SITE MANAGEMENT AND MONITORING PLAN

FOR YAQUINA BAY NORTH AND SOUTH ODMDSs

[DATE]

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 10

U.S. ARMY CORPS OF ENGINEERS, PORTLAND DISTRICT

The following Site Management and Monitoring Plan (SMMP) for the Yaquina Bay North and South Ocean Dredged Material Disposal Sites (ODMDSs) has been reviewed and revised to comply with Section 102(c)(3) of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 U.S.C. Section 1401, et seq.) as amended by Section 506 of the Water Resources Development Act (WRDA) Amendments of 1992 (Public Law 102-580) and has been approved by the following officials of the U.S. Environmental Protection Agency (EPA) Region 10 and the U.S. Army Corps of Engineers (USACE), Portland District.

_____	_____
Name Date	Name Date
Emma Pokon	COL L. Dale Caswell, Jr., PE, PMP
Regional Administrator	District Engineer
U.S. Environmental Protection Agency Region 10	U.S. Army Corps of Engineers – Portland District

This plan is effective from the date of the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers signatures for a ten-year term. Partial midterm modifications do not extend the term. The MPRSA requires review and revision no less frequently than every ten years.

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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 for the purpose of dumping and dumping of any material into ocean waters, including dredged material. Under the MPRSA, no permit or authorization may be issued for ocean dumping where such dumping will unreasonably degrade or endanger human health, welfare, and amenities, or the marine environment, ecological systems, and economic potentialities.

In the case of dredged material, the U.S. Army Corps of Engineers (USACE) is responsible for issuing ocean dumping permits and operating and maintaining federal navigation projects involving ocean dumping of dredged material (33 U.S.C. Section 1413, MPRSA Section 103). USACE applies the U.S. Environmental Protection Agency (EPA) marine protection criteria when authorizing federal navigation projects and when evaluating permit requests for the transportation of dredged material for the purpose of dumping into ocean waters. MPRSA permits and federal projects involving the ocean dumping of dredged material are subject to EPA review and written concurrence. The EPA may concur with or without conditions or decline to concur (i.e., non-concur) on the permit or federal project authorization for the ocean dumping of dredged material. If the 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, USACE cannot issue the permit for or authorize or conduct the transportation and dumping of dredged material in the ocean. According to USACE regulations at 33 C.F.R. 325.6, permits and federal project authorizations for 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 MPRSA sites for the ocean dumping of materials and the management of such designated sites. The EPA's MPRSA regulations at 40 C.F.R. Part 228 establish procedures for the designation and management of ocean dumping sites. Unless otherwise specifically noted, site management authority for each site set forth in 40 C.F.R. 228.15 is delegated to the relevant EPA Regional official. Management of a site consists of regulating times, rates, and methods of disposal; regulating quantities and types of materials disposed; developing and maintaining effective ambient monitoring programs for the site; conducting site evaluation studies; and recommending modifications in site use and/or designation (40 C.F.R. 228.3(a)).

The EPA and USACE share the responsibilities of conducting management and monitoring activities at EPA-designated ocean dredged material disposal sites (ODMDSs). Under MPRSA Section 102(c), the EPA, in conjunction with USACE, is responsible for developing a site management and monitoring plan (SMMP) for each designated ODMDS. The SMMP ensures that ocean dredged material dumping activities will not unreasonably degrade human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities. The SMMP provisions are an integral part of managing all dumping activities at an ODMDS. 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 coordination with USACE, determines that such changes are warranted, as informed by monitoring. This SMMP will be reviewed and revised as needed, or at least every 10 years, whichever is sooner. Per Section 102(c)(3), the MPRSA stipulates that the SMMP shall include, at a minimum:

- A baseline assessment of conditions at the site (Section 2.4);
- A program for monitoring the site (Sections 3.5, 4.0);
- Special management conditions or practices to be implemented at each site that are necessary for the protection of the environment (Appendix A);
- 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 (Section 2.3, 2.5.2);
- 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 (Section 2.1); and
- A schedule for review and revision of the plan (which shall be reviewed and revised at least every 10 years) (Section 5.0).

The provisions in this SMMP apply for all dredged material disposal activities at the Yaquina Bay North and South ODMDSs including monitoring and management activities by the federal agencies. This SMMP includes template provisions for USACE to include in future permits involving dredged material disposal at these sites (Appendix A) as well as USACE template contract conditions (Appendix B). 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 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 A and B, though the language may vary from the terms of the Appendices as necessary and appropriate. If the translation of template terms by USACE warrants further clarification, the EPA can ensure implementation of the template provisions in Appendix A and B as necessary through the EPA's concurrence actions.

1.1 ROLES AND RESPONSIBILITIES

The EPA and USACE work together to implement the site monitoring program for the Yaquina Bay North and South ODMDSs. Specific responsibilities of the EPA and 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 33 U.S.C. § 1411 and 1415(a), the EPA has broad authority to assess civil penalties and seek injunctive relief for unauthorized transport of material for the purpose of dumping it into ocean waters, including deviations from transportation-related and disposal-related conditions required by a regulation establishing the ODMDS or deviations from transportation-related and disposal-related conduct required or authorized by USACE in a permit or, in the case of Federal projects, the terms of the contract documents.

USACE: USACE is responsible for evaluating dredged material suitability and compliance with the MPRSA 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. USACE also has processes and conditions in place to enforce conditions related to ocean dumping by contract and government dredges at federal navigation projects. USACE contract remedies are separate and distinct from statutory remedies under the MPRSA.

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 EPA Region 10 designated the Yaquina Bay North ODMDS and South ODMDS (offshore of Newport, Oregon) pursuant to the Marine Protection, Research and Sanctuaries Act (MPRSA) on September 7, 2012 (77 FR 55144).

The official Yaquina Bay North and South ODMDSs designation is published at 40 C.F.R. 228.15(n)(15):

Yaquina Bay, OR—North and South Ocean Dredged Material Disposal Sites

(i) North Site.
(A) ***Location (NAD 83):*** 44°38’17.98” N, 124°07’25.95” W; 44°38’12.86” N, 124°06’31.10” W; 44°37’14.33” N, 124°07’37.57” W; 44°37’09.22” N, 124°06’42.73” W.
(B) ***Size:*** Approximately 1.07 nautical miles long and 0.66 nautical miles wide (0.71 square nautical miles); 597 acres (242 hectares)
(C) ***Depth:*** Ranges from approximately 112 to 152 feet (34 to 46 meters)
(D) ***Primary Use:*** Dredged material
(E) ***Period of Use:*** Continuing use
(F) ***Restrictions:***
(*1*) Disposal shall be limited to dredged material determined to be suitable for ocean disposal according to 40 CFR 227.13 from the Yaquina Bay and River navigation channel and adjacent areas;

(*2*) Disposal shall be managed by the restrictions and requirements contained in the currently-approved Site Management and Monitoring Plan (SMMP);
(*3*) Monitoring, as specified in the SMMP, is required.

(ii) South Site.
(A) ***Location (NAD 83):*** 44°36'04.50" N, 124°07'52.66" W; 44°35'59.39" N, 124°06'57.84" W; 44°35'00.85" N, 124°08'04.27" W; 44°34'55.75" N, 124°07'09.47" W.
(B) ***Size:*** Approximately 1.07 nautical miles long and 0.66 nautical miles wide (0.71 square nautical miles); 597 acres (242 hectares)
(C) ***Depth:*** Ranges from approximately 112 to 152 feet (34 to 46 meters)
(D) ***Primary Use:*** Dredged material
(E) ***Period of Use:*** Continuing use
(F) ***Restrictions:***
(*1*) Disposal shall be limited to dredged material determined to be suitable for ocean disposal according to 40 CFR 227.13, from the Yaquina Bay and River navigation channel and adjacent areas;
(*2*) Disposal shall be managed by the restrictions and requirements contained in the currently-approved Site Management and Monitoring Plan (SMMP);
(*3*) Monitoring, as specified in the SMMP, is required.

A SMMP was jointly prepared in 2012 by the EPA and USACE to describe the management and monitoring requirements for the two sites. This document is the first revision to the 2012 Yaquina Bay North and South ODMDSs SMMP.

The Yaquina North and South ODMDSs are located offshore of previous disposal sites in current depths ranging from 112 feet to 155 feet (Figure 1). The Yaquina ODMDSs were designed to provide 20-50 years of capacity for dredged material disposal and to accommodate dredge vessel operational flexibility. Furthermore, the sites were sized to allow for thin-layer placement each dredging cycle so that a relatively uniform accretion of material would occur on the seafloor.

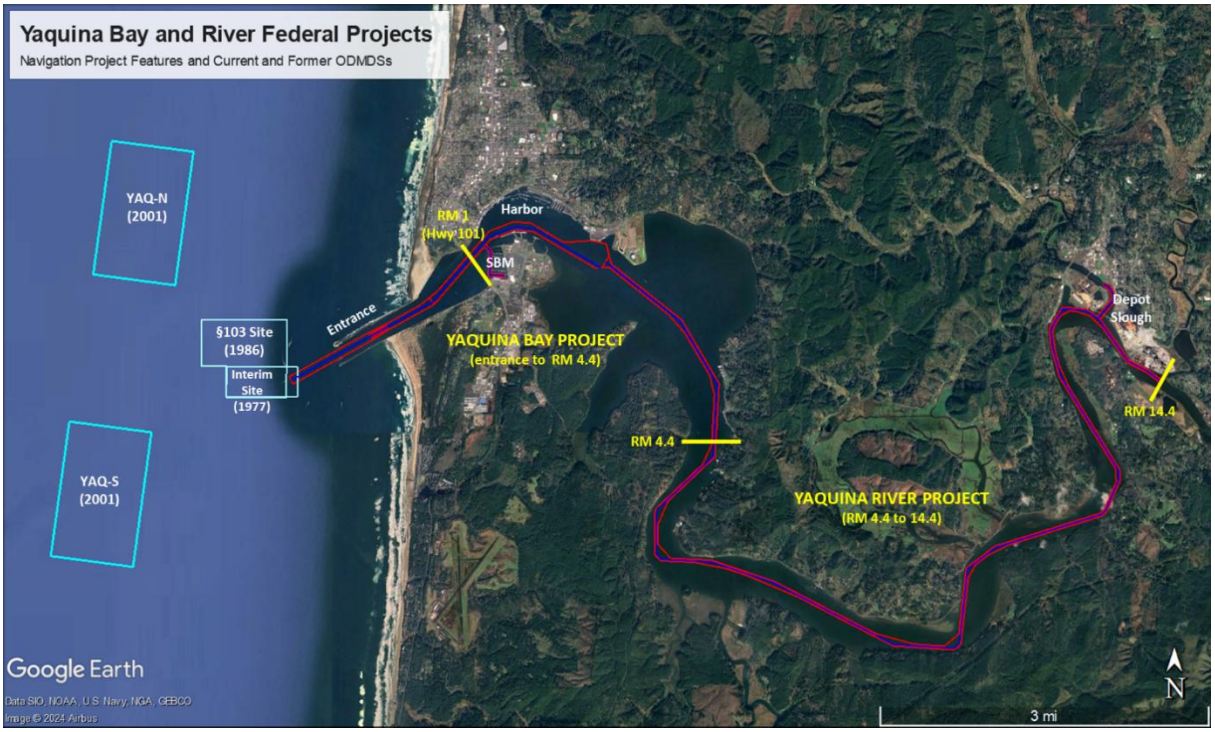

Figure 1. Yaquina Bay and River federal navigation project, including past (Interim Site and Section 103 Site) and present-day Yaquina North (YAQ-N) and Yaquina South (YAQ-S) ODMDSs.

The historical context of dredged material management offshore of Yaquina Bay was initiated by USACE construction of two rubble mound jetties in 1896 to stabilize the entrance to Yaquina Bay. In 1919, Congress authorized dredging in the bay. From 1919 to 1977, USACE disposed of 200,000 to 250,000 cubic yards (cy) of dredged material in the general area of the Interim Site. From 1978 to 1985, USACE disposed of all dredged material within the Interim Site. In 1986, USACE selected an alternate ODMDS under its MPRSA Section 103 authority, shown in Figure 1 as “Section 103 Site”, because of mounding at the Interim Site. USACE conducted bathymetric monitoring from 1985 to 1988 of the Interim Site to evaluate the height of the mound on the seafloor. By 1988, more than 20 feet of material had been scoured from the site, and the depth of the seafloor had returned to the 1983 condition. From 1986 to 1997, all dredged material was disposed of at the Section 103 Site but with continued accumulation. After 1989, USACE disposed material in specific portions of the site. In May 1998, the mound had reached 19 feet in an original water depth of approximately 84 feet. In 1998, USACE enlarged the Section 103 Site to include the outer two thirds of the former Interim Site. In 1999 and 2000, the EPA and USACE used specific areas of the disposal site to reduce further mounding.

In 2001, under USACE's MPRSA Section 103 authority, USACE selected two new sites for disposal of dredged material. Based on the historical record of significant mounding in shallower water near the entrance to Yaquina Bay, USACE chose two sites rather than one, significantly expanded their size, sited them North and South of the entrance channel, and further offshore from the entrance channel and the Yaquina Reef. From 2001 to 2011, only the North ODMDS was used for disposal because of the preference by local fishing interests and the Port of Newport, and the prevailing wave climate during the dredge season (waves approaching from the northwest) made the North ODMDS preferable for use by hopper dredges compared to the South ODMDS. Between 2001 and 2009, all dredged material was disposed in the northern half of the North ODMDS. In 2010, USACE used the entire North ODMDS, and then, in 2011, USACE used only the southern half. The only time during this period that another entity besides USACE disposed at the Yaquina ODMDSs was the Port of Toledo in 2010 (3,000 cy). In 2012, the South ODMDS was used for the first time.

2.2 SITE LOCATION

The North and South ODMDSs are located approximtely 2 nautical miles from shore (Figure 2). The coordinates of the ODMDSs are provided in Table 1. The EPA and USACE manage dredged material disposed at the ODMDSs using a grid system. The release zone of each ODMDS is split into 66 cells in a 6 by 11 grid; each cell measures 500 feet by 500 feet.

