3.4 summarize the disposal operation conditions that will be considered for management of Pensacola ODMDS as described in 40 C.F.R. 228.15(h)(13). Enforceable conditions for dredged material disposal operations at Pensacola ODMDS are drawn from the USACE-issued permits and transportation and dumping authorization documents for federal projects. The conditions intended to be enforceable are identified in this SMMP as necessary under MPRSA Section 103(a) or 103(e) and should be included as conditions in the EPA's concurrence if the permit or authorization documents do not already require such conditions.

Water quality compliance determinations will be made using a numerical model, such as the Short-Term FATE (STFATE) model, for evaluation of mixing. The general goal of the model is to increase the accuracy, reliability, and cost-effectiveness of dredged-material management activities in a timely manner (EPA and USACE, 1991). The STFATE model input parameters listed in Appendix A are specific to the Pensacola ODMDS. This model is used to predict the movement of dredged material disposed in open waters and may result in increasing or lessening operational restrictions or the need for confined disposal release zones to protect the environment and ensure regulatory compliance. Water-column bioassays will also be used to account for contaminants without water quality criteria, and to assess synergistic effects. Only material determined to be suitable and in compliance with the marine protection criteria established pursuant to Section 102 of the MPRSA (40 C.F.R. Part 227) through the verification process by the USACE and the EPA Region 4 is appropriate for transportation and dumping in the ODMDS.

The template language in Appendix B is intended to be applicable to dredging projects permitted by the USACE (federal and non-federal) as well as to the USACE-authorized federal dredging projects, regardless of whether government owned and operated dredging equipment or contracted equipment is used. Appendix C provides example language that the USACE will 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. The EPA may also specify or confirm additional project-specific conditions in its concurrence.

Conditions and reporting requirements become enforceable when and as included in the disposal site designation regulation, in MPRSA Section 103 permits, and in transportation and disposal-related authorizations for federal projects, including the USACE federal contract documents or other federal project specification documents.

Violations of the MPRSA by a permittee or dredging contractor—including violations of conditions established in a MPRSA permit or federal project authorization—are subject to compliance action including suspension of disposal operations or possible assessment of substantial administrative, civil, or criminal penalties, or other injunctive remedies, as appropriate.

3.1 MARINE PROTECTION CRITERIA COMPLIANCE PROCESS

The USACE uses the marine protection criteria established pursuant to Section 102 of the MPRSA when evaluating permit requests for applications and when implementing federal projects involving the transportation of dredged material for the purpose of dumping it into ocean waters. Dumping of dredged material in the ocean must comply with the criteria, and the EPA reviews the demonstrations of compliance when reviewing permits and projects for written concurrence, which may include conditions that must be incorporated into the permit or project authorization documents.

In the case of federal navigation projects, the USACE implements substantive MPRSA requirements directly in the USACE projects involving transportation and ocean dumping of dredged materials, including through the USACE contractors. Federal projects, though not required to have a permit, must adhere to the same criteria, factors to be evaluated, procedures, and requirements that apply to permits, including the process for evaluation of the project. Federal projects must receive the EPA's concurrence prior to authorization of transportation and disposal of dredged materials, and authorizing documents must contain any conditions included in the EPA's concurrence. The EPA and the USACE will coordinate early in the contracting process so the USACE can incorporate any EPA concurrence conditions into project authorization documents.

Ocean dumping of dredged materials from non-federal projects requires an ocean dumping permit issued by the USACE pursuant to MPRSA Section 103. A summary of the permitting process can be found at: https://www.epa.gov/marine-protection-permitting/mprsa-dredged-material-permits.

3.2 DREDGED MATERIAL CHARACTERIZATION

Prior to any disposal of dredged material at Pensacola ODMDS, the EPA and the USACE must evaluate the project applying the marine protection criteria established pursuant to Section 102 of the MPRSA (40 C.F.R. Part 227), and the USACE must specifically authorize the dumping under MPRSA Section 103. The EPA reviews and approves the proposed sampling and analysis plan for each project *prior* to any sampling of proposed dredged material. This includes how dredging projects will be subdivided into project segments for sampling and analysis. Guidance for a process to determine the suitability of dredged material proposed for disposal at the Pensacola ODMDS is described in the Ocean Testing Manual and the Southeast Regional Implementation Manual.

Procedural steps, in order of operation, include:

- Case-specific evaluation of proposed material against the exclusion criteria (40 C.F.R. 227.13(b));
- Determination of the need to test non-excluded material, taking into consideration the time since previous testing and the potential of sediment contamination since last verification;
- Conducting required testing to determine the suitability of the material for ocean disposal; and
- Review and evaluation of testing data results by the USACE and the EPA to determine suitability.

Additional reviews by stakeholders including the public, states, tribes, and other federal agencies would also be conducted through the USACE permitting or authorization processes.

Only material which the USACE and the EPA have determined to be suitable and in compliance with the Marine Protection Criteria (40 C.F.R. Part 227) may be considered for transportation and dumping in the Pensacola ODMDS. Documentation will be in the form of a MPRSA Section 103 Evaluation, as outlined in Appendix C of the SERIM. Water quality compliance determinations will be made using the STFATE (ADDAMS) model, and the input parameters provided in Appendix A of this SMMP. No disposal activities may occur at the site until the EPA reviews the testing data results and transmits its written concurrence that the material is acceptable for disposal at the ODMDS.

3.3 DREDGED MATERIAL TRANSPORTATION AND DISPOSAL

3.3.1 Transportation of Dredged Material

No specific transportation restrictions are required for this site. In order to protect sea turtles and Gulf sturgeon, the National Marine Fisheries Service (NMFS) requires monitoring according to guidance outlined in the Regional Biological Opinion for Dredging of Gulf of Mexico Navigation Channels and Sand Mining ("Borrow") Areas Using Hopper Dredges by the USACE Galveston, New Orleans, Mobile, and Jacksonville Districts (NOAA/NMFS, 2003), as amended in 2005 and 2007, with all standard surveillance and evasive measures to protect sea turtles employed during all placement operations at the Pensacola ODMDS. "Standard manatee conditions" issued by the U.S. Fish and Wildlife Service (USFWS) would be followed to minimize adverse impacts to marine mammals within the project area.

3.3.2 Disposal Locations

Prior to disposal for each dredging project, an agreement will be reached between the EPA and the USACE concerning the location of dredged material placement into the ODMDS and reflected in associated permits/contracts. The EPA and the USACE may establish disposal release zones within the site to maintain compliance with the marine protection criteria in 40 C.F.R. 227.28.

The regulation at 40 C.F.R. 227.28 defines the "release zone" for dredged material into the ODMDS to occur at least 330 feet (100 meters) inside the ODMDS boundaries, creating a buffer zone. Implementation of the release zone requirements (and the resulting buffer zone) ensures that the dredged material is deposited within the site boundaries and increases the likelihood that no material will leave the site as it falls to the seabed.

Disposal authorization documents (e.g., a permit or federal project contract term) should require that disposal be initiated within the applicable disposal release zone boundary and completed (i.e., doors closed) prior to leaving the ODMDS.

