

Attachment E

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VIA EMAIL AND HAND DELIVERY

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File No. 048876-0011

Re: NASSCO's Comments on the proposed Final Environmental Impact Report for the Shipyard Sediment Remediation Project (SCH # 2009111098)

Dear Mr. Rodriguez:

Designated Party National Steel and Shipbuilding Company ("NASSCO") submits the following comments regarding the proposed Final Environmental Impact Report ("FEIR"), including responses to comments (the "Responses"), for the Shipyard Sediment Remediation Project ("Project"), State Clearing House Number 2009111098, publicly released by the California Regional Water Quality Control Board, San Diego Region ("Regional Board") on September 15, 2011.

I. LEGALLY INFEASIBLE MITIGATION MAY NOT BE ADOPTED

A. Mitigation Measures Proposed In The FEIR Must Be Economically Feasible Under Resolution 92-49

As stated in NASSCO's initial CEQA comments, CEQA does not provide a lead agency with independent authority to mitigate environmental impacts; instead, agencies may exercise only those powers authorized by other statutes. Pub. Res. Code § 21004; *see also* CEQA Guidelines § 15040. Accordingly, mitigation is "legally infeasible" if its adoption is beyond the powers conferred by law on the agency, or prohibited by statutes governing the agency. *Kenneth Mebane Ranches v Superior Court*, 10 Cal. App. 4th 276, 291 (1992); *Sequoyah Hills Homeowners Ass'n v City of Oakland*, 23 Cal. App. 4th 704, 715-16 (1993). The Regional Board therefore may not adopt any mitigation measures for the proposed Project unless those measures are authorized by the Water Code or other applicable statutory authority beyond CEQA.

Under Resolution 92-49, cleanup levels must be evaluated for economic feasibility and cost-effectiveness before they can be adopted. Thus, as explained in NASSCO's initial comments, mitigation proposed in the DEIR cannot be adopted to the extent it was not included in the requisite economic feasibility analysis conducted for the TCAO. Any such mitigation is "legally infeasible" under CEQA.

The Responses fail to address this point, stating in conclusory fashion that the Regional Board disagrees with NASSCO's comment. Responses to Comments ("RTC"), at 78. This response is insufficient, (CEQA Guidelines § 15088(c)), and provides no justification to allow the Regional Board to adopt mitigation measures not evaluated for economic feasibility under Resolution 92-49.

This comment applies to the proposed Project and the other dredging alternatives:

B. The Regional Board May Not Use CEQA Mitigation To Dictate Cleanup Methods

NASSCO's initial comments also pointed out that, under Water Code section 13360(a), "[n]o waste discharge requirement or other order of a regional board . . . shall specify the design, location, type of construction, or particular manner in which compliance may be had with that requirement, order, or decree, and the person so ordered shall be permitted to comply with the order in any lawful manner." Hence, the Regional Board may not dictate cleanup methods, and any attempt to do so through CEQA mitigation is legally infeasible (and impermissible) for the above-stated reasons.

The Responses cite subdivision (b) of Water Code section 13360, which provides that, if an injunction is sought under the Water Code to restrain a discharger from discharging waste, and a court finds an injunction to be impracticable, the court may require specific measures to be taken "under the circumstances" to comply with the discharge requirements. RTC, at 78. But section 13360(b) is irrelevant here, as NASSCO's comment has no application to the context of a court ordered injunction. Instead, NASSCO simply pointed out that the Regional Board lacks authority to dictate cleanup methods under the Water Code, and, by extension, through CEQA.

The Responses also assert that mitigation proposed in the DEIR will not dictate how cleanup levels should be achieved, supposedly on the grounds that the EIR merely evaluates measures but none of the mitigation would be mandatory. RTC, at 78. This is incorrect, because mitigation measures are not "optional" under CEQA, and instead must be binding. CEQA Guidelines § 15126.4(a)(2); Pub. Res. Code § 21081.6(b).

That the FEIR seeks to dictate cleanup methods is made plain in the Responses. For example, NASSCO's initial comments (submitted by Anchor QEA, L.P.) explained that the mitigation measure requiring hydraulic placement of the sand cover in under pier areas should be deleted, because other feasible means of successfully placing the sand cover may exist. In response, the Cleanup Team stated that hydraulic placement "is feasible" and therefore required, and that the existence of other feasible means of accomplishing the task "is not a consideration factor in the selection of mitigation measures to protect water quality." RTC, at 155. In other

words, the Regional Board intends to dictate cleanup methods through the CEQA process, and other feasible approaches will not be considered. The point is also made clear by reviewing the proposed Project and the dredging alternatives, each of which proposes separate, binding methods to remediate the Site.

This comment applies to the proposed Project and the other dredging alternatives.¹

II. MITIGATION MEASURE 4.6.10 SHOULD BE REVISED TO CLARIFY THAT ALTERNATIVE FUEL CONSTRUCTION EQUIPMENT IS NOT REQUIRED UNLESS IT IS COST EFFECTIVE

The Errata included with the FEIR revises Mitigation Measure 4.6.10 to provide that alternative fuel construction equipment shall be utilized “to the extent 1) that the equipment is readily available, and 2), if such equipment is available in the San Diego Air Basin (SDAB), it is also cost effective.” Appendix A, A-17. NASSCO objects to this revision to the extent that it assumes that the mere availability of alternative fuel construction equipment in the SDAB compels the conclusion that it is cost effective, as the fact that a type of equipment is available says nothing about whether or not its use is cost effective.

Accordingly, Mitigation Measure 4.6.10 should be revised to make clear that alternative fuel construction equipment is not required unless it is readily available in the SDAB *and* its use is cost effective.

III. THE FEIR FAILS TO DESCRIBE STORMWATER DISCHARGES TO THE SITE OR EVALUATE POTENTIAL RECONTAMINATION

A. The Environmental Setting Is Deficient Because It Does Not Identify Continuing Stormwater Discharges To The Site

As explained in NASSCO’s initial comments, the DEIR’s description of the Project’s environmental setting completely ignores continuing and uncontrolled discharges of urban runoff to the Site from Chollas Creek and storm drains SW4 and SW9. The FEIR also fails to adequately address this issue, as the Responses make no attempt to justify the DEIR’s decision to exclude any description of stormwater discharges to the Site. *See* RTC, at 75.

There is no excusable reason for this omission, since a complete and accurate description of a project’s environmental setting is one of the most fundamental and basic of all CEQA requirements, and also is a necessary predicate for a legally adequate assessment of the environmental impacts of the project. *E.g., Cadiz Land Co. v. Rail Cycle, L.P.*, 83 Cal. App. 4th 74, 87 (2000); *Galante Vineyards v. Monterey Peninsula Water Management Dist.*, 60 Cal. App. 4th 1109, 1122 (1997). This omission is particularly significant since the primary purpose of the

¹ NASSCO’s comments on the specifics of various mitigation measures proposed in the FEIR are set forth in the concurrently submitted memorandum prepared by David Templeton and Michael Whelan of Anchor QEA, L.P.

Project is to remediate sediment contamination at the Site, and stormwater discharges constitute a continuing source of contamination to Site sediments. The Responses even acknowledge that “the purpose of an EIR is to assess the project’s effects on the existing environment,” (RTC, at 75), which confirms the invalidity of an EIR that does not accurately identify the existing environment in the first instance.

As noted in NASSCO’s comment letter on the DEIR, the TCAO and DTR state plainly that stormwater discharges have deposited contaminants to sediments at the Site, and are continuing, and Cleanup Team members have acknowledged the same. Because these points are undisputed, the failure to identify and describe stormwater discharges to the Site from Chollas Creek, SW4 and SW9 renders the EIR invalid as a matter of law. Since this omission is a procedural violation rather than a factual conclusion, the substantial evidence test is inapplicable and the Regional Board will be afforded no deference. *E.g., Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 40 Cal. 4th 412, 435-36 (2007); *Bakersfield Citizens for Local Control v. City of Bakersfield*, 124 Cal. App. 4th 1184, 1208 (2004) (where agency omits consideration of an issue in EIR, the substantial evidence test does not apply and the “relevant question is whether the lead agency failed to proceed as required by law.”). Furthermore, because the Responses do not address the decision to exclude stormwater discharges from the DEIR, they are legally inadequate under CEQA. *See* CEQA Guidelines § 15088(c) (responses to comments must include “good faith, reasoned analysis” and “[c]onclusory statements unsupported by factual information will not suffice.”).

A recirculated EIR is required to adequately describe the existing environmental setting. CEQA Guidelines § 15088.5(a).

B. Recontamination From Stormwater Discharges Is A Reasonably Foreseeable Significant Environmental Impact

NASSCO’s initial comments also explained that the DEIR’s failure to disclose stormwater discharges to the Site resulted in the separate but related failure to consider whether or not those discharges will recontaminate the Site after the proposed dredging is underway or completed.

Attempting to address this omission, the Responses assert that “an EIR need not resolve existing environmental problems that will not be made worse by the project.” RTC, at 75. This statement is not well taken. The purpose of the Project is to remediate contaminated sediment at the Site, and the Cleanup Team has proposed dredging approximately 143,000 cubic yards of sediment in furtherance of this objective. The feasibility of the remediation Project, including its likelihood of success, cannot properly be evaluated by the public and the decision-makers when the FEIR fails to describe an ongoing source of contamination to sediments at the Site, and likewise fails to evaluate whether that ongoing source could nullify the benefits of the contemplated dredging. Since the purported purpose of the Project is to “resolve existing environmental problems” at the Site, the statement that the EIR does not need to do so misses the mark. For the same reason, the statement in the Responses that “[i]t is not the purpose of a DEIR to mitigate the existing conditions” is insufficient, since the stated purpose of the Project *is to do just that*, *i.e.*, mitigate the existing conditions in the sediments at the Site. RTC, at 75.

The Responses cite *Watsonville Pilots Ass'n v. City of Watsonville*, 183 Cal. App. 4th 1059 (2010) in support of this argument, noting that the *Watsonville* court held that an EIR for a new general plan was not required to resolve an existing groundwater overdraft problem. RTC, at 75. That case is clearly inapposite. *Watsonville* involved a general plan that called for residential construction near an airport. A challenge was made on the grounds that the EIR did not adequately address impacts from supplying water to the contemplated development under the general plan, where the groundwater basin supplying water to the city had been in overdraft for decades. The court rejected an argument that the EIR was invalid because it "fail[ed] to pinpoint a solution to the overdraft problem," which was "a feat that was far beyond its scope." 183 Cal. App. 4th at 1094. The EIR's treatment of the water supply issue was held to be adequate because it discussed the impact and concluded that water demands from contemplated new development would be offset by decreased water usage associated with the conversion of farmland to other uses under the new general plan, and water conservation measures imposed by the city. Here, by contrast, the FEIR omits any mention of continuing stormwater discharges to the Site, and fails to consider the potentially significant impact of recontamination. Moreover, recontamination of Site sediments goes to the core of the Project, which is proposed for the specific purpose of remediating sediment contamination at the Site.

The responses referenced above apparently attempt to justify the non-evaluation of recontamination on the basis that recontamination is not a "direct" effect of the Project on the environment, inasmuch as the continuing stormwater discharges are not caused by the Project. But this unduly narrow view of potential impacts is inconsistent with CEQA, which requires an EIR to evaluate both the potential "direct and indirect" impacts of a proposed action. CEQA Guidelines § 15126.2. An indirect effect is one "which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment." CEQA Guidelines § 15064(d)(2). In other words, indirect effects are those "which are caused by the project and are later in time or farther removed in distance. . . ." *Id.* at § 15358(a)(2). Thus, if areas dredged pursuant to the Project are subsequently recontaminated by an ongoing source, that recontamination is an "indirect" effect of the Project.

CEQA requires an assessment of indirect impacts so long as they are "reasonably foreseeable." CEQA Guidelines §§ 15064(d)(2) and 15358(a)(2). Recontamination is reasonably foreseeable here, since there is no dispute that continuous discharges of stormwater reach the Site and impact its sediments. The Regional Board cannot argue otherwise, as the TCAO expressly recognizes the possibility of recontamination from urban runoff: "[u]pland source control measures . . . are also needed to eliminate ongoing contamination from [SW4] . . . and ensure that recontamination of cleaned up areas of the Shipyard Sediment Site from this source does not occur." TCAO, ¶ 33. Moreover, the failure to address recontamination for the proposed Project is shown to be error by virtue of the fact that recontamination is noted as a significant concern in the FEIR with regard to Alternative 3; so much so that Alternative 3 cannot be implemented until source control is achieved to the satisfaction of the State Board. *See, e.g.*, RTC at 177; *see also* FEIR Appendix D, at 32-6 ("The San Diego Water Board generally concurs with the comment that the potential for recontamination from off-site sources would affect all potential remedies...").

Responding to NASSCO's comment that Cleanup Team members have admitted that it is probable that discharges from Chollas Creek will remain uncontrolled in the future (and likely even beyond the 2028 compliance date in the Chollas Creek TMDL for metals), the Responses state that "[c]ontaminated sediment discharges from Chollas Creek will be addressed in the sediment TMDL for the mouth of Chollas Creek that is in preparation at this time." RTC, at 93. But the Regional Board may not forego analysis of a reasonably foreseeable impact from the Project now, on the grounds that the un-evaluated and un-mitigated impact allegedly will be addressed by a contemplated future administrative action at an uncertain future time. Nor is there any evidence that discharges from Chollas Creek would be confined solely to the area of the mouth of that creek.

The Responses also state that "available storm water best management practices for sediment control are capable of eliminating most, if not all sediment discharges from the Chollas Creek MS4." RTC, at 93-94. But the Responses fail to describe any of these practices or provide any analysis of how they could eliminate most or all of the sediment discharges from Chollas Creek, a dubious proposition to say the least. CEQA forbids such conclusory responses to comments. *Cleary v. County of Stanislaus*, 118 Cal. App. 3d 348, 358 (1981) ("conclusory statement, unsupported by empirical or experimental data, scientific authorities, or explanatory information . . ." is insufficient under CEQA); *see also* CEQA Guidelines § 15088(c).

Finally, without ever describing the stormwater discharges to the Site, evaluating their potential to contaminate sediments at the Site, or describing any "source control efforts" to address same, the Responses contend that "a detailed discussion on the basis for the San Diego Water Board Cleanup Team's [unstated] conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1" to the Responses to Comments submitted on the TCAO ("Response 4.1"). But the referenced response only underscores why it was impermissible for the DEIR to exclude evaluating recontamination under CEQA. First, Response 4.1 (which does not purport to provide CEQA analysis) acknowledges that continuing contamination sources could make remediation "unsuccessful," an implicit concession that recontamination could cause a potentially significant impact for CEQA purposes. Response 4.1 tries to deflect this concern by stating that if increasing contaminant of concern ("COC") concentration trends are identified after the proposed remediation, the Regional Board could require "accelerated cleanup and abatement" of that source. But the means by which this would be accomplished are not described in Response 4.1, or the EIR, and no enforceable measures that would require this to be done are proposed in the EIR. Unenforceable or illusory promises are insufficient under CEQA. CEQA Guidelines § 15126.4(a)(2); Pub. Res. Code § 21081.6(b).

Second, Response 4.1 states that the risk of recontamination from Chollas Creek discharges is "low" because the time period between the proposed Project and an anticipated future cleanup of Chollas Creek "will be short (five to six years)." But no information supporting this statement is provided, and there is no assessment of the likely time period for implementing the TCAO or any cleanup of Chollas Creek (the administrative process for which has not been publicly initiated). Given the inherent regulatory uncertainty that attends to such matters, this is a significant oversight. Indeed, the current TCAO proceeding has been pending

for more than a decade, and its implementation time is still uncertain based on factors presently unknown.

Third, Response 4.1 states that Chollas Creek discharges are or will be controlled by “stringent requirements” associated with various regulatory approaches, none of which are identified, relied upon or assessed in the CEQA document. The acknowledged need for measures to mitigate stormwater discharges highlights why recontamination needed to be evaluated in the EIR, under CEQA, with all feasible mitigation measures considered to address the admitted potentially significant impacts.

Fourth, Response 4.1 makes no effort to quantify the contribution of contamination to the Site caused by Chollas Creek and other stormwater sources, or the extent to which any other regulatory approaches (contemplated or approved) will address same, and thus is devoid of any reasoned explanation showing that recontamination is not likely to occur. For example, the Response states simply that TMDLs “should ensure” that Chollas Creek will not recontaminate the Site to a harmful degree. This is insufficient.

Fifth, and finally, the FEIR’s failure to respond directly to NASSCO’s comments regarding recontamination, following up on the omission of the issue from the DEIR, and the decision to rely entirely on Response 4.1 (buried within 734 pages of an appendix to the FEIR), fails to comply with CEQA’s requirement to clearly identify and evaluate for the public and the decision-makers the potentially significant impacts of the Project. *See, e.g., Santa Clarity Org. for Planning v. County of L.A.*, 106 Cal. App. 4th 715, 722-23 (2003) (information “scattered here and there in EIR appendices,” or a report “buried in an appendix,” is not “a good faith reasoned analysis in response.”). Given the seriousness of this issue, it merited discussion in the text of the EIR.

IV. THE MONITORED NATURAL ATTENUATION ALTERNATIVE SHOULD BE ADOPTED, BUT, AT A MINIMUM, MUST BE STUDIED IN DETAIL IN A RECIRCULATED EIR

The Responses do not dispute that Monitored Natural Attenuation (“MNA”) is environmentally superior to the Project, as it will avoid all of the Project’s significant and potentially significant impacts. *See* RTC, at 85-86. Instead, the Responses contend that MNA is not feasible, and therefore did not need to be mentioned in the DEIR. This contention is incorrect.

The Responses attempt to distinguish as “out of context” authority cited by NASSCO for the proposition that “an in depth discussion is required of any alternative that is at least potentially feasible.” RTC, at 72 (citing *Center for Biological Diversity v. County of San Bernardino*, 185 Cal. App. 4th 866, 883 (2010) and CEQA Guidelines § 15126.6(a) (an EIR “must consider a reasonable range of potentially feasible alternatives...”). The Responses make the circular argument that these authorities apply only to alternatives that already have been selected for consideration. This argument misses the point. If an alternative is *potentially feasible* and will avoid some or all of a project’s impacts, it warrants detailed review in the EIR,

so that it may be considered by the public and the decision-makers. Any final determination that such an alternative is infeasible should only be made after an adequate assessment in the EIR.

NASSCO's position that MNA will feasibly attain Project Objectives while avoiding all significant and potentially significant Project impacts is detailed at length in its initial CEQA comments, and need not be reiterated here. The Responses make no earnest effort to address these contentions on the merits.

Most significantly, the statement that MNA is infeasible is made without acknowledging or responding to the fact that MNA was selected as the preferred remedy out of three alternative remedies studied in detail in the expert-prepared Detailed Sediment Investigation underlying the TCAO/DTR ("Shipyard Report"), which was developed at the direction of and with substantial oversight from Regional Board staff, along with input from stakeholders and the public. Because the Shipyard Report provides the foundation for the DTR and TCAO, and because it concludes (based on the opinion of leading experts in the field) that the MNA alternative would feasibly achieve the TCAO objectives, there is no justifiable basis for omitting this alternative from the DEIR. Nor is there any justification for failing to provide a reasoned analysis in response to comments on the DEIR, submitted by the expert authors of the Shipyard Report, urging that MNA should be studied and adopted by the Regional Board. Conclusory responses to comments that fail to address the opinions of experts casting doubt on the adequacy of the EIR are invalid. *E.g., Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm'rs*, 91 Cal. App. 4th 1344, 1371 (2001).

Given the recommendation of the Shipyard Report and based on the other evidence cited in NASSCO's initial CEQA comments, there can be no dispute that there is substantial evidence within the Administrative Record showing that the MNA alternative can feasibly attain the Project Objectives. CEQA Guidelines § 15384 (b) ("substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts."). As such, there is no basis for exclusion of the MNA alternative from detailed consideration in the EIR, which prevents the public from understanding clearly the basis for any ultimate decision to pass over the environmentally preferred MNA alternative and accept the significant environmental impacts and extensive mitigation requirements associated with the proposed Project (or the other dredging alternatives). Only in this manner can the EIR foster CEQA's goal of informed decision-making and public participation.

The Responses also state without analysis that MNA is insufficient because it would result in adverse impacts to beneficial uses over an extended period of time. For the reasons explained in Section V of this letter, however, this statement is dependent upon the hypothetical baseline used in the EIR, which relied upon unrealistic assumptions in the DTR—rather than existing conditions at the Site—and thus is not permitted under CEQA. Because no such risks are found when realistic assumptions are utilized (as explained in NASSCO's initial CEQA comments), this statement is unsupported and is an insufficient basis for refusing to consider the MNA alternative. For the same reason, the Responses' stated reliance on TCAO Response to

Comment numbers 1.1, 31.1 and 32.1 is unhelpful, as those responses dismiss MNA based primarily on the same erroneous conclusions regarding risk to beneficial uses at the Site.²

Response 32.1 concedes that sediment sampling conducted in July 2009 demonstrated lower COC concentrations than sampling conducted in 2001 and 2003. The Cleanup Team contends nonetheless that “[e]ach sediment sample is unique” so that it cannot be determined if natural attenuation is occurring based on the 2009 samples. Appendix D, at 32-5. But this concern would also apply to any post-dredge sampling, and cannot properly be used to dismiss the results of the 2009 testing, which may well be attributable to natural attenuation. Accepting the Cleanup Team’s reasoning, one could never confirm that lower COC concentrations are the result of any remedial action taken.

Response 32.1 goes on to state that additional data is needed to confirm that natural attenuation is responsible for the lower COC concentrations observed in 2009. Rather than supporting rejection of MNA, however, this statement at best supports further sampling now, to better understand if natural attenuation is achieving the goals of the TCAO before accepting the significant environmental impacts and associated costs that will result from the proposed dredging. This is but one reason why the MNA alternative needs to be evaluated in the EIR, so the public and decision-makers can weigh the environmental costs and benefits of the proposed Project before it is too late.

Finally, the Responses state that NASSCO participated in working group meetings in fall 2010 where the range of alternatives to be evaluated was discussed. RTC, at 80. To the extent the Cleanup Team is of the position that working group discussions can take the place of analysis required to be included in the publicly disseminated EIR, NASSCO disagrees. Such a position finds no support in CEQA.

V. THE FEIR’S HYPOTHETICAL BASELINE VIOLATES CEQA

NASSCO’s initial CEQA comments explained that the “baseline” in an EIR, against which the potential environmental impacts of a project are measured, must be premised on “existing physical conditions” and not hypothetical situations. *E.g.*, *Communities for a Better Env’t v. South Coast Air Quality Mgmt. Dist.*, 48 Cal. 4th 310, 316, 319, 321 n. 7 (2010); *Sunnyvale West Neighborhood Ass’n v. City of Sunnyvale*, 190 Cal. App. 4th 1351, 1373 (2010). Rather than adhering to this mandate, the DEIR assumes (without providing any factual or analytical support) that Site sediments present risks to aquatic life, aquatic-dependent wildlife and human health beneficial uses. These assumptions color the entire CEQA review, including the Project Objectives and the analysis of alternatives and mitigation measures, and go to the heart of the decision whether the proposed Project should be pursued notwithstanding its undisputed environmental impacts.

² Moreover, the basis of any decision to exclude the MNA alternative from detailed consideration needs to be set forth in the text of the EIR, not in an appendix. *See, e.g.*, *Santa Clarity Org. for Planning v. County of L.A.*, 106 Cal. App. 4th 715, 722-23 (2003).

In response, the FEIR states that the Water Code "demands that the San Diego Water Board make reasonably conservative and environmentally protective assumptions about exposure, consumption, and risk in determining potential effects to beneficial uses from the pollutants accumulated in the sediment." RTC, at 76. This response proves NASSCO's point: the FEIR has admittedly morphed the applicable regulatory mandate by using unrealistic assumptions from the DTR to establish the CEQA baseline. Because CEQA requires the baseline to reflect actual, existing conditions, the FEIR is invalid.

It is telling that the Responses make no attempt to argue that the baseline is compliant with CEQA, or that it reflects existing conditions. The only response is that the DTR allegedly complied with the Water Code, and therefore it was proper for the DEIR to adopt wholesale the DTR's conclusions. RTC, at 76. This is incorrect. Likewise, the Responses purport to rely on the extent and duration of the studies that underlie the DTR, while failing to muster any opposition to the point that the DTR's conclusions of harm to beneficial uses (derived from such studies) are predicated on hypothetical assumptions rather than existing conditions. RTC, at 97.

The Responses fail to address NASSCO's comment that information in the DTR and the Administrative Record shows no risk to aquatic-life, aquatic-dependent wildlife or human health beneficial uses. Instead, the Responses state that "the comment references the DTR . . . not the Draft PEIR" and thus "is not a comment on the environmental analysis contained in the Draft PEIR." RTC, at 99. But the FEIR cannot rely on the DTR as the only support for its baseline assumption that sediments at the Site present risk to beneficial uses, and then refuse to respond to comments challenging the DTR's conclusions on the grounds that the comments do not raise CEQA issues.

In other areas, the Responses refuse to acknowledge the dispositive role that hypothetical assumptions played in the DTR's conclusions of harm to beneficial uses. NASSCO's initial comments explained that the DTR's finding of risk to human health was based on the assumption that subsistence anglers fish at the Shipyard and would derive their entire daily protein source from fish caught at the shipyard every day for 70 years. NASSCO pointed out that this assumption is entirely unrealistic, since no fishing is allowed at the Shipyards, which maintain strict security requirements due to work for the U.S. Navy. Despite its prior reliance on the DTR to inform the DEIR's baseline; despite the fact that the DTR's finding of risk to human health unquestionably relies upon this assumption; and despite the fact that this assumption has no connection to existing conditions at the Site, the Responses state without explanation that "[t]he EIR does not rely on an assumption that fishing occurs at the shipyards." RTC, at 101. This does not qualify as the "reasoned analysis" that CEQA requires. If the FEIR truly does not assume fishing takes place at the Shipyards, then it must explain the basis for its finding of risk to human health beneficial uses, or be revised and recirculated to state clearly that there are no such risks.