The release of dredged material into an ODMDS must occur at least 330 feet (100 meters) inside ODMDS boundaries (40 C.F.R. 227.28). Both the North and South ODMDSs include a 500-foot (152-meter) buffer around the release zone (Figure 3 and 4).

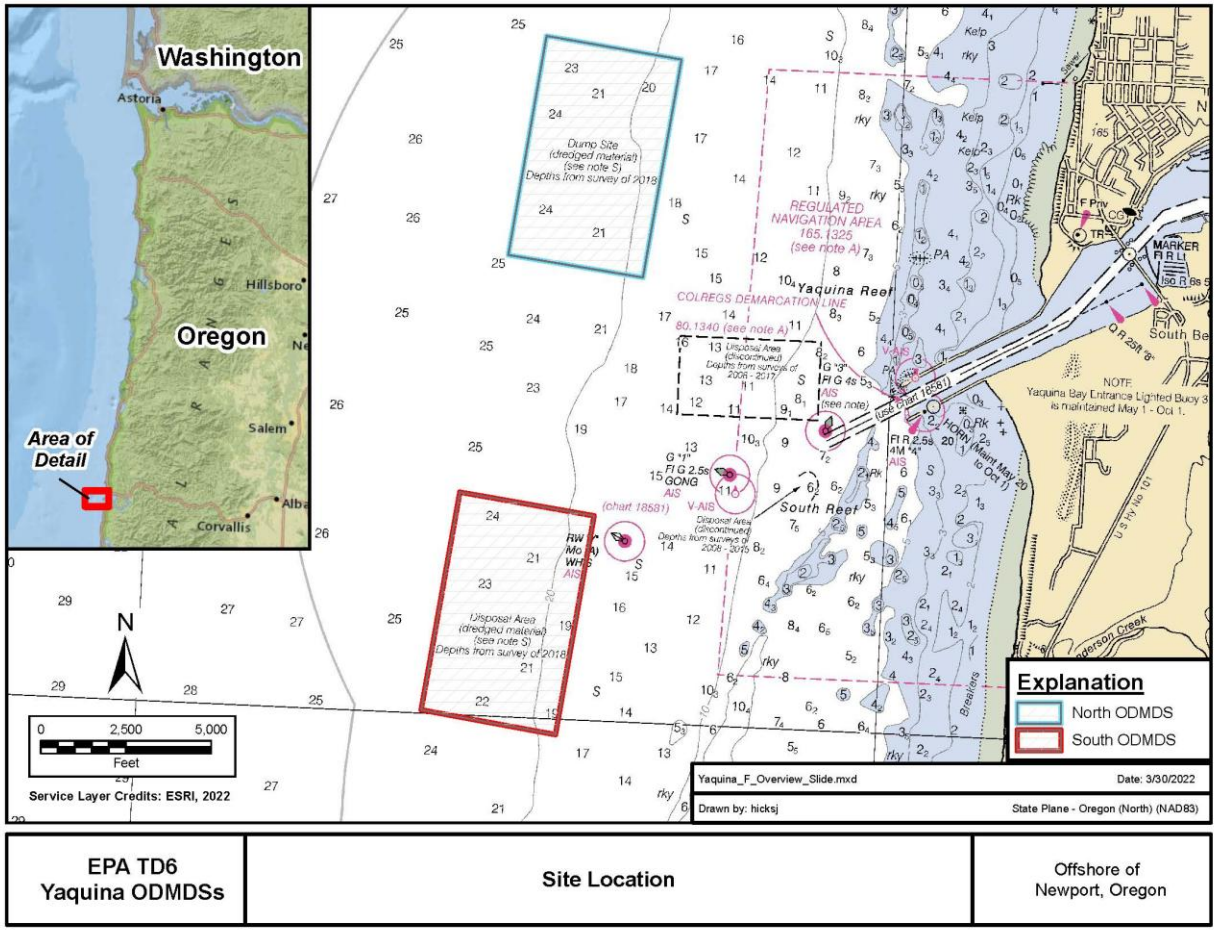

Figure 2. Location of Yaquina North and South ODMDSs, as compared to previous disposal sites, and the Yaquina Reef complex located north and south of the entrance channel to Yaquina Bay. Depths are in fathoms.

Table 1. Yaquina North and South ODMDS corner coordinates and site attributes as they appear in 40 C.F.R. 228.15 and converted to decimal degrees. Coordinates are provided in NAD 83.

Site	Corner	Decimal Degrees		Degrees, decimal minutes		Site Dimensions	Area (acres)	Depth (feet)	Distance from shore (nautical miles)
		Latitude (°N)	Longitude (°W)	Latitude (°N)	Longitude (°W)				
Yaquina North ODMDS	NW	44.63832	-124.12387	44° 38’ 17.98”	124° 07’ 25.95”	4,000 feet wide by 6,500 feet long	597	112-152	~1.7
	NE	44.63690	-124.10863	44° 38’ 12.86”	124° 06’ 31.10”				
	SE	44.62064	-124.12710	44° 37’ 14.33”	124° 07’ 37.57”				
	SW	44.61922	-124.11186	44° 37’ 09.22”	124° 06’ 42.73”				
Yaquina South ODMDS	NW	44.60125	-124.13129	44° 36’ 04.50”	124° 07’ 52.66”	4,000 feet wide by 6,500 feet long	597	112-152	~2
	NE	44.59983	-124.11606	44° 35’ 59.39”	124° 06’ 57.84”				
	SE	44.58356	-124.13451	44° 35’ 00.85”	124° 08’ 04.27”				
	SW	44.58215	-124.11929	44° 34’ 55.75	124° 07’ 09.47”				

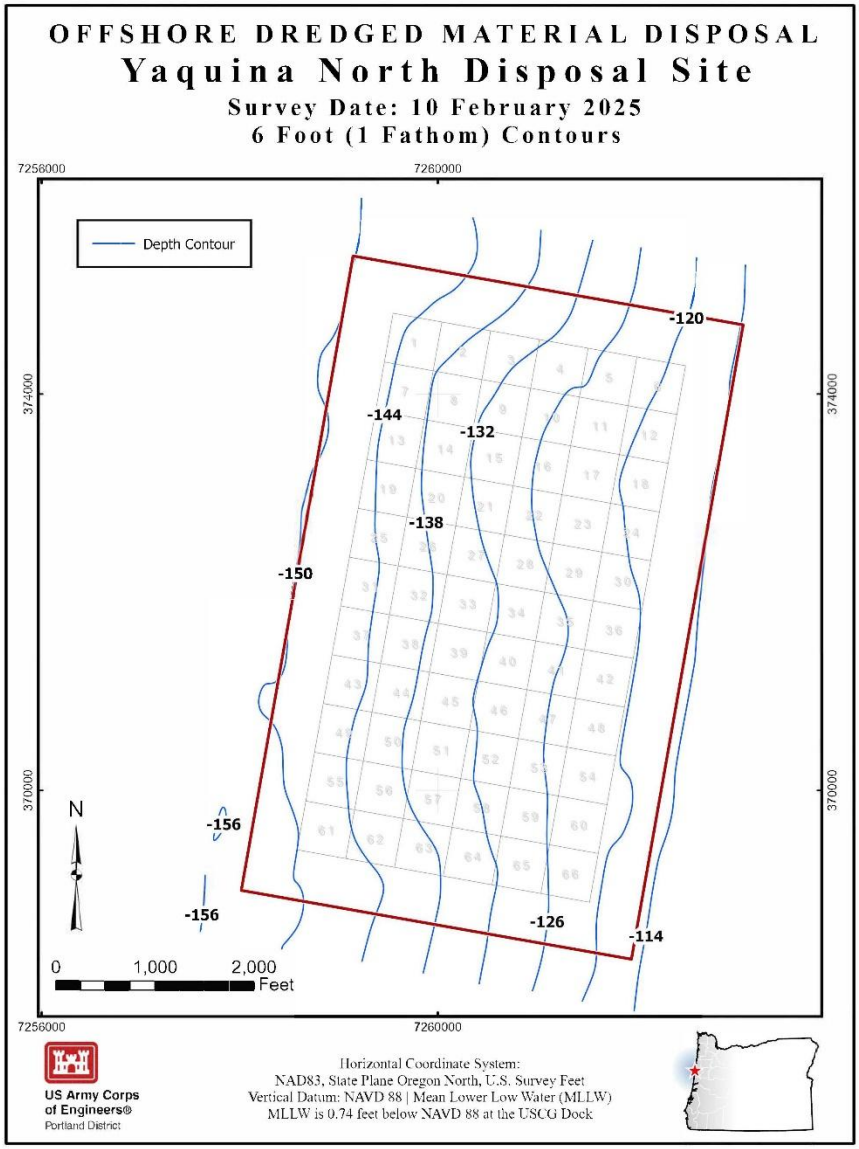

Figure 3. Map of Yaquina North ODMDS showing the boundary of the ODMDS in red, the buffer zone, and the management grid cells in gray with seafloor bathymetry contours as of February 2025.

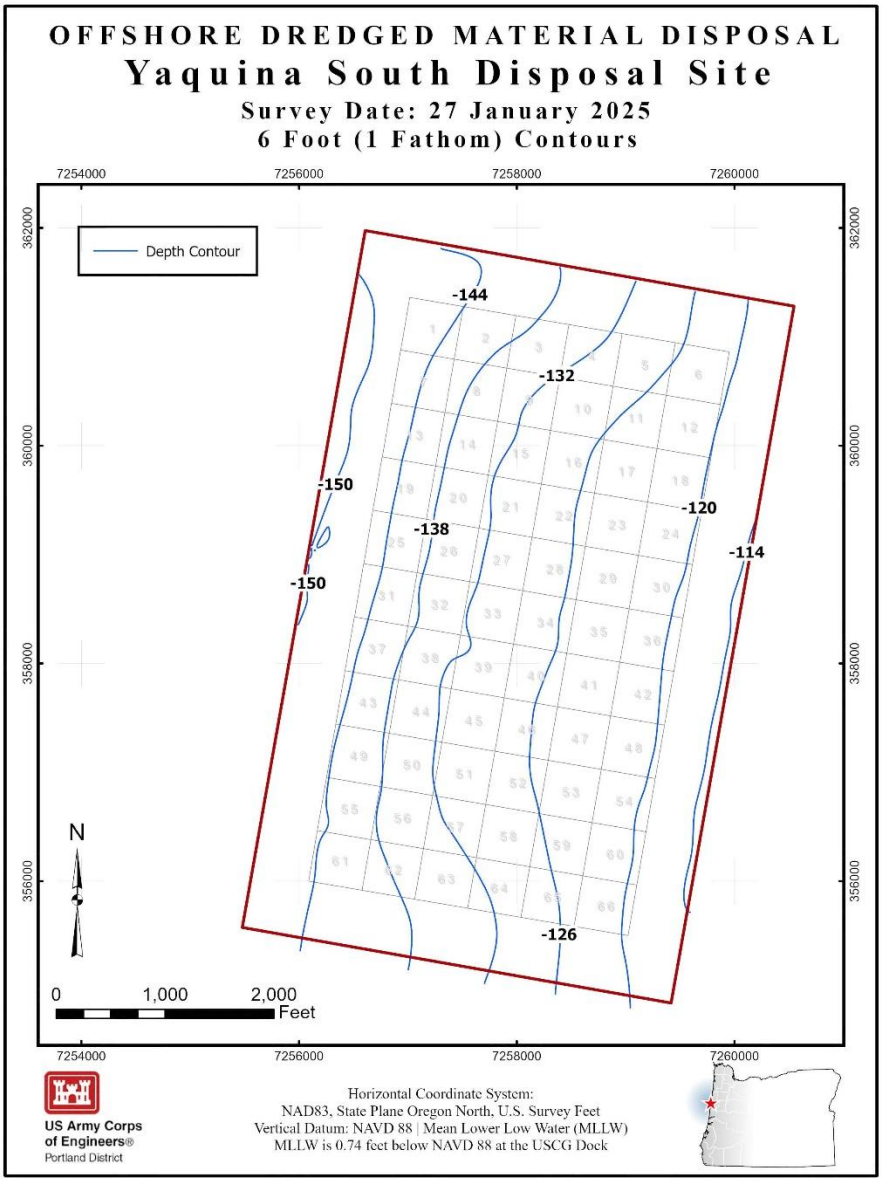

Figure 4. Map of Yaquina South ODMDS showing the boundary of the ODMDS in red, the buffer zone, and the management grid cells in gray with seafloor bathymetry contours as of January 2025.

2.3 SITE USE

USACE is the primary user of the ODMDSs. The ODMDSs have also been used, and the EPA anticipates continued use by the Port of Newport and the Port of Toledo, and other entities that receive a Section 103 MPRSA permit from USACE (Table 2).

The USACE uses the ODMDSs to dispose of dredged material from the Yaquina Bay and Yaquina River federal navigation projects. Between 2001 and 2024, approximately 3.3 million cy of dredged material were dumped at the Yaquina North ODMDS. In contrast, the Yaquina South ODMDS was first used in 2012 but has since received approximately the same volume (3.2 million cy) of dredged material as the North ODMDS. Over the last 10 years (2015-2024) the USACE has dumped on average 82,000 cy per year at the North ODMDS and 243,000 cy per year at the South ODMDS. The ODMDSs have been used by local Ports, on average every 10 years for disposal of a few thousand cubic yards.

The EPA anticipates the ODMDSs to be used by USACE for four projects, and others if necessary, including: Yaquina Bay Federal Navigation Channel (FNC), Yaquina Bay Side Channel Project, Yaquina River federal navigation project, and the Depot Slough side channel project (Figure 1; Table 3).

Yaquina Bay FNC

The authorized channel includes the 400-foot-wide entrance channel from the ocean (river mile [RM] -1+00) to RM 0+00 which is maintained to -40 feet mean lower low water (MLLW) plus 5 feet of overdredge. From RM 0+00, the FNC narrows to 300 feet wide. From RM 2+00 to 2+25, the FNC widens into a turning basin with a maximum width of 1,200 feet, terminating at RM 4+20; the interior FNC and turning basin are maintained to -30 feet MLLW plus 2 feet of overdredge.