3.3.3 Disposal Methods

No specific disposal technique is required for this site. As discussed in Section 3.3.1, In order to protect sea turtles and Gulf sturgeon, the NMFS requires monitoring according to guidance outlined in the Regional Biological Opinion (NOAA/NMFS, 2003), as amended in 2005 and 2007. "Standard manatee conditions" issued by the USFWS would be followed to minimize adverse impacts to marine mammals within the project area.

Dredged material shall not be leaked or spilled from disposal vessels during any portion of the transit to the ODMDS. Transit to the ODMDS begins as soon as the disposal vessel begins moving to the ODMDS. All appropriate measures to avoid spillage during transit must be taken.

Appropriate measures may include but are not limited to the following: up-to-date U.S. Coast Guard and/or American Bureau of Shipping certification of all disposal-related vessels; maintenance (inspection and/or replacement) of gaskets on barge doors, minimization of excess free liquids in barge loads, pre-transit testing of barge door hydraulics, and pre-transport verification of appropriate weather and sea state conditions.

For enforcement and compliance assurance purposes, the permit or authorization documents should specify a requirement for "closed doors," on disposal vessels, requiring both physically closed doors and a properly functioning hull status monitor indicating that the doors are closed. The monitoring plan and disposal authorization documents should also specify methods to prevent mounding of dredged materials which could create an unacceptable navigation hazard.

3.3.4 Disposal Times

At present, no restrictions have been determined to be necessary for disposal related to seasonal variations in ocean current or biotic activity. As monitoring results are compiled, should any such restrictions appear necessary, disposal activities will be scheduled so as to avoid adverse impacts. Monitoring and precautions necessary to protect sea turtles and Gulf sturgeon, as described in Section 3.3.3 are required when using hopper dredges. Additionally, if new information indicates that endangered or threatened species are being adversely impacted, restrictions may be implemented.

Transportation of dredged material shall only be allowed when weather and sea state conditions, and scow loading level, will not interfere with safe transportation and will not create risk of spillage, leak or other loss of dredged material during transit. No disposal trips shall be initiated when the National Weather Service has issued a gale warning for local waters during the time period necessary to complete dumping operations.

3.3.5 Disposal Vessel Tracking

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 ±0.1 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 miles or every four minutes during travel to and from the ODMDS and every 12 seconds or every 30 feet of travel, whichever is smaller, while the hull status is open within the ODMDS. 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

It is expected that disposal monitoring will be conducted utilizing the Dredge Quality Management (DQM) system for Civil Works projects [see https://dqm.usace.army.mil], although other systems are acceptable. Disposal monitoring and ETS data will be reported to the EPA Region 4 on a weekly basis utilizing the eXtensible Markup Language (XML) specification and protocol and delivered as an attachment to an email (DisposalData.R4@epa.gov).

The EPA Region 4 and the USACE Mobile District shall be notified within 24 hours if disposal occurs outside of the ODMDS or specified disposal zone or if any apparent leaking or spilling of dredged material occurs as indicated by a loss of disposal vessel draft. The draft change threshold for notification will be determined at the time of project authorization under Section 103 of the MPRSA.

3.4 DISPOSAL PERMITTING REPORTING

3.4.1 Permitting Process

All transportation to and disposal of dredged material in the ocean, except for 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 on both the EPA (https://www.epa.gov/marine-protection-permitting/mprsa-dredged-material-permits) and the USACE websites (https://www.saj.usace.army.mil/Missions/Regulatory/).

3.4.2 Information Management of Dredged Material Disposal Activities

As discussed in the following sections, a substantial amount of diverse data regarding use of the Pensacola ODMDS and effects of disposal are 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 the material dredged correctly? Disposed correctly?
- What will happen to the environment at the disposal site?

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

3.4.3 Post Disposal Summary Reports

The USACE shall provide a Post Disposal Summary Report to the EPA within 30 days at the conclusion of dredging and disposal operations for each project.

Necessary report elements include the following: 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 the 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 Section 103 concurrence and/or permit (if applicable).

The narrative should include a description of any violation(s), the time the violation(s) occurred and when the violation was reported to the EPA and the USACE, a discussion of the circumstances surrounding the violation(s), and identification and description of 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.

3.4.4 Project Initiation and Violation Reporting Requirements

The USACE or other site user shall notify the EPA 15 days prior to the beginning of a dredging cycle or project disposal.

The EPA Region 4 and the USACE, Mobile 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 the authorization documents and/or Dredged Material Permit 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.

4 SITE MONITORING

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, contract, or federal project authorization document 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.

Specific goals of the monitoring program are to provide the following:

- Information indicating whether the disposal activities are occurringin compliance with the permit (or federal project authorization documents) and site restrictions;
- Information on the short-term and long-term fate of materials disposed of in the marine environment; and,
- Information concerning the short-term and long-term environmental impacts of disposal activities.

The site monitoring program describes the monitoring actions that should be taken if issues are found during routine trend assessment monitoring or any other means. A tiered strategy for a monitoring program is used to ensure that more advanced monitoring activities are used only when necessary. With a tiered approach, an unacceptable environmental condition may trigger further and often more complex monitoring and/or changes to the management of the site. Data collected during site monitoring should be used to adjust site management and/or revise the SMMP.

A monitoring program should be structured to address specific questions (i.e., hypotheses) and measure key indicators and endpoints, particularly those defined during site designation or specific project-related issues that arise. Multi-year trend analyses are outlined in the Ocean Dumping Regulations at 40 C.F.R. 228.13; these analyses should be used to determine whether there are consistent changes from previous site conditions or baseline conditions. At a minimum, a Trend Assessment Study should be conducted at least once every ten years and should be used to revise the SMMP. Results from these surveys should be used to assess the need for additional targeted or more complex studies.

The monitoring program for the Pensacola ODMDS is designed to address the following questions:

What are the short- and long-term fates of the material disposed at the site?

This would include considerations such as:

- Does disposed dredged material remain within the site boundaries or leave the site?
- If any disposed material leaves the site, where does it go? Does it move toward sensitive areas such as marine sanctuaries or productive fisheries?
- Does disposed material create mounds within the site or result in a dispersed layer on the sea bottom?
- Is there a potential for interference with navigation due to mounding of disposed material?
- Was any material dumped outside of the site boundaries?

What are the short- and long-term environmental impacts of the disposal of material at the site?

This would include considerations such as:

- Has the benthic community structure changed due to disposal activities?
- Is there an absence of pollution-sensitive biota at the site?
- Are there progressive, non-seasonal changes in water quality, sediment composition, or numbers of pelagic, demersal, or benthic biota at or near the disposal site?
- Has there been an increase in contaminant levels in the sediments or biota at or near the site?
- Are there any other impacts detected inside or outside the site boundaries?

Sections 4.1.1 and 4.1.2 below describe the monitoring strategy at the site to address these and other questions and also summarize the management actions that should be considered by the EPA, in coordination with the USACE, if thresholds are exceeded.