In addition, for example, the Responses concede that the DEIR shows that the DTR's assumption that a least tern would consume 100% of its diet from the Site is unrealistic, but fails to square this concession with the fact that the DTR's conclusion of risk to aquatic-dependent wildlife at the Site (relied on in the FEIR's baseline) depends on this very same assumption. RTC, at 100. The Responses also acknowledge that the DEIR relied upon the assumption that

special status species forage exclusively at the Site, but fail to address or respond to NASSCO's point that this assumption is unrealistic, does not reflect existing conditions at the Site, and is not appropriate for use in setting the CEQA baseline. *Id.*

The Responses cross-reference TCAO Response to Comment numbers 24.1 and 28.1, which address the assumptions used in the aquatic-dependent and human health beneficial use impairment analyses, respectively. These TCAO responses confirm NASSCO's position that the assumptions used are not based on existing conditions. For example, Response 24.1 states "[t]he Cleanup Team's selection of an AUF of 1.0 in the risk analysis may overestimate the exposure of the receptors to Site contaminants" because it does not account for the receptor's actual foraging activities. Appendix D, at 24-5. Further, the Cleanup Team concedes that the Site contains active industrial uses that would discourage foraging by aquatic-dependent wildlife species, but speculates that in the future (sometime after the current lease expires in 2040) the land use may change and the Site could be transformed into an attractive spot for wildlife feeding. *Id.* at 24-6. In other words, the baseline is premised on assumptions derived from speculated future uses of the Site that might or might not occur in 30 years. Finally, it also is worth noting that Response 24.1 concedes that the Cleanup Team deviated from EPA Guidance in order to use even more conservative assumptions than those recommended by EPA. *Id.* at 24-4 and 24-6. Whether or not this is appropriate in the context of the Water Code, it is impermissible under CEQA.

Similarly, Response 28.1 concedes the human health analysis relied on the "assumption that recreational and subsistence anglers catch and consume 100 percent of their seafood from the Shipyard Sediment Site," even though security restrictions admittedly preclude fishing at the Site. Appendix D, at 28-5.

Finally, the Responses state that elevated levels of pollutants were found in sediments at the Site and present risk of a condition of pollution and harm to beneficial uses. RTC, at 76. But the Responses do not address NASSCO's comment that the alleged harm to beneficial uses is based on extremely conservative and unrealistic assumptions, or NASSCO's request that the Cleanup Team use realistic assumptions—based on actual conditions—to inform the CEQA analysis. The Responses therefore are inadequate. *California Oak Found. v. City of Santa Clarita*, 133 Cal. App. 4th 1219, 1236-37 (2005) (CEQA response to comment invalid where it is "completely devoid of any direct discussion" of the comment submitted and "provided no analysis of the point.").

VI. CEQA PRECLUDES ADOPTION OF THE CONVAIR LAGOON ALTERNATIVE IN PLACE OF THE PROPOSED PROJECT

A. The Responses Confirm That Alternative 3 Is Environmentally Inferior To The Proposed Project, And Infeasible

At the outset, NASSCO is pleased with the Cleanup Team's statement that the Convair Lagoon Alternative ("Alternative 3") is not "the preferred course of action," and that Alternative 3 is environmentally inferior to the proposed Project. RTC, at 130 ("The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed

project in multiple areas, most significantly including water quality and biological resources.”); *id.* at 138 (“The San Diego Water Board Cleanup Team agrees with the comments regarding the loss of eelgrass, intertidal and open water habitat . . . the scale, geographic location, and status of the eelgrass beds as an existing mitigation site *clearly* classifies Alternative 3 as *not* Environmentally Superior to the proposed project.”) (emphasis added). The Responses also state that the Cleanup Team “concur[s]” with expert-prepared comments submitted on behalf NASSCO indicating Alternative 3 has “increased impacts to aquatic habitat compared to the proposed project.” RTC, at 162 (responding to Comment O-3-190); *see also* FEIR, Appendix C, Comment O-3-190 (“[o]ne obvious negative aspect of Alternative 3 is the dramatically greater loss of aquatic habitat . . . due to the destruction of existing habitat in the CDF area, which is diverse and of relatively high quality.”).

The Responses also appear to acknowledge that Alternative 3 (without further analysis) should be treated as causing a significant impact to water quality, hazards and hazardous materials, and marine biological resources, given that the FEIR fails to analyze in sufficient detail the risk that contaminated sediment placed into the CDF will escape and recontaminate another portion of the Bay. Rather than refuting or directly addressing this comment, the Responses indicate Alternative 3 would “also” result in significant unavoidable impacts to air quality. RTC, at 135-36 (Comment O-3-121).

Given the additional significant and potentially significant impacts of Alternative 3, and its additional mitigation requirements (with their own resulting impacts and mitigation requirements),³ the Regional Board should clearly and expressly identify Alternative 3 as environmentally inferior to the proposed Project, consistent with the above-referenced Responses and the text of the DEIR.

We also note that the Responses acknowledge the “substantial regulatory obstacles” and associated issues that could prevent implementation of Alternative 3; in particular, the requirement to achieve upland source control from Convair Lagoon (to the satisfaction of the State Board) before Alternative 3 could be implemented. RTC, at 177-78. Thus, the Cleanup Team determined that “[e]ven assuming that a CDF could be permitted at Convair Lagoon, *it is unlikely that it could be permitted in time to meet the contemplated TCAO implementation schedule.*” *Id.* (emphasis added).

³ NASSCO’s comments pointed out that Alternative 3 required additional mitigation measures, the success of which was uncertain, and that these additional mitigation measures would cause significant environmental impacts of their own requiring even further mitigation, weighing heavily against adoption of Alternative 3. The Responses fail to respond to this comment directly, so it is assumed that the Cleanup Team agrees. RTC, at 140-41 (Comment O-3-135).

Because the Cleanup Team does not specifically respond to comments requesting information on the anticipated time it would take to achieve control (of a still uncertain)⁴ source of contaminants to Convair Lagoon, (RTC, at 136), and then obtain all necessary permitting, the Regional Board must make clear that Alternative 3 is not feasible, and therefore cannot be adopted in place of the proposed Project. CEQA Guidelines § 15364 (“‘feasible’ means capable of being accomplished in a successful manner *within a reasonable period of time*, taking into account economic, environmental, legal, social, and technological factors.”) (emphasis added); RTC, at 74 (asserting MNA is infeasible because it allegedly could not implement TCAO remediation goals “in a reasonable period of time.”). Since the Cleanup Team asserts that MNA is infeasible because it cannot be accomplished in a reasonable period of time (a point NASSCO disputes), it cannot make a contrary determination as to Alternative 3.

Alternative 3 is infeasible for the additional reason that it is not clear at this point whether Alternative 3 *could* ultimately be permitted, regardless of the anticipated delays that would arise. RTC, at 136, 177-78.

Since Alternative 3 is not environmentally preferable to the Project (indeed, quite the opposite), and since it cannot feasibly accomplish Project Objectives in a reasonable time period, there is no basis for including a detailed analysis of the alternative in the DEIR. *See* CEQA Guidelines § 15126.6(a) (“EIR shall describe a range of reasonable alternatives . . . which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.”).⁵ In any event, it certainly would not be permissible under CEQA for the Regional Board to adopt Alternative 3 in place of the proposed Project.

B. The Responses Confirm Alternative 3 Could Not Be Adopted Without Additional CEQA Review

As noted in NASSCO’s DEIR Comments, it is quite unusual that approximately 31% of the DEIR is devoted solely to Alternative 3. Given this extensive treatment, it seemed possible that the Cleanup Team viewed the analysis as sufficient to adopt Alternative 3 in lieu of the Project at the upcoming hearing. We understand from the Responses, however, that the Cleanup Team believes additional “site specific” CEQA review would be necessary prior to adopting Alternative 3 (or any other dredging alternative). RTC, at 130-31. Such review, by way of example but without limitation, would be required to evaluate whether the proposed CDF would adequately protect against contaminated sediment escaping from the CDF and recontaminating the Bay. RTC, at 128-29 (Response O-3-105, the “integrity of an engineered cap [proposed in

⁴ The Responses acknowledge that the source of contamination to Convair Lagoon is not known with certainty. RTC, at 177, 136-37.

⁵ For reasons discussed below, any argument that the Port District’s “special status” as a responsible agency warrants evaluation of its proposed alternative, even though the alternative is infeasible and causes more environmental harm than the proposed Project, is inconsistent with CEQA.

Alternative 2] . . . notably would also be subject to further environmental review . . . [n]o reported CEQA case has suggested or required a level of detail similar to that of the proposed project [for an alternative] . . .”); RTC, at 136-37 (referencing Response O-3-105 as also applying to the need for additional analysis of the integrity of Alternative 3’s CDF).

In fact, the Responses’ acknowledgment that additional CEQA review is needed to determine if the proposed CDF is sufficient to sequester the contaminated sediment serves as a concession that there is no substantial evidence supporting a contrary conclusion, and that the Regional Board therefore must treat Alternative 3 as causing a significant impact to water quality, hazards and hazardous materials, and marine biological resources. CEQA does not permit a lead agency to defer assessment of environmental impacts or the development of mitigation for same. *E.g., Communities for a Better Env’t v. City of Richmond*, 184 Cal. App. 4th 70, 95 (2010).

The Responses likewise defer analysis regarding a host of issues pertaining to the feasibility of Alternative 3, confirming the Cleanup Team’s apparent position that the FEIR has not conducted sufficient analysis to make a determination as to the feasibility of Alternative 3 and its numerous required mitigations. RTC, at 164-66 (Comments O-3-193-199).

Another key omission in the analysis of Alternative 3 is a description of the contemplated future use of the Convair Lagoon parcel, beyond serving as a CDF. The analysis is critical, because, as stated in Exponent’s comments, the proposed design is unlikely to be capable of supporting any structure or redevelopment without significant risk of containment failure. CEQA requires environmental review at the earliest possible time, and an agency may not defer evaluation of impacts from foreseeable future activities simply because such activities have not formally been approved. *E.g., Laurel Heights Improvement Ass’n v. Regents of Univ. of Cal.*, 47 Cal. 3d 376, 394-95 (1988); *Vineyard Area Citizens*, 40 Cal. 4th at 431 (CEQA “is not satisfied by simply stating information will be provided in the future” and “[t]iering does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis . . .”). Any contemplated uses of the Convair Lagoon parcel should be made clear as part of the analysis of Alternative 3, so that the environmental consequences of those uses can be assessed at this time.

C. The Port District Received Improper Special Treatment With Regard To Alternative 3

NASSCO’s initial CEQA comments explained that it was improper for the Regional Board to allow the Port District to prepare its own alternative, with its own consultants, that comprised approximately 31% of the entire DEIR, particularly when the alternative would result in significant financial benefits for the Port District. The Responses do not provide the good faith, reasoned analysis required by CEQA.

First, the Responses state that the inclusion of detailed analysis on Alternative 3 was merely “intended to illuminate the potential effects of such an alternative and to inform the decision-makers.” RTC, at 133. But that should be the purpose of each alternative considered,

and provides no basis for affording special consideration to a single alternative championed by one of the many Designated Parties to the TCAO proceeding.

Second, the Responses state that the Port District is entitled to special treatment because it is a responsible agency with some discretionary authority over the Project, and is not a private entity like the Shipyards. RTC, at 174-75. The Responses further indicate that, as a responsible agency, the Port District was entitled to request a meeting to discuss the EIR under Public Resources Code section 21080.4(b). *Id.* But these arguments do not apply in the context of the proposed Project. Like the Shipyards and other Designated Parties, the Port District is a named party to the TCAO, and is asserted to have primary liability for the alleged sediment contamination at the Site. It thus stands on equal footing with the other parties, will be liable for its equitable portion of the cleanup costs, and should not be afforded any special "status" because it is also a responsible agency.

CEQA is an environmental protection statute, and its provisions regarding responsible agencies are intended to further that goal. No provision in CEQA supports a finding that an entity's status as a responsible agency allows the entity to use that status to pursue financial or other gain. The FEIR's treatment of Alternative 3 reflects bias in favor of the Port District.

D. Alternative 3 Conflicts With Port Master Plan Goals

NASSCO commented that Alternative 3 is inconsistent with Port Master Plan ("PMP") Goal X, requiring protection of the waters of the state, because Alternative 3 would eliminate 10 acres of water by converting it to upland habitat. In response, the Cleanup Team contends that eliminating water can still protect the "quality" of that water, and that Alternative 3 does not conflict with this PMP goal. RTC, at 139. This argument contradicts the plain terms of the PMP.

The Cleanup Team also argues that its interpretation is supported by the opinion of the Port District, as expressed in private consultations, and thus is supported by "expert opinion." But no evidence of any interpretation by the Port District is included in the record, and no deference is warranted on the basis of an interpretation that was advanced in private conversations. *See McPherson v. City of Manhattan Beach*, 78 Cal. App. 4th 1252, 1266 n.6 (2000). Moreover, deference is never warranted to an interpretation that conflicts with the plain terms of a document, which a reviewing court will interpret as a matter of law. *See id.*

Likewise, Alternative 3 conflicts with PMP Goal XI, which requires natural resources to be protected, preserved and enhanced, because Alternative 3 will destroy up to six acres of eelgrass at the Convair site, and destroy the benthic community, and thus cannot be said to "preserve" the same. RTC, at 139-40. The creation of eelgrass off-site will not preserve the eelgrass currently existing at the site.

For these reasons, Alternative 3 will cause a significant impact regarding consistency with local policies and ordinances, and the FEIR is deficient for failing to so state.

VII. RECIRCULATION IS REQUIRED

Because the FEIR and the Responses fail to address meaningfully the concerns raised in NASSCO's comments on the DEIR, NASSCO reiterates that the FEIR requires recirculation, for the reasons previously stated as well as those set forth herein.

VIII. THE FEIR'S ASSUMPTION THAT 15% OF THE DREDGED MATERIAL WILL BE "HAZARDOUS" IS NOT SUPPORTED BY SUBSTANTIAL EVIDENCE

Comments submitted by NASSCO and other parties noted the lack of support for the DEIR's assumption that 15% of the material proposed to be dredged will be "hazardous." The Responses indicate that this assumption was determined by Regional Board staff, and "[m]ore specific information is not necessary." RTC, at 77. But one of the key purposes of an EIR is to foster informed decision-making and public participation; this purpose is not satisfied by statements that staff reached a given conclusion but will not provide information used to support that conclusion. See *California Oak Foundation*, 133 Cal. App. 4th at 1237 ("[t]o facilitate CEQA's informational role, the EIR must contain facts and analysis, not just the agency's bare conclusions or opinions."). Thus, the Responses' admitted reliance on the bare conclusion of Regional Board staff is insufficient under CEQA, and also constitutes a failure to adequately respond to comments. See *People v. County of Kern*, 62 Cal. App. 3d 761, 770, 772 (1976) ("conclusionary statement unsupported by empirical or experimental data, scientific authorities, or explanatory information of any kind" does not constitute good faith, reasoned response to comment, particularly where the agency "fail[s] to identify in any manner the data available to it upon which it reaches its conclusion . . .").

Nor is it appropriate to defer an adequate analysis of the likely extent of contaminated sediment included in the remedial footprint, as suggested by the Responses. RTC, at 77 ("Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA."). Given that this assumption underlies all of the environmental impact areas assessed for the Project and the dredging alternatives, it demands thorough analysis at this time.

IX. THE CUMULATIVE IMPACTS ANALYSIS FAILS ADEQUATELY TO EVALUATE REASONABLY ANTICIPATED FUTURE DREDGING PROJECTS

NASSCO's comments on the DEIR noted that the cumulative impacts analysis does not address the potential impacts of the Project when considered cumulatively with other reasonably anticipated future dredging projects. Although the DEIR estimates that 245,000 cubic yards of sediment is dredged annually from San Diego Bay, the Responses state that no specific information regarding any future dredging projects could be obtained. E.g., RTC, at 117 ("it is difficult or impossible to predict the timing that various areas within the Bay will require dredging."). The Responses also state, however, that permitting for dredging occurs after applications have been received, and that applications for dredging approvals and permits are available on the Regional Board's website. RTC, at 119. Based on this response, this information should have been obtained and included in the FEIR, in order to provide an accurate forecast for the cumulative impacts analysis.

The Responses go on to state that future dredging was estimated based on historical records, and that this estimate was used to analyze cumulative impacts. RTC, at 116. But this is incorrect; the FEIR does not analyze the proposed Project's impacts when considered cumulatively with the expected impacts of other dredging projects. No discussion of the expected impacts from other dredging projects is included. Accordingly, the cumulative impacts analysis is deficient.

In response to NASSCO's request for information regarding whether other dredging projects are subject to CEQA review, the Responses state that "CEQA review has been required for the referenced previous dredging projects that required issuance of a Certification of Water Quality or Waste Discharge Requirements." RTC, at 118. But this statement is unhelpful because no previous dredging projects are specifically referenced.

X. THE ANALYSIS OF THE "NO PROJECT" ALTERNATIVE IS FLAWED

The DEIR's conclusion that the "no project" alternative presents risk to aquatic life, aquatic-dependent wildlife and human health beneficial uses, and would perpetuate a "public nuisance" at the Site, is predicated entirely on the DEIR's hypothetical baseline, which admittedly was derived from the analysis in the DTR (using unrealistic assumptions) and does not reflect actual, existing conditions at the Site. RTC, at 126-27. For the reasons explained above, CEQA does not permit use of a hypothetical baseline, and the decision to do so invalidates the FEIR, including these statements regarding the "no project" alternative.

XI. THE ANALYSIS OF ALTERNATIVES 2 AND 4 IS FLAWED

With regard to the confined aquatic disposal ("CAD") facility proposed in Alternative 2, NASSCO commented that the DEIR fails to provide sufficient analysis to determine whether or not the CAD would maintain integrity and prevent contaminated sediments from escaping, which is further complicated by the DEIR's failure to identify any proposed locations for the CAD, precluding assessment of whether the alternative is feasible. RTC, at 127-29. The exact same concerns apply with respect to the CDF contemplated by Alternative 4. RTC, at 131-32.

The Responses state that the requested level of detail is not required at this time (because these are only alternatives), and that further "site specific" environmental review would be required under CEQA before either approach could be approved. Given this concession, the FEIR should treat each alternative as causing significant impacts to marine biological resources, hydrology and water quality (and any other areas affected by a breach of the CAD/CDF), and also treat each alternative as environmentally inferior to the proposed Project. Neither alternative may be approved now, given these additional significant impacts relative to the proposed Project. In addition, approval of the alternatives at this time is precluded because assessment of potentially significant environmental impacts and associated mitigation requirements may not be deferred. *E.g., Communities for a Better Env't v. City of Richmond*, 184 Cal. App. 4th 70, 95 (2010). It is also difficult if not impossible to assess the feasibility of a proposed CDF/CAD without identifying the proposed location of same.

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It is noteworthy that the Responses do not squarely address the substantially different level of treatment afforded Alternative 3 as opposed to Alternatives 2 and 4. If, as the Responses contend, the robust description of Alternative 3 was needed "to illuminate the potential effects of such an alternative and to inform the decision-makers," (RTC, at 136), an explanation should also be provided as to whether or not the substantially less-detailed analysis of Alternatives 2 and 4 was sufficient for that purpose.

XII. THE PROJECT IS CATEGORICALLY EXEMPT FROM CEQA REVIEW

NASSCO's initial CEQA comments detailed the reasons why NASSCO believes the Project is categorically exempt from CEQA and no "unusual circumstances" apply to overcome the exemption, inasmuch as the proposed dredging of 143,000 cubic yards admittedly "falls within the historic ranges for the yearly overall volume of dredging activity in San Diego Bay." DEIR, at 4-2 (annual average of 245,000 cubic yards of sediment is dredged from the Bay). The Responses indicate that the lead agency has discretion to determine whether or not the Project is categorically exempt, which is not in dispute. RTC, at 145. But the lead agency's decision must be supported by substantial evidence in the administrative record. For the reasons explained in NASSCO's DEIR comments, no substantial evidence exists to support a finding of unusual circumstances here.

The Responses also indicate that the Regional Board may distinguish between maintenance and environmental dredging, (RTC, at 147), but provide no analysis of the extent to which the annual sediment dredging figures provided in the DEIR involve maintenance versus environmental dredging, or the extent to which (or reasons why) one type of dredging requires environmental review while the other does not. To the contrary, the Cleanup Team elected not to provide the records of annual dredging in San Diego Bay between 1994-2005, relied upon in the DEIR, in response to a direct request by NASSCO. Instead, the Cleanup Team stated that NASSCO should submit a Public Records Act request and then file a motion to have the documents admitted into the TCAO proceeding. CEQA's informational purpose is not fulfilled when highly relevant information is not included in the EIR or disclosed in response to comments, and the burden is shifted to the public to submit Public Records Act requests to obtain same.

Thank you for your consideration of these comments.

Very truly yours,



Jeffrey P. Carlin
of LATHAM & WATKINS LLP

cc: Frank Melbourn and Catherine Hagan, on behalf of the Advisory Team
Designated Parties (per attached proof of service)

PROOF OF SERVICE

I am employed in the County of San Diego, State of California. I am over the age of 18 years and not a party to this action. My business address is Latham & Watkins LLP, 600 West Broadway, Suite 1800, San Diego, CA 92101-3375.

On **October 19, 2011**, I served the following document described as:

**NASSCO'S COMMENTS ON THE PROPOSED FINAL ENVIRONMENTAL
IMPACT REPORT FOR THE SHIPYARD SEDIMENT REMEDIATION
PROJECT (SCH #2009111098)**

by serving a true copy of the above-described document in the following manner:

BY ELECTRONIC MAIL

Upon written agreement by the parties, the above-described document was transmitted via electronic mail to the parties noted below on **October 19, 2011**.

BY HAND DELIVERY

I am familiar with the office practice of Latham & Watkins LLP for collecting and processing documents for hand delivery by a messenger courier service or a registered process server. Under that practice, documents are deposited to the Latham & Watkins LLP personnel responsible for dispatching a messenger courier service or registered process server for the delivery of documents by hand in accordance with the instructions provided to the messenger courier service or registered process server; such documents are delivered to a messenger courier service or registered process server on that same day in the ordinary course of business. I caused a sealed envelope or package containing the above-described document and addressed as set forth below in accordance with the office practice of Latham & Watkins LLP for collecting and processing documents for hand delivery by a messenger courier service or a registered process server.

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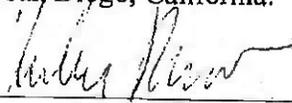
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I declare that I am employed in the office of a member of the Bar of, or permitted to practice before, this Court at whose direction the service was made and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on **October 19, 2011**, at San Diego, California.

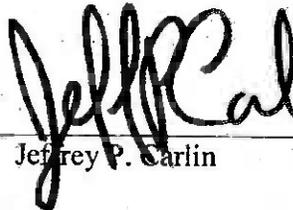


Andrea Rasco

Certification of Authenticity of Electronic Submittal

I, Jeffrey P. Carlin, declare:

I am an associate at Latham & Watkins LLP, counsel of record for National Steel and Shipbuilding Company ("NASSCO") in the Matter of Tentative Cleanup and Abatement Order R9-2011-0001 before the San Diego Regional Water Quality Control Board ("Water Board"). I am licensed to practice law in the State of California and make this declaration as an authorized representative for NASSCO. I declare under penalty of perjury under the laws of the State of California that the electronic version of NASSCO's Comments on the Proposed Final Environmental Impact Report for the Shipyard Sediment Remediation Project (SCH #2009111098), submitted to the "Water Board" and served on the Designated Parties by e-mail on October 19, 2011, is a true and accurate copy of the submitted signed original. Executed this 19th day of October 2011, in San Diego, California.



Jeffrey P. Carlin

Attachment F

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LATHAM & WATKINS LLP

February 24, 2012

VIA EMAIL AND U.S. MAIL

Frank Melbourn
San Diego Regional Water Quality Control Board
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Milan
File No. 048876-0002

Re: San Diego Shipyard Sediment Site – Notice of Public Hearing for Tentative Cleanup and Abatement Order No. R9-2012-0024 and Tentative Resolution No. R9-2012-0025

Dear Mr. Melbourn:

Designated Party National Steel and Shipbuilding Company (“NASSCO”) submits the following comments regarding the revised Tentative Cleanup and Abatement Order No. R9-2012-0024 (“CAO”) and Tentative Resolution No. R9-2012-0025 (“EIR”).¹

A. The Regional Board Should Not Delete The Language Indicating That Cleanup Of The Remedial Footprint Will Restore Any Injury, Destruction, Or Loss Of Natural Resources

In the revised order, the panel proposes deleting the Regional Board staff’s finding that “[c]leanup of the remedial footprint will restore any injury, destruction, or loss of natural resources;” however, there has been no finding to the contrary, nor is there substantial evidence

Pursuant to the Presiding Officer’s instruction in the Notice of Public Hearing, NASSCO’s comments herein address the revisions to the Tentative CAO, Draft Technical Report, and Final Environmental Impact Report issued on February 13, 2012; however, NASSCO reiterates and preserves all comments and arguments previously made in these proceedings. In the event that the San Diego Regional Water Quality Control Board (the “Regional Board”) proposes any material changes to the panel’s recommendation, NASSCO also reserves its right to complete the administrative process delineated in the Final Discovery Plan with respect to such material changes, including rights to conduct discovery, to cross-examine witnesses, and to submit rebuttal evidence, comments, and initial and final briefs, subject to revised deadlines to be set by the Regional Board or its designated Presiding Officer.

(or *any* evidence) in the record indicating that cleanup of the remedial footprint will fail to restore any such alleged impairments to natural resources. Accordingly, the Cleanup Team's finding should not be disturbed.