Dredging Methods and Disposal. The entrance, FNC, and turning basin are typically maintained by the Government's trailing suction hopper dredge, YAQUINA. However, the turning basin has been maintained with a clamshell and transported to the ODMDSs by tug and dumping scow.

Sediment Characteristics. Sediment dredged from the Yaquina Bay and Harbor entrance up to the turning basin at RM 2 is primarily composed of medium to coarse sand. Samples from within the turning basin are composed of 94-99% sand and 1% to 6% fines (silt + clay); total organic carbon is less than 0.3%.

Table 2. Disposal history by the USACE and permitted entities, as well as projected use by USACE (2026 and 2027) (cubic yards).

Year	North ODMDS	South ODMDS	TOTAL
2001	152,600	-	152,600
2002	167,600	-	167,600
2003	273,300	-	273,300
2004	271,900	-	271,900
2005	156,600	-	156,600
2006	275,800	-	275,800
2007	178,800	-	178,800
2008	171,200	-	171,200
2009	142,500 / 79,300*	-	221,800
2010	183,400 / 21,900* / 3,400^	-	208,800
2011	240,700	-	240,700
2012	-	344,800	344,800
2013	121,300	141,000	262,300
2014	95,900	301,200	397,100
2015	84,900	179,700	264,600
2016	47,000 / 12,000*	263,800 / 41,200*	364,000
2017	88,600	273,400	362,000
2018	72,800	255,000	327,800
2019	-	283,600	283,600
2020	101,800	120,600	222,400
2021	127,700	263,400	391,100
2022	83,300	257,600	340,900
2023	29,300	221,800 / 51,700* / 2,200^	305,000
2024	172,000	215,000	387,000
2025	67,300	127,000	194,300
2026 (est.)	TBD	TBD	Up to 450,000
2027 (est.)	TBD	TBD	Up to 1.25 million †

* Depot Slough (Yaquina River side channel project), federal maintenance volume
^ Depot Slough, Port of Toledo maintenance volume (MPRSA Section 103 permit)
† Yaquina Bay FNC: up to 450,000 cy; Yaquina River FNC (contingent on Congressional appropriations): up to 800,000 cy

Table 3. Dredging projects which the EPA and the USACE are aware of as of April 2026 and that may dispose of material at the ODMDSs (maximum and projected annual volumes included). Projected annual dredge volumes are based on a 10-year average of actual dredging (2015-2024).

Location	Annual Volume (Maximum) (cy)	Frequency	MAX Annual Volume (cy)	Projected Annual Volume (cy)
Yaquina Bay entrance & Turning Basin	450,000	Annually	450,000	321,000
Depot Slough	100,000	Every 5 years	20,000	9,000
Yaquina River 50-yr deferred maintenance	1,200,000	One-time	--	--
Yaquina River maintenance	150,000	Every 5 years	30,000	30,000
CMAC construction	215,000	One-Time	--	--
CMAC maintenance	20,000	Every 10 years	2,000	2,000
Section 103 Permitted Projects	TBD based on MPRSA 103 permit requests			
Total Annual Maintenance Quantity (with Yaquina River and Commercial Marine Access Channel):			**502,000**	**362,000**

Yaquina River FNC

The Yaquina River FNC runs from RM 4+20 to RM 14+20 and is 150 feet wide (with widening at the channel bends). This channel has not been maintained in over 50 years. When maintenance is funded, the channel will be maintained to -10 feet MLLW plus 3 foot overdepth (-13 ft MLLW). The anticipated initial dredge volume may be up to 850,000 cy, with an additional 400,000 cy the following year. Maintenance requirements for the equilibrated channel are expected to be 150,000 cy every 5 to 8 years.

Dredging Methods and Disposal. USACE plans to maintain this channel during the 2026 or 2027 dredging season. USACE anticipates using a clamshell dredge and will seek EPA concurrence to transport dredged material to the ODMDSs by tug and dumping scow.

Sediment Characteristics. Yaquina River sediments are composed of 0% to 2% gravel, 86% to 97% sand, and 3% to 11% fines; total organic carbon ranges from 0.2% to 1.1%.

Depot Slough Side Channel (Yaquina River side channel project)

The federal side channel entrance is located at RM 13+05 of the Yaquina River in Toledo, Oregon. The Depot Slough side channel project provides for a channel 10 feet deep, 200 feet wide, and approximately 2,300 feet long.

Dredging Methods and Disposal. This material is dredged by clamshell and transported to the ODMDSs by tug and scow.

Sediment Characteristics. Sediment dredged from Depot Slough is composed of 14% sand and 86% fines (mostly clay); total organic carbon is 5.4%.

New uses of the ODMDSs

This SMMP contemplates the potential use of the North and South ODMDSs for a proposed project by USACE and the Port of Newport under Section 107 of the Rivers and Harbor Act (Continuing Authorities Program – Navigation Improvements). USACE is studying whether to assume maintenance responsibility for the Port of Newport's Commercial Marina Access Channel (CMAC) in the harbor on the north side of Yaquina Bay. Under the proposed alteration, the initial construction volume is approximately 215,000 cy. USACE anticipates maintenance dredging volumes after construction of approximately 20,000 cy every 10 years. The material would be considered for disposal at the ODMDSs. The EPA has concurred on the proposed dumping for this project.

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 sites. Data collected during previous monitoring activities inform future monitoring approaches and site management (Table 4).

Table 4. Baseline and monitoring surveys along with other studies conducted at or in the vicinity of Yaquina North and South ODMDSs. This Table does not include annual USACE bathymetric surveys. The 1984 thru 1989 surveys were not conducted at the current ODMDSs, but at two previous MPRSA disposal sites closer to shore. These surveys are referenced because the data provide information related to seasonal changes in benthic communities, response of benthic communities to disposal, and substrate grain size.

Date	Purpose	Findings of Note
1984 - March	Characterize the benthos offshore Yaquina Bay.	Substrate is predominantly fine to medium sand. Dominant infauna changed over the years and between seasons (Spring to Fall). Thus, it is difficult to compare impacts from year to year or season to season, unless a consistent approach using reference sites is implemented. (MTS 2000)
1986 - May	Characterize the benthos offshore Yaquina Bay.	
1989 - Oct	Characterize the benthos offshore Yaquina Bay.	
1999 - May and Sept	Baseline survey: characterize substrate type and benthic infauna at North and South ODMDSs.	Substrate is predominantly medium to fine-grain sand. Describes differences between benthic assemblages in the Spring versus Fall (pre- and post- upwelling). Benthos are heterogeneous communities that can change quickly. (MTS 2001)

2000 - June and Sept	Baseline survey: characterize substrate type and benthic infauna at North and South ODMDSs.	Substrate is predominantly medium to fine-grain sand. Describes differences between benthic assemblages in the Spring versus Fall (pre- and post- upwelling). Benthos are heterogeneous communities that can change quickly. (MTS 2001)
2002 - June and Sept	Baseline survey (area of investigation expanded from 1999 and 2000 surveys): characterize substrate type and benthic infauna at North and South ODMDSs.	Substrate is predominantly fine-grain sand. Provides insight into the fluctuations in benthic communities (abundance and taxa richness) due to seasonality of survey. Post-upwelling communities are more abundant, changes in species diversity, and large recruitment of juvenile life-stages of infaunal invertebrates.
2008 - June and Aug	Assess physical and chemical attributes of substrate, and infaunal and epifaunal communities at ODMDSs. South ODMDS had not yet been used for disposal but rather was used as a point of reference for data collected at the North ODMDS.	Provides data that demonstrates impact to benthic infaunal communities immediately after disposal (lower taxa richness, lower density. Data also shows differences in benthic communities related to bathymetry (density increases with depth). For epibenthos, the area north of the North ODMDS had the greatest abundance and diversity of fish as compared to the North ODMDS or South ODMDS.
2016 - Sept	Trend assessment survey. Assess physical and chemical attributes of substrate, and infaunal and epifaunal communities at ODMDSs. Conducted analysis of smaller sample size in relation to outcome of benthic infaunal analysis.	Dredged material increased percentage of fines at South ODMDS. Data showed depression of infauna metrics after recent disposal. Collecting smaller volume of material for infaunal analysis reduced ability to detect community changes. If smaller volume of material would be collected, additional stations would need to be sampled to ensure statistical power to detect community changes. Dissolved oxygen at the seafloor 1.5 - 4 mg/l.
2018	Sediment transport evaluation conducted by USACE (desktop exercise)	Mounding of 12 ft in North ODMDS and 5 ft in South ODMDS will not amplify ambient wave heights. Prevailing sediment transport is to the north. Sediment transport driven by large wave and large ocean currents, albeit the sites are still considered depositional given the relatively small volume of material transported north during winter storms.
2021 - Sept	Trend assessment survey. Assess physical and chemical attributes of substrate, and infaunal and epifaunal communities at ODMDSs.	Substrate is similar to ambient seafloor. Dissolved oxygen at the seafloor was low (1-2 mg/l) throughout entire survey area. North ODMDS infauna community was distinguishable from ambient seafloor. Infaunal community depressed in South ODMDS. Sand dollar bed is located to the north of North ODMDS. In both North and South ODMDSs and their reference sites, fish and invertebrate density are dependent upon bathymetry (greater density in shallower depths, which are located closer to shore).

2.5 SITE CHARACTERIZATION

The Yaquina North and South ODMDSs are located nearshore, two nautical miles from the entrance to the Yaquina Bay estuary. Their proximity to the shoreline and the confluence of marine and freshwater inputs is critical to understanding the nature of the environment at the disposal sites. Yaquina Bay is the fourth largest estuary in Oregon. The estuary is fed mainly by

the Yaquina River which drains 253 square miles and is 59 miles long from its mouth to headwaters. The Yaquina River's annual discharge is marked by a high seasonal variability; highest river discharges occur during November through April due to rain runoff and lowest flows occur during May through October (Brown et al., 2007). The shoreline and nearshore vary from wide sand beaches to rocky headlands.

In the nearshore area, wave energy has removed fine silts and clays from sediments leaving medium-fine sand covering an area 3 to 10 miles offshore along much of the Oregon coast.

The underlying geology, marine forces, and human action influence the nearshore bathymetry at Yaquina Bay. From the tip of the north jetty, the Yaquina Reef extends northward to Yaquina Head. The reef, with depths less than twelve feet in places, is submerged continuation of the basalt headland at Yaquina Head. South of the jetties, the offshore reef turns seaward and is less continuous. There are few indications of submerged rock outcrops inshore of the reef, and the South Beach area is a wide expanse of recent sand (Figure 5, 6).

2.5.1 Sediment Physical Characterization

Yaquina North ODMDS: In 2016, survey results found that the North ODMDS grain size was similar to the ambient seafloor. The North ODMDS averaged 98% sand and 2% fines. The reference area averaged 98% sand and 1% fines. In 2021, survey results found that the ODMDS were also similar in grain size to the ambient seafloor. The Yaquina North ODMDS was 98% sand, 2% fines, and 0.04% TOC. The reference area was also 98% sand, 2% fines, with slightly higher TOC at 0.06%. It was notable that in the North ODMDS, 22% of the stations sampled collected gravel, whereas in the reference area, only 8% of the stations had gravel present.

Yaquina South ODMDS: In 2016, survey results found that the disposal at the South ODMDS increased the percentage of fine-grained sediments slightly as compared to the ambient seafloor. The South ODMDS grain size averaged 93% sand and 7% fines. Four stations within the South ODMDS exceeded 10% fines. The reference area averaged 96% sand and 2% fines. In 2021, the ODMDS were also similar in grain size to the ambient seafloor.

For grain size, the South ODMDS and the reference area to the south were identical. Both areas had 98% sand, 2% fines, and 0.06% TOC. However, they differed in the presence of gravel. Within the South ODMDS, 42% of the stations had gravel (albeit less than 1% of the sample) whereas there was no gravel collected in the reference area.

<u>Sediment Transport</u>

In 2018, USACE conducted a sediment transport evaluation for the North and South ODMDSs

because comparison of multi-year bathymetric plots appeared to show a large volume of material that was moved offsite during the 2011-2012 winter storms. The ODMDSs are presumed to be depositional, so this finding from USACE' annual bathymetry triggered an evaluation of potential sediment transport because the Yaquina Reef is shoreward of the disposal sites and provides high-value habitat for rockfish, lingcod, and other marine species. Thus, it is important to understand the nature of material transport near the disposal sites, and to ensure that material disposed at these sites does not deposit on the rocky reefs.

USACE' conclusions from the evaluation were:

1. The overall mass balance suggests the ODMDSs are still non-dispersive and have capacity for more material.

2. The sediment transport environment at the ODMDSs is one that is driven by the joint occurrence of large wave and broad ocean currents. Waves have a large capacity to suspend particles from the bed but little capacity for transport, and the ocean circulation has little capacity to suspend particles but a large capacity for transport.

3. Offshore data suggest the prevailing sediment transport at the project area is to the north, since large scale ocean currents are directed northwards during winter storms when particles are more likely to be suspended by wave action.

4. The observed 2011/2012 decrease in the height of the mound may have been from the result of a higher frequency of large waves and large ocean currents occurring together during a particular winter-storm event.

5. USACE also postulated that the notable difference may have been an artifact of miscalculation of the remote-sensing data and/or data interpretation error which may have created a larger calculated difference in bathymetry than what occurred on the seafloor.