4.1.1 Monitoring the Transportation, Disposal, and Fate of Disposed Materials

Monitoring the transportation and disposal process is necessary to confirm that disposal activities comply with all permit conditions and site restrictions. Monitoring the location and movement of disposed material at the site should be used to ensure that disposed material remains within the designated site boundaries to determine that any accumulation of disposed material does not pose a navigational hazard in the area, and to confirm that future site use will not exceed the site's capacity. The monitoring activities used to achieve each of these management goals are summarized in Table 4 below.

4.1.2 Monitoring Environmental Effects of Disposed Material

Monitoring of impacts to the physical, chemical, and biological environment is necessary to ensure that the transport and disposal of dredged material does not result in unreasonable degradation to the marine environment or endanger human health, welfare, or economic potentialities.

The environmental effects monitoring plan for Pensacola ODMDS summarized in Table 4 below is structured as a tiered monitoring approach; unacceptable conditions discovered during a lower tier assessment should trigger additional testing or other management action.

The USACE and the EPA periodically assess environmental conditions of the entire site and surrounding area and consider other environmental data that may have been collected by other entities in the area; this information is then used to assess overall site conditions and to conduct trend assessments. Enhanced environmental effects monitoring should be triggered if disposed material is found to have unexpectedly left the site or is observed in unexpected locations during the transportation, disposal, and fate monitoring activities described in Section 4.1.1. Any monitoring at the site that identifies an issue of potential concern should trigger additional monitoring or management actions.

Table 4. Pensacola ODMDS Monitoring Strategies and Management Options

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options When Threshold:	
						Not Exceeded	Exceeded
Short & Long-term Fate of Disposed Dredged Material	Sediment Profile Imaging, Sediment Mapping (Gamma/CS^3), or Bathymetry	Site User/ EPA	Confirm aerial extent of disposal mound 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	(A) Restrict disposal volumes (B) Modify disposal zones (C) Institute Environmental Effects Monitoring
Monitor Bathymetric Trends	Bathymetry	Site User	Determine the extent of the disposal mound and major bathymetric changes	Pre and post disposal (>50,000 cy or > 5 yrs)	Disposal mound occurs outside ODMDS boundary	Continue Monitoring	(A) Modify disposal method/ placement (B) Restrict disposal volume
Ensure Safe Navigation Depth	Bathymetry	Site User	Determine height of mound and any excessive mounding	Post disposal for significant projects (>50,000cy)	(A) Mound height > -30 feet MLLW (B) Mound height > -25 feet MLLW	Continue Monitoring	(A) Modify disposal method/placement (A & B) Direct disposal operators to avoid areas shallower than 30 feet. (B) Physically level material shallower than 25 feet (B) Notify mariners of mound location and depth (B) Further restrict disposal volumes

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options When Threshold:	
						Not Exceeded	Exceeded
Trend Assessment	Water and Sediment Quality, Benthic Community Analysis (40C.F.R.228.13)	EPA	Periodically evaluate the impact of disposal on the marine environment (40C.F.R. 228.9)	Approximately every 10 years.	(A) Absence from the site of pollution sensitive biota (B) Progressive non-seasonal changes in water or sediment quality	Continue Monitoring	(A) Conduct Environmental Effects Monitoring or Advanced Environmental Effects Monitoring (B) Review dredged material evaluation procedures
Environmental Effects Monitoring	(A) Chemical Monitoring (B) Benthic Monitoring	EPA/ USACE	(A) Determine if chemical contaminants are significantly elevated[1] within and outside of site boundaries (B) Determine whether there are adverse changes in the benthic populations outside of the site and evaluate recovery rates	Implement if disposal footprint extends beyond the site boundaries or if Trend Assessment results warrant.	(A) Contaminants are found to be elevated[1] (B) Adverse changes observed outside of the site that may endanger the marine environment	Discontinue monitoring.	(A) Institute Advanced Environmental Effects Monitoring (B) Implement case specific management options (i.e. Remediation, limits on quantities or types of material). (C) Consider isolating dredged material (capping)

[1] Significantly elevated: Concentrations above the range of contaminant levels in dredged sediments that the Regional Administrator and the District Engineer found to be suitable for disposal at the ODMDS.

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

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options When Threshold:	
						Not Exceeded	Exceeded
Advanced Environmental Effects Monitoring	(A) Tissue Chemical Analysis or bioaccumulation modeling (B) Benthic Monitoring	EPA/ USACE	Determine if the site is a source of adverse: (a) bioaccumulation (b) sub-lethal[2] changes in benthic organisms which may endanger the marine environment.	Implement if Environmental Effects Monitoring warrants.	(A) Benthic body burdens and risk assessment models indicate potential for food chain impacts. (B) Sub-lethal effects are unacceptable.	Discontinue monitoring	(A) Discontinue site use (B) Implement case specific management options (i.e., Remediation, limits on quantities or types of material).
Compliance	Disposal Site Use Records in EPA Region 4's XML format	Site User	(A) Ensure management requirements are being met (B) 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

4.1.3 Pre- and Post-Disposal Bathymetric Monitoring Requirements

Pre-disposal monitoring. A baseline bathymetric survey will be conducted prior to the first use of each disposal release zone.

- Surveys will conform to the minimum performance standards for Corps of Engineers Hydrographic Surveys as described in the USACE Engineering Manual, EM1110-2-1003, Hydrographic Surveying dated November 30, 2013 [http://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM_1110-2- 1003.pdf] or updates.
- The number and length of transects required will be sufficient to encompass the disposal release zone and a 500-foot-wide area around it.
- The surveys will be taken along lines spaced at 200-foot intervals or less for single beam surveys and 500 feet or less for multibeam surveys unless a lesser spacing provides 100% coverage.

The minimum performance standards 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 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).

No additional pre-disposal monitoring at this site is required unless indicated by the agencies.

Post-disposal monitoring. The USACE or other site user will conduct a bathymetric survey within 30 days after disposal project completion. Surveys will not be required for projects less than 50,000 cys. The number and aerial extent of transects required will be the same as in the baseline survey. Bathymetric survey results will be used to ensure that unacceptable mounding is not occurring and to aid in environmental effects monitoring.

Data collection methods are described in Engineer Manual EM 1110-2-1003. Results from post- and pre-dredge bathymetry should be provided to the EPA Region 4 when completed as part of the summary report. (https://www.publications.usace.army.mil/Portals/76/Publications/EngineerManuals/EM_1110-2-1003.pdf).

4.1.4 Data Reporting

The USACE or other site user shall 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 violation of the permit and/or contract conditions related to MPRSA Section 103 or SMMP requirements occur during disposal operations.

Disposal monitoring data shall be provided to the 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. The XML format is available from the EPA Region 4.

A Post Disposal Summary Report shall be provided to the 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 unpaid 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 EPA-issued concurrence letter, this Site Management and Monitoring Plan and/or the permit/contract (where 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 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.

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5 MODIFICATION OF THIS SMMP

This plan is effective and available for implementation from the date of the last signature. The regulations designating ODMDSs require site users to comply with specific minimum terms and conditions identified in the SMMP and incorporated into the site designations. The MPRSA Section 102(c)(3) directs the EPA, in conjunction with the USACE, to review and revise this SMMP at least every 10 years or sooner if site conditions 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. Conditions for updating this SMMP may include but are not limited to:

- Significant changes in disposal site use (change in frequency, site expansion, de-designation, new dredged material source location, etc.);
- Discovery of significant impacts to the physical, chemical, or biological environment during monitoring activities; and
- Any other conditions or changes at the site or area surrounding the site that may necessitate a review or update to the SMMP.