B. There Is No Evidence Indicating That Sediments At NASSCO Are Causing The Bay's Narrative Water Quality Objective For Toxicity Not To Be Attained

In the revised order, the panel proposes adding a finding that site pollutants are "causing the Bay's narrative water quality objective for toxicity to not be attained;" however, there is no evidence indicating that sediments at NASSCO are toxic. To the contrary, the record is clear that sediments at NASSCO generally meet reference conditions with respect to toxicity.

First, not a single sediment sampling location at NASSCO had "high" toxicity, and the majority of toxicity tests met background reference conditions for *every* station. *See* DTR, Table 18-9.

Second, the Regional Board previously used multiple lines of evidence under the "triad" approach for determining exceedances of toxicity to aquatic life in its 303(d) listing process. *See* Draft Technical Report ("DTR"), Appendix 12. Applying the triad approach to the NASSCO site, the CAO concluded that only a single station at NASSCO – NA19 – was likely impaired for the aquatic life beneficial use. *See* DTR, Table 18-1. Even assuming that station NA19 is likely impaired (which NASSCO disputes), the water body segment at NASSCO would still not be listed as impaired for toxicity under the 303(d) policy. As NASSCO presented at the hearing in November, the 303(d) policy allows for 3-6 exceedances before a water body segment is deemed to be impaired; however, the Cleanup Team alleged only one exceedance at the NASSCO site.

Moreover, there is no evidence that site-related chemicals (as compared to physical disturbances or other factors) are causing any apparent benthic effects, and there is overwhelming evidence in the record that there is no correlation between concentrations of site chemicals and toxicity.

Finally, based on the direct measurements of the health of aquatic life at NASSCO, sediment conditions are not "causing the Bay's narrative water quality objective for toxicity to not be attained." All stations at NASSCO (52 out of 52 tests) met reference conditions for benthic community health according to the Cleanup Team. *See* DTR, Table 18-13, and NASSCO opening presentation at 10.

Accordingly, the revised finding is not supported by the record, and should be rejected.

C. The Regional Board's Oversight Costs Should Be Addressed Separately From The Adoption Of The CAO And EIR

Pursuant to revised Finding 41 of the CAO, the Regional Board now seeks to recover an array of oversight costs in excess of \$1,885,848; however, these claims were added to the Tentative CAO late in the process—without providing the Designated Parties an opportunity to brief the issue—and have not been adequately supported by the Cleanup Team to date. For

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example, while the Regional Board staff has provided some invoices supporting its claims, the documentation provided does not satisfy the requirements of sections 13304 and 13365, as described below. Moreover, the Regional Board seeks to recover substantial costs related to the digitization and indexing of the voluminous administrative record, even though many of the documents included were not relevant to assessing the impacts to beneficial uses at the site (or related to the site at all), and NASSCO previously objected to such costs as unreasonable before they were incurred.

Further, certain of the claims for oversight costs may be time-barred, and the Regional Board staff may otherwise be estopped from recovering the oversight costs due to failure to comply with applicable processes for cost-recovery, including semi-annual billing. The agency's invoices date back as much as a decade and many of them were never properly issued.

In order to ensure that the parties have a full and fair opportunity to vet the oversight costs claimed by the Regional Board, NASSCO respectfully requests that the Regional Board (1) revise Finding 41 to indicate only that the Regional Board intends to seek oversight costs, and (2) hold a separate hearing to determine the extent to which the Regional Board has incurred recoverable oversight costs, including the specific amounts that the Regional Board seeks to recover. If the costs are found to meet the applicable substantive and procedural legal standards for recovery, NASSCO agrees to fund its pro rata share.

1. The Regional Board Must Specify The Oversight Costs For Which It Seeks Recovery, And Demonstrate That Such Expenditures Were Actually Incurred And Reasonable

To recover oversight costs, the Regional Board must provide sufficient documentation that the claimed costs were "*reasonable* costs actually incurred in cleaning up the waste, abating the effects of the waste, supervising cleanup or abatement activities, or taking other remedial action," as required under Water Code sections 13304 and 13365 (emphasis added). Under the plain terms of Water Code sections 13304 and 13365, the Regional Board may not recover any amount without first providing the bill, and a daily detail of work performed and time spent by each employee and contractor employee sufficient to prove that the expenditure was "*reasonable*." *Id.* Section 13365 further provides that such invoices must be "issued not less than semi-annually," and that the agency must provide copies of time records and other materials supporting each invoice within thirty days, upon request of the discharger.

While the Regional Board staff has provided some invoices supporting its claims, the documentation provided to date is incomplete in many respects, and does not satisfy the requirements of sections 13304 and 13365. Specifically, many of the invoices provided do not permit an evaluation of whether the listed costs were reasonably incurred because they do not contain any description of what tasks were performed. For example, the Cleanup Team, to support its claims for unreimbursed staff oversight costs, provided a table indicating the number of hours each staff member worked each fiscal year, and the corresponding hourly rate, but no description of the tasks performed. Indeed, there is no evidence that the time was even spent on this matter or another site. Moreover, while the Cleanup Team cites "budget constraints" as the reason why these costs were not claimed previously, it provides no explanation indicating why

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budget constraints prevented it from making a timely claim for these costs. Likewise, certain OEHHA invoices provided by the Cleanup Team also fail to provide any description of the work performed, referring only to a State Water Resources Control Board Work Transmittal Form that does not appear to have been included in the Cleanup Team's supporting documentation.

2. Oversight Costs Related To Digitization Of The Administrative Record Are Not Reimbursable Under The California Water Code

NASSCO also objects to the Regional Board's recovery of costs relating to the digitization and indexing of the voluminous set of documents that it claims constitutes the administrative record. As NASSCO made clear when this expense was proposed *more than five years ago*, it is neither fair nor reasonable for the Regional Board to spend, and seek recovery of, enormous sums of money to scan and index *130 linear feet* of documents, most of which bear, at best, only a tangential relationship to the alleged impacts of shipyard sediments on beneficial uses of San Diego Bay. No party requested scanning of those documents, and there was no need to do so.

Under Water Code section 13304, recoverable costs are limited to those which are "reasonable." In the absence of any published court case or State Board opinion interpreting the meaning of "reasonable" recoverable costs under section 13304(c)(1), the term must be ascribed its plain meaning.²

NASSCO continues to believe that it is excessive and unreasonable to require the parties to pay to archive and index such a large, overbroad collection of documents, most of which have no bearing on whether site sediments adversely impact aquatic life, aquatic wildlife, or human health, or even relate to the site at all. This is especially true considering that the State Board and/or Regional Board already planned to undertake a pilot project to index many, or all, of the Regional Board's existing files. To the extent the indexing falls under the State Board's Document Imaging and Services Project -- a statewide imaging project not directly related to the shipyard matter -- such indexing would have taken place regardless of the Tentative CAO, and is not properly charged to the parties. Accordingly, NASSCO renews its objection to these costs, and will dispute any attempt by the Regional Board or State Board to seek reimbursement for costs associated with the Document Imaging Services Project.

² *People v. Johnson*, 28 Cal. 4th 240, 244 (2002) ("Because the statutory language is generally the most reliable indicator of [statutory] intent, we look first at the words themselves, giving them their usual and ordinary meaning and construing them in context."). Webster's Third New International Dictionary defines "reasonable" as "1. . . . b: being or remaining within the bounds of reason: not extreme: not excessive . . ." Likewise, Black's Law Dictionary, Ninth Edition (2009) defines "reasonable" as "1. fair, proper, or moderate under the circumstances."

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3. Oversight Costs More Than Three Years Old Are Time-Barred

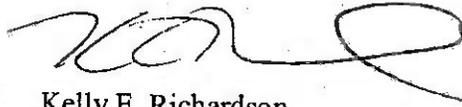
NASSCO is also concerned that a number of costs claimed by the Regional Board are time-barred. For the first time, the Regional Board seeks reimbursement for costs incurred as far back as 2002, without complying with the procedural requirements (including the issuance of timely semi-annual invoices) set forth in Water Code section 13365. Section 338 of the California Code of Civil Procedure provides a three year limitations period for cost recovery actions under Water Code section 13304; accordingly, NASSCO objects to costs over three years old as time-barred.

The amounts and backup information supporting the Regional Board's claimed oversight costs were not provided to the Designated Parties until November 2, 2011—only seven days before the hearing was scheduled to begin and after the deadline for comments on the Tentative CAO and Draft Technical Report had passed. Accordingly, to ensure that the Designated Parties have an opportunity to evaluate the Regional Board's claimed oversight costs without unnecessarily delaying the CAO process, NASSCO respectfully requests that the Regional Board hold a separate hearing to address the oversight costs claimed by the Regional Board.

Thank you in advance for your consideration of these important matters.

Respectfully submitted,

LATHAM & WATKINS LLP



Kelly E. Richardson
Attorneys for Designated Party NATIONAL
STEEL AND SHIPBUILDING COMPANY

PROOF OF SERVICE

I am employed in the County of San Diego, State of California. I am over the age of 18 years and not a party to this action. My business address is Latham & Watkins LLP, 600 West Broadway, Suite 1800, San Diego, CA 92101-3375.

On February 24, 2012, I served the following document described as:

**NASSCO'S COMMENTS ON TENTATIVE CLEANUP AND ABATEMENT
ORDER NO. R9-2012-0024 AND TENTATIVE RESOLUTION NO. R9-2012-0025**

by serving a true copy of the above-described document in the following manner:

BY ELECTRONIC MAIL

Upon written agreement by the parties, the above-described document was transmitted via electronic mail to the parties noted below on February 24, 2012.

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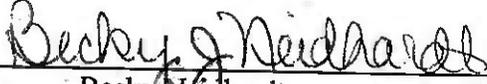
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I declare that I am employed in the office of a member of the Bar of, or permitted to practice before, this Court at whose direction the service was made and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on February 24, 2012, at San Diego, California.



Becky Neidhardt

EXHIBIT 3

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

CLEANUP AND ABATEMENT ORDER

NO. R9-2012-0024

NATIONAL STEEL AND SHIPBUILDING COMPANY

BAE SYSTEMS SAN DIEGO SHIP REPAIR, INC.

CITY OF SAN DIEGO

CAMPBELL INDUSTRIES

SAN DIEGO GAS AND ELECTRIC

UNITED STATES NAVY

SAN DIEGO UNIFIED PORT DISTRICT

SHIPYARD SEDIMENT SITE

SAN DIEGO BAY

SAN DIEGO, CALIFORNIA

The California Regional Water Quality Control Board, San Diego Region (hereinafter San Diego Water Board), finds as follows, based upon the weight of the evidence in this matter:

JURISDICTION

1. **WASTE DISCHARGE.** Elevated levels of pollutants above San Diego Bay background conditions exist in the San Diego Bay bottom marine sediment along the eastern shore of central San Diego Bay extending approximately from the Sampson Street Extension to the northwest and Chollas Creek to the southeast, and from the shoreline out to the San Diego Bay main shipping channel to the west. This area is hereinafter collectively referred to as the "Shipyard Sediment Site." The National Steel and Shipbuilding Company Shipyard facility (NASSCO), the BAE Systems San Diego Ship Repair Facility (BAE Systems), the City of San Diego, San Diego Marine Construction Company,¹ Campbell Industries (Campbell), San Diego Gas and Electric (SDG&E), the United States Navy, and the San Diego Unified Port District (Port District) have each caused or permitted the discharge of waste to the Shipyard Sediment Site resulting in the accumulation of waste in the marine sediment. The contaminated marine sediment has caused conditions of pollution, contamination or nuisance in San Diego Bay that adversely affect aquatic life, aquatic-dependent wildlife, and human health San Diego Bay beneficial uses. A map of the Shipyard Sediment Area is provided in Attachment 1 to this Order (referred to interchangeably as CAO or Order).

RESPONSIBLE PERSON/DISCHARGER DETERMINATIONS

2. **NATIONAL STEEL AND SHIPBUILDING COMPANY (NASSCO), A SUBSIDIARY OF GENERAL DYNAMICS COMPANY.** The San Diego Water Board finds that NASSCO has caused or permitted wastes to be discharged or to be deposited where they were discharged into San Diego Bay and created, or threatened to create, a condition of pollution or nuisance. These wastes contained metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc), butyl tin species, polychlorinated biphenyls (PCBs), polychlorinated terphenyls (PCTs), polynuclear aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons (TPH).

NASSCO, a subsidiary of General Dynamics Company, owns and operates a full service ship construction, modification, repair, and maintenance facility on 126 acres of tidelands property leased from the Port District on the eastern waterfront of central San Diego Bay at 2798 Harbor Drive in San Diego. Shipyard operations have been conducted at this site by NASSCO over San Diego Bay waters or very close to the waterfront since at least 1960. Shipyard facilities operated by NASSCO over the years at the Site have included concrete platens used for steel fabrication, a graving dock, shipbuilding ways, and berths on piers or

¹ San Diego Marine Construction Company is not identified as a discharger with responsibility for compliance with this Order because San Diego Marine Construction Company no longer exists and no corporate successor with legal responsibility for San Diego Marine Construction Company's liabilities has been identified. See Finding No. 5 and the Technical Report Section 5.

land to accommodate the berthing of ships. An assortment of waste is generated at the facility including spent abrasive, paint, rust, petroleum products, marine growth, sanitary waste, and general refuse. Based on these considerations NASSCO is referred to as "Discharger(s)" in this Cleanup and Abatement Order (CAO).

- 3. BAE SYSTEMS SAN DIEGO SHIP REPAIR, INC., FORMERLY SOUTHWEST MARINE, INC.** The San Diego Water Board finds that BAE Systems caused or permitted wastes to be discharged or to be deposited where they were discharged into San Diego Bay and created, or threatened to create, a condition of pollution or nuisance. These wastes contained metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc), butyl tin species, PCBs, PCTs, PAHs, and TPH.

From 1979 to the present, Southwest Marine, Inc. and its successor BAE Systems have owned and operated a ship repair, alteration, and overhaul facility on approximately 39.6 acres of tidelands property on the eastern waterfront of central San Diego Bay. The facility, currently referred to as BAE Systems San Diego Ship Repair, is located on land leased from the Port District at 2205 East Belt Street, foot of Sampson Street in San Diego, San Diego County, California. Shipyard facilities operated by BAE Systems over the years have included concrete platens used for steel fabrication, two floating dry docks, five piers, and two marine railways. An assortment of waste has been generated at the facility including spent abrasive, paint, rust, petroleum products, marine growth, sanitary waste, and general refuse. Based on these considerations BAE Systems is referred to as "Discharger(s)" in this CAO.

- 4. CITY OF SAN DIEGO.** The San Diego Water Board finds that the City of San Diego caused or permitted wastes to be discharged or to be deposited where they were discharged into San Diego Bay and created, or threatened to create, a condition of pollution or nuisance. From the early 1900s through February 1963, when the relevant tideland areas were transferred from the City of San Diego to the Port District, the City was the trustee of and leased to various operators, all relevant portions of the Shipyard Sediment Site. The wastes the City of San Diego caused or permitted to be discharged, or to be deposited where they were discharged into San Diego Bay through its ownership of the Shipyard Sediment Site contained metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc), butyl tin species, PCBs, PCTs, PAHs, and TPH.

The City of San Diego also owns and operates a municipal separate storm sewer system (MS4) through which it discharges waste commonly found in urban runoff to San Diego Bay subject to the terms and conditions of a National Pollutant Discharge Elimination System (NPDES) Storm Water Permit. The San Diego Water Board finds that the City of San Diego has discharged urban storm water containing waste directly to San Diego Bay at the Shipyard Sediment Site. The waste includes metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc), total suspended solids, sediment (due to anthropogenic activities), petroleum products, and synthetic organics (pesticides, herbicides, and PCBs) through its SW4 (located on the BAE Systems leasehold) and SW9 (located on the NASSCO leasehold) MS4 conduit pipes.

The San Diego Water Board finds that the City of San Diego has also discharged urban storm water containing waste through its MS4 to Chollas Creek resulting in the exceedances of chronic and acute California Toxics Rule copper, lead, and zinc criteria for the protection of aquatic life. Studies indicate that during storm events, storm water plumes toxic to marine life emanate from Chollas Creek up to 1.2 kilometers into San Diego Bay, and contribute to pollutant levels at the Shipyard Sediment Site. The urban storm water containing waste that has discharged from the on-site and off-site MS4 has contributed to the accumulation of pollutants in the marine sediments at the Shipyard Sediment Site to levels, that cause, and threaten to cause, conditions of pollution, contamination, and nuisance by exceeding applicable water quality objectives for toxic pollutants in San Diego Bay. Based on these considerations the City of San Diego is referred to as "Discharger(s)" in this CAO.

5. **STAR & CRESCENT BOAT COMPANY.** The San Diego Water Board finds that between 1914 and 1972, San Diego Marine Construction Company operated a ship repair, alteration, and overhaul facility on what is now the BAE Systems leasehold at the foot of Sampson Street in San Diego. Shipyard operations were conducted at this site over San Diego Bay water or very close to the waterfront. An assortment of waste was generated at the facility, including spent abrasive blast waste, paint, rust, petroleum products, marine growth, sanitary waste and general refuse. These wastes contained metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc), butyl tin species, PCBs, PCTs, PAHs, and TPH. In July 1972, San Diego Marine Construction Company sold its shipyard operations to Campbell Industries, and changed its corporate name, effective July 14, 1972, to Star & Crescent Investment Co. On March 19, 1976, Star & Crescent Boat Company (Star & Crescent), was incorporated in California and on April 9, 1976, Star & Crescent Investment Co. (formerly San Diego Marine Construction Company) transferred some portion of its assets and liabilities to Star & Crescent. The San Diego Water Board's Cleanup Team and several other designated parties allege that Star & Crescent Investment Co. (formerly San Diego Marine Construction Company) transferred all of its liabilities and assets to Star & Crescent. Accordingly, these parties allege that Star & Crescent is the corporate successor of and responsible for the conditions of pollution or nuisance caused or permitted by San Diego Marine Construction Company. Star & Crescent denies that it is the corporate successor to San Diego Marine Construction Company's and denies any responsibility for San Diego Marine Construction Company's discharges of waste to the San Diego Bay Shipyard Sediment Site from 1914 to 1972.

The San Diego Water Board finds that San Diego Marine Construction Company caused or permitted wastes to be discharged or to be deposited where they were discharged into San Diego Bay and created, or threatened to create, a condition of pollution or nuisance. San Diego Marine Construction Company is no longer in existence. The San Diego Water Board declines to decide the legal and factual questions necessary to determine whether Star & Crescent is the corporate successor to and therefore liable for San Diego Marine Construction Company's discharges. Due to Star & Crescent's uncertain legal status and due to the pending federal court litigation to which Star & Crescent is a party and that the San Diego Water Board expects will address allocation issues associated with this Order, the San Diego Water Board does not name Star & Crescent as a Discharger under this

Order. The San Diego Water Board retains the authority to exercise its discretion to add Star & Crescent as a Discharger under this Order in the future. If the federal court determines that Star & Crescent is the corporate successor to San Diego Marine Construction Company (later Star & Crescent Investment Company), the San Diego Water Board directs the Cleanup Team to reevaluate whether it is appropriate to amend the Order to add Star & Crescent as a Discharger.

6. **CAMPBELL INDUSTRIES.** The San Diego Water Board finds that Campbell caused or permitted wastes to be discharged or to be deposited where they were discharged into San Diego Bay and created, or threatened to create, a condition of pollution or nuisance. These wastes contained metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc), butyl tin species, PCBs, PCTs, PAHs, and TPH. From July 1972 through 1979, Campbell's wholly owned subsidiaries MCCSD and later San Diego Marine Construction Corporation operated a ship repair, alteration, and overhaul facility on what is now the BAE Systems leasehold at the foot of Sampson Street in San Diego. Shipyard operations were conducted at this site by Campbell over San Diego Bay waters or very close to the waterfront. An assortment of waste was generated at the facility including spent abrasive blast waste, paint, rust, petroleum products, marine growth, sanitary waste, and general refuse. Based on these considerations, Campbell is referred to as "Discharger(s)" in this CAO.
7. **CHEVRON, A SUBSIDIARY OF CHEVRONTEXACO.** Chevron, a subsidiary of ChevronTexaco (hereinafter, Chevron) owns and operates the Chevron Terminal, a bulk fuel storage facility currently located at 2351 East Harbor Drive in the City of San Diego adjacent to the NASSCO and BAE Systems leaseholds. Fuel products containing petroleum hydrocarbons have been stored at the Chevron Terminal since the early 1900s at both the currently operating 7 million gallon product capacity upper tank farm and the closed 5 million gallon capacity lower tank farm. Based on the information that the San Diego Water Board has reviewed to date, there is insufficient evidence to find that discharges from the Chevron Terminal contributed to the accumulation of pollutants in the marine sediments at the Shipyard Sediment Site to levels, which create, or threaten to create, conditions of pollution or nuisance. Accordingly, Chevron is not referred to as "Discharger(s)" in this CAO.
8. **BP AS THE PARENT COMPANY AND SUCCESSOR TO ATLANTIC RICHFIELD.** BP owns and operates the Atlantic Richfield Company (ARCO) Terminal, a bulk fuel storage facility with approximately 9 million gallons of capacity located at 2295 East Harbor Drive in the City of San Diego. Fuel products containing petroleum hydrocarbons and related constituents such as PAHs have been stored at ARCO Terminal since the early 1900s. ARCO owned and operated ancillary facilities include a wharf, fuel pier (currently BAE Systems Pier 4), and a marine fueling station used for loading and unloading petroleum products and fueling from 1925 to 1978, and five pipelines connecting the terminal to the pier and wharf in use from 1925 to 1978. Storm water flows from ARCO Terminal enter a City of San Diego MS4 storm drain that terminates in San Diego Bay in the Shipyard Sediment Site approximately 300 feet south of the Sampson Street extension. Based on the information that the San Diego Water Board has reviewed

to date, there is insufficient evidence to find that discharges from the ARCO Terminal contributed to the accumulation of pollutants in the marine sediments at the Shipyard Sediment Site to levels, which create, or threaten to create, conditions of pollution or nuisance. Accordingly, BP and ARCO are not referred to as "Discharger(s)" in this CAO.

9. **SAN DIEGO GAS AND ELECTRIC, A SUBSIDIARY OF SEMPRA ENERGY.** SDG&E owned and operated the Silver Gate Power Plant along the north side of the BAE Systems leasehold from approximately 1943 to the 1990s. SDG&E utilized an easement to San Diego Bay along BAE Systems' north property boundary for the intake and discharge of cooling water via concrete tunnels at flow rates ranging from 120 to 180 million gallons per day. SDG&E operations included discharging waste to holding ponds above the tunnels near the Shipyard Sediment Site.

The San Diego Water Board finds that SDG&E has caused or permitted waste (including metals [chromium, copper, lead, nickel, and zinc], PCBs, PAHs, and total petroleum hydrocarbons [TPH-d and TPH-h]) to be discharged or to be deposited where they were discharged into San Diego Bay and created, or threatened to create, a condition of pollution or nuisance. Based on these considerations SDG&E is referred to as "Discharger(s)" in this CAO.

10. **UNITED STATES NAVY.** The San Diego Water Board finds that the United States Navy (hereinafter "U.S. Navy") caused or permitted wastes to be discharged or to be deposited where they were discharged into San Diego Bay and created, or threatened to create, a condition of pollution or nuisance. The U.S. Navy owns and operates a municipal separate storm sewer system (MS4) at Naval Base San Diego (NBSD), formerly Naval Station San Diego or NAVSTA, through which it has caused or permitted the discharge of waste commonly found in urban runoff to Chollas Creek and San Diego Bay, including excessive concentrations of copper, lead, and zinc in violation of waste discharge requirements. Technical reports by the U.S. Navy and others indicate that Chollas Creek outflows during storm events convey elevated sediment and urban runoff chemical pollutant loading and its associated toxicity up to 1.2 kilometers into San Diego Bay over an area including the Shipyard Sediment Site.

The San Diego Water Board finds that the U.S. Navy has caused or permitted marine sediment and associated waste to be resuspended into the water column as a result of shear forces generated by the thrust of propellers during ship movements at NBSD. The resuspended sediment and pollutants can be transported by tidal currents and deposited in other parts of San Diego Bay, including the Shipyard Sediment Site. The above discharges have contributed to the accumulation of pollutants in marine sediment at the Shipyard Sediment Site to levels that cause, and threaten to cause, conditions of pollution, contamination, and nuisance by exceeding applicable water quality objectives for toxic pollutants in San Diego Bay.

Also, from 1921 to the present, the U.S. Navy has provided shore support and pier-side berthing services to U.S. Pacific fleet vessels at NBSD located at 3445 Surface Navy Boulevard in the City of San Diego. NBSD currently occupies 1,029 acres of land and 326

water acres adjacent to San Diego Bay to the west, and Chollas Creek to the north near Pier 1. Between 1938 and 1956, the NBSD leasehold included a parcel of land within the Shipyard Sediment Site referred to as the 28th Street Shore Boat Landing Station, located at the south end of the present day NASSCO leasehold at the foot of 28th Street and including the 28th Street Pier. The San Diego Water Board finds that the U.S. Navy caused or permitted wastes to be discharged or to be deposited where they were discharged into San Diego Bay and created, or threatened to create, a condition of pollution or nuisance at this location when it conducted operations similar in scope to a small boatyard, including solvent cleaning and degreasing of vessel parts and surfaces, abrasive blasting and scraping for paint removal and surface preparations, metal plating, and surface finishing and painting. Prevailing industry-wide boatyard operational practices employed during the 1930s through the 1980s were often not sufficient to adequately control or prevent pollutant discharges, and often led to excessive discharges of pollutants and accumulation of pollutants in marine sediment in San Diego Bay. The types of pollutants found in elevated concentrations at the Shipyard Sediment Site (metals, butyltin species, PCBs, PCTs, PAHs, and TPH) are associated with the characteristics of the waste the U.S. Navy operations generated at the 28th Street Shore Boat Landing Station site. Based on the preceding considerations, the U.S. Navy is referred to as "Discharger(s)" in this CAO.