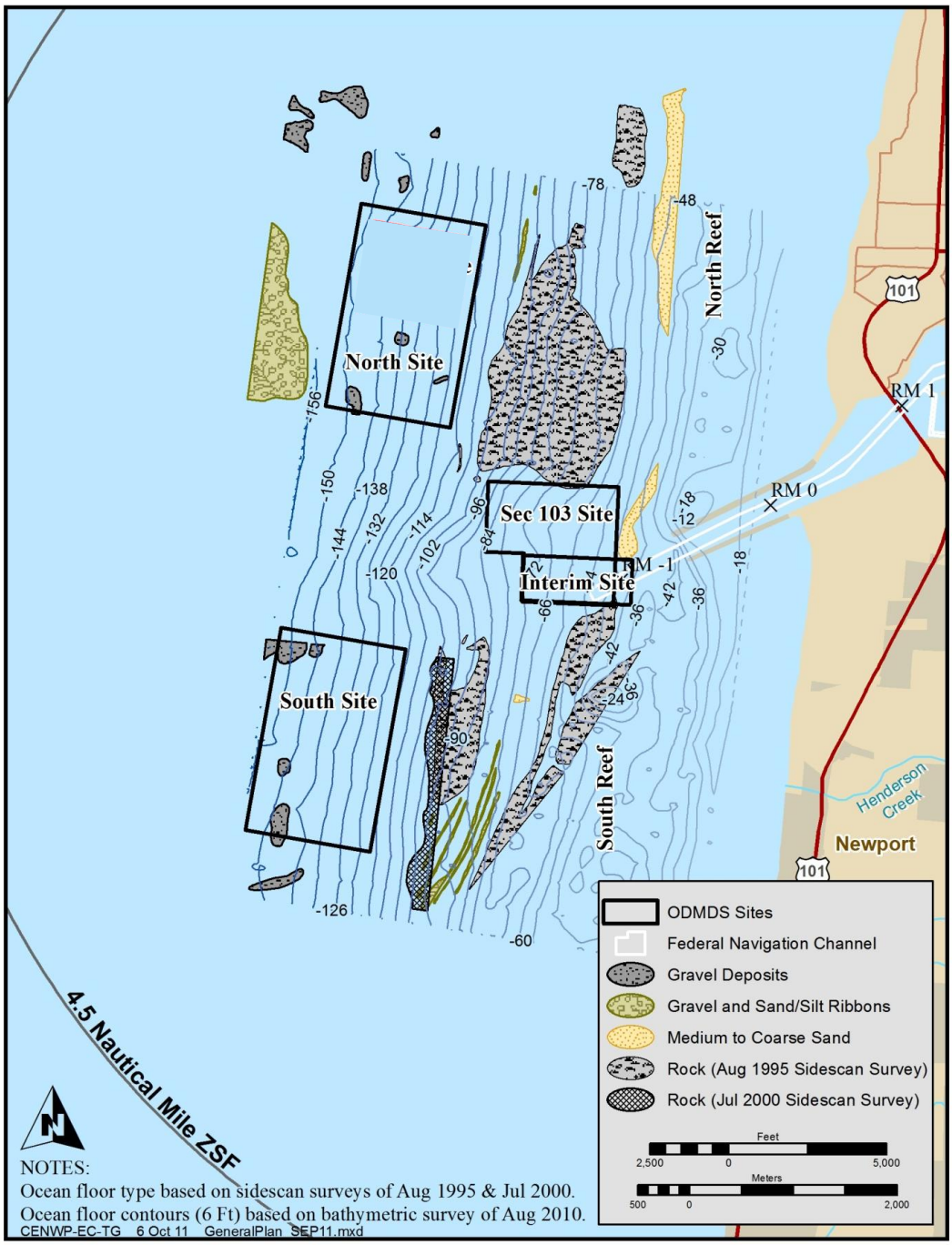

Figure 5. Submerged, physical features in and around the Yaquina ODMDSs and Yaquina Bay entrance.

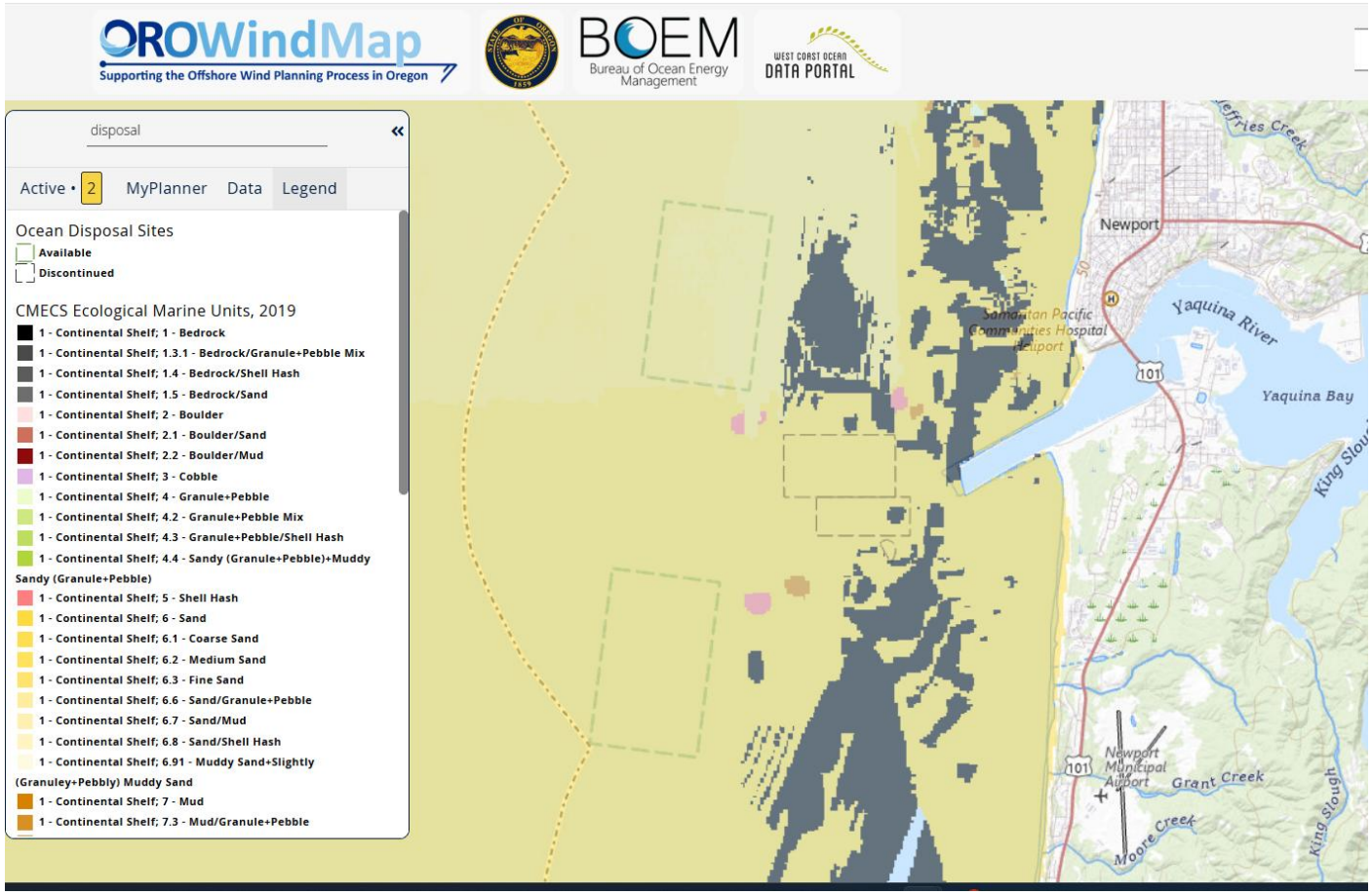

Figure 6. Map showing lithological layers at and near the Yaquina North and South ODMDSs as displayed through the State of Oregon and Bureau of Ocean Energy Management OROWindMap GIS.

2.5.2 Sediment Chemistry

Yaquina North ODMDS: The analysis of sediments for chemicals of concern in the Yaquina North ODMDS in 2021 did not find any levels of concern for the classes of compounds of metals, butyltins, diesel range and motor oil organic compounds, pesticides, PCBs, and PAHs. Phenol compounds were detected at concentrations of potential toxicity concern at a few stations in the North ODMDS.

Yaquina South ODMDS: The analysis of sediments for chemicals of concern in the Yaquina South ODMDS in 2021 did not find any levels of concern for the classes of compounds of metals, butyltins, diesel range and motor oil organic compounds, pesticides, PCBs, and PAHs. Phenol compounds were detected at concentrations of potential toxicity concern at a few stations in the South ODMDS.

After considering the data for the material that was disposed at the ODMDSs, which did not have levels of concern for phenols, the EPA believes that the elevated phenol levels measured likely can be attributed to decaying phytoplankton and zooplankton at the seafloor, as phenols are known to be a by-product of plant decomposition (Dai and Mumper, 2010). The EPA Region 10 attempted to conduct benthic video imagery on the survey when these data were collected but was unable to due to poor visibility from the high density of flocculent material near the seafloor. Also, the flocculent material is more likely to settle in the depressions between sand waves, which are known to be part of the seafloor topography at the Yaquina North and South ODMDSs.

2.5.3 Water Quality

Yaquina North ODMDS: The EPA also collected near-bottom water quality data in September 2021. There were minor differences between the water quality at the North ODMDS and the reference area. Seafloor temperatures ranged from 7.8 to 8.0 °C at the North ODMDS compared to 7.8 to 7.9 °C in the North reference area. While the range in salinity was the same between the ODMDS and the reference area (32 to 34 ppt), there were more stations with lower salinity in the North reference area. The pH range was 7.3 to 7.5 inside the North ODMDS and 7.2 to 7.4 within the reference area. The North ODMDS had slightly higher dissolved oxygen (1.2 to 2.1 mg/L) than the North reference area (0.96 to 1.5 mg/L).

Yaquina South ODMDS: Similar to Yaquina North, in 2021 there were minor differences between the water quality at the Yaquina South ODMDS and the reference area. Several parameters were varied little between the ODMDS and reference area including, seafloor

temperatures range of 8.0 to 8.3 °C, salinity was the same (32 ppt), and pH ranged from (7.2 to 7.3). The South reference area had more stations with lower dissolved oxygen (1.3 to 2.3 mg/L) than inside the ODMDS (1.6 to 2.3 mg/L).

The water quality data collected during the 2021 monitoring survey was consistent with long-term water quality time series data measured near the Yaquina ODMDSs at similar depths along the Newport Hydrographic Line (NOAA 2021, NOAA 2022).

2.5.4 Pelagic and Seafloor Biological Communities

The Yaquina Bay nearshore area supports a variety of pelagic and demersal fish species and epibenthic invertebrate species. Bottom habitats include sand, gravel, pebbles, and rocky reefs. The neritic reefs located inshore of the ODMDSs, known as Yaquina Reef, are a unique feature of the coast and are associated with bull kelp (*Nereocystis leutkeana*) beds. Pelagic fish species found in the nearshore ocean off Yaquina River include anadromous salmonids such as coho salmon (*Oncorhynchus kisutch*), winter steelhead (*Oncorhynchus mykiss*), and spring and fall Chinook salmon (*Oncorhynchus tshawytscha*). Other pelagic species include the Pacific herring (*Clupea harengus pallasi*), northern anchovy (*Engraulis mordax*), and surf smelt (*Hypomesus pretiosus*). Demersal fish species present in the nearshore area are mostly residents and include sculpins, sea perch, rockfish species associated rocky habitats, as well as flatfish species occurring predominantly over open sandy-seafloor, such as that found in the ODMDSs. Flatfish species include English sole (*Parophrys vetulus*), sanddab (*Citharichthys* sp.), and starry flounder (*Platichthys stellatus*). English sole, starry flounder, and sand sole (*Psettichthys melanostictus*) spawn in the inshore area in the summer. Juveniles of these flatfish, as well as other marine species, may rear in Yaquina Bay and settle as young-of-the-year in and around the ODMDSs.

The commercially and recreationally important epibenthic invertebrate species off Yaquina Bay include shellfish and Dungeness crab (*Metacarcinus magister*). Dungeness crab adults occur on sandy substrate along the entire Oregon coast and spawn in offshore areas and then inhabit the estuary when conditions are favorable in late summer and fall. Inshore of the ODMDSs, razor clam beds are located north and south of the jetties along the beach. Gaper clams are present in large numbers near the mouth and upriver in the estuary. Cockles are also present in the intertidal areas near the base of the jetties. Piddock clams occur in the sandstone outcroppings north of the entrance to the Yaquina River.

<u>Benthic Infauna</u>

Yaquina North ODMDS: In 2008, the EPA observed the effect of dumping of dredged material at the ODMDS by detecting a reduction in the number of infaunal organisms, however, the number of species did not appear to be adversely affected.

In 2016, the EPA again noted differences, albeit not statistically significant, in the infaunal community within the ODMDS as compared to reference areas. At the Yaquina North ODMDS, the abundance, density, diversity, and evenness of the infauna community was lower than the reference area. The epibenthic community had higher density, richness, diversity, and evenness inside the Yaquina North ODMDS compared to the reference area.

In 2021, the EPA's trend assessment survey at the Yaquina North ODMDS revealed community-level differences that suggested potential ecological effects associated with dredged material disposal. While indices such as taxa richness, abundance, diversity, and evenness did not differ significantly between the disposal site and reference areas, multivariate analyses indicated a statistically significant, but low-level, differentiation in benthic community composition between the Yaquina North ODMDS and reference area. Despite the result that the average abundance (all taxa across all stations) of benthic infauna within the disposal site was not statistically different than the reference area, the average abundance of *Owenia fusiformis* (average of this species across all stations) was almost two times greater in the reference area than within the North ODMDS. This finding supports the understanding that *O. fusiformis* is not resilient to a disturbance such as disposal of dredged material. The observed differences were largely attributable to shifts in the relative abundances of a few dominant species, notably *O. fusiformis* and *Spiophanes bombyx*. Results of multivariate analyses suggested a more homogenized community structure within the Yaquina North ODMDS than at the reference area. This pattern may reflect environmental disturbance associated with dredged material deposition, which may lead to dominance by opportunistic taxa and suppression of more sensitive or specialized species. The dominance of *S. bombyx* in both environments suggests that this is a disturbance-tolerant species. Variability in the relative abundances and contributions of the top four taxa—*S. bombyx* (tube-living bristle worm), *O. fusiformis* (tube-living bristle worm), *Magelona sacculata* (burrowing polychaete), *and Photis sp.* (amphipod crustacean juvenile) recorded at the Yaquina North ODMDS and reference area suggested that dredged material disposal may have influenced community structure by altering species dominance hierarchies.