6 REFERENCES

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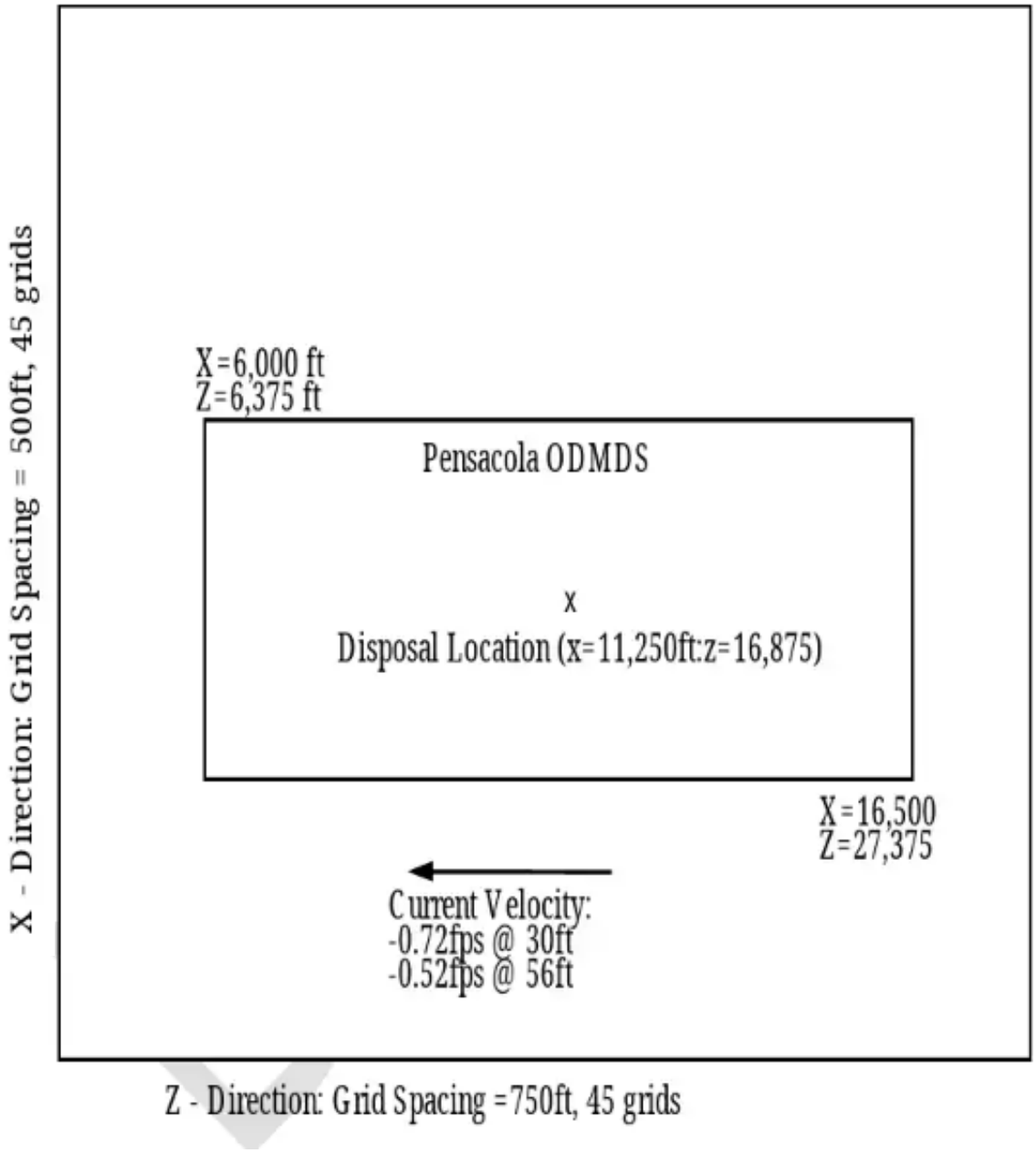
7 APPENDIX A – STFATE WATER QUALITY MODEL STANDARD INPUT PARAMETERS

Pensacola STFATE Input Parameters



Water Column Evaluations Numerical Model
(STFATE) Input Parameters Pensacola
Offshore 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)	750	ft
Spacing Between Grid Points (top to bottom)	500	ft
Constant Water Depth	75	ft
Roughness Height at Bottom of Disposal Site	.005[1]	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 = 1 ft	1.0248	g/cc
Ambient Density at Depth = 36 ft	1.0267	g/cc
Ambient Density at Depth = 75 ft	1.0271	g/cc

AMBIENT VELOCITY DATA

Parameter	Value	Units
Profile	2-Point at constant depth	
X-Direction Velocity at Depth = 30 ft	0.0	ft/sec
Z-Direction Velocity at Depth = 30 ft	-0.722	ft/sec
X-Direction Velocity at Depth = 56 ft	0.0	ft/sec
Z-Direction Velocity at Depth = 56 ft	-0.525	ft/sec

DISPOSAL OPERATION DATA

Parameter	Value	Units
Location of Disposal Point from Top of Grid	11,250[2]	ft
Location of Disposal Point from Left Edge of Grid	16,875[2]	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	6,000	ft
Location of the Upper Left Corner of the Disposal Site - Distance from Left Edge	6,375	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Top Edge	16,500	ft
Location of the Lower Right Corner of the Disposal Site - Distance from Left Edge	27,375	ft
Duration of Simulation	14,400	sec
Long Term Time Step	600	sec

COEFFICIENTS

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

[1]Model default value
[2]Represents center of disposal site. Dredged material requiring disposal in another location in order to meet the dilution criteria must be brought to the attention of EPA and the USACE.

Pensacola Offshore ODMDS Background Water Concentrations

Chemicals of concern	Background Concentrations (ug/L)
Arsenic	1.14
Cadmium	0.004[1]
Chromium	0.21
Copper	0.229
Lead	0.041
Mercury	0.1[1]
Nickel	0.64
Selenium	0.5[1]
Silver	0.01[1]
Zinc	0.59
Tributyltin (TBT)	0.025[1]
Aldrin	0.001[1]
Chlordane	0.001[1]
DDT	0.0025[1]
Dieldrin	0.001[1]
alpha-Endosulfan	0.001[1]
beta-Endosulfam	0.002[1]
Endrin	0.002[1]
gamma-BHC (Lindane)	0.0005[1]
Heptachlor	0.00075[1]
Heptachlor epoxide	0.001[1]
Toxaphene	0.1[1]
Pentachlorophenol	5.33[1]

Values derived from Pensacola Offshore ODMDS Trend Assessment Study (2013)
[1] Analyte not detected. Value based on one half the reporting limit.