11. **SAN DIEGO UNIFIED PORT DISTRICT.** The San Diego Water Board finds that the Port District caused or permitted wastes to be discharged or to be deposited where they were discharged into San Diego Bay and created, or threatened to create, a condition of pollution or nuisance. The Port District is a special government entity, created in 1962 by the San Diego Unified Port District Act, California Harbors and Navigation Code Appendix I, in order to manage San Diego Harbor, and administer certain public lands along San Diego Bay. The Port District holds and manages as trust property on behalf of the People of the State of California the land occupied by NASSCO, BAE Systems, and the cooling water tunnels for SDG&E's former Silver Gate Power Plant. The Port District is also the trustee of the land formerly occupied by the San Diego Marine Construction Company and by Campbell at all times since 1963 during which they conducted shipbuilding and repair activities.² The Port District's own ordinances, which date back to 1963, prohibit the deposit or discharge of any chemicals or waste to the tidelands or San Diego Bay and make it unlawful to discharge pollutants in non-storm water directly or indirectly into the storm water conveyance system.

The wastes the Port District caused or permitted to be discharged, or to be deposited where they were discharged into San Diego Bay through its ownership of the Shipyard Sediment Site contained metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc), butyl tin species, PCBs, PCTs, PAHs, and TPH.

The San Diego Water Board has the discretion to name the Port District in its capacity as the State's trustee as a "discharger" and does so in the Shipyard Sediment site CAO. The Port District asserts that its status as a lessor and State's trustee as well as other factors

² San Diego Marine Construction Company and Campbell Industries owned and operated ship repair and construction facilities in past years prior to BAE Systems San Diego Ship Repair, Inc.'s occupation of the leasehold. See Sections 5 and 6 of the Technical Report.

should only give rise to secondary and not primary liability as a discharger under this Order. Allocation of responsibility has not been determined and there is insufficient evidence to establish that present and former Port District tenants at the Site each have sufficient financial resources to perform all of the remedial activities required by this Order. In addition, cleanup is not underway at this time. Under these circumstances, it is not appropriate to accord the Port District secondary liability status it seeks.

The Port District also owns and operates a municipal separate storm sewer system (MS4) through which it discharges waste commonly found in urban runoff to San Diego Bay subject to the terms and conditions of an NPDES Storm Water Permit. The San Diego Water Board finds that the Port District has discharged urban storm water containing waste directly or indirectly to San Diego Bay at the Shipyard Sediment Site. The waste includes metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc), total suspended solids, sediment (due to anthropogenic activities), petroleum products, and synthetic organics (pesticides, herbicides, and PCBs).

The urban storm water containing waste that has discharged from the on-site and off-site MS4 has contributed to the accumulation of pollutants in the marine sediments at the Shipyard Sediment Site to levels, that cause, and threaten to cause, conditions of pollution, contamination, and nuisance by exceeding applicable water quality objectives for toxic pollutants in San Diego Bay. Based on these considerations the San Diego Unified Port District is referred to as "Discharger(s)" in this CAO.

FACTUAL BACKGROUND

12. **CLEAN WATER ACT SECTION 303(d) LIST.** The San Diego Bay shoreline between Sampson and 28th Streets is listed on the Clean Water Act section 303(d) List of Water Quality Limited Segments for elevated levels of copper, mercury, zinc, PAHs, and PCBs in the marine sediment. These pollutants are impairing the aquatic life, aquatic-dependent wildlife, and human health beneficial uses designated for San Diego Bay and are causing the Bay's narrative water quality objective for toxicity to not be attained. The Shipyard Sediment Site occupies this shoreline. Issuance of a CAO (in lieu of a Total Maximum Daily Load program) is the appropriate regulatory tool to use for correcting the impairment at the Shipyard Sediment Site.
13. **SEDIMENT QUALITY INVESTIGATION.** NASSCO and BAE Systems conducted a detailed sediment investigation at the Shipyard Sediment Site in San Diego Bay within and adjacent to the NASSCO and BAE Systems leaseholds. Two phases of fieldwork were conducted, Phase I in 2001 and Phase II in 2002. The results of the investigation are provided in the Exponent report *NASSCO and Southwest Marine Detailed Sediment Investigation, September 2003 (Shipyard Report, Exponent 2003)*. Unless otherwise explicitly stated, the San Diego Water Board's finding and conclusions in this CAO are based on the data and other technical information contained in the Shipyard Report prepared by NASSCO's and BAE Systems' consultant, Exponent.

The Shipyard Sediment Site is exempt from the Phase I Sediment Quality Objectives

promulgated by the State Water Board because a site assessment (the Shipyard Report) was completed and submitted to the San Diego Water Board on October 15, 2003. See State Water Board, *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality*, II.B.2 (August 25, 2009).

IMPAIRMENT OF AQUATIC LIFE BENEFICIAL USES

14. **AQUATIC LIFE IMPAIRMENT.** Aquatic life beneficial uses designated for San Diego Bay are impaired due to the elevated levels of pollutants present in the marine sediment at the Shipyard Sediment Site. Aquatic life beneficial uses include: Estuarine Habitat (EST), Marine Habitat (MAR), and Migration of Aquatic Organisms (MIGR). This finding is based on the considerations described below in this *Impairment of Aquatic Life Beneficial Uses* section of the CAO.
15. **WEIGHT-OF-EVIDENCE APPROACH.** The San Diego Water Board used a weight-of-evidence approach based upon multiple lines of evidence to evaluate the potential risks to aquatic life beneficial uses from pollutants at the Shipyard Sediment Site. The approach focused on measuring and evaluating exposure and adverse effects to the benthic macroinvertebrate community and to fish using data from multiple lines of evidence and best professional judgment. Pollutant exposure and adverse effects to the benthic macroinvertebrate community were evaluated using sediment quality triad measurements, and bioaccumulation analyses, and interstitial water (i.e., pore water) analyses. The San Diego Water Board evaluated pollutant exposure and adverse effects to fish using fish histopathology analyses and analyses of PAH breakdown products in fish bile.
16. **SEDIMENT QUALITY TRIAD MEASURES.** The San Diego Water Board used lines of evidence organized into a sediment quality triad, to evaluate potential risks to the benthic community from pollutants present in the Shipyard Sediment Site. The sediment quality triad provides a “weight-of-evidence” approach to sediment quality assessment by integrating synoptic measures of sediment chemistry, toxicity, and benthic community composition. All three measures provide a framework of complementary evidence for assessing the degree of pollutant-induced degradation in the benthic community.
17. **REFERENCE SEDIMENT QUALITY CONDITIONS.** The San Diego Water Board selected a group of reference stations from three independent sediment quality investigations to contrast pollution conditions at the Shipyard Sediment Site with conditions found in other relatively cleaner areas of San Diego Bay not affected by the Shipyard Sediment Site: (1) Southern California Bight 1998 Regional Monitoring Program (Bight 98), (2) 2001 Mouth of Chollas Creek and Mouth of Paleta Creek TMDL studies, and (3) 2001 NASSCO and BAE Systems Detailed Sediment Investigation. Stations from these studies were selected to represent selected physical, chemical, and biological characteristics of San Diego Bay. Criteria for selecting acceptable reference stations included low levels of anthropogenic pollutant concentrations, locations remote from pollution sources, similar biological habitat to the Shipyard Sediment Site, sediment total organic carbon (TOC) and grain size profiles similar to the Shipyard Sediment Site, adequate sample size for statistical analysis, and sediment quality data comparability. The

reference stations selected for the Reference Sediment Quality Conditions are identified below.

Reference Stations Used To Establish Reference Sediment Quality Conditions

2001 Chollas/Paleta Reference Station Identification Number	2001 NASSCO/BAE Systems Reference Station Identification Number	1998 Bight '98 Reference Station Identification Number
2231	2231	2235
2243	2243	2241
2433	2433	2242
2441	2441	2243
2238		2256
		2257
		2258
		2260
		2265

18. **SEDIMENT QUALITY TRIAD RESULTS.** The San Diego Water Board categorized 6 of 30 sediment quality triad sampling stations at the Shipyard Sediment Site as having sediment pollutant levels "Likely" to adversely affect the health of the benthic community. The remaining triad stations were classified as "Possible" (13) and "Unlikely" (11). These results are based on the synoptic measures of sediment chemistry, toxicity, and benthic community structure at the Shipyard Sediment Site.
19. **BIOACCUMULATION.** The San Diego Water Board evaluated initial laboratory bioaccumulation test data to ascertain the bioaccumulation potential of the sediment chemical pollutants at the Shipyard Sediment Site. Examination of laboratory test data on the chemical pollutant concentrations in tissue of the clam *Macoma nasuta* relative to the pollutant concentrations in sediment indicates that bioaccumulation of chemical pollutants is occurring at the Shipyard Sediment Site. The data indicates for several chemical pollutants that concentrations in *Macoma nasuta* tissue increase proportionally as chemical pollutant concentrations in sediment increase. Statistically significant relationships were found for arsenic, copper, lead, mercury, zinc, tributyltin (TBT), PCBs, and high molecular weight polynuclear aromatic hydrocarbons (HPAHs). These chemical pollutants have a bioaccumulation potential at the Shipyard Sediment Site and are therefore considered bioavailable to benthic organisms. No statistically significant relationships were found for cadmium, chromium, nickel, selenium, silver, or PCTs.
20. **INDICATOR SEDIMENT CHEMICALS.** The San Diego Water Board evaluated the relationships between sediment chemical pollutants and biological responses to identify

indicator chemical pollutants that may be impacting aquatic life and would therefore be candidates for assignment of cleanup levels or remediation goals. A two-step process was conducted. The first step in the selection of indicator chemicals was to identify chemicals representative of the major classes of sediment pollutants: metals, butyltins, PCBs and PCTs, PAHs, and petroleum hydrocarbons. The second step was the evaluation of relationships between these chemicals and biological responses. Results of the three toxicity tests, benthic community assessment, and bioaccumulation testing conducted in Phase 1 of the Shipyard study were all used to evaluate the potential of such relationships. Chemical pollutants were selected as indicator chemicals if they had any statistically significant relationship with amphipod mortality, echinoderm fertilization, bivalve development, total benthic macroinvertebrate abundance, total benthic macroinvertebrate richness, or tissue chemical concentrations in *Macoma nasuta*. Chemical pollutants selected as indicator chemicals include arsenic, copper, lead, mercury, zinc, TBT, total PCB homologs, diesel range organics (DRO), and residual range organics (RRO).

IMPAIRMENT OF AQUATIC-DEPENDENT WILDLIFE BENEFICIAL USES

21. **AQUATIC-DEPENDENT WILDLIFE IMPAIRMENT.** Aquatic-dependent wildlife beneficial uses designated for San Diego Bay are impaired due to the elevated levels of pollutants present in the marine sediment at the Shipyard Sediment Site. Aquatic-dependent wildlife beneficial uses include: Wildlife Habitat (WILD), Preservation of Biological Habitats of Special Significance (BIOL), and Rare, Threatened, or Endangered Species (RARE). This finding is based on the considerations described below in the *Impairment of Aquatic-Dependent Wildlife Beneficial Uses* section of this CAO.
22. **RISK ASSESSMENT APPROACH FOR AQUATIC-DEPENDENT WILDLIFE.** The San Diego Water Board evaluated potential risks to aquatic-dependent wildlife from chemical pollutants present in the sediment at the Shipyard Sediment Site based on a two-tier approach. The Tier I screening level risk assessment was based on tissue data derived from the exposure of the clam *Macoma nasuta* to site sediments for 28 days using the protocols specified by American Society of Testing Material (ASTM). The Tier II baseline comprehensive risk assessment was based on tissue data derived from resident fish and shellfish caught within and adjacent to the Shipyard Sediment Site.
23. **TIER I SCREENING LEVEL RISK ASSESSMENT FOR AQUATIC-DEPENDENT WILDLIFE.** The Tier I risk assessment objectives were to determine whether or not Shipyard Sediment Site conditions pose a potential unacceptable risk to aquatic-dependent wildlife receptors of concern and to identify whether a comprehensive, site-specific risk assessment was warranted (i.e., Tier II baseline risk assessment). The receptors of concern selected for the assessment include: California least tern (*Sterna antillarum brownie*), California brown pelican (*Pelecanus occidentalis californicus*), Western grebe (*Aechmophorus occidentalis*), Surf scoter (*Melanitta perspicillata*), California sea lion (*Zalophus californianus*), and East Pacific green turtle (*Chelonia mydas agassizii*). Chemical pollutant concentrations measured in clam tissue derived from laboratory bioaccumulation tests were used to estimate chemical exposure to these receptors of concern. Based on the Tier I screening level risk assessment results, there is a potential

risk to all receptors of concern ingesting prey caught at the Shipyard Sediment Site. The chemical pollutants in *Macoma* tissue posing a potential risk include arsenic, copper, lead, zinc, benzo[a]pyrene (BAP), and total PCBs. The results of the Tier I risk assessment indicated that a Tier II baseline comprehensive risk assessment was warranted.

24. **TIER II BASELINE COMPREHENSIVE RISK ASSESSMENT FOR AQUATIC-DEPENDENT WILDLIFE.** The Tier II risk assessment objective was to more conclusively determine whether or not Shipyard Sediment Site conditions pose an unacceptable risk to aquatic-dependent wildlife receptors of concern. The receptors of concern selected for the assessment include: California least tern (*Sterna antillarum brownie*), California brown pelican (*Pelecanus occidentalis californicus*), Western grebe (*Aechmophorus occidentalis*), Surf scoter (*Melanitta perspicillata*), California sea lion (*Zalophus californianus*), and East Pacific green turtle (*Chelonia mydas agassizii*). Based on the Tier I screening level risk assessment results, there is a potential risk to all receptors of concern ingesting prey caught at the Shipyard Sediment Site and so a Tier II assessment was conducted. To focus the risk assessment, prey items were collected within four assessment units at the Shipyard Sediment Site and from a reference area located across the bay from the site. Chemical concentrations measured in fish were used to estimate chemical exposure for the least tern, western grebe, brown pelican, and sea lion and chemical concentrations in benthic mussels and eelgrass were used to estimate chemical pollutant exposure for the surf scoter and green turtle, respectively. Based on the Tier II risk assessment results, ingestion of prey items caught within all four assessment units at the Shipyard Sediment Site poses an increased risk above reference to all receptors of concern (excluding the sea lion). The chemicals in prey tissue posing a risk include BAP, PCBs, copper, lead, mercury, and zinc.

IMPAIRMENT OF HUMAN HEALTH BENEFICIAL USES

25. **HUMAN HEALTH IMPAIRMENT.** Human health beneficial uses for Shellfish Harvesting (SHELL), and Commercial and Sport Fishing (COMM) designated for San Diego Bay are impaired due to the elevated levels of pollutants present in the marine sediment at the Shipyard Sediment Site. This finding is based on the considerations described below in this *Impairment of Human Health Beneficial Uses* section of the CAO.
26. **RISK ASSESSMENT APPROACH FOR HUMAN HEALTH.** The San Diego Water Board evaluated potential risks to human health from chemical pollutants present in the sediment at the Shipyard Sediment Site based on a two-tier approach. The Tier I screening level risk assessment was based on tissue data derived from the exposure of the clam *Macoma nasuta* to site sediments for 28 days using ASTM protocols. The Tier II baseline comprehensive risk assessment was based on tissue data derived from resident fish and shellfish caught within and adjacent to the Shipyard Sediment Site. Two types of receptors (i.e., members of the population or individuals at risk) were evaluated:
- Recreational Anglers – Persons who eat the fish and/or shellfish they catch recreationally; and

- b. Subsistence Anglers – Persons who fish for food, for economic and/or cultural reasons, and for whom the fish and/or shellfish caught is a major source of protein in their diet.
27. **TIER I SCREENING LEVEL RISK ASSESSMENT FOR HUMAN HEALTH.** The Tier I risk assessment objectives were to determine whether or not Shipyard Sediment Site conditions potentially pose an unacceptable risk to human health and to identify if a comprehensive, site-specific risk assessment was warranted (i.e., Tier II baseline risk assessment). The receptors of concern identified for Tier I are recreational anglers and subsistence anglers. Recreational anglers represent those who eat the fish and/or shellfish they catch recreationally and subsistence anglers represent those who fish for food, for economic and/or cultural reasons, and for whom the fish and/or shellfish caught is a major source of protein in the diet. Chemical concentrations measured in *Macoma nasuta* tissue derived from laboratory bioaccumulation tests were used to estimate chemical exposure for these receptors of concern. Based on the Tier I screening level risk assessment results, there is a potential risk greater than that in reference areas to recreational and subsistence anglers ingesting fish and shellfish caught at the Shipyard Sediment Site. The chemicals in *Macoma* tissue posing a potential risk include arsenic, BAP, PCBs, and TBT.
28. **TIER II BASELINE COMPREHENSIVE RISK ASSESSMENT FOR HUMAN HEALTH.** The Tier II risk assessment objective was to more conclusively determine whether Shipyard Sediment Site conditions pose unacceptable cancer and non-cancer health risks to recreational and subsistence anglers. Fish and shellfish were collected within four assessment units at the Shipyard Sediment Site and from two reference areas located across the bay from the Shipyard Site. Chemical concentrations measured in fish fillets and edible shellfish tissue were used to estimate chemical exposure for recreational anglers and chemical concentrations in fish whole bodies and shellfish whole bodies were used to estimate chemical exposure for subsistence anglers. Based on the Tier II risk assessment results, ingestion of fish and shellfish caught within all four assessment units at the Shipyard Sediment Site poses a theoretical increased cancer and non-cancer risk greater than that in reference areas to recreational and subsistence anglers. The chemicals posing theoretical increased cancer risks include inorganic arsenic and PCBs. The chemicals posing theoretical increased non-cancer risks include cadmium, copper, mercury, and PCBs.

*EVALUATING FEASIBILITY OF CLEANUP TO BACKGROUND
SEDIMENT QUALITY CONDITIONS*

29. **CHEMICALS OF CONCERN AND BACKGROUND SEDIMENT QUALITY.** The San Diego Water Board derived sediment chemistry levels for use in evaluating the feasibility of cleanup to background sediment quality conditions from the pool of San Diego Bay reference stations described in Finding 17. The background sediment chemistry levels based on these reference stations are as follows:

Table 1. Background Sediment Chemistry Levels

Chemicals of Concern	Units (dry weight)	Background Sediment Chemistry Levels ¹
Primary COCs		
Copper	mg/kg	121
Mercury	mg/kg	0.57
HPAHs ²	µg/kg	663
PCBs ³	µg/kg	84
Tributyltin	µg/kg	22
Secondary COCs		
Arsenic	mg/kg	7.5
Cadmium	mg/kg	0.33
Lead	mg/kg	53
Zinc	mg/kg	192

1. Equal to the 2005 Reference Pool's 95% upper predictive limits shown in Section 18 of the *Technical Report for Cleanup and Abatement Order No. R9-2012-0024*. The background levels for metals are based on the %fines:metals regression using 50% fines, which is conservative because the mean fine grain sediment at the Shipyard Investigation Site is 70% fines.
2. HPAHs = sum of 6 PAHs: Fluoranthene, Perylene, Benzo[a]anthracene, Chrysene, Benzo[a]pyrene, and Dibenzo[a,h]anthracene.
3. PCBs = sum of 41 congeners: 18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206.

The San Diego Water Board identified constituents of primary concern (primary COCs), which are associated with the greatest exceedance of background and highest magnitude of potential risk at the Shipyard Sediment Site. A greater concentration relative to background suggests a stronger association with the Shipyard Sediment Site, and a higher potential for exposure reduction via remediation. Secondary contaminants of concern (secondary COCs) are contaminants with lower concentrations relative to background, and are highly correlated with primary COCs and would be addressed in a common remedial footprint. Based on these criteria, the primary COCs for the Shipyard Sediment Site are copper, mercury, HPAHs,³ PCBs, and TBT, and the secondary COCs are arsenic, cadmium, lead, and zinc.

³ Petroleum hydrocarbons, including TPH, RRO, DRO, and other PAHs were eliminated as primary and secondary COCs for the following reasons. HPAHs, a primary COC, are considered to be the most recalcitrant, bioavailable, and toxic compounds present in the complex mixture of petroleum hydrocarbons. Other measures of petroleum hydrocarbons are generally correlated with HPAHs such that remedial measures to address HPAHs will also address

30. **TECHNOLOGICAL FEASIBILITY CONSIDERATIONS.** Although there are complexities and difficulties that would need to be addressed and overcome (e.g. removal and handling of large volume of sediment; obstructions such as piers and ongoing shipyard operations; transportation and disposal of waste), it is technologically feasible to cleanup to the background sediment quality levels utilizing one or more remedial and disposal techniques. Mechanical dredging, subaqueous capping, and natural recovery have been successfully performed at numerous sites, including several in San Diego Bay, and many of these projects have successfully overcome the same types of operational limitations present at the Shipyard Sediment Site, such as piers and other obstructions, ship movements, and limited staging areas. Confined aquatic disposal or near-shore confined disposal facilities have also been employed in San Diego Bay and elsewhere, and may be evaluated as project alternatives for the management of sediment removed from the Shipyard Sediment Site.
31. **ECONOMIC FEASIBILITY CONSIDERATIONS.** Under State Water Board Resolution No. 92-49, *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304*, determining “economic feasibility” requires an objective balancing of the incremental benefit of attaining further reduction in the concentrations of primary COCs as compared with the incremental cost of achieving those reductions. Resolution No. 92-49 provides that “[e]conomic feasibility does not refer to the dischargers’ ability to finance cleanup.” When considering appropriate cleanup levels under Resolution No. 92-49, the San Diego Water Board is charged with evaluating “economic feasibility” by estimating the costs to remediate constituents of concern at a site to background and the costs of implementing other alternative remedial levels. An economically feasible alternative cleanup level is one where the incremental cost of further reductions in primary COCs outweighs the incremental benefits.

The San Diego Water Board evaluated a number of criteria to determine risks, costs, and benefits associated with no action, cleanups to background sediment chemistry levels, and alternative cleanup levels greater than background concentrations. The criteria included factors such as total cost, volume of sediment dredged, exposure pathways of receptors to contaminants, short- and long-term effects on beneficial uses (as they fall into the broader categories of aquatic life, aquatic-dependent wildlife, and human health). The San Diego Water Board then compared these cost criteria against the benefits gained by diminishing exposure to the primary COCs to estimate the incremental benefit gained from reducing exposure based on the incremental costs of doing so. As set forth in detail herein, this comparison revealed that the incremental benefit of cleanup diminishes significantly with additional cost beyond a certain cleanup level, and asymptotically approaches zero as remediation approaches background. Based on these considerations, cleaning up to background sediment chemistry levels is not economically feasible.

environmental concerns associated with elevated levels of low molecular weight PAHs (LPAHs), total PAHs, TPH, RRO and DRO.

ALTERNATIVE SEDIMENT CLEANUP LEVELS

32. **ALTERNATIVE CLEANUP LEVELS:** Under State Water Board Resolution No. 92-49, *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304*, the San Diego Water Board may prescribe alternative cleanup levels less stringent than background sediment chemistry concentrations if attainment of background concentrations is technologically or economically infeasible. Resolution No. 92-49 requires that alternative levels must result in the best water quality which is reasonable if background levels of water quality cannot be restored, considering all demands being made and to be made on the waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible. Resolution No. 92-49 further requires that any alternative cleanup level shall: (1) be consistent with maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial uses of such water; and (3) not result in water quality less than that prescribed in the Water Quality Control Plans and Policies adopted by the State and Regional Water Boards.

The San Diego Water Board is prescribing the alternative cleanup levels for sediment summarized in the table below to protect aquatic life, aquatic-dependent wildlife, and human health based beneficial uses consistent with the requirements of Resolution No. 92-49. Compliance with alternative cleanup levels will be determined using the monitoring protocols summarized in Finding 34 and described in detail of Section 34 of the Technical Report.

Table 2. Alternative Cleanup Levels: Shipyard Sediment Site

Aquatic Life	Aquatic Dependent Wildlife and Human Health	
Remediate all areas determined to have sediment pollutant levels likely to adversely affect the health of the benthic community.	Surface Weighted Average Concentrations (site-wide)	
	Copper	159 mg/kg
	Mercury	0.68 mg/kg
	HPAHs ¹	2,451 µg/kg
	PCBs ²	194 µg/kg
Tributyltin	110 µg/kg	

1. HPAHs = sum of 10 PAHs: Fluoranthene, Pyrene, Benz[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, Indeno[1,2,3-c,d]pyrene, Dibenz[a,h]anthracene, and Benzo[g,h,i]perylene.

2. PCBs = sum of 41 congeners: 18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206.

In approving alternative cleanup levels less stringent than background the San Diego Water Board has considered the factors contained in Resolution No. 92-49 and the California Code of Regulations, Title 23, section 2550.4, subdivision (d):

Alternative Cleanup Levels are Appropriate. Cleaning up to background sediment quality levels at the Shipyard Sediment Site is economically infeasible. The alternative cleanup levels established for the Shipyard Sediment Site are the lowest levels that are technologically and economically achievable, as required under the California Code of Regulations Title 23 section 2550.4(e).

Alternative Cleanup Levels are Consistent with Water Quality Control Plans and Policies. The alternative cleanup levels provide for the reasonable protection of San Diego Bay beneficial uses and will not result in water quality less than prescribed in water quality control plans and policies adopted by the State Water Board and the San Diego Water Board. While it is impossible to determine the precise level of water quality that will be attained given the residual sediment pollutant constituents that will remain at the Site, compliance with the alternative cleanup levels will markedly improve water quality conditions at the Shipyard Sediment Site and result in attainment of water quality standards at the site.

Alternative Cleanup Levels Will Not Unreasonably Affect Present and Anticipated Beneficial Uses of the Site. The level of water quality that will be attained upon remediation of the required cleanup at the Shipyard Sediment Site will not unreasonably affect San Diego Bay beneficial uses assigned to the Shipyard Sediment Site represented by aquatic life, aquatic-dependent wildlife, and human health.