The moderate dissimilarity between North ODMDS and reference area communities and the higher total abundance and taxa richness at the reference area indicated that the Yaquina North ODMDS was associated with subtle ecological shifts, but not a complete restructuring of benthic communities. The benthic community inside the Yaquina North ODMDS was distinguishable from the reference area. The observed differences appear to be driven by changes in the relative abundances of dominant taxa rather than wholesale community replacement. The EPA will continue monitoring the ODMDSs every 5 years to assess temporal trends and evaluate the persistence or attenuation of these effects over time.

Yaquina South ODMDS: In 2008, the EPA observed the effect of dumping of dredged material at the ODMDs by detecting a reduction in the number of infaunal organisms, however, the number of species did not appear to be impacted.

In 2016, the EPA again noted differences, albeit not statistically significant, in the infaunal community within the ODMDS as compared to reference areas. The benthic infauna abundance, density, and richness were lower inside the South ODMDS compared to the reference area. However, the EPA observed a greater abundance of epibenthic invertebrates and demersal fish inside the South ODMDS as compared to the reference area.

The EPA's 2021 trend assessment survey at the Yaquina South ODMDS revealed that the benthic infauna were statistically significantly different from the reference area in community structure indicative of potential ecological effects related to dredged material disposal. Most univariate indices such as average taxa richness, diversity, evenness, and Margalef's species richness did not show statistically significant differences between the South ODMDS and reference area. However, average abundance was significantly greater at the reference area than in the South ODMDS. This difference in benthic infauna abundance may indicate impacts from the disposal of dredged material that had occurred just a few days to a few weeks prior to the survey. Multivariate analyses also indicated clear differences in benthic community composition.

The most notable differences at the Yaquina South ODMDS were the suppressed abundance inside the ODMDS, and the dominant presence of *O. fusiformis* in the South reference area. Although *O. fusiformis* were depressed inside of both the North and South ODMDSs relative to their respective reference areas, the difference was greater at the Yaquina South ODMDS. Furthermore, statistical analyses demonstrated a highly significant difference in community structure between the South ODMDS and reference area (notably higher than observed at the North ODMDS), indicating a stronger differentiation of benthic communities at the Yaquina South ODMDS. The Yaquina South ODMDS community was highly homogenized driven predominantly by the polychaete *S. bombyx*. In contrast, the South reference area was more heterogeneous. This was found to be a substantial difference. *O. fusiformis* was the dominant contributor at the reference area, followed by *S. bombyx* and others. This difference in dominant taxa within the South ODMDS and reference area indicates variability in benthic infauna communities that may be ecologically significant.

These results suggest that dredged material disposal at the Yaquina South ODMDS has led to reduced taxonomic richness, homogenized community composition, and possible exclusion of disturbance-sensitive taxa such as *O. fusiformis*. This differentiation was more pronounced than what was observed at the Yaquina North ODMDS. Given USACE had disposed at the South ODMDS more recently and with greater volumes than the North ODMDS, the observed trends supported that the frequency and or intensity of dredged material disposal is noticeably

altering the benthic community response. It should be noted that disposal activities occurred in June and July 2021 which corresponds to what is typically a period of high recruitment for benthic organisms. The Yaquina North ODMDS received a small volume (<16,000 cy) of dredged material between mid-June and mid-July 2021, thus, EPA is considering any observations of the benthic community to not be attributable to the disposal in 2021 but rather indicative of a benthic infauna community approximately one year after disposal. USACE dumped dredged material at the South ODMDS immediately before the sediment survey in September 2021. These disposal timing factors likely magnified the differences between the Yaquina North and South ODMDSs.

The statistical differences may not be ecologically significant at the North ODMDS given the slight differences in the metrics observed; however, the differences in abundance were notable and likely biologically meaningful for the South ODMDS. These results suggest an adverse impact due to the disposal of dredged material at Yaquina South ODMDS. While the EPA was able to understand the spatial component of the impact, the EPA's surveys have collected limited data on the temporal aspect of the impact. Based on results from the North ODMDS, the EPA anticipates the benthic infaunal communities to rebound in the manner observed at the North ODMDS. However, additional monitoring is needed to discern whether the impacts observed in the South ODMDS are short-term or indicative of a longer-term depressed infaunal community structure. Conducting a survey prior to disposal would allow for an understanding of the way in which the benthic infaunal community recolonizes between dredging/disposal seasons.

Epifauna

Yaquina North ODMDS The epifauna community at the Yaquina North ODMDS demonstrated subtle but meaningful differences as compared to the reference area. Most univariate indices including average diversity, evenness, Margalef's species richness, and taxa richness showed higher, although not statistically significantly, values inside the North ODMDS. In contrast, average density was greater in the North reference area. The high density in the reference area resulted from very high density of sand dollars collected along one transect. The presence of a dense sand dollar bed notably skewed the reference site data, inflating average density and reducing between-group comparability. Once this anomalous trawl was excluded, the directionality of community metrics shifted; density and taxa richness increased within the ODMDS. This underscores the influence that localized benthic features can exert and highlights the need to account for outlier stations in analyses and to carefully select a reference area that is ecologically similar to the disposal site.

The Yaquina North ODMDS supported a suite of fish species, with the fish community dominated by English sole, both inside and outside the ODMDS. A dense Pacific sand dollar bed was encountered at the North reference area. Commercially important Dungeness crabs were

found inside and outside the ODMDS. The epibenthic invertebrate community was dominated by Crangon shrimp and young-of-the-year Dungeness crab at both the North ODMDS and reference area, however high abundances of adult Dungeness crab and spot prawns were also collected. Generally, female crabs were larger which may be reflective of the local fishing pressure. Although the Dungeness crab fishing season closed for the year in August 2021, the results were likely due to the increased fishing pressure on male Dungeness crab prior to the monitoring effort. Male Dungeness crabs above 14.5 centimeters may be fished but female crabs cannot be harvested (ODFW, 2024).

Multivariate analyses indicated no statistically significant difference between Yaquina North ODMDS and reference area epifauna communities. However, these results highlighted that Crangon spp. and Dungeness crab dominated both the North ODMDS and reference area epifauna communities. When epifauna fish communities were analyzed (excluding invertebrates) speckled sanddab, Pacific sanddab, and English sole were primary contributors both inside the North ODMDS and at the reference area, although with some variability. These findings suggested that while dominant epifauna and fish taxa were shared in both the Yaquina North ODMDS and reference area, their relative abundances and distributions differed, particularly among fish species. This suggested that key species like Pacific sand dollar and English sole may be sensitive to disturbance and were either reduced or redistributed inside the ODMDS. Overall, epifauna community differences between the Yaquina North ODMDS and reference area appeared to be driven by spatial variability in the abundance of a few dominant taxa rather than broad-scale changes in diversity or richness. These patterns may have reflected localized environmental changes associated with dredged material deposition or natural habitat heterogeneity and warrant continued monitoring to assess long-term ecological trends.

Yaquina South ODMDS: The Yaquina South ODMDS supports numerous fish species but the fish community was dominated by Speckled sanddab, English sole, and Pacific sanddab both inside the ODMDS and in the reference area. Similar to the North ODMDS, the invertebrate epifauna community was dominated by Crangon shrimp and Dungeness crab (adult and young-of-the-year) both in the ODMDS and at the reference area.

The epifauna community at the Yaquina South ODMDS exhibited small but measurable differences between the ODMDS and the reference area. Average values for density, taxa richness, diversity, and evenness were slightly higher at the South reference area, with Margalef's species richness significantly greater outside the ODMDS. These differences suggested potential impacts of dredged material deposition on community structure, although overall variability between sites remained limited. Multivariate analyses indicated no statistically significant difference between Yaquina South ODMDS and reference area epifauna communities.

Overall, the Yaquina South ODMDS supported epifaunal communities that differ moderately from those in reference area. These differences were particularly evident among invertebrates

and appear to be driven by a few dominant taxa. While multivariate analyses did not confirm statistically significant differences between disposal site and reference area epifauna communities, the ecological patterns observed warrant continued monitoring and further investigation of potential long-term community shifts. These findings may support the idea that benthic infauna communities are more sensitive to dredged material disposal than epifauna communities due to the greater mobility and broader ecological tolerance of epifauna.

2.5.5 Discussion of critical amenities

In 2012 the EPA conducted formal consultation with the National Marine Fisheries Service under the Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act, and with the U.S. Fish and Wildlife Service under ESA, for the designation of both Yaquina ODMDSs.

Through ESA Section 7 consultation the EPA's action of designating the Yaquina North and South ODMDSs under an updated SMMP may affect but is not likely to adversely affect most listed species. The EPA's action is also likely to adversely affect some species listed as threatened or endangered under the ESA. The EPA similarly determined that disposal site designation may adversely affect Essential Fish Habitat (EFH), however the effects are expected to be minimal.

Essential Fish Habitat and Habitat Areas of Particular Concern.

The Yaquina North and South ODMDSs are within designated essential fish habitat (EFH) for various life-history stages of Pacific Coast Groundfish (PFMC, 2025), Coastal Pelagic Species (PFMC, 1998), and Pacific Salmon (PFMC, 2014).

Inshore of the Yaquina North and South ODMDSs is the Yaquina Reef. This reef, located approximately 1,200 ft east of the ODMDSs, is designated a Habitat Area of Particular Concern for Essential Fish Habitat for groundfish (PFMC, 2025). To protect the reef from deposition of sediment, both ODMDSs include a 500-foot buffer within the site to ensure material is disposed within the boundaries of the ODMDS. USACE conducts annual bathymetric monitoring of both ODMDSs and conducts change-analyses to determine how much, if any, dredged material moved beyond the boundaries of the ODMDS due to winter storm events. The EPA and USACE have not detected any effects on the marine environment from the small volume of dredged material moving off the Yaquina North or South ODMDSs.

Endangered and Threatened Species and Critical Habitat

There are 22 threatened or endangered species protected under the Endangered Species Act that may occur at the ODMDSs (Table 5). Furthermore, the ODMDSs are within designated critical habitat for southern resident killer whales, leatherback sea turtles, and green sturgeon.

Marine Mammals

Many species of marine mammals may be present at the Yaquina ODMDSs at varying times throughout the year. Specifically, the North and South ODMDSs are within biologically important feeding grounds for migrating gray whales.

Table 5. Threatened or Endangered Species that May Occur at the Yaquina North and South ODMDSs.

Species	Listing Status	Critical Habitat
Anadromous Fish		
Oregon Coast coho salmon (*Oncorhynchus kisutch*)	T 4/14/14; 79 FR 20802	2/11/08; 73 FR 7816*
Southern Oregon/Northern California Coast coho Salmon (*O. kisutch*)	T 4/14/14; 79 FR 20802	5/5/99; 64 FR 24049*
Upper Columbia River Chinook salmon (*O. tshawytscha*)	E 4/14/14; 79 FR 20802	9/2/05; 70 FR 52630*
Lower Columbia River Chinook salmon (*O. tshawytscha*)	T 4/14/14; 79 FR 20802	9/2/05; 70 FR 52630*
Upper Willamette River Chinook salmon (*O. tshawytscha*)	T 4/14/14; 79 FR 20802	9/2/05; 70 FR 52630*
Snake River spring/summer run Chinook salmon (*O. tshawytscha*)	T 4/14/14; 79 FR 20802	10/25/99; 64 FR 57399*
Snake River fall-run Chinook salmon (*O. tshawytscha*)	T 4/14/14; 79 FR 20802	6/28/05; 70 FR 37160*
Southern DPS Green sturgeon (*Acipenser medirostris*)	T 4/07/06; 71 FR 17757	10/09/09; 74 FR 52300
Eulachon (*Thaleichthys pacificus*)	T 3/18/10; 75 FR 13012	10/20/11; 76 FR 65324*
Marine Mammals		
Blue whale (*Balaenoptera musculus*)	E 12/02/70; 35 FR 18319	Not applicable
Fin whale (*B. physalus*)	E 12/02/70; 35 FR 18319	Not applicable
Humpback whale (*Megaptera novaeangliae*)	E 12/02/70; 35 FR 18319	4/21/21; 86 FR 21082*
Southern Resident Killer whale (*Orcinus orca*)	E 11/18/05; 70 FR 69903	11/26/06; 71 FR 69054
North Pacific Right Whale (*Eubalaena japonica*)	E 12/02/70; 35 FR 18319	4/8/08; 73 FR 19000*
Sei whale (*B. borealis*)	E 12/02/70; 35 FR 18319	Not applicable

Species	Listing Status	Critical Habitat
Sperm whale (*Physeter macrocephalus*)	E 12/02/70; 35 FR 18319	Not applicable
Marine Turtles		
Green turtle (*Chelonia mydas*)	ET 7/28/78; 43 FR 32800	9/02/98; 63 FR 46693* 7/19/23; 88 FR 46572 (proposed)*
Leatherback turtle (*Dermochelys coriacea*)	E 6/02/70; 39 FR 19320	3/23/79; 44 FR 17710 (designated)* 1/26/12; 77 FR 4170 (revised)
Loggerhead turtle (*Caretta caretta*)	T 7/28/78; 43 FR 32800	Not applicable
Olive ridley turtle (*Lepidochelys olivacea*)	ET 7/28/78; 43 FR 32800	Not applicable
Birds		
Marbled murrelet *(Brachyramphus marmoratus)*	T 10/01/92; 57 FR 45328	61 FR 26255; 05/24/1996*
Short-tailed albatross *(Phoebastria (=Diomedea) albatrus)*	E 06/02/70; 35 FR 8491	Not applicable
*Indicates critical habitat is designated for the species but is not within the Yaquina North or South ODMDSs.		

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 (MPRSA Sections 102 and 103(a)). The primary objectives for management of the ODMDSs include, but are not limited to:

1. Maintaining long-term disposal alternatives for dredged material to ensure USACE provides safe and reliable federal navigation channels that facilitate commerce.

2. Maintaining a long-term disposal alternative for dredged material, while encouraging beneficial use of dredged material where practicable

3. Protecting the marine environment, such that:
   a) Adequate site monitoring is conducted to detect environmental impacts; and
   b) No unacceptable adverse physical, chemical, or biological impacts occur inside or outside the disposal site.