8 APPENDIX B – TEMPLATE FOR GENERIC SPECIAL CONDITIONS

Generic Special Conditions For

MPRSA Section 103 Permits Pensacola ODMDS

MPRSA Section 102(c)(3) directs the EPA in conjunction with the USACE to develop a SMMP for dredged material disposal sites; such plans are implemented through MPRSA permits issued by the USACE or through federal projects subject to the same criteria, evaluation factors, procedures, and requirements as permits (including through terms and conditions in contracts for federal projects).

The EPA in conjunction with the USACE developed the template language below for inclusion in permits, though the template language is intended to be included on a case-by-case basis. Neither the SMMP nor this Appendix directly impose requirements specific to permitted activity. Instead, the SMMP and this Appendix recommend conditions that the USACE should impose and, if not, that the EPA should require in concurring on the permit. The regulation designating an ODMDS also may impose conditions on a permittee directly. The terms of any particular permit incorporating the language from this Appendix (including as modified) would impose requirements specific to the permitted activity. The USACE is not obligated to impose any particular permit term based on the template language, though the USACE may elect to do so; the language is provided to facilitate the USACE permit development and to provide notice to third parties. For any future permit, the EPA's concurrence review would confirm that appropriate terms are included to assure adequate implementation of the SMMP, and the EPA would consider this Appendix to guide its review. The EPA may condition its concurrence on compliance with specified terms and conditions derived from this Appendix, or other terms and conditions deemed appropriate to implement this SMMP or the MPRSA, and in such cases the USACE must include in the permit the terms and conditions specified in the EPA's concurrence letter.

DISPOSAL OPERATIONS

The permittee shall certify the accuracy of the electronic positioning system proposed for use during disposal operations at the Pensacola ODMDS. The certification shall be accomplished by providing current certification documentation from the National DQM Program for scow and hopper dredge instrumentation systems. The National DQM certification is valid for one year from the date of certification.

This permit does not authorize leakage or spillage out of barges, dump scows, or hopper dredges of water and/or excavated material while enroute to the ODMDS disposal release zone(s). Leakage or spillage may be determined to be unpermitted dumping. Failure to repair leaks or change the method of operation that results in the leakage or spillage will result in the suspension of dredging operation and require prompt repair or change of operation as prerequisite to the resumption of dredging. Transit to the ODMDS begins as soon as the vessel begins moving to the ODMDS. All appropriate measures to avoid spillage during transit must be taken. Appropriate measures may include but are not limited to: up-to-date U.S. Coast Guard and/or American Bureau of Shipping certification of all disposal-related vessels, maintenance (inspection and/or replacement) of gaskets on barge doors, minimization of excess free liquids in barge loads, pre-transit testing of barge door hydraulics, and pre-transport verification of appropriate weather and sea state conditions. The EPA Region 4 and the USACE District Mobile shall be notified within 24 hours (or the next business day) if any apparent leaking or spilling of dredged material occurs as indicated by an average loss of draft during transit from the dredging area to the disposal release zone(s) (forward draft loss plus aft draft loss divided by 2) in excess of one foot. In addition, the permittee understands that no debris is to be placed in the transit vessel or at the Pensacola ODMDS.

A disposal operations inspector and/or captain of any vessel used to transport dredged material to the Pensacola ODMDS shall insure compliance with disposal operation conditions defined in this permit.

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

The permittee shall contact the USACE Mobile District's Regulatory Branch (251) 690-2658 and the EPA Region 4 at OceanDumpingR4@epa.gov or (404) 562-9300 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 post-dredging report.

When dredged material is disposed, no portion of the hopper dredge, disposal barge, or scow shall be outside of the boundaries of the Pensacola ODMDS as defined in Special Condition B. Additionally, disposal shall occur within a specified disposal zone defined as [DEFINE COORDINATES AND SIZE OF DISPOSAL ZONE or refer to table]. Disposal shall not occur closer than 1,300 feet to any oil or gas rig that may be present within the site boundaries.

The permittee shall use an automated disposal verification system that is certified by the National DQM program to continuously track the horizontal location and draft condition of the disposal vessel (hopper dredge or disposal barge or scow) to and from the Pensacola ODMDS. This real-time information is available on-line to the Pensacola ODMDS District and will be provided to the EPA Region 4 on a weekly basis via email using the eXtensible Markup Language (XML) specification and protocol. Data shall be provided per the EPA Region 4 XML format and delivered as an attachment to an email to [email address]. The XML format is available from the EPA Region 4.

The permittee shall conduct a bathymetric survey of the Pensacola ODMDS within 30 days of a disposal event following project completion.

The number and length of the survey transects shall be sufficient to encompass the defined disposal zone within the Pensacola ODMDS and a 500-foot-wide area around the disposal zone. Transects shall be spaced at 500-foot intervals or less with a depth recording density of 20 to 70 feet.

Vertical accuracy of the survey shall be ±0.1 feet. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing either a microwave line of site system or differential global positioning system. The vertical datum will be referenced to prescribed NOAA MLLW datum. MLLW is 1.8 feet below NGVD 1929. The horizontal datum will be Alabama State Plane (zone 0102 Alabama West) or Geographic (NAD 1983). State Plane coordinates shall be reported to the nearest 0.10 foot and latitude and longitude coordinates shall be reported as degrees and decimal minutes to the nearest 0.01 minutes.

The permittee has read and agrees to assure its actions are consistent with any revisions to the Pensacola ODMDS Site Management and Monitoring Plan (SMMP) in effect at the time of permit issuance.

The permittee shall not transport dredged material to the Pensacola ODMDS until it confirms that the EPA has concurred that the proposed dredge material meets the Ocean Disposal Criteria as given in 40 C.F.R. 227.

REPORTING REQUIREMENTS

The permittee shall send the USACE, Mobile District's Regulatory Branch and the EPA Region 4 Ocean, Wetlands, and Streams Protection Branch (61 Forsyth Street SW, Atlanta, GA 30303) a notification of commencement of work at least 15 days before initiation of any dredging operations authorized by this permit.

The permittee shall submit to the USACE and the EPA Region 4 weekly disposal monitoring reports. These reports shall contain the information described in Special Condition I.

The permittee shall develop and send one copy of the disposal summary report to the Pensacola ODMDS District's Regulatory Branch and one copy of the disposal summary report to the 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:

- The report shall indicate whether all general and special permit conditions were met.
- Any violations of the permit shall be explained in detail.
- USACE permit number,
- Actual start date and completion date of dredging and disposal operations,
- Total cubic yards disposed at the Pensacola ODMDS,
- Locations of disposal events, and
- Post disposal bathymetric survey results (in hard copy and electronic formats).

PERMIT LIABILITY

The permittee and all contractors or other third parties who perform an activity authorized by this permit on behalf of the permittee shall be separately liable for a civil penalty for each violation of any term of this permit committed alone or in concert with the permittee or other parties. Liability shall be individual, rather than joint and several, and shall not be reduced in

any fashion to reflect the liability assigned to and civil penalty assessed against the permittee or any other third party as defined in MPRSA Section 105(a), 33 U.S.C. § 1415(a).

If the permittee or any contractor or other third party knowingly violates any term of this permit (either alone or in concert), the permittee, contractor or other party shall be individually liable for the criminal penalties set forth in MPRSA Section 105(b), 33 U.S.C. § 1415(b).