Alternative Cleanup Levels are Consistent with the Maximum Benefit to the People of the State. The proposed alternative cleanup levels are consistent with maximum benefit to the people of the State based on the San Diego Bay resource protection, mass removal and source control, and economic considerations. The Shipyard Sediment Site pollution is located in San Diego Bay, one of the finest natural harbors in the world. San Diego Bay is an important and valuable resource to San Diego and the Southern California Region. The alternative cleanup levels will result in significant contaminant mass removal and therefore risk reduction from San Diego Bay. Remediated areas will approach reference area sediment concentrations for most contaminants. Compared to cleaning up to background cleanup levels, cleaning up to the alternative cleanup levels will cause less diesel emission, less greenhouse gas emission, less noise, less truck traffic, have a lower potential for accidents, and less disruption to the local community. Achieving the alternative cleanup levels also requires less barge and crane movement on San Diego Bay, has a lower risk of re-suspension of contaminated sediments, and reduces the amount of landfill capacity required to dispose of the sediment wastes. The alternative cleanup levels properly balance reasonable protection of San Diego Bay beneficial uses with the significant economic and service activities provided by the City of San Diego, the NASSCO and BAE Systems Shipyards and the U.S. Navy.

33. **PROPOSED REMEDIAL FOOTPRINT AND PRELIMINARY REMEDIAL DESIGN.** Polygonal areas were developed around the sampling stations at the Shipyard Sediment Site using the Thiessen Polygon method to facilitate the development of the remedial footprint. The polygons targeted for remediation are shown in red and green in

Attachment 2. The red areas are where the proposed remedial action is dredging. The areas shown in green represent inaccessible or under-pier areas that will be remediated by one or more methods other than dredging. Portions of polygons NA20, NA21, and NA22 as shown in Attachment 2 were omitted from this analysis because it falls within an area that is being evaluated as part of the TMDLs for Toxic Pollutants in Sediment at the Mouth of Chollas Creek TMDL and is not considered part of the Shipyard Sediment Site for purposes of the CAO.

The polygons were ranked based on a number of factors including likely impaired stations, composite surface-area weighted average concentration for the five primary COCs, Site-Specific Median Effects Quotient (SS-MEQ)⁴ for non-Triad stations, and highest concentration of individual primary COCs. Based on these rankings, polygons were selected for remediation on a "worst first" basis.

In recognition of the methodologies and limitations of traditional mechanical dredging, the irregular polygons were converted into uniform dredge units. Each dredge unit (sediment management unit or "SMU") was then used to develop the dredge footprint. The conversion from irregular polygons to SMUs is shown in Attachments 3 and 4. These attachments show the remedial footprint, inclusive of areas to be dredged ("dredge remedial area," in red) and under-pier areas ("under-pier remedial area," in green) to be remediated by other means, most likely by sand cover. Together, the dredge remedial area and the under-pier remedial area constitute the remedial footprint.

Upland source control measures in the watershed of municipal separate storm sewer system outfall SW-4 are also needed to eliminate ongoing contamination from this source, if any, and ensure that recontamination of cleaned up areas of the Shipyard Sediment Site from this source does not occur.

34. **REMEDIAL MONITORING PROGRAM.** Monitoring during remediation activities is needed to document that remedial actions have not caused water quality standards to be violated outside of the remedial footprint, that the target cleanup levels have been reached within the remedial footprint, and to assess sediment for appropriate disposal. This monitoring should include water quality monitoring, sediment monitoring, and disposal monitoring.

Post-remediation monitoring is needed to verify that remaining pollutant concentrations in the sediments will not unreasonably affect San Diego Bay beneficial uses. Post-remediation monitoring should be initiated two years after remedy implementation has been completed and continue for a period of up to 10 years after remediation. For human health and aquatic dependent wildlife beneficial uses, post-remediation monitoring should include sediment chemistry monitoring to ensure that post-remediation SWACs are maintained at the site following cleanup. A subset of samples should undergo bioaccumulation testing using *Macoma*. For aquatic life beneficial uses, post-remediation

⁴ The SS-MEQ is a threshold developed to predict likely benthic community impairments based on sediment chemistry at the Shipyard Sediment Site. The development, validation, and application of the SS-MEQ are described in Section 32.5.2 of the Technical Report.

monitoring should include sediment chemistry, and toxicity bioassays to verify that post-remedial conditions have the potential to support a healthy benthic community. In addition, post-remediation monitoring should include benthic community condition assessments to evaluate the overall impact of remediation on the benthic community recolonization activities.

Environmental data has natural variability which does not represent a true difference from expected values. Therefore, if remedial monitoring results are within an acceptable range of the expected outcome, the remedial actions will be considered successful.

35. **REMEDIAL ACTION IMPLEMENTATION SCHEDULE.** The Dischargers have proposed a remedial action implementation schedule and a description of specific remedial actions they intend to undertake to comply with this CAO. The remedial action implementation schedule will begin with the adoption of this CAO and end with the submission of final reports documenting that the alternative sediment cleanup levels have been met. From start to finish, remedial action implementation is expected to take approximately 5 years to complete.

The proposed remedial actions have a substantial likelihood to achieve compliance with the requirements of this CAO within a reasonable time frame. The proposed schedule is as short as possible, given 1) the scope, size, complexity, and cost of the remediation, 2) industry experience with the time typically required to implement similar remedial actions, 3) the time needed to secure other regulatory agency approvals and permits before remediation can start, and 4) the need to conduct dredging in a phased manner to prevent or reduce adverse effects to the endangered California Least Tern. Therefore, the remedial action implementation schedule proposed by the Dischargers is consistent with the provisions in Resolution No. 92-49 for schedules for cleanup and abatement.

36. **LEGAL AND REGULATORY AUTHORITY.** This Order is based on (1) section 13267 and Chapter 5, Enforcement, of the Porter-Cologne Water Quality Control Act (Division 7 of the Water Code, commencing with section 13000), commencing with section 13300; (2) applicable state and federal regulations; (3) all applicable provisions of statewide Water Quality Control Plans adopted by the State Water Resources Control Board and the *Water Quality Control Plan for the San Diego Basin* (Basin Plan) adopted by the San Diego Water Board including beneficial uses, water quality objectives, and implementation plans; (4) State Water Board policies for water quality control, including State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California* and Resolution No. 92-49, *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code section 13304*; and (5) relevant standards, criteria, and advisories adopted by other state and federal agencies.

37. **CALIFORNIA ENVIRONMENTAL QUALITY ACT.** In many cases, an enforcement action such as this could be exempt from the provisions of the California Environmental Quality Act ("CEQA"; Public Resources Code, section 21000 et seq.), because it would fall within Classes 7, 8, and 21 of the categorical exemptions for projects that have been

determined not to have a significant effect on the environment under section 21084 of CEQA.⁵ In Resolution No. R9-2010-0115 adopted on September 8, 2010, the San Diego Water Board found that because the tentative CAO presents unusual circumstances and there is a reasonable possibility of a significant effect on the environment due to the unusual circumstances, the tentative CAO is not exempt from CEQA and that an EIR analyzing the potential environmental effects of the tentative CAO should be prepared.

As the lead agency for the tentative CAO, the San Diego Water Board prepared an EIR that complies with CEQA. The San Diego Water Board has reviewed and considered the information in the EIR and certified the EIR, adopting a statement of overriding considerations, in Resolution No. R9-2012-0025.

38. **PUBLIC NOTICE.** The San Diego Water Board has notified all known interested persons and the public of its intent to adopt this CAO, and has provided them with an opportunity to submit written comments, evidence, testimony and recommendations.
39. **PUBLIC HEARING.** A lengthy procedural history preceded adoption of this CAO. The San Diego Water Board has considered all comments, evidence and testimony pertaining to this CAO submitted to the San Diego Water Board in writing, or by oral presentations at the public hearing held on November 9, 14, 15, and 16, 2011, and March 14, 2012. Responses to many relevant comments have been incorporated into the Technical Report for this CAO and/or are provided in the Response to Comments Report, as revised, prepared by the San Diego Water Board Cleanup Team.
40. **TECHNICAL REPORT.** The "*Technical Report for Cleanup and Abatement Order No. R9-2012-0024 for the Shipyard Sediment Site, San Diego Bay, San Diego, CA*" is hereby incorporated as a finding in support of this CAO as if fully set forth here verbatim.
41. **COST RECOVERY.** Pursuant to Water Code section 13304, and consistent with other statutory and regulatory requirements, including but not limited to Water Code section 13365, the San Diego Water Board and the State Water Board are entitled to, and will seek reimbursement for, all reasonable costs actually incurred by the San Diego Water Board and the State Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action required by this Order.

Unreimbursed reasonable costs actually incurred by the San Diego Water Board and the State Water Board for the development and issuance of this Cleanup and Abatement Order are as follows:

- a. Contracts funded by the State Water Board Cleanup and Abatement Account or other San Diego Water Board contract funds for services in support of the development and issuance of this Cleanup and Abatement Order.

⁵ Title 14 CCR sections 15307, 15308, and 15321

- i. DM Information Services, Inc. produced the electronic administrative record. This work was paid for with Cleanup and Abatement Account funds and San Diego Water Board contract funds in the amount of \$109,908.
 - ii. The Department of Fish and Game provided technical consultation services on the fish histopathology and bile studies, and the wildlife risk assessments. This work was paid for with Cleanup and Abatement Account funds in the amount of \$43,287.
 - iii. The Office of Environmental Health Hazard Assessment provided technical consultation services on the human health risk assessments. This work was paid for with San Diego Water Board contract funds in the amount of \$12,009.
- b. Filing fees for CEQA documents. Pursuant to Fish and Game Code Section 711.4, the San Diego Water Board must pay to the Department of Fish and Game a filing fee to defray the costs of managing and protecting California's vast fish and wildlife resources. The filing fee for the Environmental Impact Report is \$2,919 and the County Clerk Processing fee is 50.00 for a total of \$2,969.

The amount of past and future recoverable staff costs will be determined through the process set forth in Water Code section 13365. The Chair may designate an individual qualified under Water Code section 13365, subdivision (c)(4) to resolve dischargers' disputes about the reasonableness of past and future oversight costs the San Diego Water Board seeks to recover from the dischargers to this Order. Under Water Code section 13365, the determination of the reasonableness of oversight costs can include, but is not limited to, evaluation of documentary support (including information not already in the record) for requested oversight costs. The Assistant Executive Officer is authorized to amend this Order as necessary to include any undisputed oversight cost amounts or amounts derived through the dispute resolution process identified in Water Code section 13365, subdivision (c)(4) and determined to be owed by the discharger(s).

42. **PROCEDURAL MATTERS.** At the public hearing, the San Diego Water Board Cleanup Team objected to argument made by counsel for SDG&E during SDG&E's presentation as mischaracterizing Cleanup Team witnesses' deposition testimony. The Cleanup Team's objections are overruled. The San Diego Water Board has considered the deposition testimony and counsel's legal argument. The transcripts speak for themselves. Counsel's characterization of the Cleanup Team witnesses' deposition testimony took some of the deposition testimony out of context, but counsel was making legal argument and not testifying. Accordingly, it is not necessary to strike any portion of counsel's presentation. All exhibits introduced and marked during the hearing were accepted and are included in the administrative record.

ORDER DIRECTIVES

IT IS HEREBY ORDERED that, pursuant to sections 13267 and 13304 of the Water Code, National Steel and Shipbuilding Company; BAE Systems San Diego Ship Repair Inc.; the City of San Diego; Campbell Industries; San Diego Gas and Electric; the United States Navy; and the

San Diego Unified Port District (hereinafter Dischargers), shall comply with the following directives:

A. CLEANUP AND ABATE

1. **Illicit Discharges.** The Dischargers shall terminate all illicit discharges, if any, to the Shipyard Sediment Site (see Attachment 1) in violation of waste discharge requirements or other order or prohibition issued by the San Diego Water Board.
2. **Corrective Action.** The Dischargers shall take all corrective actions necessary to remediate the contaminated marine bay sediment at the Shipyard Sediment Site as described below: Corrective action design details shall be included in the Remedial Action Plan required by Directive B.
 - a. **Dredge Remedial Areas.** The sediments in the dredge remedial areas shown on Attachments 3 and 4 shall be dredged. This dredging shall remediate the sediment in the dredge remedial area to the concentrations in the table below for primary COCs, pursuant to confirmatory testing:

Primary COCs	Post-Remedial Dredge Area Concentrations (Background ¹)
Copper	121 mg/kg
Mercury	0.57 mg/kg
HPAHs ²	663 µg/kg
PCBs ³	84 µg/kg
Tributyltin	22 µg/kg

1. See Finding 29, Table 1.
2. HPAHs = High Molecular Weight Polynuclear Aromatic Hydrocarbons, sum of 6 PAHs: Fluoranthene, Perylene, Benzo(a)anthracene, Chrysene, Benzo(a)pyrene, and Dibenzo(a,h)anthracene.
3. PCBs = Polychlorinated Biphenyls, sum of 41 congeners: 18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206.

If the concentration of any primary COC in subsurface sediments (deeper than the upper 5 cm) is above 120 percent of the post-remedial dredge area concentration after completion of initial dredging, then additional sediments shall be dredged by performing an additional "pass" with the equipment. If concentrations of primary

COCs in subsurface sediments are below 120 percent of post-remedial dredge area concentrations, then the dredging is sufficient and may stop.

- b. **Under-Pier Remedial Areas.** The sediments in the under pier areas shown on Attachments 3 and 4 and other locations where significant impacts to infrastructure may occur shall be remediated by dredging, sand covering or other means.
- c. **Post Remedial Surface-Area Weighted Average Concentrations.** The Shipyard Sediment Site as shown in Attachment 2 shall be remediated to attain the following post remedial surface-area weighted average concentrations (“SWACs”):

Primary COCs	Predicted Post-Remedial SWAC
Copper	159 mg/kg
Mercury	0.68 mg/kg
HPAHs ¹	2,451 µg/kg
PCBs ²	194 µg/kg
Tributyltin	110 µg/kg

1. HPAHs = sum of 10 PAHs: Fluoranthene, Pyrene, Benz[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[a]pyrene, indeno[1,2,3-c,d]pyrene, Dibenz[a,h]anthracene, and Benzo[g,h,i]perylene.

2. PCBs = sum of 41 congeners: 18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206.

- 3. **MS4 Interim Mitigation Measures.** Immediately after adoption of the CAO, the City of San Diego and the San Diego Unified Port District within the tideland area shall take interim remedial actions, as necessary, to abate or correct the actual or potential effects of releases from the MS4 system that drains to outfall SW4. Interim remedial actions can occur concurrently with any phase of corrective action. Before taking interim remedial actions, the City and the Port District shall notify the San Diego Water Board of the proposed action and shall comply with any requirements that the San Diego Water Board sets.
- 4. **MS4 Investigation and Mitigation Plan.** The City of San Diego and the San Diego Unified Port District within the tideland area shall prepare and submit a municipal separate storm sewer system (MS4) Investigation and Mitigation Plan (Plan) within 90 days after adoption of the CAO. The Plan shall be designed to identify, characterize, and

mitigate pollutants and pollutant sources in the watershed that drains to the MS4 outfall SW-4 at the Shipyard Sediment Site and contain, at a minimum, the following information:

- a. **Site Conceptual Model.** The Plan shall contain a site conceptual model showing all of the current and former potential pollutant sources and pathways for pollutants to potentially enter the watershed that drains to the MS4 outfall SW-4.
- b. **Map.** A detailed map to scale showing the location and all elements of, and potential pollutant sources within, the MS4 system within the watershed that drains to the outfall SW-4.
- c. **Sampling and Analyses.** The Plan shall include sampling and analysis of the residual sediments within the MS4 system at key locations sufficient to characterize the sediments that will potentially be discharged to the Shipyard Sediment Site. The suite of chemical analyses must be adequate to identify the full range of site-specific waste constituents including, at a minimum, total PCB congeners, copper, mercury, lead, zinc, TPH, and HPAHs.
- d. **Sample Locations.** At a minimum, samples must be collected within all catch basins and similar junctions where accessible, and at intervals adequate to detect potential sources and no greater than approximately 500 feet within the streets in the storm water infrastructure within the SW-4 watershed. In addition, samples must be collected at locations designed to assess contributions from potential pollutant sources such as businesses with industrial activities or other pollutant-generating activities within the current SW-4 watershed. The Plan shall identify the number and location of the proposed sampling locations, and provide justification for the sampling intervals within the streets.
- e. **Sampling Protocols and Quality Assurance Project Plan (QAPP).** The Plan shall include the planned sampling protocols and a Quality Assurance Project Plan (QAPP) to assure that all environmental data generated scientifically valid and of acceptable quality to meet the Plan's objectives.
- f. **Mitigation.** The Plan shall include, at a minimum, the following mitigation activities:
 1. Removal and characterization of residual sediments in the MS4 system.
 2. Installation of structural treatment control best management practices (BMPs), where necessary and feasible, in the MS4 system to prevent or mitigate the entry of pollutants into the storm drains to the maximum extent practicable.
 3. Maintenance of BMPs, as necessary, to prevent degradation of their performance.

- g. **Activity Completion Schedule:** The Plan shall include a reasonable schedule for completion of all activities and submission of a final MS4 Investigation and Mitigation Report described in Directive A.5.

5. MS4 Investigation and Mitigation Implementation and Report

- a. **Implementation.** The City of San Diego and the San Diego Unified Port District within the tideland area shall implement the MS4 Investigation and Mitigation Plan according to the Activity Completion Schedule described in Directive 4.g.
- b. **MS4 Investigation and Mitigation Report.** The MS4 Investigation and Mitigation Report shall include the following:
 - 1. Sampling protocols implemented.
 - 2. Location, type, and number of samples shown on detailed site maps and tables.
 - 3. Concentration and interpreted lateral extent of each constituent.
 - 4. Mass of residual sediments removed from the MS4 system.
 - 5. Interpretations regarding the potential for the pollutants within the MS4 system to contaminate or re-contaminate the Shipyard Sediment Site during or after the remedial activities.
 - 6. Evaluation of the effectiveness of the mitigation activities implemented.
 - 7. Recommendations for additional investigation and mitigation activities.

B. REMEDIAL ACTION PLAN AND IMPLEMENTATION

- 1. **Remedial Action Plan.** The Dischargers shall prepare and submit a Remedial Action Plan (RAP) to the San Diego Water Board no later than 90 days after adoption of the CAO. The RAP shall be complete and contain the following information
 - a. **Introduction.** A brief description of the Shipyard Sediment Site and Site History.
 - b. **Selected Remedy.** A detailed description of all of the remedial activities selected to attain all cleanup levels in Directive A.2.
 - c. **Health and Safety Plan.** A Health and Safety Plan including employee training, protective equipment, medical surveillance requirements, standard operating procedures and contingency plans.
 - d. **Community Relations Plan.** A Community Relations Plan for informing the public about (i) activities related to the final remedial design, (ii) the schedule for the remedial action, (iii) the activities to be expected during construction and

- remediation, (iv) provisions for responding to emergency releases and spills during remediation, and (v) any potential inconveniences such as excess traffic and noise that may affect the community during the remedial action.
- e. *Quality Assurance Project Plan.* A Quality Assurance Project plan (QAPP) shall be included describing the project objectives and organization, functional activities, and quality assurance/quality control protocols as they relate to the remedial action
 - f. *Sampling and Analysis Plan.* A Sampling and Analysis Plan defining (i) sample and data collection methods to be used for the project, (ii) a description of the media and parameters to be monitored or sampled during the remedial action, and (iii) a description of the analytical methods to be utilized and an appropriate reference for each.
 - g. *Wastes Generated.* A description of the plans for management, treatment, storage and disposal of all wastes generated by the remedial action.
 - h. *Pilot Testing.* The results of bench scale or pilot scale studies or other data collected to provide sizing and operations criteria to optimize the remedial design.
 - i. *Design Criteria Report.* A Design Criteria Report that defines in detail the technical parameters upon which the remedial design will be based. Specifically, the Design Criteria Report shall include the preliminary design assumptions and parameters, including (i) waste characterization; (ii) volume and types of each medium requiring removal or containment; (iii) removal or containment schemes and rates, (iv) required qualities of waste streams (i.e., input and output rates to stockpiles, influent and effluent qualities of any liquid waste streams such as dredge spoil return water, potential air emissions, and so forth); (v) performance standards; (v) compliance with applicable local, State and federal regulations; (vi) technical factors of importance to the design, construction, and implementation of the selected remedy including use of currently accepted environmental control measures, constructability of the design, and use of currently acceptable construction practices and techniques.
 - j. *Equipment, Services, and Utilities.* A list of any elements or components of the selected remedial action that will require custom fabrication or long lead time for procurement. The list shall state the basis for such need, and the recognized sources of such procurement.
 - k. *Regulatory Permits and Approvals.* A list of required federal, State and local permits or approvals to conduct the remedial action.
 - l. *Remediation Monitoring Plan.* A Remediation Monitoring Plan consisting of (i) water quality monitoring, (ii) sediment monitoring, and (iii) disposal monitoring consistent with Section 34.1 of the Technical Report. The water quality monitoring must be sufficient to demonstrate that implementation of the selected remedial activities do not result in violations of water quality standards outside the construction area. The sediment monitoring must be sufficient to confirm that the selected

remedial activities have achieved target cleanup levels within the remedial footprint specified in Directive A.2. The disposal monitoring must be sufficient to adequately characterize the dredged sediments in order to identify appropriate disposal options.

- m. *Site Map*. A site map showing the location of buildings, roads, property boundaries, remedial equipment locations and other information pertinent to the remedial action.
 - n. *Contingencies*. A description of any additional items necessary to complete the RAP.
 - o. *Remediation Schedule*. A schedule detailing the sequence of events and time frame for each activity based on the shortest practicable time required to complete each activity. The initiation and completion of each activity must be no longer than the durations described in Attachment 5.
2. **RAP Implementation**. In the interest of promoting prompt cleanup, the Discharger may begin implementation of the RAP 60 calendar days after submittal to the San Diego Water Board, unless otherwise directed in writing by the San Diego Water Board. The Dischargers shall complete implementation of the RAP based on the schedule in the RAP. Before beginning RAP implementation activities, the Dischargers shall:
- a. Notify the San Diego Water Board of its intention to begin cleanup; and
 - b. Comply with any conditions set by the San Diego Water Board, including mitigation of adverse consequences from cleanup activities.
 - c. The Dischargers shall modify or suspend cleanup activities when directed to do so by the San Diego Water Board.

C. CLEANUP AND ABATEMENT COMPLETION VERIFICATION

Final Cleanup and Abatement Completion Report. The Dischargers shall submit a final Cleanup and Abatement Completion Report verifying completion of the RAP activities for the Shipyard Sediment Site within 90 days of completion of remediation. The report shall provide a demonstration, based on a sound technical analysis, that sediment quality cleanup levels in Directive A.2 have been achieved.

D. POST REMEDIAL MONITORING

1. **Post Remedial Monitoring Plan**. The Dischargers shall prepare and submit a Post Remedial Monitoring Plan to the San Diego Water Board no later than 90 days after adoption of this CAO. The Post Remedial Monitoring Plan shall be designed to verify that the remaining pollutant concentrations in the sediments will not unreasonably affect San Diego Bay beneficial uses. At a minimum the Post Remedial Monitoring Plan shall include the following elements:
- a. *Quality Assurance Project Plan*. A Quality Assurance Project plan (QAPP) describing the project objectives and organization, functional activities, and quality assurance/quality control protocols for the post remediation monitoring.

- b. **Sampling and Analysis Plan.** A Sampling and Analysis Plan defining (i) sample and data collection methods to be used for the post radiation monitoring, (ii) a description of the media and parameters to be monitored or sampled, and (iii) a description of the analytical methods to be utilized and an appropriate reference for each.
- c. **Sediment Chemistry.** Site-wide post-remedial SWACs for the five primary COCs (copper, mercury, TBT, PCBs, and HPAH) shall be confirmed through composite sampling of the entire Shipyard Sediment Site. Samples shall be collected at all 65 sampling stations used to develop Thiessen polygons and composited on a surface area weighted basis into 6 polygon groups as shown in Attachment 6.
 1. To prepare the composite samples, the 65 station locations within the six polygon groups shall be sampled. The volume of the sample at each station shall be proportional to the area of the polygon the station represents. These samples shall be collected from the 0-2 cm depth interval. Two (2) grab samples shall be composited in the field at each station.
 2. The individual samples shall be combined into six (6) composite samples representing the six (6) polygon groups as shown in Attachment 6. Three (3) replicates shall be taken from each of these six (6) composite samples and analyzed for PCBs, copper, mercury, HPAHs, and TBT, and sediment conventional parameters (e.g., grain size, TOC, ammonia). See Attachment 7 for the required list of PCB and HPAH analytes.
 3. The average concentration of each of the six (6) composites shall be calculated from the analytical results of the replicates for each COC. The average concentrations represent SWACs for each of the six (6) polygon groups.
 4. The three replicate sub-samples of composite samples provide an estimate of variances in the compositing process. Sample material from the 65 station-specific composite samples shall be archived for potential future analysis.
 5. The mean concentration for each of the six (6) composite groups shall be used to calculate Site-Wide SWACs for each COC.
 6. SWAC trigger concentrations shall be used to evaluate whether Site-Wide SWACs exceed the Predicted Post-Remedial SWACs, and whether further action is needed. These concentrations represent the surface-area weighted average concentration expected after cleanup, accounting for the variability in measured concentrations throughout the area. If the Site-Wide SWAC after remediation is below the trigger concentration then remediation shall be considered successful. Exceedance of the trigger concentration shall result in further evaluation of the site-specific conditions to determine if the remedy was successful as detailed in Directive D.3. The trigger concentrations for the primary COCs are listed below.

Primary COCs	Trigger Concentrations
Copper	185 mg/kg
Mercury	0.78 mg/kg
HPAHs ¹	3,208 µg/kg
PCBs ²	253 µg/kg
Tributyltin	156 µg/kg

1. HPAHs = sum of 6 PAHs: Fluoranthene, Perylene, Benzo[a]anthracene, Chrysene, Benzo[a]pyrene, and Dibenzo[a,h]anthracene.
2. PCBs = sum of 41 congeners: 18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206.