4. Ensuring that disposed material:
   a) Meets the suitability requirements of the MPRSA regulations (40 C.F.R. Parts 220 through 228) and
   b) Is consistent with national and regional guidance for the evaluation of dredged material proposed for ocean dumping per the Ocean Testing Manual (USEPA and USACE, 1991) and the Sediment Evaluation Framework for the Pacific Northwest (USACE, 2018). These manuals provide 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)).

5. Identifying site management conditions to be implemented by the EPA and USACE, as well as conditions for MPRSA permits for the transport and disposal of dredged material in ocean waters. For federal projects, the EPA will specify in the MPRSA concurrence letter that the conditions are to be incorporated into USACE dredging contracts.

6. Identifying a schedule or condition triggering a review or renewal of this SMMP.

SMMP sections 3.1 through 3.6 summarize the disposal operation conditions that will be considered for management of Yaquina Bay North and South ODMDSs as described in [40 C.F.R. 228.15(n)(15)]. Enforceable conditions for dredged material disposal operations at Yaquina Bay North and South ODMDSs are drawn from the EPA's letters of concurrence which are incorporated into USACE-issued Section 103 permits. The EPA may also issue enforceable conditions to USACE for maintenance of federal navigation channels and projects as necessary under MPRSA Section 103(a) or 103(e). These conditions are implemented through dredge orders (for Government dredges) and in dredging contract specifications.

Appendix A is applicable to both federal and non-federal dredging projects permitted by USACE as well as Congressionally authorized federal navigation projects operated and maintained by USACE, regardless of whether Government-owned and operated dredging equipment or contracted dredging equipment is used.

Appendix B provides example language that USACE may use in the development of contract specifications for use of the ODMDSs. In coordination with USACE, the EPA's concurrence should be conditioned on use of these specifications. The EPA may determine not to include one or more of the conditions identified in Appendices A or B. 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.

Violations of the MPRSA by a permittee or dredging contractor—including conditions established in an 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 OCEAN DUMPING CRITERIA COMPLIANCE PROCESS

USACE uses the marine protection criteria (40 C.F.R. Part 227) when evaluating permit requests for and when implementing federal projects involving the transportation of dredged material for the purpose of dumping it into ocean waters. All disposal of dredged material in the ocean must comply with the marine protection criteria, and 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, USACE implements substantive MPRSA requirements directly in USACE projects involving transportation and ocean disposal of dredged materials, including through 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 transportation and disposal of dredged materials, and authorizing documents must contain any conditions included in the EPA's concurrence. The EPA and USACE will coordinate early in the contracting process so USACE can incorporate any EPA concurrence conditions into project authorization documents.

Dredging projects that are not Federal projects involving ocean disposal of dredged material require an ocean dumping permit issued by 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 Yaquina Bay North and South ODMDSs, the EPA and USACE must agree on the sampling and analysis plan for each project *prior* to sampling dredged material.

Guidance for a process to determine the suitability of dredged material proposed for disposal at the Yaquina Bay North and South ODMDSs is described in the Ocean Testing Manual, sometimes referred to as the Green Book (USEPA and USACE, 1991), and the regional Sediment Evaluation Framework for the Pacific Northwest (USACE, 2018).

Steps include:

1. Case-specific evaluation of proposed material against the exclusion criteria (40 C.F.R. 227.13(b));
2. 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;
3. Conducting required testing to determine the suitability of the material for ocean disposal; and
4. Review and evaluation of testing data results by the EPA and USACE to determine suitability.

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

Only material which 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 transport to and disposal in the Yaquina Bay North and South ODMDSs. No disposal activities may occur at the sites until the EPA reviews the testing data results and transmits its written concurrence that the material is acceptable for disposal at the sites.

Additional information describing the types of material disposed at the site (source location, sediment type, etc) are discussed in section 2.3 of this document.

3.3 Dredged Material Transportation and Disposal

3.3.1 Transportation of Dredged Material

The EPA does not have any general restrictions on transportation routes to and from the North and South ODMDSs.

3.3.2 Disposal Locations

The regulation at 40 C.F.R. 227.28 requires that the release of dredged material into the ODMDS occur at least 330 feet (100 meters) inside ODMDS boundaries. The North and South ODMDSs include a 500-foot (152-meter) buffer around the release zone. Implementation of the buffer zone requirements 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 release zone boundary and completed (i.e., doors closed) prior to leaving the release zone boundary.

For USACE Civil Works projects, each year that an ODMDS is to be used, USACE will prepare a unique site utilization plan (SUP) for the use of the ODMDS, and each piece of equipment using the ODMDS. Multiple SUPs may be prepared in a dredging season, depending on the volume to be dredged, dredging equipment, dredge schedules, etc. USACE Civil Works will provide SUPs to the EPA at least 15 days prior to the first use that dredging season of an ODMDS. The SUP will include specificity about which cells within the release zone will be used for disposal. The EPA will review SUPs provided by USACE and approve by electronic mail correspondence. An example SUP appears in Figure 7, below.

For USACE-issued Section 103 permits, the applicant shall request a SUP, as specified in the EPA's concurrence conditions. Prior to use of an ODMDS, a SUP, developed by USACE and approved by the EPA, must be requested and received by the permittee.

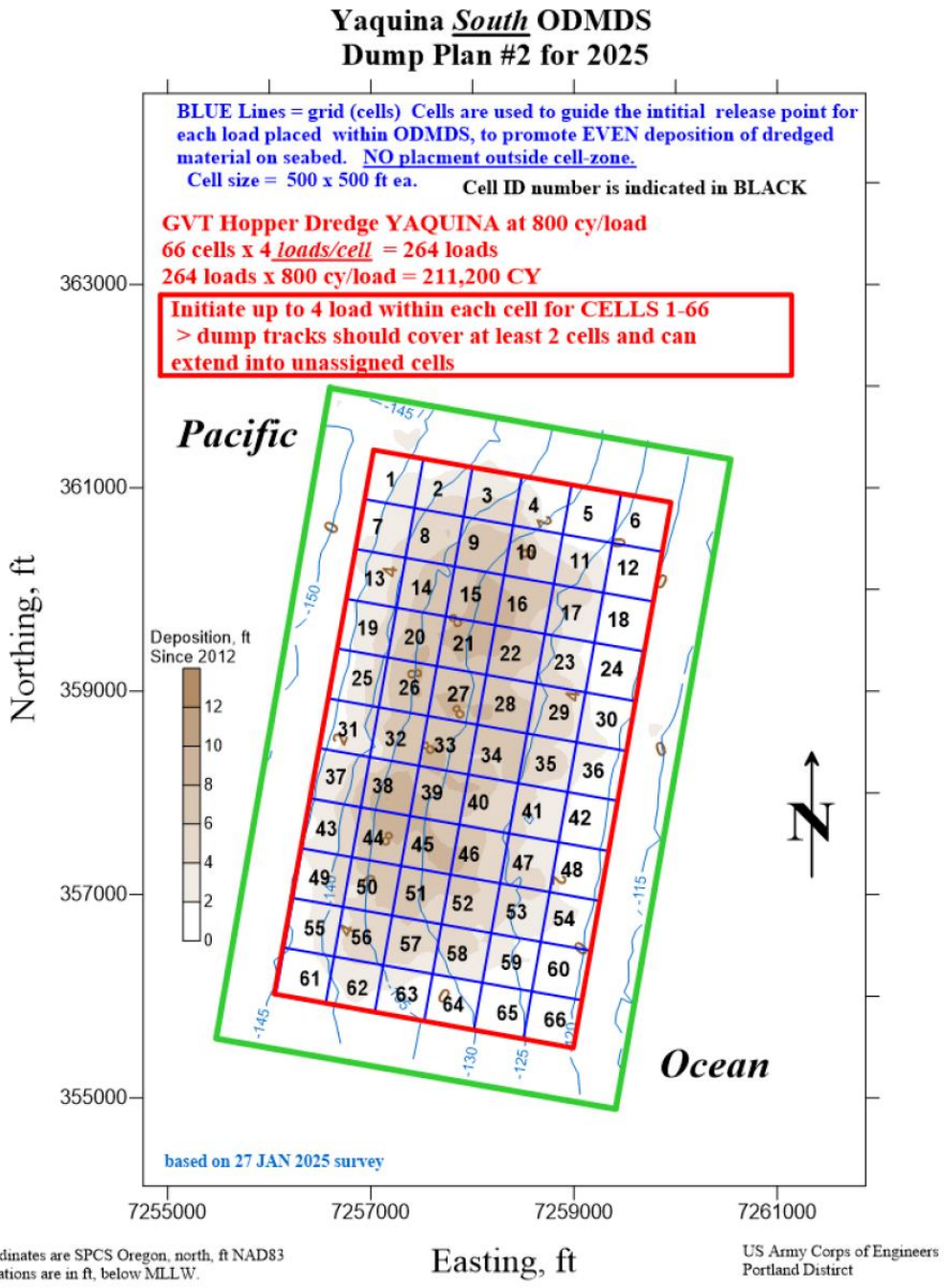

Figure 7. Example SUP prepared for the GOV dredge YAQUINA to dispose 211,200 CY at the Yaquina South ODMDS. The ODMDS site border is shown in green, and the release zone border is shown in red.

3.3.3 Disposal Methods

Dredging and disposal is typically performed by use of hopper dredges. Hopper dredges, such as USACE's trailing suction hopper dredge YAQUINA, release dredged material through the bottom of the hull below the hopper through a system of several doors. Other hopper dredges release dredged material through a split hull. In either case, the dredge can more precisely place dredged material by limiting the rate of release. Bottom dump scows may also be used to transport dredged material to the Yaquina sites. The scows are exclusively contracted by the two port authorities (Port of Newport and Port of Toledo) and USACE. For example, Depot Slough is dredged under a clamshell contract, and dredged material is transported to the Yaquina ODMDSs by tug and scow. Hopper dredges or clamshell and barge operations could include USACE and private contract dredges and barges. All such operations are required to meet all U.S. Coast Guard (USCG) requirements for safety. For enforcement and compliance assurance purposes, the permit or authorization documents should specify a requirement for "closed doors" to require both physically closed doors and a properly functioning hull status monitor indicating that the doors are closed. The permit or disposal authorization documents also should specify methods to prevent mounding of dredged materials from becoming an unacceptable navigation hazard.

Quantities disposed of at the North and South Sites will vary year-to-year depending on shoaling. Disposal volumes and locations will be closely monitored and documented to verify even accumulation through annual bathymetric monitoring by USACE. For the Yaquina Sites, the EPA and USACE will implement a uniform disposal strategy, meaning the dredge will transit in the disposal site during disposal, rather than spot dumping. This approach is intended to cause accretion throughout the disposal site in a relatively consistent manner over the long-term, i.e., 5 years.

3.3.4 Disposal Times

Adverse sea and weather conditions limit dredging and disposal to a period typically from June 15 through October 31, although USACE usually dredges the Yaquina Bay project approximately 6 days in April and May. Even during the dredging season, storm events can restrict disposal events. Environmental restrictions may be imposed on disposal. If new information or monitoring results reveal the need for any additional restrictions, disposal activities may be scheduled to avoid unreasonable degradation of the marine environment.

3.3.5 Disposal Vessel Tracking

All vessels disposing of dredged material in the North and South Sites are required to use modern global positioning equipment capable of fixing their location within 1 to 3 meters to

ensure that material is disposed within the designated sites. As stated in the reporting requirements section, daily records are required of dredgers indicating where material was dredged and where and how material was placed when disposed. Disposal monitoring should be conducted utilizing the Dredge Quality Management (DQM) system [see http://dqm.usace.army.mil/Specifications/Index.aspx], although other systems may be acceptable.

3.3.6 Inspection and Surveillance

The EPA will typically utilize the inspection and surveillance capabilities of USACE and USCG. For example, contract dredges are periodically inspected by USACE personnel to ensure dredging and disposal takes place in the correct locations, and USACE dredges are responsible for ensuring their own proper positioning. The EPA may also choose to implement its own inspection and surveillance requirements using the EPA personnel or contractors. It is expected that the EPA and USACE will coordinate with each other on any special inspections and surveillance.

3.3.7 Specific Management Practices

Disposal of dredged material that is substantially different from the ambient seafloor (grain size, total organic carbon, sediment chemistry) may require post-disposal management. The need for post-disposal management and management options will be coordinated between the EPA and USACE (and applicant, if a permit for ocean dumping of dredged material is sought) and conditioned in the EPA's letter of concurrence for use of the ODMDS(s).

> The EPA and USACE anticipate USACE would maintain the new federal side channel proposed in the Port of Newport's proposed Commercial Marina Access Channel project. Improvements to the marina, including deepening moorage at Port Docks 5 and 7, would involve dredging and transport of the material to the ocean for disposal. The total project volume is estimated at approximately 220,000 cy of mixed dredged material types. Sediments in the project dredge prism consist of approximately 130,000 cy of sand and silty sand over 90,000 cy of mudstone. These materials were found to be suitable for unconfined, aquatic disposal per the MPRSA sediment testing regulations (40 C.F.R. 227.13) and the Sediment Evaluation Framework for the Pacific Northwest (USACE, 2018).
>
> However, due to the difference in physical characteristics between the mudstone and the surrounding native sediment, post-disposal management would be necessary for the mudstone material. The mudstone would need to be placed in a specific area within one of the Yaquina ODMDSs. This management approach will ensure that the post-

disposal substrate does not attract epibenthic invertebrates and vertebrates that would otherwise not be present at the ODMDS. The presence of such organisms could potentially restrict site use and future site capacity.

Within a year after the project components are constructed, USACE would place at least 12 inches of sand that has been found suitable for unconfined, aquatic disposal per the MPRSA regulations (40 C.F.R. 227.13) over the mudstone. The suitable material would most likely be dredged from the Yaquina Bay entrance and FNC by USACE's hopper dredge YAQUINA. The EPA likely will require pre- and post-disposal surveys, which may include physical, chemical, and/or biological surveys of the area at a frequency sufficient to assess re-colonization by benthic infauna.

3.4 DISPOSAL REPORTING

3.4.1 Project Initiation and Violation Reporting Requirements

USACE and other site user(s) must notify the EPA at least 15 days prior to the beginning of a dredging event. A disposal event would be considered complete when the dredger ceases work for more than 30 consecutive calendar days. If a violation of permit or dredging contract conditions occurs during disposal, the user should notify both USACE and the EPA within 24 hours.