9 APPENDIX C – GENERIC CONTRACT LANGUAGE

Generic Contract Specification Language for Use of the Pensacola ODMDS

Marine Protection, Research, and Sanctuaries Act (MPRSA) section 102(c)(3) directs the Environmental Protection Agency (EPA) in conjunction with the U.S. Army Corps of Engineers (USACE) to develop site management and monitoring plans (SMMP) for dredged material disposal sites; such plans are implemented through MPRSA permits issued by USACE or through federal projects subject to the same criteria, evaluation factors, procedures, and requirements as permits. The EPA in conjunction with the USACE, developed the template language below for inclusion in the USACE contracts or other project specifications for the transportation and disposal at the Pensacola Ocean Dredged Material Disposal Site (ODMDS). The regulation designating an ODMDS may impose certain conditions and requirements on transportation to and dumping at the site directly. In addition, the terms of any particular contract or other project specification document for the transportation and disposal of dredged material at the Pensacola ODMDS can impose requirements specific to the project activity incorporating the language from this Appendix (including as modified). A particular contract can and often does also include a term requiring the site user or contractor to comply with specific terms and conditions derived from the SMMP. The USACE is not obligated to impose any particular contract term based on the template language, though the USACE may elect to do so; the language is provided to facilitate the USACE contract development and to provide notice to third parties. For any future federal project, the EPA's concurrence review would confirm that appropriate terms are included to assure adequate implementation of the SMMP and the MPRSA, and the language in this Appendix is available to guide the EPA's review. The EPA may condition its concurrence on compliance with specified terms and conditions derived from this Appendix, or other terms and conditions deemed appropriate, and in such cases, USACE must include these terms and conditions in the contract documents.

SECTION 35 20 23.23

NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM

HOPPER DREDGE

08-04-2023

PART 1 GENERAL

1.1 DESCRIPTION

This permit requires use of the National Dredging Quality Management Program

(DQM) to monitor the dredge's status at all times during the permit and to manage data history.

This performance-based specification Section identifies the minimum required output and the precision and instrumentation requirements. The requirements may be satisfied using equipment and technical procedures selected by the Contractor.

1.2 SUBMITTALS

- National Dredging Quality Management Program Certification

1.3 PAYMENT

Not used.

1.4 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM CERTIFICATION

1.4.1 CERTIFICATION

The Contractor is required to have a current certification from DQM for the hopper dredge instrumentation system to be used under this permit. Criteria for certification is based on the most recent specification posted on the DQM website (https://dqm.usace.army.mil). Verify compliance with these criteria by annual onsite quality assurance (QA) checks conducted by the DQM Support Center Data Acquisition and Analysis Team and by periodic review of the transmitted data. DQM Certification is valid for one year from the date of the annual QA checks. Certification is contingent upon the system's ability to continuously meet the performance requirements as

outlined in paragraph PERFORMANCE REQUIREMENTS. If issues with data quality are not corrected within 48 hours, the system certification will be revoked and additional

QA checks by the Data Acquisition and Analysis Team may be necessary. Annual DQM Certification must be based on the following:

- A series of quality assurance checks as outlined on the DQM website (https://dqm.usace.army.mil)
- Verification of data acquisition and transfer as described in paragraph PERFORMANCE REQUIREMENTS
- Review of the Dredge Plant Instrumentation Plan (DPIP) as described in paragraph DREDGE PLANT INSTRUMENTATION PLAN (DPIP)

1.4.2 RECERTIFICATION

The owner or operator of the dredge must contact DQM at DQM-AnnualQA@rpsgroup.com on an annual basis, or at least three weeks prior to certification expiration, to schedule QA checks for renewal. This notification is meant to make the Data Acquisition and Analysis Team aware of a target date for the annual QA checks for the dredge. At least one week prior to the target date, the Contractor must contact the Data Acquisition and Analysis Team and verbally coordinate a specific date and location. The Contractor must then follow up this conversation with a written email confirmation. The owner/operator must coordinate the QA checks with all local authorities, including but not limited to, the local USACE permitting representative. Recertification is required for any yard work which produces modification to displacement (change in dredge lines, or repositioning or repainting hull marks), modification to bin volume (change in bin dimensions, or addition or subtraction of structure), or changes in sensor type or location; report these changes in the sensor log section of the DPIP. A system does not have to be transmitting data between jobs; however, in order to retain its certification during this period, the system sensors or hardware should not be disconnected or removed from the dredge. If the system is powered down, retain calibration coefficients.

1.5 DREDGE PLANT INSTRUMENTATION PLAN (DPIP)

The Contractor must have a digital copy of the DPIP on file with the DQM Support Center. While working on site, the Contractor must also maintain on the dredge a copy of the DPIP, which is easily accessible to government personnel at all times. This document must describe the sensors used, configuration of the system, how sensor data will be collected, how quality control on the data will be performed, and how sensors/data reporting equipment will be calibrated and repaired if they fail. A description of the computed dredge-specific data and how the sensor data will be transmitted to the DQM database will also be included. A complete list of the required DPIP contents is provided on the DQM website (https://dqm.usace.army.mil). Submit to the DQM Support Center any addendum or modifications made to the plan, subsequent to its original submission, prior to the start of work. Any changes to the computation methods must be approved by the DQM Support Center prior to their implementation.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 REQUIREMENTS FOR REPORTED DATA

Provide, operate, and maintain all hardware and software to meet these specifications. The Contractor is responsible for replacement, repair, and calibration of sensors and other necessary data acquisition equipment needed to supply the required data. Complete repairs within 48 hours of any sensor failure. Notify the Permit Project Manager upon completion of a repair, replacement, installation, modification, or calibration. In consultation with the DQM Support Center, the Permit Project Manager may request recalibration of sensors or other hardware components at any time during the permit as deemed necessary.

Keep a log of sensor repair, replacement, installation, modification and calibration in the dredge's onboard copy of the DPIP. The log must contain a three-year history of sensor maintenance, including the time of the sensor failures (and subsequent repairs), the time and results of sensor calibrations, the time of sensor replacements, and the time that backup sensor systems were initiated to provide the required data. It must also contain the name of the person responsible for the sensor work.

Install sensors that are capable of collecting parameters within specified accuracies and resolutions indicated in the following subparagraphs. Reported sensor values for ullage,

draft, and draghead depth should represent a weighted average with the highest and lowest values not included in the calculated average for the given interval. This information should be documented in the DPIP Sections that say “Calculations done external to the instrumentation.”

3.1.1 Date and Time

The date and time shall be reported to the nearest second and referenced to UTC time based on a 24-hour format; mm/dd/yyyy hh:mm:ss. The reported time shall be the time reported by the GPS in the NMEA string.

3.1.2 Load Number

A load number must document the end of a disposal event. Load numbering will begin at number 1 at the start of the permit and will be incremented by 1 at the completion of each disposal event or emptying of the hopper. Whenever possible, calculate the load number off of the sensors aboard the dredge using a mathematically repeatable routine. Make efforts to include logic that avoids false load number increments. Do not allow the routine to miss any disposal event. If manual incrementing of the load number is in place, pay extra attention to this value in the quality control process.