- d. **Bioaccumulation Testing.** Nine (9) sediment samples shall undergo bioaccumulation testing using the 28-day *Macoma nasuta* test. The samples selected for bioaccumulation testing shall be from stations SW04, SW08, SW13, SW21, SW28, and NA06, NA11, NA12; and NA20. Tissue samples shall be analyzed for arsenic, cadmium, copper, lead, mercury, zinc, HPAHs, and PCBs. See Attachment 7 for the required list of PCB and HPAH analytes.
- e. **Sediment Chemistry for Benthic Exposure.** Samples shall be collected for chemical analyses at the following five station locations: SW04, SW13, SW22, SW23 and NA19. Sediments shall be analyzed for sediment conventional parameters (e.g., grain size, TOC, ammonia) and the following: arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc, TBT, PCBs, and PAHs. See Attachment 7 for the required list of PCB and PAH analytes. Results from the chemical analyses shall be evaluated in accordance with the flow diagram in Attachment 8 to determine if further evaluation or action is necessary based on benthic effects indicators. SS-MEQ values shall be determined for each station and compared to the 0.9 SS-MEQ threshold. The sediment chemistry results shall be compared to the 60% LAET thresholds.
- f. **Sediment Toxicity.** Sediment samples shall be collected for toxicity analyses at the following five station locations: SW04, SW13, SW22, SW23, and NA19. Two types of sediment toxicity tests shall be conducted in accordance with protocols recommended by the San Diego Water Board: (1) 10-day amphipod survival test using *Eohaustorius estuarius* exposed to whole sediment, and (2) 48-hour bivalve larva development test using the mussel *Mytilus galloprovincialis* exposed to whole sediment at the sediment-water interface. Results from the toxicity analyses shall be evaluated in accordance with the flow diagram in Attachment 9 to determine if further evaluation or action is necessary based on benthic effects indicators.

- g. ***Benthic Community Assessment.*** Samples shall be collected to evaluate benthic communities at five randomly selected stations within the remediation footprint, excluding stations NA19, SW04, SW13, SW22, and SW23, at years 3 and 4 following completion of remediation activities. The random samples shall be stratified to assure two to three samples are collected from each of the NASSCO and BAE Systems areas. The benthic community analyses shall consist of full taxonomic analyses at the lowest feasible taxa level. This sampling shall be conducted only to evaluate the development of the benthic community following remediation.
 - h. ***Schedule.*** Sampling and analyses for sediment chemistry and toxicity, and for bioaccumulation assessment shall occur at two and five years post-remediation. If the remedial goals described in Directive D.3.c.2 are not met, the sampling and analyses shall also occur at ten years post remediation. The Post Remedial Monitoring Plan shall include a schedule detailing the sequence of sampling events and time frame for each activity. The schedule shall also include the dates for submittal of the Post-Cleanup Monitoring annual progress reports as detailed in Directive E and final report as detailed in Directive D.3. below.
2. **Post Remedial Monitoring Plan Implementation.** The Dischargers shall implement the Post Remedial Monitoring Plan in accordance with the schedule contained in the Post Remedial Monitoring Plan unless otherwise directed in writing by the San Diego Water Board. Before beginning sample collection activities, the Dischargers shall:
- a. Notify the San Diego Water Board in advance of the beginning of sample collection activities in accordance with Provision G.6.; and
 - b. Comply with any conditions set by the San Diego Water Board with respect to sample collection methods such as providing split samples.
3. **Post Remedial Monitoring Reports.** The Dischargers shall submit Post Remedial Monitoring Reports containing the following information:
- a. An evaluation, interpretation and tabulation of monitoring data including interpretations and conclusions regarding the potential presence and chemical characteristics of any newly deposited sediment within the cleanup areas, and interpretations and conclusions regarding the health and recovery of the benthic communities.
 - b. The locations, type, and number of samples shall be identified and shown on a site map.
 - c. An analysis of whether or not the remedial goals described below have been attained:

1. Year 2 Remedial Goals

- Composite site-wide SWACs below the Trigger Concentrations identified in D.1.c.6. above; and
- Sediment chemistry below SS-MEQ and 60%LAET thresholds; and
- Toxicity not significantly different from conditions at the reference stations described in Finding 17 and in the *Technical Report for Cleanup and Abatement Order No. R9-2012-0024 for the Shipyard Sediment Site, San Diego Bay, San Diego, CA*; and
- The average of stations sampled shows bioaccumulation levels below the pre-remedial levels.

2. Year 5 Remedial Goals

- Composite site-wide SWACs below the Trigger Concentrations identified in D.1.c.6. above; and
- Sediment chemistry below SS-MEQ and 60%LAET thresholds; and
- Toxicity not significantly different from conditions at the reference stations described in Finding 17 and as defined in the *Technical Report for Cleanup and Abatement Order No. R9-2012-0024 for the Shipyard Sediment Site, San Diego Bay, San Diego, CA*; and
- The average of stations sampled shows bioaccumulation levels continuing to decrease below the pre-remedial levels and equal to or below the Year 2 post-remedial monitoring sampling event levels.

3. Confirm remedial goals are maintained at year 10 (if goals were not met in year 5)

- Composite site-wide SWACs below the Trigger Concentrations identified in D.1.c.6. above; and
- Sediment chemistry below SS-MEQ and 60%LAET thresholds; and
- Toxicity not significantly different from conditions at the reference stations described in Finding 17 and defined in the *Technical Report for Cleanup and Abatement Order No. R9-2012-0024 for the Shipyard Sediment Site, San Diego Bay, San Diego, CA*; and
- The average of stations sampled shows bioaccumulation levels below the pre-remedial levels and equal to or below the Year 5 post-remedial monitoring sampling event levels.

4. **SWAC Trigger Concentration, SS-MEQ Threshold, or 60% LAET Threshold Exceedance Investigation and Characterization.** Post remediation monitoring may indicate exceedance of one or more of the post-remediation Site-Wide SWAC trigger concentrations, SS-MEQ thresholds, or 60% LAET thresholds. In that event the Dischargers shall conduct an Exceedance Investigation and Characterization study to determine the cause(s) of the exceedance. There are several lines of investigation that may be pursued, individually or in combination, depending upon the type, scope, and scale of the exceedance(s) and site-specific conditions. The following approaches may be considered and implemented for the investigation and characterization effort:
 - a. Recalculation of the 95% UCL incorporating more recent sampling data (e.g. the dredge performance monitoring data, pre-remediation monitoring data from July, 2009, the most recent post remediation verification monitoring data etc.).
 - b. Identification of the specific subarea(s) that caused the excursion(s) using surrounding post remediation monitoring data and historical data as appropriate.
 - c. Evaluation of changes in site conditions as a result of disturbances since the previous sampling event from spills, major storm events, construction activities, newly discovered pollutant sources or other causes.
 - d. Analysis of the archived samples used to comprise the composite sample for the specific COC(s) exceeding the 95% UCL as a basis to understand which polygons have higher concentrations than expected. The data from this analysis could be used as a basis for spatial weighting of the data before recalculating 95% UCLs using interpolation methods such as inverse distance weighting.
5. **Exceedance Investigation and Characterization Report.** The Dischargers shall prepare and submit an adequate Exceedance Investigation and Characterization Report describing the final results of the investigation and characterization study to the San Diego Water Board. If the exceedances are found to be significant, the Report shall include a recommended approach, or combination of approaches, for addressing the exceedance(s) by additional sampling of the affected area, re-dredging, natural recovery, reanalysis following the next scheduled monitoring event, or other appropriate methods. The Report shall be due within 90 days of discovery of the exceedance or as otherwise directed by the San Diego Water Board.

E. QUARTERLY PROGRESS REPORTS

The Dischargers shall prepare and provide written quarterly progress reports which: (1) describe the actions which have been taken toward achieving compliance with this CAO during the

previous quarter; (2) include all results of sampling, tests, and all other verified or validated data received or generated by or on behalf of the Dischargers during the previous quarter in the implementation of the remedial actions required by this CAO; (3) describe all activities including, data collection and other field activities which are scheduled for the next two quarters and provide other information relating to the progress of work, including, but not limited to, a graphical depiction of the progress of the remedial actions; (4) identify any modifications to the Remedial Action Plan or other work plan(s) that the Dischargers proposed to the San Diego Water Board or that have been approved by San Diego Water Board during the previous quarter; and (5) include information regarding all delays encountered or anticipated that may affect the future schedule for completion of the remedial actions required, and a description of all efforts made to mitigate those delays or anticipated delays. These progress reports shall be submitted to the San Diego Water Board by the (15th) day of March, June, September, and December of each year following the effective date of this CAO. Submission of these progress reports shall continue until submittal of the final Cleanup and Abatement Completion Report verifying completion of the Remedial Action Plan (RAP) for the Shipyard Sediment Site (see Directive C).

F. REPORTS AND WORKPLANS

The Dischargers shall prepare and submit all required plans and reports described in Directives B, C, and D of this Order to the San Diego Water Board for review and approval. The San Diego Water Board shall make these plans/reports available to the public for comment. If comments or concerns on these plans and reports are not resolved informally, then the Assistant Executive Officer will schedule the item for San Diego Water Board consideration at a public meeting.

G. NO FURTHER ACTION

Upon approval by the San Diego Water Board of the Final Cleanup and Abatement Completion Report (Directive C) and the Post Remedial Monitoring Reports (Directive D.3) remedial actions and monitoring will be complete and compliance with this CAO will be achieved. At that time the San Diego Water Board will inform the Dischargers and other interested persons in writing that, based on available information, no further remedial work is required. However, the portion of polygon SW29 not in the dredge footprint may be addressed by the San Diego Water Board under a separate future regulatory action based upon available information.

H. PROVISIONS

1. **Cost Recovery.** The Dischargers shall reimburse the State of California for all reasonable costs actually incurred by the San Diego Water Board and State Water Board to investigate, oversee, and monitor cleanup and abatement actions required by this CAO, including the cost to prepare CEQA documents according to billing statements prepared from time to time by the State Water Board. If the Dischargers are enrolled in a reimbursement program managed by the State Water Board for the discharge addressed by this CAO, reimbursement shall be made pursuant to the procedures established in that program.

Within 60 days of the adoption of this CAO, the Dischargers shall reimburse the State of California in the amount of \$168,173 for the unreimbursed costs actually incurred by the San Diego Water Board and State Water Board as described in Finding 41 of this Order.

Within 30 days of the adoption of this CAO, the Dischargers shall identify to the San Diego Water Board an entity or party, including contact information, authorized by the Dischargers to receive and pay future invoices issued by the State Water Board Cost Recovery Program for staff oversight costs incurred by the San Diego Water Board to investigate, oversee, and monitor cleanup and abatement actions required by this CAO.

2. **Waste Management.** The Dischargers shall properly manage, store, treat, and dispose of contaminated marine sediment and associated wastes in accordance with applicable federal, state, and local laws and regulations. The storage, handling, treatment, or disposal of contaminated marine sediment and associated waste shall not create conditions of pollution, contamination or nuisance as defined in Water Code section 13050. The Dischargers shall, as required by the San Diego Water Board, obtain, or apply for coverage under, waste discharge requirements or a conditional waiver of waste discharge requirements for the removal of waste from the immediate place of release and discharge of the waste to (a) land for treatment, storage, or disposal or (b) waters of the state. No waste discharge requirements or conditional waiver of waste discharge requirements shall be required for disposal of marine sediment and associated waste in a landfill regulated under existing waste discharge requirements.
3. **Request to Provide Information.** The Dischargers may present characterization data, preliminary interpretations and conclusions as they become available, rather than waiting until a final report is prepared. This type of on-going reporting can facilitate a consensus being reached between the Dischargers and the San Diego Water Board and may result in overall reduction of the time necessary for regulatory approval.
4. **Waste Constituent Analysis.** Unless otherwise permitted by the San Diego Water Board, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. Specific methods of analysis must be identified. If the Dischargers propose to use methods or test procedures other than those included in the most current version of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846" (U.S. Environmental Protection Agency) or 40 CFR 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants; Procedures for Detection and Quantification", the exact methodology must be submitted for review and must be approved by the San Diego Water Board prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports submitted to the San Diego Water Board.

Any report presenting new analytical data is required to include the complete Laboratory Analytical Report(s). The Laboratory Analytical Report(s) must be signed by the laboratory director and contain:

- A complete sample analytical report.
 - A complete laboratory quality assurance/quality control (QA/QC) report.
 - A discussion of the sample and QA/QC data.
 - A transmittal letter that must indicate whether or not all the analytical work was supervised by the director of the laboratory, and contain the following statement, "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services in accordance with current USEPA procedures."
5. **Duty to Operate and Maintain.** The Dischargers shall, at all times, properly operate and maintain all facilities and systems of treatment, control, storage, disposal and monitoring (and related appurtenances) which are installed or used by the Dischargers to achieve compliance with this CAO. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities, which are installed by the Dischargers only when the operation is necessary to achieve compliance the conditions of this CAO.
6. **Field Work Notice.** The Dischargers shall give the San Diego Water Board at least fourteen (14) days advance notice of all field work or field activities to be performed by the Dischargers pursuant to this CAO; provided, however, that in a given instance, if it is impossible for the Dischargers to provide such notice, the Dischargers shall provide notice to the San Diego Water Board of all such field work or activities as far in advance of such work as is possible. In any event, any notification pursuant to this Provision shall be given at least twenty-four (24) hours prior to the given field activities, unless the San Diego Water Board agrees otherwise.
7. **Duty to Use Registered Professionals.** The Dischargers shall provide documentation that plans and reports required under this CAO are prepared under the direction of appropriately qualified professionals. California Business and Professions Code sections 6735, 7835 and 7835.1 require that engineering and geologic evaluations and judgments be performed by or under the direction of registered professionals. A statement of qualifications and registration numbers of the responsible lead professionals shall be included in all plans and reports submitted by the Dischargers. The lead professional shall sign and affix their registration stamp to the report, plan or document.
8. **Corporate Signatory Requirements.** All reports required under this Order shall be signed and certified by a responsible corporate officers of the Dischargers described in paragraph 5.a. of this provision or by a duly authorized representative of that person as described in paragraph 5.b. of this provision.
- a. **Responsible Corporate Officer(s).** For the purposes of this provision, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who

performs similar policy - or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. ***Duly Authorized Representative.*** A person is a duly authorized representative only if

1. The authorization is made in writing by a person described in paragraph (a) of this provision;
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
3. The written authorization is submitted to the San Diego Water Board.

c. ***Changes to Authorization.*** If an authorization under paragraph (b) of this provision is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this provision must be submitted to the San Diego Water Board prior to or together with any reports or information to be signed by an authorized representative.

d. ***Certification Statement.*** Any person signing a document under paragraph a. or b. of this provision shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

9. **Duty to Submit Other Information.** When the Dischargers become aware that it failed to submit any relevant facts in any report required under this CAO, or submitted incorrect

information in any such report, the Dischargers shall promptly submit such facts or information to the San Diego Water Board.

10. Electronic and Paper Media Reporting Requirements. The Dischargers shall submit both electronic and paper copies of all reports required under this CAO including work plans, technical reports, and monitoring reports. Larger documents shall be divided into separate files at logical places in the report to keep file sizes under 150 megabytes. The Discharger shall continue to provide a paper transmittal letter, a paper copy of all figures larger than 8.5 inches by 14 inches (legal size), and an electronic copy (on CD or other appropriate media) of all reports to the San Diego Water Board. All paper correspondence and documents submitted to the San Diego Water Board must include the following identification numbers in the header or subject line: Geotracker Site ID: T10000003580. The Dischargers shall comply with the following reporting requirements for all reports and plans (and amendments thereto) required by this Order:

- a. **Reports and Plans Required by this Order.** The Dischargers shall submit one paper and one electronic, searchable PDF copy of all technical reports, monitoring reports, progress reports, and plans required by this Order. The PDF copy of all the reports shall also be uploaded into the Geotracker database, as required by Provision G.10(b)(4) below.
- b. **Electronic Data Submittals for Sediment Chemistry.** All information submitted to the San Diego Water Board in compliance with this Order is required to be submitted electronically via the Internet into the Geotracker database (<http://geotracker.waterboards.ca.gov/> (Geotracker Site ID. T10000003580)). The electronic data shall be uploaded on or prior to the regulatory due dates set forth in the Order or addenda thereto. To comply with these requirements, the Dischargers shall upload to the Geotracker database the following minimum information:
 1. **Laboratory Analytical Data:** Analytical data (including geochemical data) for all sediment and water samples in Electronic Data File (EDF) format. Water, sediment, and soil include analytical results of samples collected from: dredging equipment, monitoring wells, boreholes, gas and vapor wells or other collection devices, surface water, groundwater, piezometers, and stockpiles.
 2. **Locational Data:** The latitude and longitude of any permanent monitoring location (surface water or sediment sampling location) for which data is reported in EDF format, accurate to within 1 meter and referenced to a minimum of two reference points from the California Spatial Reference System (CSRS-H), if available.
 3. **Site Map:** Site map or maps which display discharge locations, streets bordering the facility, and sampling locations for all sediment, soil, and water samples. The site map is a stand-alone document that may be submitted in various electronic formats. A site map must also be uploaded to show the maximum extent of any sediment and water pollution. An update to the site map may be uploaded at any time.

4. **Electronic Report:** A complete copy (in searchable PDF format) of all workplans, assessment, cleanup, and monitoring reports including the signed transmittal letters, professional certifications, and all data presented in the reports.

11. **Report Submittals.** All monitoring and technical reports required under this CAO shall be submitted to

Executive Officer
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

12. **Amendment.** This CAO in no way limits the authority of this San Diego Water Board to institute additional enforcement actions or to require additional investigation and cleanup consistent with the California Water Code. This CAO may be revised by the San Diego Water Board as additional information becomes available.
13. **Time Extensions.** If, for any reason, the Dischargers are unable to perform any activity or submit any documentation in compliance with requirements in this CAO, including the RAP, or in compliance with associated implementation schedules, including the RAP implementation schedule, the Dischargers may request, in writing, an extension of time. The written extension request shall include justification for the delay and shall be received by the San Diego Water Board reasonably (but not less than 15 calendar days) in advance of the deadline sought to be extended. An extension may be granted for good cause, in which case this CAO will be accordingly amended.
14. **Community Relations.** The Dischargers shall cooperate with the San Diego Water Board in providing information regarding the remediation of the Shipyard Sediment Site to the public. If requested by the San Diego Water Board, the Dischargers shall participate in the preparation of such information for distribution to the public and in public meetings which may be held or sponsored by the San Diego Water Board to explain activities at or relating to the Shipyard Sediment Site.

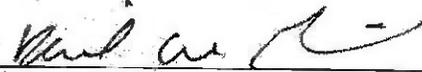
I. NOTIFICATIONS

1. **Enforcement Discretion.** The San Diego Water Board reserves its right to take any enforcement action authorized by law for violations of the terms and conditions of this CAO.
2. **Enforcement Notification.** The Porter-Cologne Water Quality Control Act commencing with Chapter 5, Enforcement and Implementation, section 13308, provides that if there is a threatened or continuing violation of a CAO, the San Diego Water Board may issue a Time Schedule Order prescribing a civil penalty in an amount not to exceed \$10,000 per day for each day compliance is not achieved in accordance with that time schedule. Section 13350 provides that any person may be assessed administrative civil liability by the San Diego Water Board for violating a CAO in an amount not to exceed \$5,000 for

March 14, 2012

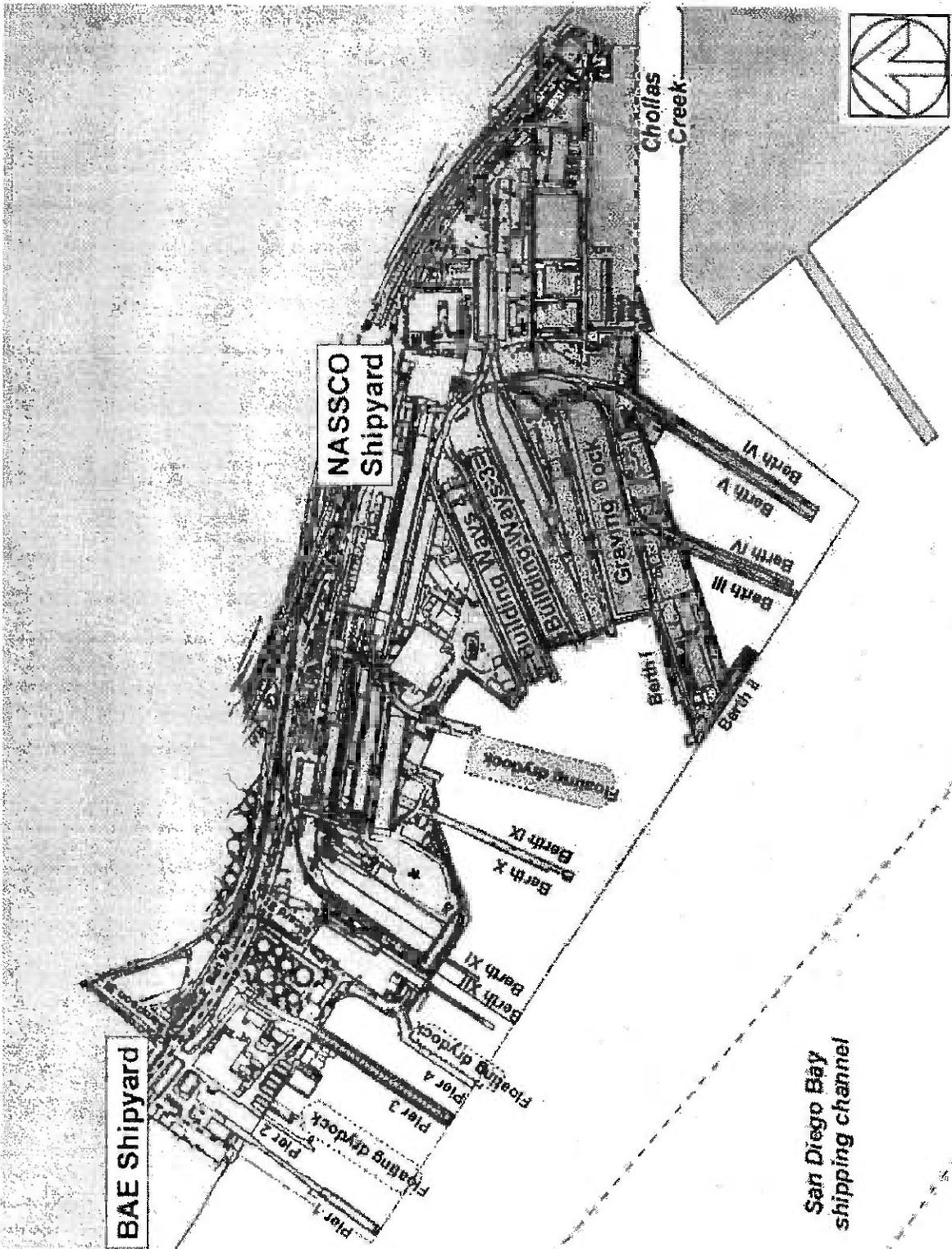
each day the violation occurs, or on a per gallon basis, not to exceed \$10 for each gallon of waste discharged. Alternatively the court may impose civil liability in an amount not to exceed \$15,000 for each day the violation occurs, or on a per gallon basis, not to exceed \$20 for each gallon of waste discharged. Section 13385 provides that any person may be assessed administrative civil liability by the San Diego Water Board for violating a CAO for an activity subject to regulation under Division 7, Chapter 5.5 of the Water Code, in an amount not to exceed the sum of both of the following: (1) \$10,000 for each day in which the violation occurs; and (2) where there is a discharge, any portion of which is not susceptible to cleanup or is not cleaned up, and the volume discharged but not cleaned up exceeds 1,000 gallons, an additional liability not to exceed \$10 multiplied by the number of gallons by which the volume discharged but not cleaned up exceeds 1,000 gallons. Alternatively the civil liability may be imposed by the court in an amount not to exceed the sum of both of the following: (1) \$25,000 for each day in which the violation occurs; and (2) where there is a discharge, any portion of which is not susceptible to cleanup or is not cleaned up, and the volume discharged but not cleaned up exceeds 1,000 gallons, an additional liability not to exceed \$25 multiplied by the number of gallons by which the volume discharged but not cleaned up exceeds 1,000 gallons.

I, David W. Gibson, Executive Officer, do hereby certify the forgoing is a full, true, and correct copy of a CAO issued on March 14, 2012.