3.4.2 Reporting leaks, spills, or dumping outside of site boundaries

Alerts regarding any degree of apparent dumping outside the ODMDS boundaries and/or any apparent significant leakage/spillage or other loss of material (including turbid water) en-route to the site (including excessive leakage as defined in the permit, contract term, or concurrence letter) should be sent via email within 24 hours of the permittee becoming aware of the apparent issue to the EPA MPRSA Permitting Program and the USACE Ocean Dumping Coordinator. If the event occurs on the weekend or holiday, notification should take place the following business day.

3.4.3 Post Disposal Summary Reports

A site user shall provide a Post Disposal Summary Report to the EPA within 60 days completing disposal in each calendar year that disposal occurs. Post-disposal reports should include vessel name, disposal start and end dates and times, dredging project, volume disposed, number of loads completed, type of material disposed, name of contractor conducting the work, permit and/or contract ID number, and identification of any misplaced material or other violations of

disposal-related conditions. Specifically, for USACE Civil Works, the report shall include dates of bathymetric surveys of the ODMDSs which were used.

3.4.1 Debris Removal Provisions

Debris is material that could alter the functionality of the seafloor by interfering with particular uses or creating habitat for species that would not otherwise be present at the ODMDSs. Floatable debris might include logs, wood chunks, or plastics that can be navigation hazards, foul beaches, or harm marine life. Non-floatable debris may cause conflicts with bottom trawling and includes materials such as logs, pilings, rip-rap, and concrete. In a relatively featureless seafloor, any type of debris, anthropogenic or natural has the ability to create structure for species that may not otherwise inhabit the seafloor at that location.

As a general rule, non-floatable, non-sediment materials that would pass through a 12-inch x 12-inch mesh are not considered debris if it is natural in origin and only occasionally found within, and therefore dredged as part of, the sediment matrix. This would only be a potential issue for clamshell dredging as hopper and pipeline dredges are incapable of picking up such debris.

The EPA will assess the potential risks of any debris that could be encountered during dredging during the concurrence process. Should debris be identified as a potential issue, USACE or the EPA may make dredging or disposal area inspections to ensure that a contractor is in compliance with the regulation at 40 C.F.R 227.5(d) and the approved operating plans, and that debris is removed prior to disposal at the Sites. The preference is that floatable debris be removed at the dredging area; however, circumstances may occur where floatable debris must be removed from the water at the ODMDS.

Clamshell-dredged sediments, which contain debris that is not easily removed, may require screening through a 12-inch x 12-inch mesh or grid structure. The mesh must be periodically cleaned and the debris disposed of according to the approved dredging and disposal plan. Dredging contractors and USACE dredge captains are required to maintain a record of the handling of debris encountered during dredging and disposal. Compliance inspectors may review these records. If debris is encountered, copies of dredging logs recording management of debris shall be provided to the EPA. Example contract specification concerning debris monitoring and removal appear in Appendix B.

3.5 BATHYMETRIC MONITORING REQUIREMENTS

Pre- disposal season bathymetric surveys should be conducted by USACE, usually occurring in the Spring, along transects within the ODMDSs and extending a minimum of 328 feet (100 meters) outside the ODMDS boundaries (including the buffer). The recommended minimum performance standards for bathymetric surveys are as follows:

- Determined horizontal location of the survey lines and depth sounding points by an automated positioning system utilizing a differential global positioning system.
- Reference vertical datum to prescribed NOAA mean lower low water (MLLW) datum.
- Reference horizontal datum to the local State Plane Coordinate System (SPCS) for that area or in Geographical Coordinates (latitude-longitude).
- Reference horizontal reference datum using the North American Datum of 1983 (NAD 83).

Data collection methods are described in Engineer Manual EM 1110-2-1003 (USACE, 2013). Results from ODMDS bathymetric surveys should be provided to the EPA Region 10 as part of USACE' Annual Site Review report.

3.6 EPA/USACE ANNUAL SITE REVIEW

The EPA and USACE will meet annually in the Spring to discuss management of the Yaquina ODMDSs. USACE will prepare a summary report for the prior dredging/disposal year that will include the results of sediment characterization (if conducted), description of the use (volumes, sites) of the ODMDSs, bathymetric change maps, and current bathymetry.

USACE will also provide anticipated use of the ODMDSs, pre-disposal hydrographic surveys, capacity discussion, anticipated operational adjustments that are needed, expected volumes to be disposed, upcoming sediment sampling, testing recency of material proposed for disposal, dredging and disposal techniques, timing of use of ODMDSs, and/or special studies.

Once reviewed by the EPA and the EPA's edits are incorporated or addressed, the summary will constitute the tentative plan for that year's disposal. The EPA recognizes that the summary cannot anticipate every operational situation. Day-to-day flexibility in dredging and disposal decisions will be necessary; however, USACE will make every effort to communicate with the EPA and will seek the EPA's concurrence before changes are initiated.

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:

1. Information indicating whether the disposal activities are occurring in compliance with the permit (or federal project authorization documents) and site restrictions;
2. Information on the short-term and long-term fate of materials disposed of in the marine environment; and,
3. 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 MPRSA Regulations at 40 C.F.R. 228.13. Trend analyses should assess whether there are consistent changes from previous site conditions or baseline conditions. At a minimum, a trend assessment survey should be conducted at least once every ten years and should be used to revise the SMMP. For the Yaquina ODMDSs, a trend assessment survey will occur every 5 years. Results from these surveys should be used to assess the need for additional targeted or more complex studies.

The monitoring program for the Yaquina Bay North and South ODMDSs 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 nearshore rocky reefs or productive fisheries habitats?
- 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 and 4.2 below describe the monitoring strategy at the site to address these and other questions and summarize the management actions that should be considered by the EPA, in coordination with USACE, if thresholds are exceeded.

4.1 MONITORING THE TRANSPORTATION, DISPOSAL, AND FATE OF DISPOSED MATERIALS

Monitoring the transportation and disposal process is necessary to confirm that the disposal activities comply with all permit conditions and site restrictions. Monitoring the bathymetry at the ODMDSs should be used to identify and avoid mounding of the seafloor that could pose a navigational hazard. The following monitoring activities will be undertaken to track the location and movement of dredged materials disposed at the ODMDSs:

Bathymetric Monitoring:

1. At a minimum, USACE will perform bathymetric surveys of both ODMDSs once per year, prior to each dredging season. These pre-disposal surveys will identify any mounded areas and inform the site utilization plans for the upcoming dredging season. The maximum average mound height allowed in the ODMDSs is 14 feet above the baseline bathymetry (North ODMDS = February 21, 2001; South ODMDS = April 10, 2010).

   Investigations to designate a new ODMDS or expand the current North and South ODMDSs should be initiated when the average mound height in either of the ODMDSs reaches 12 feet above the baseline bathymetry (see #3). Once a 12-foot mound has been detected, the EPA and USACE project that the agencies would have approximately 6 to 7 years of additional site use before the 14-foot maximum mound height is reached.

2. If more than 450,000 cy combined are disposed of at the ODMDSs, in a dredging season, USACE will perform a post-season bathymetric survey at the sites, as weather allows.

3. As part of the USACE Annual Site Review (section 3.6), USACE will prepare bathymetric difference (change) plots comparing:

   a) The most current pre-disposal bathymetric surveys to the prior year's pre-disposal bathymetric surveys.

   b) The most current pre-dredge bathymetric surveys to the baseline bathymetric surveys (North ODMDS = February 21, 2001; South ODMDS = April 10, 2010).

Table 6 outlines activities that will be undertaken to monitor the transportation, disposal, and fate of disposed material; thresholds for action are also described.

Table 6. Summary of activities to monitor the transportation, disposal, and fate of disposed material and thresholds for action at Yaquina Bay North and South ODMDSs.

Management Goal	Monitoring activity	Responsible entity	Purpose	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Ensure compliance with permit conditions and site restrictions	Disposal site use records	Site User (USACE or permitted entity)	Ensure management requirements are being met	Completed annually by USACE; completed within 30 days of completion of a dredging event by permitted entities.	Disposal records required by SMMP are not submitted or are incomplete.	Continue monitoring	Identify corrective action
					Review of records indicates disposal occurred outside ODMDS boundary, and/or excessive leakage en route to the ODMDS.	Continue monitoring and reporting	-Notify the EPA Region 10 & USACE and investigate why non-compliance occurred. -Verify corrective actions to be enacted; or -Take appropriate enforcement action.
Assess bathymetric trends	Annual bathymetry	USACE	Determine the extent of mounding and major bathymetric changes or trends.	Pre-disposal to occur annually. Post-disposal when total annual quantities greater than 450,000 cy.	Dredged material accumulation detected outside ODMDS boundaries.	Continue monitoring	-Modify disposal method/disposal. -Restrict disposal volumes. -Consider the need for environmental monitoring
Ensure safe navigation	Bathymetry and capacity modeling	USACE	Determine that large project volumes can be accommodated based on most recent bathymetry.	Capacity assessment every 5 years	Bathymetric change from baseline reaches 12 feet in either ODMDS.[1]	No action	-Modify disposal. -Restrict disposal volumes. -Expand the site or identify new sites.

[1] The maximum average mound height allowed in the ODMDSs is 14 feet above the baseline bathymetry (North ODMDS = February 21, 2001; South ODMDS = April 10, 2010).

4.2 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 unreasonably affect human health, welfare, or amenities, or the marine environments, ecological systems, or economic potentialities.

The environmental effects monitoring plan for Yaquina Bay North and South ODMDSs summarized in Table 7 below is structured as a tiered monitoring approach; unacceptable conditions discovered during a lower tier assessment should trigger additional evaluation or other management action.

The EPA and USACE 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 ODMDS or is observed in unexpected locations during the transportation, disposal, and fate monitoring activities described in section 4.1. Any monitoring at the ODMDS that identifies an issue of potential concern should trigger additional monitoring or management actions.

Grain Size Monitoring

During each monitoring event when sediment is collected, samples will be collected and analyzed for grain size and total organic carbon, at a minimum. Grain size analysis would occur within the ODMDSs and compared to reference areas along similar bathymetric contours. Collection of these data inform the results of other analyses (chemistry, infauna, epifauna).

- Disposal of dredged material that is substantially different from the ambient seafloor (grain size, total organic carbon, sediment chemistry) may require post-disposal management. The need for post-disposal management and management options will be coordinated between the EPA and USACE (and applicant, if a section 103 permit is being sought) and conditioned in EPA's letter of concurrence for use of the ODMDS(s).
    - This SMMP contemplates the Port of Newport's proposed Commercial Marina Access Channel (CMAC) project to construct a new federal side channel that would be then maintained by the USACE. Improvements to the marina, including deepening moorage at Port Docks 5 and 7, would require dredging and transport of the material to the ocean. The total project volume is approximately 220,000 CY of mixed dredged material types. Sediments in the project dredge prism

consist of approximately 130,000 CY of sand and silty sand over 90,000 CY of mudstone. These materials were found to be suitable for unconfined, aquatic disposal per the MPRSA sediment testing regulations (40 CFR 227.13) and the Sediment Evaluation Framework for the Pacific Northwest (SEF) (RSET 2018).

However, due to the difference in physical characteristics between the mudstone and the surrounding native sediment, post-disposal management of the mudstone material will be required. The mudstone is required to be placed in a specific area within one of the Yaquina ODMDSs. Within a year after the project components are constructed, USACE will place at least 12 inches of sand over the mudstone. This material would most likely be dredged from the Yaquina Bay entrance and FNC by USACE's hopper dredge YAQUINA. The EPA will require pre- and post-disposal surveys, which may include physical, chemical, and/or biological surveys of the area at a frequency sufficient to assess re-colonization by benthic infauna.

Bioassay/Bioaccumulation Monitoring

- All dredged material is evaluated prior to disposal at the ODMDSs to determine the toxicity or bioaccumulative risk to benthic organisms in accordance with the Ocean Testing Manual (USEPA and USACE, 1991), as implemented by the regional implementation manual of the Sediment Evaluation Framework for the Pacific Northwest (USACE, 2018).
- The EPA will conduct toxicity and bioaccumulation evaluations of the ODMDSs, at least every 10 years during trend assessment surveys if SEF screening levels or bioaccumulation triggers are exceeded.

Ecological Monitoring

- Monitoring of the benthic infaunal and epifaunal communities will occur every 5 years. The EPA may use a variety of field methods to assess the status of the benthic community at the ODMDSs, which may include benthic grabs to assess infaunal community dynamics and/or visual imagery of the seafloor to assess benthic invertebrates and vertebrates. Monitoring will be conducted such that statistical analyses of diversity indices can be compared between the ODMDSs and their associated reference areas. The EPA will determine specific sampling methodology, including seasonality, frequency, and sampling stations, subsequent to the approval of

this SMMP and in coordination with USACE. A tiered management approach will be implemented that assesses thresholds for action to ensure that the ODMDSs do not experience unreasonable degradation of the marine environment. If a threshold is exceeded, then tiered management options will be enacted per Table 7. It is anticipated that ecological monitoring will be documented as stand-alone reports to be used in adaptively managing the Yaquina ODMDSs.

Table 7. Summary of activities to monitor the environmental impacts of disposed material and thresholds for action at the Yaquina Bay North and South ODMDSs.