3.1.3 Horizontal Positioning

Obtain all locations using a positioning system operating with a minimum accuracy level of 1 to 3 meters horizontal Circular Error Probable (CEP). Report positions as Latitude/Longitude WGS 84 in decimal degrees. West Longitude and South Latitude values are reported as negative.

3.1.3.1 Vessel Horizontal Positioning

Record vessel horizontal positioning as geographic coordinates of the vessel as indicated by the location of the GPS antenna.

3.1.3.2 Draghead Horizontal Positioning

Record draghead horizontal positioning as geographic coordinates of the heel on the centerline of the draghead(s). Describe any offset calculations from the GPS antenna in the DPIP.

3.1.4 Hull Status

Monitor open/closed status of the hopper dredge, corresponding to the split/non-split condition of a split-hull hopper dredge. For dredges with hopper doors, the status of a single door that is the first opened during normal disposal operations may be monitored. An “open” value indicates that the hopper door is open or, in the case of split-hull dredges, that the hull is split. A “closed” value indicates that the hopper doors are closed or, in the case of split-hull dredges, that the hull is not split.

For this contract, hull status must register closed prior to leaving the disposal area.

3.1.5 Dredge Course

Provide dredge course-over-ground (COG) using industry-standard equipment. Provide dredge course-over-ground to the nearest whole degree with values from 000 (true north) to 359 degrees referenced to a clockwise positive direction convention.

3.1.6 Dredge Speed

Provide dredge speed-over-ground in knots using industry-standard equipment with a minimum accuracy of 1 knot and resolution to the nearest 0.1 knot.

3.1.7 Dredge Heading

Provide dredge heading using industry-standard equipment. The dredge heading must be accurate to within five degrees and reported to the nearest whole degree with values from 000 (true north) to 359 degrees referenced to a clockwise positive direction convention.

3.1.8 Tide

Obtain tide data using appropriate equipment to give the water level with an accuracy of ± 0.1 foot and a resolution of 0.01 foot. Enter tide values above project datum described in the dredging specification with a positive sign and those below with a negative sign.

3.1.9 Draft

Report all draft measurements in feet, tenths, and hundredths with an accuracy of ± 0.1 foot relative to observed physical draft readings. Report the measurements at a resolution of two decimal places (hundredths of a foot). The reported forward draft value is equal to the sum of the visual forward port and starboard draft mark readings divided by two. The reported aft draft value is equal to the sum of the visual aft port and

starboard draft mark readings divided by two. Forward draft, aft draft, and average draft will be reported. Place sensors at an optimum location on the vessel to be reflective of observed physical draft mark readings at any trim or list. Minimum accuracies are conditional to relatively calm water. The sensor value reported must be an average of at least ten samples per event, with at least one maximum value and one minimum value removed, and the minimum eight remaining values averaged. When the average draft is calculated for the purpose of determining displacement, maintain significant digits for average draft such that if forward draft was 0.15 and aft draft was 0.1, the average draft would be 0.125.

3.1.10 Hopper Ullage Sounding

Report all ullage soundings in feet, tenths, and hundredths with an accuracy of ± 0.1 foot with respect to the combing; they must be representative of the forward and aft extents of the hopper as close to the centerline as is possible. Report the measurements at a resolution of two decimal places (hundredths of a foot). Report forward ullage and aft ullage soundings. Mount sensors to avoid discharge flume turbulence, foam, and any structure that could produce sidelobe errors. If sensors must be offset from the centerline of the hopper, they should be offset to opposite sides of the vessel. If more than one fore or one aft sensor are used, place the sensors near the corners of the hopper, and report the average value of the fore sensors and the average value of the aft sensors. The sensor value reported must be an average of at least 10 samples per event, with at least one maximum value and one minimum value removed and the minimum eight remaining values averaged. When the average ullage is calculated for the purpose of determining hopper volume, maintain significant digits for average ullage such that if forward ullage was 0.15 and aft ullage was 0.1, the average ullage would be 0.125.

3.1.11 Hopper Volume

Report hopper volume in cys, based on the most accurate method available for the dredge. The minimum standard of accuracy for hopper volume is interpolation from the certified hopper volume table, based on the average fore and aft ullage soundings.

3.1.12 Displacement

Report dredge displacement in long tons, based on the most accurate method available for the dredge. The minimum standard of accuracy for displacement is interpolation

from the displacement table, based on the average draft. For this contract the density of water used to calculate displacement is _____*****kg/cubic meter, and it will be used for an additional interpolation between the fresh and salt water tables. **The water density used is project-/location-specific. Enter the appropriate water density in the blank:*

- *Fresh Water—1000 kg/m³ (1 g/cm³)*
- *Salt Water—1027-1030 kg/m³ (1.027-1.03 g/cm³)*

3.1.13 Empty Displacement

Report empty displacement in long tons, which is the lightship value of the dredge, or the weight of the dredge with no material in the hopper, adjusted for fuel and water consumption.

3.1.14 Draghead Depths

Report draghead depths with an accuracy of ± 0.5 foot and a resolution to the nearest 0.1 foot as measured from the surface of the water with no tidal adjustments. Minimum accuracies are conditional to relatively calm water. The sensor value reported must be an average of at least ten samples per event, with at least one maximum value and one minimum value removed and the minimum eight remaining values averaged.

3.1.15 Slurry Densities

Use a density-metering device, calibrated according to the manufacturer's specifications, to record the slurry density of each dragarm to the nearest 0.001 g/cc with an accuracy of ± 0.01 g/cc. If the manufacturer does not specify a frequency of recalibration, conduct calibration prior to commencement of work.

3.1.16 Slurry Velocities

Use a flow-metering device, calibrated according to the manufacturer's specifications, to record the slurry velocity of each dragarm to the nearest 0.01 fps with an accuracy of ± 0.5 fps. If the manufacturer does not specify a frequency of recalibration, conduct calibration prior to commencement of work. Measure the slurry velocity in the same pipeline inside diameter as that used for the slurry density measurement.

3.1.17 Pump RPM

Measure the RPM of any pump being used to move material with the highest level of accuracy that is standard on the vessel operational displays, either at the bridge, at the

drag tender's controls, or in the engine room. Dredges with multiple pumps per side must report RPM for the pump that best describes the dredging process (typically the outboard pump).

3.1.18 Sea Suction Valve for Dragarm

If sea suction can be taken to bypass suction through the draghead, the sea suction location and valve status will be reported. The status of the valve will change from "closed" to "open" when the valve starts to open and will register "closed" when the valve is fully closed. When applicable, the state of the latch will be reported as "true" or "false." Report the sea suction location in a standard non-changing name string of no more than 20 characters. These field values will always occur in the XML string as a set. The DQM system can accommodate only up to four unique sea suction locations. Suggested options for the naming convention can be found in the example dataset in paragraph DATA FORMAT.

3.1.19 Pumpout

When the hopper dredge is being pumped out, report a "true" value; when it is not, report a "false" value. The only permissible values are "true" and "false."