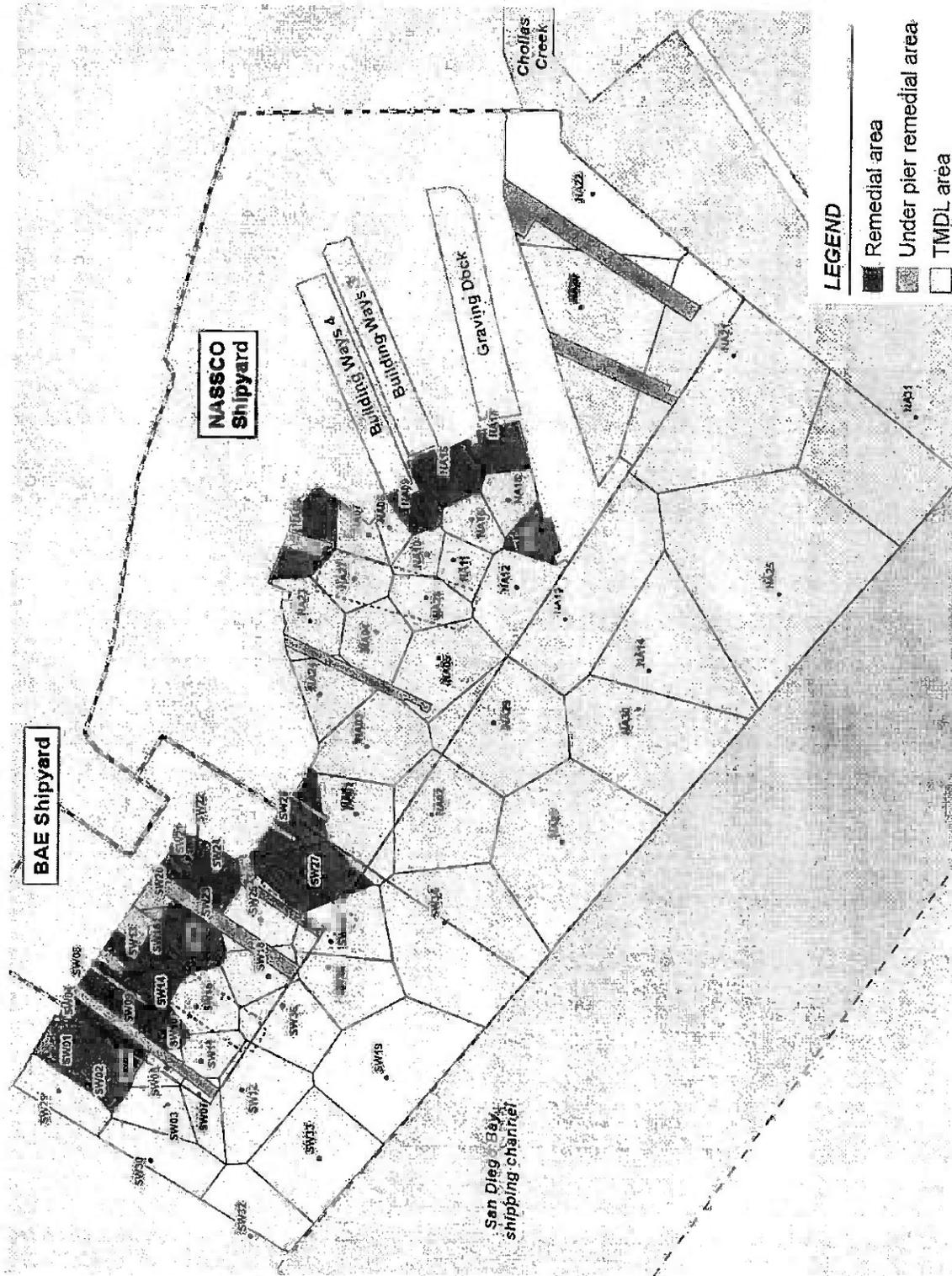


David W. Gibson
Executive Officer

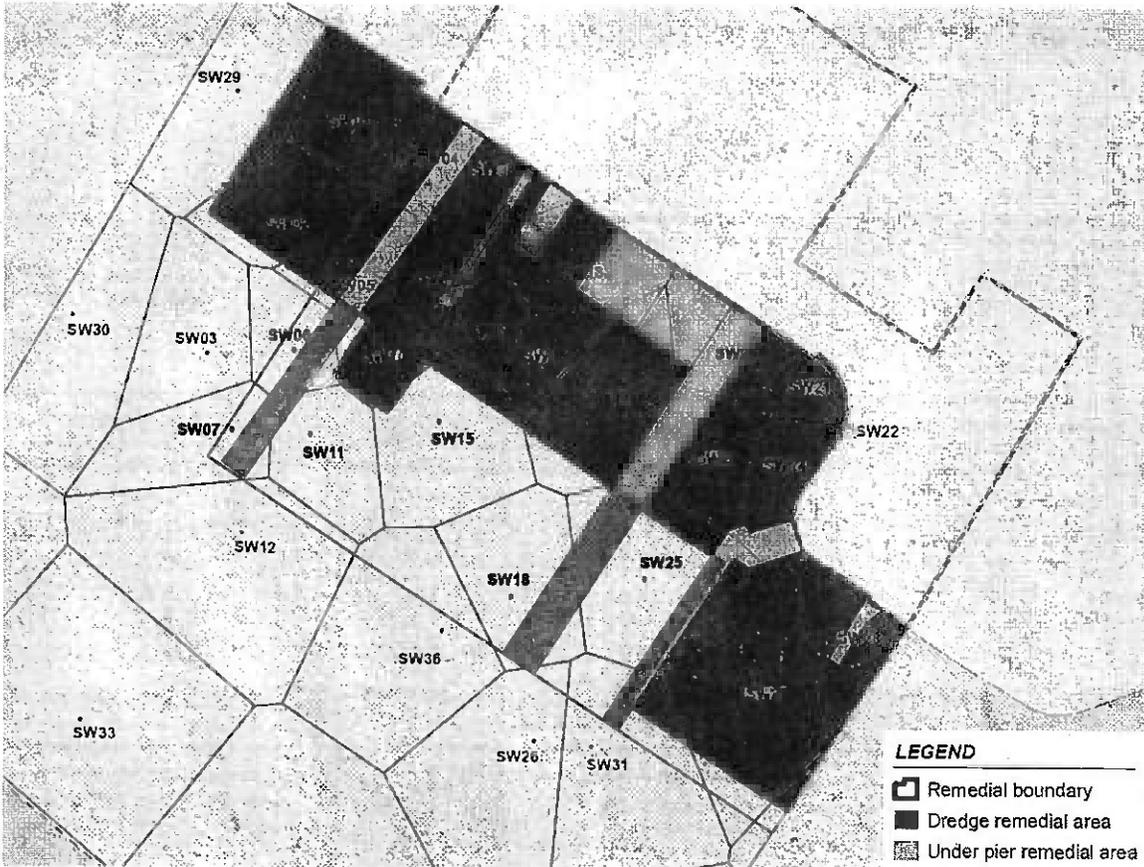
Attachment 1. Shipyard Sediment Area



Attachment 2. Polygons Targeted for Remediation



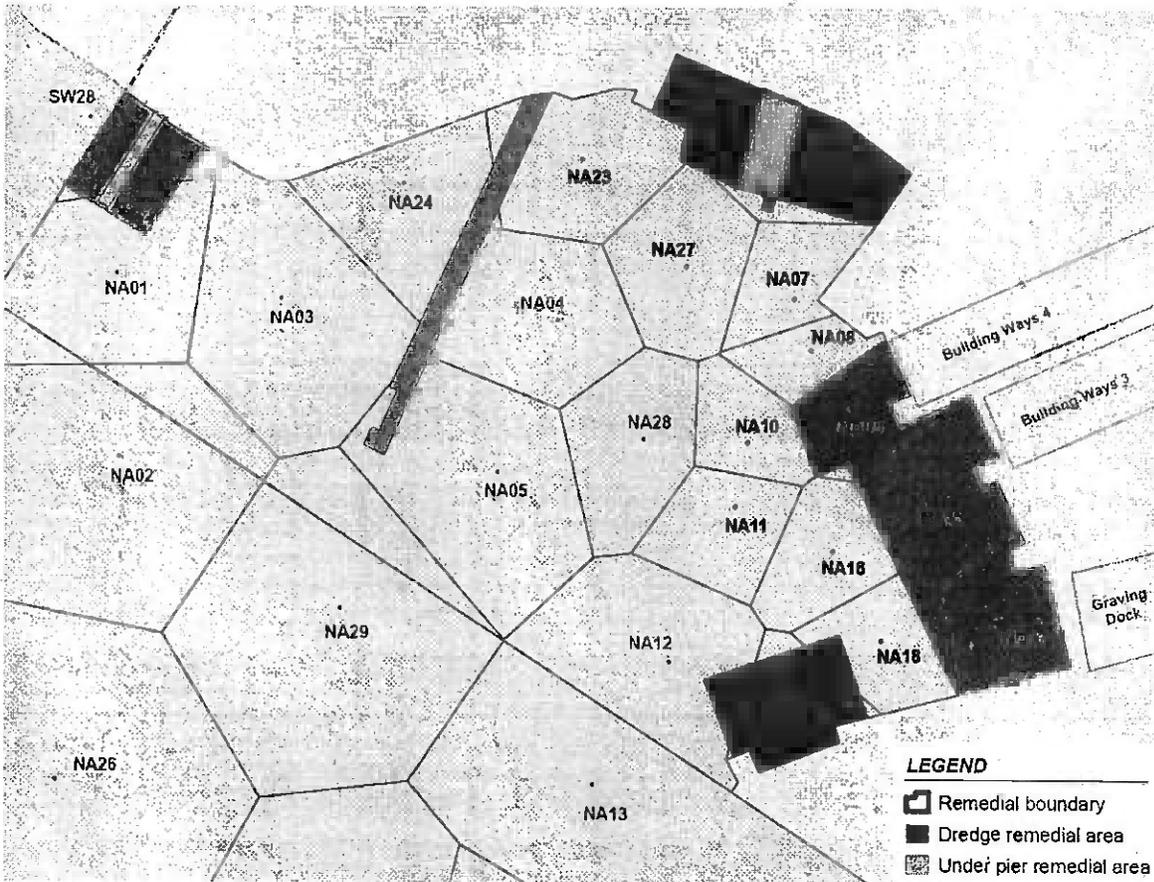
Attachment 3. Remedial Footprint Based on Sediment Management Units for BAE Shipyard



Remedial Site (North)	
Dredge remedial Area (ft ²)	438,300
Under pier remedial area (ft ²)	89,980
Total Remedial Area (ft ²)	528,295
Dredge Volume (yd ³)	90,800

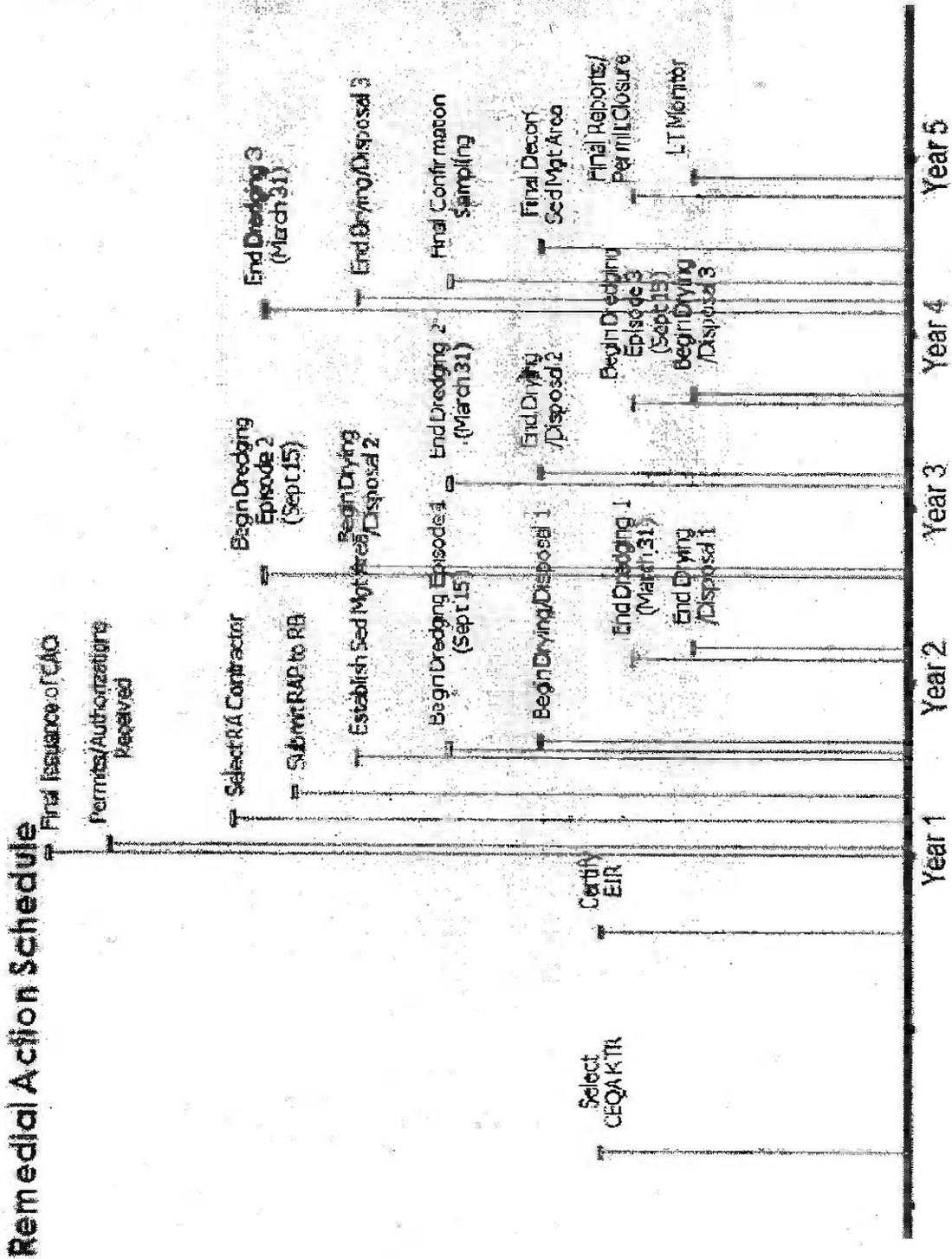
Note: Presumed remedy within the remedial boundary is dredging, except for under pier remedial areas.

Attachment 4. Remedial Footprint Based on Sediment Management Units for NASSCO Shipyard

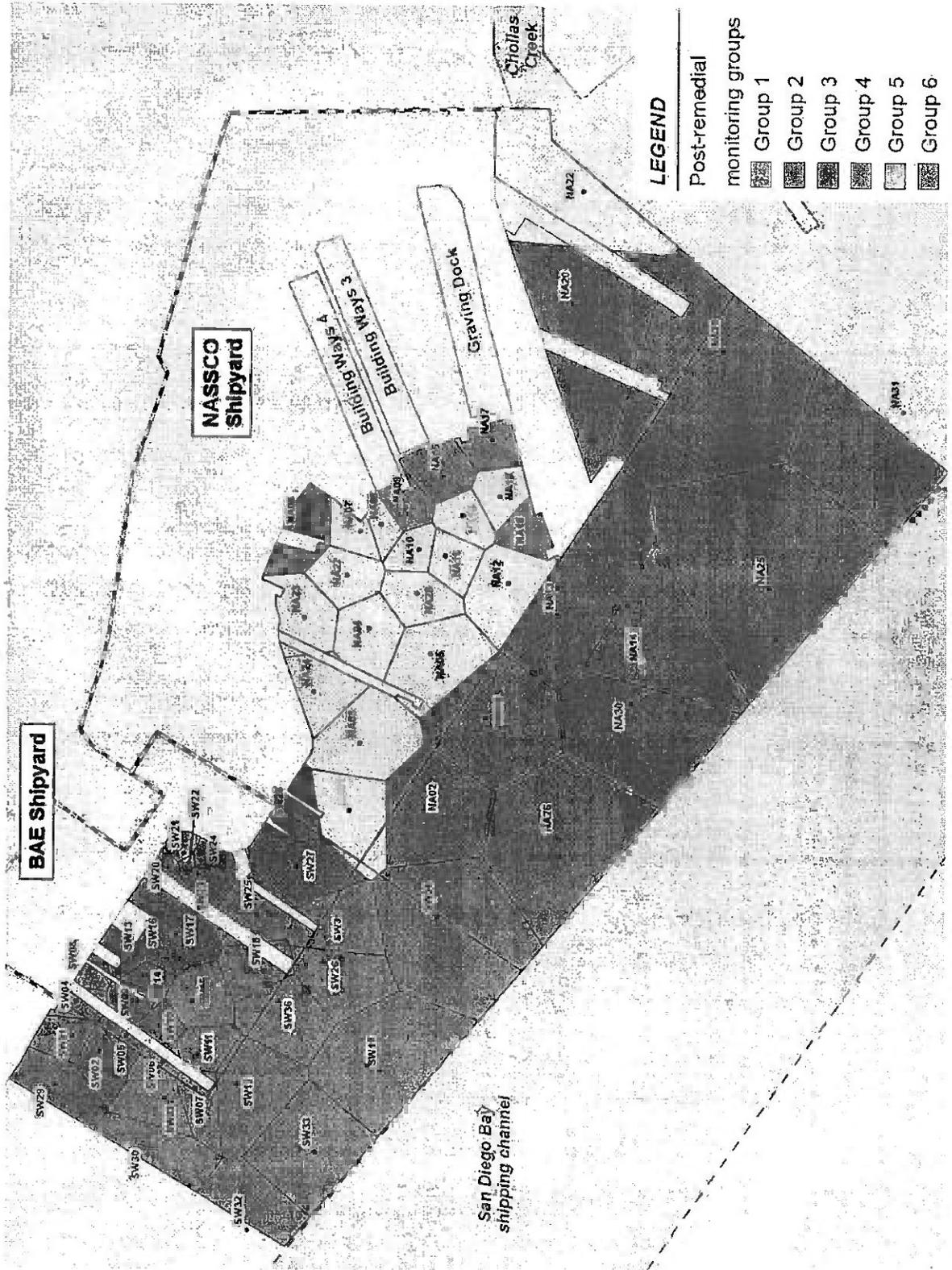


Remedial Site (South)	
Dredge remedial Area (ft ²)	217,800
Under pier remedial area (ft ²)	13,725
Total Remedial Area (ft ²)	231,495
Volume (yd ³)	52,600
TMDL area (ft ²)	218,060
Note: Presumed remedy within the remedial boundary is dredging, except for under pier remedial areas.	

Attachment 5. Remedial Action Implementation Schedule



Attachment 6. Composite Sampling Area for Post-Remedial Monitoring



Attachment 7. Summed list of PCB and PAH analytes measured in bulk sediments.

PAH	Identifier	PAH	Identifier
Naphthalene	C0N	Pyrene	PYR
C1-Naphthalenes	C1N	C1-Fluoranthenes/pyrenes	C1F/P
C2-Naphthalenes	C2N	C2-Fluoranthenes/pyrenes	C2F/P
C3-Naphthalenes	C3N	C3-Fluoranthenes/pyrenes	C3F/P
C4-Naphthalenes	C4N	Benzo[a]anthracene	BAA
Acenaphthylene	ACEY	Chrysene	C0C
Acenaphthene	ACE	C1-Chrysenes	C1C
Biphenyl	BIP	C2-Chrysenes	C2C
Fluorene	C0F	C3-Chrysenes	C3C
C1-Fluorenes	C1F	C4-Chrysenes	C4C
C2-Fluorenes	C2F	Benzo[b]fluoranthene	BBF
C3-Fluorenes	C3F	Benzo[k]fluoranthene	BKF
Anthracene	C0A	Benzo[e]pyrene	BEP
Phenanthrene	C0P	Benzo[a]pyrene	BAP
C1-Phenanthrenes/anthracenes	C1P/A	Perylene	PER
C2-Phenanthrenes/anthracenes	C2P/A	Indeno[1,2,3,-c,d]pyrene	INDENO
C3-Phenanthrenes/anthracenes	C3P/A	Dibenzo[a,h]anthracene	DAH
C4-Phenanthrenes/anthracenes	C4P/A	Benzo[g,h,i]perylene	BGP
Dibenzothiophene	C0D	Total PAH ¹	TPAH
C1-Dibenzothiophenes	C1D	Priority Pollutant PAH ²	PPPAH
C2-Dibenzothiophenes	C2D	Low Molecular Weight PAH ³	LMWPAH
C3-Dibenzothiophenes	C3D	High Molecular Weight PAH ⁴	HMWPAH
Fluoranthene	FLANT		

SCCWRP and U.S. Navy, 2005b

¹Total PAH = sum of all listed PAH analytes

²Priority pollutant PAH = sum of C0N, ACEY, ACE, C0F, C0A, C0P, FLANT, PYR, BAA, C0C, BBF, BKF, BAP, INDENO, DAH, BGP

³Low Molecular Weight PAH = sum of C0N, C2N, ACEY, ACE, C0F, C0A, C0P

⁴High Molecular Weight PAH = sum of FLANT, PYR, BAA, C0C, BAP, DAH

Attachment 7 (continued). Summed list of PCB and PAH analytes measured in bulk sediments.

PCB Congener	Congener Number	PCB Congener	Congener Number
2,2',5'-Trichlorobiphenyl (C13)	18	2,2',3,3',4,4'-Hexachlorobiphenyl (C16)	128
2,4,4'-Trichlorobiphenyl (C13)	28	2,2',3,4,4',5'-Hexachlorobiphenyl (C16)	138
3,4,4'-Trichlorobiphenyl (C13)	37	2,2',3,4',5',6'-Hexachlorobiphenyl (C16)	149
2,2',3,5'-Tetrachlorobiphenyl (C14)	44	2,2',3,5,5',6'-Hexachlorobiphenyl (C16)	151
2,4,4',5'-Tetrachlorobiphenyl (C14)	49	2,2',4,4',5,5'-Hexachlorobiphenyl (C16)	153
2,2',5,5'-Tetrachlorobiphenyl (C14)	52	2,3,3',4,4',5'-Hexachlorobiphenyl (C16)	156
2,3',4,4'-Tetrachlorobiphenyl (C14)	66	2,3,3',4,4',5'-Hexachlorobiphenyl (C16)	157
2,3',4',5'-Tetrachlorobiphenyl (C14)	70	2,3,3',4,4',6'-Hexachlorobiphenyl (C16)	158
2,4,4',5'-Tetrachlorobiphenyl (C14)	74	2,3',4,4',5,5'-Hexachlorobiphenyl (C16)	167
3,4,4',5'-Tetrachlorobiphenyl (C14)	81	2,3',4,4',5',6'-Hexachlorobiphenyl (C16)	168
3,3',4,4'-Tetrachlorobiphenyl (C14)	77	3,3',4,4',5,5'-Hexachlorobiphenyl (C16)	169
2,2',3,4,5'-Pentachlorobiphenyl (C15)	87	2,2',3,3',4,4',5'-Heptachlorobiphenyl (C17)	170
2,2',4,4',5'-Pentachlorobiphenyl (C15)	99	2,2',3,3',4,5',6'-Heptachlorobiphenyl (C17)	177
2,2',4,5,5'-Pentachlorobiphenyl (C15)	101	2,2',3,4,4',5,5'-Heptachlorobiphenyl (C17)	180
2,3,3',4,4'-Pentachlorobiphenyl (C15)	105	2,2',3,4,4',5',6'-Heptachlorobiphenyl (C17)	183
2,3,3',4',6'-Pentachlorobiphenyl (C15)	110	2,2',3,4',5,5',6'-Heptachlorobiphenyl (C17)	187
2,3,4,4',5'-Pentachlorobiphenyl (C15)	114	2,3,3',4,4',5,5'-Heptachlorobiphenyl (C17)	189
2,3',4,4',5'-Pentachlorobiphenyl (C15)	118	2,2',3,3',4,4',5,5'-Octachlorobiphenyl (C18)	194
2,3',4,4',6'-Pentachlorobiphenyl (C15)	119	2,2',3,3',4,5',6,6'-Octachlorobiphenyl (C18)	201
2,3',4,4',5'-Pentachlorobiphenyl (C15)	123	2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl (C19)	206
3,3',4,4',5'-Pentachlorobiphenyl (C15)	126	Total PCB ¹	TPCB

SCCWRP and U.S. Navy, 2005b

¹Total PCB = sum of all listed PCB congeners.