Management Goal	Monitoring activity	Responsible entity	Purpose	Frequency	Threshold(s) for Action	Tiered Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Ensure compliance with 40 CFR 228.13 (benthic community) and State of Oregon CZMA	Sediment collection and water quality analysis	EPA	Periodically evaluate the impact of disposal on the marine environment (40 CFR 228.9)	Every 5 years	- Absence of, or significant difference in abundance of, disturbance-sensitive infaunal and/or epifaunal species. -Persistent significant difference in infaunal and/or epifaunal diversity indices observed over consecutive surveys.	Continue monitoring.	1. Collect data within three years after the threshold is exceeded. Design survey to assess whether the observed impact is from immediate response to disposal or longer-term chronic impact to seafloor. 2. Consider changes in management of site, e.g., rotational disposal within the sites, volume limits, preferentially use the other ODMDS to allow the benthos where the threshold was exceeded to recover, method of disposal, timing of disposal. 3. Discontinue site use. Withdraw site from regulations.
Ensure compliance with 40 CFR 228.13 (Water, Sediment Quality)	Sediment collection and water quality analysis			Every 10 years	Exceedance of SEF marine benthic toxicity screening level(s).		1. Conduct marine bioassay testing within a year. 2. Bioassay failure triggers investigations to identify the source(s) of contamination (USACE FNC; adjacent permitted projects; unauthorized disposal). 3. Management of contaminated sediments at the sites, e.g. collect additional pre-dredge samples to increase power of analysis, cover contaminated sediments with clean dredged material. 4. Discontinue site use. Withdraw site from regulations
Ensure compliance with 40 CFR 228.13 (Water, Sediment Quality)	Sediment collection and water quality analysis			Every 10 years	Exceedance of SEF bioaccumulation triggers.		1. Conduct marine bioaccumulation testing within a year. 2. Bioaccumulation testing failure triggers investigations to identify the source(s) of contamination (USACE FNC; adjacent permitted projects; unauthorized disposal). 3. Management of contaminated sediments at the sites.

5 SMMP MODIFICATION OF THIS SMMP PRIOR TO RENEWAL

This plan is effective and available for implementation from the date of signature. The MPRSA Section 102(c)(3) directs the EPA, in conjunction with USACE, to review and revise this SMMP at least every ten years or sooner if site use and conditions at the site indicate a need for revision. 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
- Any other conditions or changes at the site or area surrounding the site that may necessitate a review or update to the SMMP

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7 APPENDIX A – TEMPLATE FOR GENERIC SPECIAL CONDITIONS

Special Conditions for Department of the Army

MPRSA Section 103 Permits

YAQUINA BAY NORTH AND SOUTH ODMDSs

MPRSA Section 102(c)(3) directs the EPA in conjunction with USACE to develop a site management and monitoring plan (SMMP) for dredged material disposal sites; such plans are implemented through Department of the Army (DA) MPRSA permits issued by USACE.

The EPA Region 10 in conjunction with USACE Portland District 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 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 permit incorporating the language from this Appendix (including as modified) would impose requirements specific to the permitted activity. USACE is not obligated to impose any permit term based on the template language, though USACE may elect to do so; the language is provided to facilitate 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 USACE must include in the permit the terms and conditions specified by EPA.

Conditioning of Department of the Army (DA) Regulatory permits per Section 103 MPRSA

1. Permit time limits: Per 33 C.F.R § 325.6(c), permits issued for the transport of dredged material for the purpose of disposing of it in ocean waters will specify a completion date for the disposal not to exceed three years from the date of permit issuance. It is possible an applicant may seek and obtain a permit which involves upland disposal of dredged material with return water and/or estuary/river in-water disposal of dredged material (meaning a discharge under Section 404 Clean

Water Act), in conjunction with a Section 103 MPRSA permit request. In this instance the Section 103 MPRSA project component can only be authorized for three years from the date of permit issuance; the other disposal options (i.e. upland, or estuary/river in-water disposal) can be authorized for a longer timeframe. Note, per 33 C.F.R § 325.6(e) USACE RHA Section 10 / CWA Section 404 maintenance dredging permits may not exceed ten years from the date of issuance.

If a permittee has received a combined 404/10/103 permit and intends to seek section 103 MPRSA authorization after the original Section 103 MPRSA authorization has expired the activity should be treated as a new permit action; a new permit application, public notice, and permit decision and/or permit modification decisions should be prepared. In this circumstance, USACE will need to re-coordinate with EPA to obtain a new Section 103 MPRSA concurrence. Additionally, the applicant may need a new 401 Water Quality Certification (WQC) and Coastal Zone Management Act (CZMA) concurrence for this federal action (permit).

Maintenance dredging and other work time limit: General Condition 1 of the permit form will only have one expiration date. Following is an example of a special condition to apply a shorter time limit to work authorized under the MPRSA:

- *The work authorized herein includes periodic maintenance dredging and may be performed under this permit for (XX) years from the date of issuance of this permit. The time limit for completing work authorized under the MPRSA ends 3 years from the date of issuance of this permit.*

This special condition may also be used:

- *The work authorized herein includes periodic maintenance dredging and disposal of dredge material at [name/describe 404 disposal site] which may be performed under this permit for XX years from the date of issuance of this permit. Permittee is also authorized to transport dredged material for disposal in ocean waters at the [name disposal site] Ocean Dredged Material Disposal Site. The time limit for completing ocean disposal ends 3 years from the date of issuance of this permit.*

2. Permittee commencement of work and adherence to USACE-prescribed Site Utilization Plan (SUP):

The following condition ensures that both USACE and EPA staff are notified prior to the commencement of dredging and disposal operations and to ensure the permittee adheres to the USACE-provided site utilization plan (SUP). A SUP is **always** required for disposal at the Yaquina North or South ODMDS. If the permittee is directed to use more than one ODMDS, a separate SUP will be developed for each site; if the permittee plans to use more than one disposal vessel, a separate SUP may also be developed for each vessel. With the information provided from the special condition below, the Portland District Ocean Dumping Coordinator (ODC) shall prepare the SUP request form for the dredge event and submit it to the District's Hydraulic Design Branch to develop the SUP for the permittee, copying the Regulatory Project Manager and the EPA Region 10 MPRSA Permitting Program. The Regulatory Project Manager will transmit the SUP(s) to the permittee, copying the EPA Region 10 and Portland District POCs.

At least 15 days prior to the commencement of dredging, the permittee shall request a SUP, providing the following information in their request:

- *Regulatory permit number*
- *Permittee name*
- *Dredging location(s), volume(s), and type(s) of material to be dredged*
- *The dredging company name and names of the dredging equipment to be used (including the dredge plant, and tugs and scows, if applicable)*
- *Capacity(ies) of disposal vessel(s)*
- *Anticipated volume of dredged material per load.*

At least 15 days prior to commencement of dredging event, the permittee shall send via e-mail a notification of commencement of work to the following staff[2]:

- *USACE Regulatory Project Manager*
- *EPA Region 10 MPRSA Permitting Program*
- *Portland District Ocean Dumping Coordinator*

[2] The name and email addresses of staff can be found in the USACE Permit Application and the EPA's conditions in the MPRSA Section 103 concurrence letter.

The permittee shall adhere to SUP(s) prepared by Portland District which has been transmitted to the permittee. Disposal at the Yaquina North or Yaquina South ODMDS without a SUP is strictly prohibited and subject to enforcement [see Special Condition X, "Permit Non-Compliance"].

3. Permittee adherence to the EPA section 103 MPRSA concurrence:

- Permittee shall comply with the conditions specified in the U.S. Environmental Protection Agency's Section 103 Marine Protection, Research, and Sanctuaries Act letter of concurrence dated DATE (and as attached).
- Reporting. The permittee shall send the U.S. Army Corps of Engineers, Portland District Regulatory Project Manager and the Portland District and the EPA Region 10 MPRSA Permitting Program a disposal summary report within 30 days after the dredging event is completed. A dredging event is considered any work stoppage that may occur for more than 30 consecutive calendar days. The disposal summary report shall include the following information:
    - USACE permit number,
    - Description of compliance/ non-compliance with the EPA's Section 103 concurrence conditions.
    - Any violations of permit conditions, including mis-dumps, shall be explained in detail.
    - Actual start date and completion date of dredging and disposal operations,
    - Total cubic yards disposed at the Yaquina Bay North and South ODMDSs and method of calculation (pre- and post-bathymetric survey, bin measure, or other),
    - Figure(s) depicting the ODMDS(s) and management cells used, the disposal vessel track lines for each load (with the beginning and ending points of disposal), and standard cartographic conventions (coordinate grid, north arrow, scale, etc.).

4. Permittee adherence to Dredging Quality Management (DQM) (where applicable): DQM consists of: 1) government-furnished software developed through the National Dredging Quality Management Program, 2) on-dredge hardware owned or leased and operated by the dredging contractors, and 3) a centralized DQM database. DQM applies to DA permits for dredging and/or dredged sediment discharge/placement into navigable waters.

Details on DQM can be found here: https://www.sam.usace.army.mil/Missions/Spatial-Data-Branch/Dredging-Quality-Management/

DQM instrumentation and software is installed on all USACE Government and contractor hopper dredges and dumping scows. Permittees can contract with the USACE' dredging contractor to

accomplish their dredging, the cost of dredge mobilization and demobilization is already assumed by USACE. As such, all permittees need to provide dredge track data as part of their permit compliance reporting to the EPA and USACE Regulatory Branch.

In the unlikely event that a permittee's dredger is not equipped with DQM, the permittee needs to provide justification for a DQM exemption for unusual circumstances (including project size) or undue hardships. The exemption must be approved by the USACE District Engineer.

The primary method of dredging and disposal of dredged material in ocean waters for DA Permits occurs mechanically via a clamshell dredge and dumping scow. Permittees performing maintenance dredging and disposal in ocean waters often capitalize dredging equipment which has been mobilized by USACE (Navigation Division) under a federal contract to fulfill Corps Civil Works (CW) Operations and Maintenance (O&M) dredging responsibilities. The federal contractor is required to use DQM per the Corps CW contract. The permittee will often coordinate with the federal contractor while at or near a respective USACE CW project location to procure them to accomplish non-federal dredging. In these situations, it is appropriate for the DA permit to include a special condition requiring the use of DQM because the same dredging equipment is being utilized for federal and non-federal dredging. The recommended DQM condition is as follows:

- Dredging *Quality Management (DQM).* Dredging, dredged sediment discharge/ placement, and monitoring of the dredging projects using the Dredging Quality Management (DQM) system shall be implemented for this permit when the project activity is using dredging equipment. The permittee 's DQM system must have been certified by the National DQM Support Center (DQM Center) within one calendar year prior to the initiation of the dredging/discharge/placement of sediments. The permittee is responsible for ensuring that the DQM system is operational throughout the dredging and discharge/placement of sediments, and that the project data is submitted to the DQM Center in accordance with the specifications provided at the DQM website. Questions regarding codification and/or additional information about L3QM program should be addressed to the DQM Center at (877) 840-8024 and/or https://dqm.usace.army.mil.

Other Considerations for Permit Coordination and Compliance

US Coast Guard Coordination

Per 33 C.F.R § 325.2(a)(9)(iv), DA permits issued by USACE which involve the transportation of dredged material for the purpose of dumping it in ocean waters require USACE to transmit the

permit to the appropriate U.S. Coast Guard (USCG) District Commander. The appropriate USCG District Commander within the Portland District area of responsibility is District 13. USACE fulfills this requirement by providing a copy of the Department of the Army permit to the USCG District 13 Commander.

Post-permit issuance:

1. Regulatory Project Manager shall provide the EPA with a copy of the DA permit, EA/EIS and supporting decision document, and the Clean Water Act Section 401 Water Quality Certification.
2. It is critical that the Regulatory Project Manager ensures permittee compliance with the notification and reporting special conditions above.
3. In the event the permittee or their contractor do not adhere to the prescribed SUP, USACE and the EPA will coordinate prior to further coordination with the permittee regarding permit non-compliance.

8 APPENDIX B – GENERIC CONTRACT LANGUAGE

Generic Contract Specification Language for Use at the YAQUINA BAY NORTH AND SOUTH ODMDSs

MPRSA Section 102(c)(3) directs the EPA in conjunction with 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 USACE developed the template language below for inclusion in USACE contracts or other project specifications for the transportation and disposal at the Yaquina Bay North and South ODMDSs. 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 Yaquina Bay North and South ODMDSs 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. USACE is not obligated to impose any particular contract term based on the template language, though USACE may elect to do so; the language is provided to facilitate 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. The following conditions may be included in USACE dredging contract specifications:

1. Debris monitoring condition; notation of debris to be included in the contents of the daily contractor quality control (CQC) reports:
    - Monitoring for and reporting of debris is required in the daily contractor quality control (CQC) report. In the remarks section, provide information regarding the presence and nature of any debris encountered. Additionally, make notation within a turbidity log in the column for presence of debris. Notations in the daily CQC reports are to include:

i. Characteristics of debris, such as but not limited to, logs/snags, wire rope, scrap metal, tires, rope/netting.
ii. Load number(s) in which debris was encountered.
iii. Photographs of the debris encountered.
iv. Notation that the debris was removed and disposed upland.

2. Conditions for dredged material disposal at the ODMDSs:

- Dispersal of Material – All material shall be disposed within the assigned ODMDS as well as within the designated disposal cells, as prescribed in the site utilization plan (SUP). Dredged material will be disposed to prevent mounding and uneven distribution of material that would otherwise prematurely reduce the usable capacity of the ODMDS, unless specifically directed to do otherwise by USACE. Prior to the start of each dredging job, have a pre-dredge meeting with USACE and contractors to discuss the operational requirements and constraints of using the ODMDS(s).
- ODMDS Surveys (Usual Conditions) – The contractor will perform bathymetric surveys, either pre-disposal and/or post-disposal (as specified by the USACE contract), and provide them to USACE. Surveys of the ODMDS shall be performed by multi-beam or single-beam and must cover the entire ODMDS and a minimum of 328 ft (100 m) outside the ODMDS boundary (including the buffer).
- ODMDS Surveys (Mounding Concerns or Nearing Maximum Capacity) – Monitor placement operations through close management and surveys every XX days or more frequently as needed to ensure the maximum mounding threshold specified is not exceeded. Disposal site surveys will be performed by multi-beam or single-beam and must cover the entire ODMDS and a minimum of 328 ft (100 m) outside the ODMDS boundary (including the buffer).
- Miscellaneous Trash and Debris – All logs, snags, trash, and debris removed from the designated channel will become the property of the contractor and must be disposed of in accordance with all applicable Federal, State, and municipal laws and regulations. Logs, snags, trash, and debris must not be placed in the Government furnished material placement sites. If debris is encountered, make note of it in the daily CQC reports and contractor turbidity log.

3. For enforcement and compliance assurance purposes, closed doors should be defined to require both physically closed doors and a properly functioning hull status monitor indicating that the doors are closed.