3.2 NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM SYSTEM REQUIREMENTS

The Contractor's DQM system must be capable of collecting, displaying, and transmitting information to the DQM database. Record the applicable parameters from paragraph REQUIREMENTS FOR REPORTED DATA as events locally and continually transmit them to the DQM database anytime an Internet connection is available. Equip the dredge with a DQM computer system, consisting of a computer, monitor, keyboard, mouse, data modem, UPS, and network hub. Provide a standalone computer system, exclusive to the DQM monitoring system, with the USACE DQM software installed on it. If a hardware problem occurs, or if a part of the system is physically damaged, the Contractor is responsible for repairing it within 48 hours of determination of the condition.

3.2.1 Computer Requirements

Provide a dedicated onboard computer for use by the DQM system. This computer must run the USACE software and receive data from the Contractor's data-reporting interface. This computer must meet or exceed the following performance specifications:

CPU	Intel or AMD processor with a (non-overclocked) clock speed of at least 1.6 gigahertz (GHz)
Hard drive	250 gigabytes (GB); internal
RAM	4 gigabytes (GB)
Ethernet adapter	Internal network card with an RJ-45 connector
Ports	1 free serial port with standard 9-pin connectors; 1 free USB port
Other hardware	Keyboard, mouse, monitor

Install a fully licensed copy of Windows 10 (or higher) Professional Operating System on the computer specified above. Also install any necessary manufacturer-provided drivers for the installed hardware.

Locate and orient the computer to allow data entry and data viewing as well as to provide access to data ports for the connection of external hardware.

3.2.2 Software

The DQM computer's primary function is to transmit data to the DQM shoreside database. Do not install software which conflicts with this function on this computer. The DQM computer must have the USACE-provided Dredging Quality Management Onboard Software (DQMOBS) installed on it by DQM personnel along with the USACE-selected software for remote support and management.

3.2.3 UPS

Supply an Uninterruptible Power Supply (UPS) for the computer and networking equipment. The UPS must provide backup power at 1 kVA for a minimum of ten minutes. The UPS must interface with the DQM computer to communicate UPS status. Ensure that sufficient power outlets are available to run all specified equipment.

3.2.4 Internet Access

Maintain an Internet connection capable of transmitting real-time data to the DQM server and supporting remote access as well as enough additional bandwidth to clear

historically queued data when a connection is reobtained. If connectivity is lost, queue and transmit unsent data upon restoration of connectivity. Delays in pushing real-time data to the DQM database should not exceed four hours. Exceptions to these requirements may be granted by the DQM Support Center on a case-by-case basis with consideration for contract-specific requirements, site-specific conditions, and extreme weather events.

Acquire and install all necessary hardware and software to make the Internet connection available for data transmission to the DQM web service. Configure the hardware and software to allow the DQM Support Center remote access to this computer. Coordination between the dredging company's IT and the DQM Support Center may be required in order to configure remote access though any security, firewall, router, and telemetry systems. Telemetry systems must be capable of meeting these minimum reporting requirements in all operating conditions.

3.2.5 Data Routing Requirements

Onboard sensors must continually monitor dredge conditions, operations, and efficiency and route this information into the shipboard dredge-specific system (DSS) computer to assist in guiding dredge operations. Portions of this Contractor-collected information must be routed to the DQM computer on a real-time basis. Use an RS-232 9600- or 19200-baud serial interface to send standard sensor data to the DQM computer. Configure the serial interface as 8 bits, no parity, and no flow control.

3.2.6 Data Reporting Frequency

Log data as a series of events. Each event will consist of a dataset containing dredge information in accordance with paragraph REQUIREMENTS FOR REPORTED DATA. Each set of measurements (time, position, etc.) will be considered an event. Collect any required information in paragraph REQUIREMENTS FOR REPORTED DATA that is not an averaged variable (draft and ullage) within one second of the reported time. Send a data string for an event to the DQM computer every six to 12 seconds. This interval must remain constant throughout the contract; do not transmit data strings more than once per every five seconds. Collect and compute any averaged variable within this sampling interval.

3.2.7 Data Format

Report data as an Extensible Markup Language (W3C standard XML 1.0).

3.2.8 Data Reporting

The system must transmit correctly formatted event data XML strings to the DQM database continuously from mobilization until the last USACE post-dredging survey has been accepted. If the Internet connection (paragraph INTERNET ACCESS) is non-operable, perform manual backups from the dredge computer of the XML data string which would have been transmitted to the DQM computer over the serial connection for each day the device is inoperable and submit to the DQM Support Center within 48 hours. This submission does not replace the requirement of correcting the issue affecting the automatic transmission of data. In the event of data transfer, transmission, or hardware failure, maintain a manually recorded disposal log consisting of a series of events. These events are start of dredging, end of dredging, pre-disposal, and post-disposal. Include time stamp (GMT), position (Latitude and Longitude WGS84), draft, ullage, volume, and displacement for each event. Submit disposal logs on a daily basis to the Permit Project Manager during the time when the system is not operational.

3.2.9 Contractor Data Backup

Maintain an archive of all data sent to the DQM computer during the permit. The Permit Project Manager may require that the Contractor provide a copy of these data covering specified time periods. Provide the data transmitted to the DQM computer in the XML format with no line breaks between the parameters and each record string on a separate line. The naming convention for the files is <*dredgename*>_<*StartYYYYMMddhhmmss*>_<*EndYYYYMMddhhmmss*>.txt. Submit data via storage medium acceptable to the Permit Project Manager. At the end of the dredging contract, contact the DQM Support Center prior to discarding the data. The DQM Support Center will verify that all data has been received and appropriately archived before giving the Contractor discard permission. Record the following information in a separate section at the end of the dredge's onboard copy of the DPIP:

- Person who made the call
- Date of the call
- DQM representative who gave permission to discard

3.3 PERFORMANCE REQUIREMENTS

The Contractor's DQM system must be fully operational at the start of dredging operations and fully certified prior to moving dredge material on the contract (see paragraph NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM CERTIFICATION). To meet specification requirements for operability, in addition to certification, the Contractor's system must provide a data string with all values for all parameters while operating, as described in the specifications. Additionally, all hardware must be compliant with hardware requirements (paragraph COMPUTER REQUIREMENTS). Quality data strings are considered to be those providing values for all parameters reported when operating according to the specification. Make repairs necessary to restore data return compliance within 48 hours. Failure by the Contractor to report the required data within the specified time window for dredge measurements (see paragraph DATA REPORTING FREQUENCY and paragraph DATA REPORTING) will result in withholding of up to 10% of the contract progress payment per FAR 52.232-5 ("Payments Under Fixed-Price Construction Contracts").

3.4 LIST OF ITEMS TO BE PROVIDED BY THE CONTRACTOR

DPIP	https://dqm.usace.army.mil
DQM System	
Sensor instrumentation	Paragraph REQUIREMENTS FOR REPORTED DATA
DQM computer	Paragraph NATIONAL DREDGING QUALITY MANAGEMENT PROGRAM SYSTEM REQUIREMENTS
Dredge Data	
Event documentation	Paragraph DATA REPORTING
Dredge data backups	Paragraph CONTRACTOR DATA BACKUP
QA Equipment on the Dredge	
Dragarm depth chain	
Ullage tape	
Refractometer	
Water-sampling device	