Attachment 8. Flow Diagram for the Sediment Chemistry Ranking Criteria (Low, Moderate, and High)

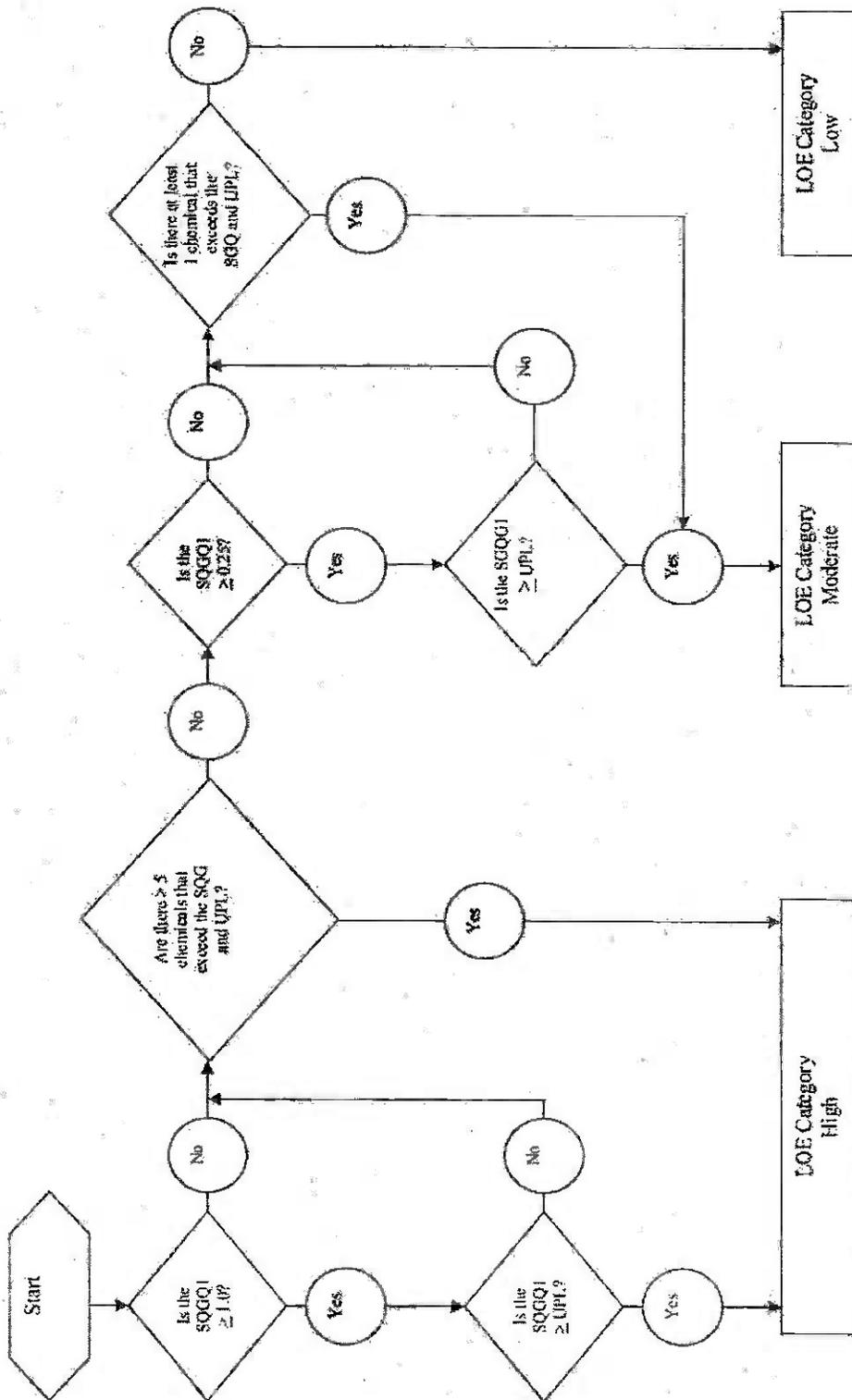


EXHIBIT 4

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

RESOLUTION NO. R9-2012-0025

CERTIFICATION, PURSUANT TO THE CALIFORNIA ENVIRONMENTAL QUALITY
ACT (Pub. Resources Code § 21000 et seq.; CEQA), OF THE FINAL
ENVIRONMENTAL IMPACT REPORT FOR THE SHIPYARD SEDIMENT
REMEDIATION PROJECT
SAN DIEGO BAY, CALIFORNIA

Whereas, the California Regional Water Quality Control Board, San Diego Region (hereinafter San Diego Water Board), finds that:

1. On September 15, 2010, the San Diego Water Board released Tentative Cleanup and Abatement Order No. R9-2011-0001. The Tentative Cleanup and Abatement Order was subsequently revised and released as Tentative Cleanup and Abatement Order No. R9-2012-0024 (CAO) and is directed to National Steel and Shipbuilding Company, BAE Systems San Diego Ship Repair, Inc., the City of San Diego, Campbell Industries, San Diego Gas & Electric, the United States Navy, and the San Diego Unified Port District (hereafter dischargers). The CAO requires the remediation of accumulated waste in marine sediments adjacent to existing shipyard facilities in San Diego Bay (the Project).
2. The purpose of the Project is to implement the CAO, which includes the dredging of sediment adjacent to shipyards in San Diego Bay; the dewatering and solidification of this dredged material; the potential treatment and disposal of decanted water from dredging; and the transport of the dredged sediment to an appropriate landfill for disposal.
3. In Resolution No. R9-2010-0115 adopted on September 8, 2010, the San Diego Water Board found that the Project presents unusual circumstances and there is a reasonable possibility of a significant effect on the environment. Therefore, the Project is not exempt from analysis under CEQA, and an Environmental Impact Report (EIR) analyzing the potential environmental effects of the CAO should be prepared.
4. The San Diego Water Board is functioning as the lead agency under CEQA, which has the principal responsibility for preparing environmental documents, engaging the public and responsible agencies and exercising its discretion to approve or disapprove the proposed Project.

5. The San Diego Water Board prepared an Initial Study/Environmental Checklist for the Project in accordance with the CEQA and the State CEQA guidelines (Cal. Code Regs., titl 14, § 15000, et seq.) on December 22, 2009.
6. On January 21, 2010, the San Diego Water Board held a CEQA scoping meeting to obtain comments concerning potential Project alternatives, significant environmental impacts, and mitigation measures for the Project.
7. On June 16, 2011, the San Diego Water Board distributed a Draft Program EIR for public review and comment. A Notice of Availability was sent to the State Clearinghouse, Responsible Agencies, and interested parties. The Draft Program EIR was circulated for a 45 day public review period, from June 16 to August 1, 2011. Copies of the Draft Program EIR were distributed to all Responsible Agencies and to the State Clearinghouse in addition to various public agencies and interested organizations. Copies of the Draft Program EIR were also made available for public review at Logan Heights Public Library, at the San Diego Water Board office, and on the internet at the San Diego Water Board website www.waterboards.ca.gov/sandiego. Comments were accepted for a period of 45 days as required by CEQA. A Notice of Availability was also filed with the County Clerk on September 20, 2011.
8. On September 15, 2011, the San Diego Water Board prepared, and distributed for public review, a proposed Final Program EIR consisting of the Draft Program EIR, comments received on the Draft Program EIR, responses to comments received during the public comment period, and minor revisions to the Draft Program EIR. Following additional public comment, further minor revisions were made to the Draft Program EIR and the Mitigation and Reporting Program on November 2, 2011. A CEQA Mitigation Monitoring and Reporting Program is contained within the Final Program EIR. Together, these documents constitute the required environmental documentation under CEQA. (Cal. Code Regs., tit. 14, §15132.)
9. As required by Public Resources Code section 21159 and Title 14 California Code of Regulations section 15187, the San Diego Water Board has evaluated the potentially significant adverse environmental impacts of reasonably foreseeable methods of compliance with the CAO. As described in the Final Program EIR, the adoption of the CAO and implementation of the Project is anticipated to result in direct impacts from the dredging and the disposal of sediment. The CAO does not prescribe the location of staging areas for the dredged sediment, nor does it prescribe the scheduling of the dredging in relation to sensitive species. Predicting the number or location of staging areas for the dredged sediment selected by the dischargers during remediation is overly speculative at this time. The selection of a staging area(s) for dewatering, and scheduling Project activities will be determined by the dischargers, and the selected staging area(s) and scheduling Project activities could have potentially significant adverse environmental impacts. Accordingly, the Final Program EIR evaluates environmental impacts at a programmatic level.

10. When an agency decides to approve a project that will cause one or more significant adverse environmental effects identified in an EIR, CEQA requires that the lead agency prepare a statement of overriding considerations which reflects the ultimate balancing of competing public objectives (including environmental, legal, technical, social, and economic factors) that the agency is required by law to carry out or approve. (Pub. Resources Code, §§ 21002.1, 21081; Cal. Code Regs., tit. 14, § 15093.) The Final Program EIR for the CAO finds that the implementation of the CAO could result in potentially significant environmental impacts. The San Diego Water Board, under CEQA, is required to adopt all feasible mitigation measures or feasible project alternatives that can substantially lessen or avoid any potentially significant project-related impacts. Other public agencies that approve individual actions taken in response to the CAO that are subject to CEQA can and should incorporate feasible mitigation measures into any projects or project approvals that they undertake.
11. As demonstrated by the CEQA Findings of Fact (attached hereto as Exhibit A and incorporated by this reference as if set forth in full herein), most of the Project's potentially significant adverse environmental impacts can be lessened to less than significant levels or avoided through the adoption of feasible mitigation measures. However, some adverse environmental impacts will remain significant and unavoidable despite the adoption and implementation of all feasible mitigation measures.
12. Under CEQA, the San Diego Water Board must consider the feasibility of a reasonable range of alternatives that would reduce or eliminate significant unavoidable effects associated with the Project while still attaining the Project's goals and objectives. The San Diego Water Board has determined, for reasons set forth in Exhibit A and the Final Program EIR, that the proposed alternatives to the Project are not environmentally preferable (e.g. they cause additional impacts), fail to fully meet the project objectives, and/or are wholly infeasible.
13. The San Diego Water Board has determined, as prescribed in Exhibit A and in the Final Program EIR, that the preferred Project is feasible and fully meets the Project objectives in accordance with CEQA.
14. The San Diego Water Board is required under CEQA to adopt a Mitigation Monitoring and Reporting Plan in order to ensure the proper implementation of mitigation measures adopted by the San Diego Water Board. A Mitigation Monitoring and Reporting Plan has been prepared within the Final Program EIR, is attached hereto as Exhibit B, and is incorporated by this reference as if set forth in full herein.
15. As some environmental impacts will remain significant and unavoidable despite the adoption and implementation of all feasible mitigation measures, CEQA requires the San Diego Water Board to adopt a Statement of Overriding Considerations,

which is attached hereto as Exhibit A and incorporated by this reference as if set forth in full herein.

16. It is appropriate to certify the Final Program EIR and to adopt the Findings of Fact, Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Plan as incorporated within this Resolution.

THEREFORE BE IT RESOLVED THAT:

1. Certification of the Final Program EIR

The San Diego Water Board hereby certifies that the Final Program EIR has been completed in compliance with CEQA. The San Diego Water Board has reviewed and considered the information contained in these documents, which reflect the San Diego Water Board's independent judgment and analysis; and has reviewed and considered the information in the Final Program EIR, as well as other information in the record, prior to approving the proposed Project.

2. Adoption of Findings

As the decision-making body for the proposed Shipyard Sediment Remediation Project, the San Diego Water Board has reviewed and considered the information contained in the Final Program EIR and the Findings of Fact attached hereto as Exhibit A and supporting documentation. The San Diego Water Board determines that the Findings of Fact contain a complete and accurate reporting of the environmental impacts and mitigation measures/strategies associated with the proposed Shipyard Sediment Remediation Project, addresses the infeasibility of certain mitigation measures, and includes the reasons why certain impacts cannot be mitigated to a less than significant level. The San Diego Water Board further finds that the Findings of Fact have been completed in compliance with CEQA and the State CEQA Guidelines. The San Diego Water Board hereby adopts the Findings of Fact attached hereto as Exhibit A.

3. Approval of the Statement of Overriding Considerations

In accordance with Public Resources Code section 21081 and State CEQA Guidelines Section 15093, subdivision (a), which state that CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve a project, the Statement of Overriding Considerations attached hereto as Exhibit A sets forth those significant effects on the environment that are found to be unavoidable, but are acceptable due to specific overriding concerns and benefits expected to result from implementing the proposed Shipyard Sediment

Remediation Project. The San Diego Water Board hereby approves and adopts the Statement of Overriding Considerations attached hereto as Exhibit A.

4. Mitigation Monitoring and Reporting Program

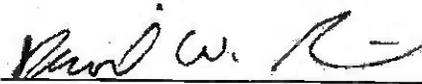
Pursuant to Public Resources Code section 21081.6 and CEQA Guidelines Section 15092, subdivision (d), the San Diego Board hereby adopts the Mitigation Monitoring and Reporting Program attached hereto as Exhibit B. The mitigation measures as set forth in the findings and in the MMRP are hereby incorporated into the proposed Shipyard Sediment Remediation Project.

5. Custodian of Documents

David Barker, Supervising WRC Engineer of the San Diego Water Board, is designated as the custodian of the documents and records of proceedings on which this decision is based. The San Diego Water Board's office is located at 9174 Sky Park Court, Suite 100, San Diego, CA 92123-4340, and the telephone number is (858) 467-2965.

Certification

I, David W. Gibson, Executive Officer, do hereby certify that this Resolution with all attachments is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Diego Region, on March 14, 2012.



David W. Gibson
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

FINDINGS OF FACT AND
STATEMENT OF OVERRIDING CONSIDERATIONS

SHIPYARD SEDIMENT REMEDIATION PROJECT
ENVIRONMENTAL IMPACT REPORT (EIR)
(SCH #2009111098)

March 14, 2012

Introduction

1. These findings of fact are made pursuant to the California Environmental Quality Act (Pub. Resources- Code § 21000 et seq; "CEQA") and the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.) by the San Diego Regional Water Quality Control Board (San Diego Water Board) in connection with the EIR prepared for the Shipyard Sediment Remediation Project, San Diego Bay, CA (Project), EIR SCH # 2009111098.
2. These CEQA findings are Exhibit A to San Diego Water Board Resolution R9-2012-0025, and are attached thereto and incorporated therein by reference.
3. These findings of fact are based on substantial evidence in light of the entire administrative record, and references to specific reports and specific pages of documents are not intended to identify those sources as the exclusive basis for the findings.

Project Description

4. The Project, which is the subject of the Final Program EIR, is the remedial dredging of sediment adjacent to shipyards in San Diego Bay, the dewatering and solidification of the dredged material, the potential treatment of decanted water, the transport of the dredged material to an appropriate landfill for disposal, and the placement of a sand cover in areas where dredging is not feasible, such as under existing piers.
5. The purpose of the Project is to restore and to protect impaired beneficial uses of the waters of San Diego Bay through implementation of Cleanup and Abatement Order No. R9-2012-0024 (the CAO) issued by the San Diego Water Board. The San Diego Water Board is the Lead Agency under CEQA for the proposed Project. The dredging will occur in an area of San Diego Bay defined in the CAO. The sediment removal footprint and optional staging sites comprise the Project site for the purpose of this Final Program EIR.

Environmental Review

6. The environmental review process for the Project has been outlined in Resolution No. R9-2012-0025.

Administrative Record

7. The record, upon which all findings and determinations related to the approval of the Project are based, includes the following:
 - a. The EIR and all documents referenced in or relied upon by the EIR.
 - b. All information, including written evidence and testimony, provided by San Diego Water Board staff to the San Diego Water Board regarding the

- Program EIR, the approvals, and the Project, including the administrative record for the CAO.
- c. All information including written evidence and testimony, presented to the San Diego Water Board by the environmental consultants who prepared the Program EIR or incorporated into reports presented to the San Diego Water Board.
 - d. All information, including written evidence and testimony, presented to the San Diego Water Board from other public agencies relating to the Program EIR.
 - e. All final information, including written evidence and testimony, presented at any San Diego Water Board hearing or workshop related to the Project and Program EIR.
 - f. The Mitigation Monitoring and Reporting Program for the Project.
 - g. All public comments received on the draft and proposed Final Program EIR during the designated comment periods, and the San Diego Water Board responses to comments received.
 - h. These findings of fact and statement of overriding considerations.
 - i. All other documents composing the record pursuant to Public Resources Code section 21167.6(e).
8. David Barker, Supervising WRC Engineer of the San Diego Water Board, is the custodian of the documents and other materials that constitute the record of the proceedings upon which the San Diego Water Board's decision is based. Documents and materials are located at 9174 Sky Park Court, Suite 100, San Diego, CA 92123.

Certification of the EIR

9. In accordance with CEQA, the San Diego Water Board certifies that the Final Program EIR has been completed in compliance with CEQA. The San Diego Water Board has independently reviewed the record and Final Program EIR prior to certifying the Final Program EIR and approving the Project. By these findings, the San Diego Water Board confirms, ratifies, and adopts the findings and conclusions of the Final Program EIR as supplemented and modified by these findings. The Final Program EIR and these findings represent the independent judgment of the San Diego Water Board.
10. The San Diego Water Board recognizes that the Final Program EIR may contain clerical errors but has reviewed the entirety of the Final Program EIR and bases its determination on the substance of the information it contains.
11. The San Diego Water Board certifies that the Final Program EIR is adequate to support all actions in connection with the approval of the Project. The San Diego Water Board certifies that the Final Program EIR is adequate to support approval of the Project described in the Final Program EIR, each component and phase of the Project described in the Final Program EIR, any variant of the Project as

described in the Final Program EIR, any minor modifications to the Project or variants described in the Final Program EIR and components of the Project.

12. The San Diego Water Board certifies that the Final Program EIR is adequate to support all actions as prescribed in the Final Program EIR, including the selection of staging areas for the Project. The San Diego Water Board recognizes that, once a staging area(s) is selected and a specific staging area sited, additional analysis will be conducted.

Absence of Significant New Information

13. The San Diego Water Board recognizes that the Final Program EIR incorporates information obtained and produced after the Draft Program EIR and proposed Final Program EIR were completed, and the Final Program EIR contains additions, modifications, and clarifications. The San Diego Water Board has reviewed and considered the Final Program EIR and all of this information. The Final Program EIR does not add significant new information to the Draft or proposed Final Program EIR that would require recirculation of the Program EIR under CEQA. The new information added to the Final Program EIR does not involve a new significant environmental impact, a substantial increase in the severity of an environmental impact, or a feasible mitigation measure or alternative considerably different from others previously analyzed and that would clearly lessen the significant impacts of the Project while meeting the Project objectives.
14. The public was provided with forty-five (45) days to provide written comments on the Draft Program EIR, which was released on June 16, 2011. No information indicates the Draft Program EIR was inadequate or conclusory, or that the public was deprived of a meaningful opportunity to review and comment on the Draft Program EIR.
15. The public was further provided with an additional thirty-five (35) days to provide written comments on changes found in the proposed Final Program EIR, which was released on September 15, 2011. The public was further provided an opportunity to provide oral comments on the proposed Final Program EIR at the San Diego Water Board hearings in this matter. No information indicates the proposed Final Program EIR was inadequate or conclusory, or that the public was deprived of a meaningful opportunity to review and comment on the proposed Final Program EIR.
16. The San Diego Water Board finds that the changes and modifications made to the Program EIR after the Draft Program EIR was circulated for public review and comment, and after the proposed Final Program EIR was circulated for public review and comment, do not individually or collectively constitute significant new information within the meaning of Public Resources Code section 21092.1 or CEQA Guidelines at section 15088.5. Thus, recirculation of the Final Program EIR is not required.

Mitigation Measures, Conditions of Approval, and Mitigation Monitoring and Reporting Program

17. Public Resources Code section 21081.6 and CEQA Guidelines section 15097 require the San Diego Water Board to adopt a monitoring or reporting program to ensure that mitigation measures and revisions to the Project identified in the proposed Final Program EIR are implemented. The Mitigation Monitoring and Reporting Program (MMRP) is included, and incorporated by reference, in the Final Program EIR and as Exhibit B to the resolution. The MMRP is included in the conditions of approval for the Project, and is adopted by the San Diego Water Board. The MMRP satisfies the requirements of CEQA.
18. The mitigation measures set forth in the MMRP are specific and enforceable and are capable of being fully implemented by the efforts of the San Diego Water Board, the dischargers, and/or other identified public agencies of responsibility. As appropriate, some mitigation measures define performance standards to ensure no significant environmental impacts will result. The MMRP adequately describes the implementation procedures, monitoring responsibility, reporting actions, compliance schedule, non-compliance sanctions, and verification of compliance in order to ensure that the Project complies with the adopted mitigation measures.
19. The San Diego Water Board will adopt and impose the feasible mitigation measures as set forth in the MMRP as enforceable conditions.
20. The mitigation measures incorporated and imposed upon the Project approval will not have new significant environmental impacts that were not analyzed in the Final Program EIR. In the event a mitigation measure recommended in the Final Program EIR has been inadvertently omitted from the MMRP, that mitigation measure is adopted and incorporated from the Final Program EIR into the MMRP by reference and adopted as a condition of approval.

Findings Regarding Impacts

21. In accordance with Public Resources Code section 21081 and CEQA Guidelines sections 15091 and 15092, the San Diego Water Board adopts the findings and conclusions regarding impacts and mitigation measure that are set forth in the EIR and summarized in the MMRP. These findings do not repeat the full discussions of environmental impacts, mitigation measures, conditions of approval, and explanations contained in the EIR. The San Diego Water Board ratifies, adopts, and incorporates, as though fully set forth, the analysis, explanation, findings, responses to comments and conclusions of the EIR.
22. The San Diego Water Board recognizes that the environmental analysis of the Project raises controversial environmental issues relative to the Project description,

and that a range of technical and scientific opinion exists with respect to those issues. The San Diego Water Board acknowledges that there are differing and potentially conflicting expert and other opinions regarding the Project description. The San Diego Water Board maintains that EIR Project description is consistent with the Project as described in Tentative CAO No. R9-2012-0024. These findings are based on a full appraisal of all viewpoints expressed in the EIR and in the record, as well as other relevant information in the record of the proceedings for the Project.

Significant But Mitigatable Impacts

23. Under Public Resources Code section 21081(a)(1) and CEQA Guidelines sections 15091(a)(1) and 15092(b), and to the extent reflected in the EIR and the MMRP, the San Diego Water Board finds that changes or alterations have been required in, or incorporated into, the components of the Project that mitigate or avoid potentially significant effects on the environment. The following potentially significant impacts will be reduced to a less than significant level through the implementation of Project mitigation measures, or where indicated through the implementation of Standard Conditions of Approval (which are treated as mitigation measures and are an integral part of the MMRP as presented in the EIR and Exhibit B):

a. Transportation and Circulation:

- i. Intersections and Roadway Segments/_I-5 southbound Ramp/Boston Avenue intersection and Boston Avenue between 28th Street and the I-5 southbound ramp (Staging Areas 1-4)
 1. Staging Areas 1 and 2: If Staging Areas 1 and 2 are selected, the existing plus Project a.m. and p.m. peak-hour LOS analysis for all study area intersections for Staging Areas 1 and 2 indicates that all study area intersections will continue to operate at an acceptable LOS (D or better) in the a.m. and p.m. peak hour with implementation of the Project, with the exception of the I-5 southbound ramp/Boston Avenue intersection (LOS F during p.m. peak hour). The addition of Project traffic will increase the vehicle delay greater than 1 second at this intersection. As such, the Project traffic will result in a significant impact at this intersection in the existing plus Project condition, based on the City of San Diego's significance criteria.

Based on the analysis of the daily traffic volumes and v/c ratios for the study area roadway segments in the existing condition with the addition of Project traffic, the roadway segments are forecast to operate at an acceptable LOS (LOS D or better) with the addition of Project traffic, with the exceptions of National Avenue between 28th

Street and the I-5 northbound ramps (LOS F), and Boston Avenue between 28th Street and the I-5 southbound ramp (LOS F). The addition of Project traffic will not increase the v/c ratio greater than 0.01 along National Avenue between 28th Street and the I-5 northbound ramps. Therefore, this impact does not exceed the City's threshold of significance. However, implementation of the Project would cause a significant impact for the street segment along Boston Avenue between 28th Street and the I-5 southbound ramp.

2. Staging Area 3: If Staging Area 3 is selected, it is anticipated that the trucks will utilize the intersection of Sampson Avenue to access Staging Area 3. Trucks departing from potential Staging Area 3 would access I-5 north and south via Harbor Drive and 28th Street. The results of the existing plus Project a.m. and p.m. peak-hour LOS analysis indicates that all study area intersections will continue to operate at an acceptable LOS (D or better) in the a.m. and p.m. peak hour with implementation of the proposed Project, with the exception of the I-5 southbound ramp/Boston Avenue intersection (LOS F during p.m. peak hour). The addition of Project traffic will increase the vehicle delay greater than 1 second at this intersection. As such, the Project traffic will result in a significant impact at this intersection in the existing plus Project condition based on the City's significance criteria.

The analysis of daily traffic volumes and v/c ratios for the study area roadway segments in the existing condition with the addition of Project traffic indicates that the roadway segments are forecast to operate at an acceptable LOS (LOS D or better) with the addition of Project traffic, with the exceptions of National Avenue between 28th Street and

the I-5 northbound ramps (LOS F), and Boston Avenue between 28th Street and the I-5 southbound ramp (LOS F). The addition of Project traffic will not increase the v/c ratio greater than 0.01 along National Avenue between 28th Street and the I-5 northbound ramps. Therefore this impact at the I-5 northbound ramps does not exceed the City's threshold of significance. However, implementation of the Project would cause a significant impact along Boston Avenue between 28th Street and the I-5 southbound ramp.

3. Staging Area 4: Staging Area 4 consists of two existing NASSCO parking lots. The north parking lot is larger than the south lot. To determine the amount of traffic destined for the north, and south lots, the Project trips were split 75 percent and 25 percent, respectively, based on the size of the two lots. The trips associated

with the south lot would access I-5 north and south via Harbor Drive and 28th Street. Before the trips can reach the I-5 ramps, the trips associated with the north lot would have to travel west along Harbor Drive, make a U-turn at the intersection of Sampson Street, then continue east along Harbor Drive and north along 28th Street. The analysis of the existing plus Project a.m. and p.m. peak hour trips indicates that all study area intersections will continue to operate at an acceptable LOS (D or better) in the a.m. and p.m. peak hour with implementation of the proposed Project, with the exception of the I-5 southbound ramp/Boston Avenue intersection (LOS F during p.m. peak hour). The addition of Project traffic will increase the vehicle delay greater than 1 second at this intersection. As such, the Project traffic will result in a significant impact at this intersection in the existing plus Project condition, based on the City's significance criteria.

The analysis of daily traffic volumes and v/c ratios for the study area roadway segments in the existing condition with the addition of Project traffic indicates that the roadway segments are forecast to operate at an acceptable LOS (LOS D or better) with the addition of Project traffic, with the exceptions of National Avenue between 28th Street and the I-5 northbound ramps (LOS F), and Boston Avenue between 28th Street and the I-5 southbound ramp (LOS F). The addition of Project traffic will not increase the v/c ratio greater than 0.01 along National Avenue between 28th Street and the I-5 northbound ramps. Therefore this impact at the I-5 northbound ramps does not exceed the City's threshold of significance. However, implementation of the Project would result in a significant impact along Boston Avenue between 28th Street and the I-5 southbound ramp.

The following mitigation measure(s) will be required should any of Staging Areas 1-4 be selected:

Mitigation Measure 4.1.1: Should one or more of Staging Areas 1 through 4 be selected, the contractor shall require, and the San Diego Water Board shall verify, that the Project-related truck traffic is routed on Harbor Drive (southbound) to the Civic Center Drive access to Interstate 5 (I-5) for the duration of the dredge-and-haul activity and sand import activity. This requirement will be reflected in the contract documents for the primary contractor and sub-contractors. Haul, delivery, and employee traffic shall be discouraged at the I-5 southbound ramp/Boston Avenue intersection and on the roadway segment of Boston Avenue between 28th Street and the I-5 southbound ramp.

The traffic distribution for the haul route scenario defined in Mitigation Measure 4.1.1 will avoid the proposed Project impact at this intersection and roadway segment, and not result in a significant impact at this or other intersections in the existing plus Project condition.

- ii. Implementation and/or operation of Bayshore Bikeway (Staging Area 5): The Bayshore Bikeway Plan was adopted by SANDAG in 2006 to identify opportunities to improve the 24-mile bicycle facility around San Diego Bay, particularly along the east side of the bay. Approximately 13 miles of bicycle paths are currently in use on the Bayshore Bikeway. The remainder of the facility consists of on-street sections designated as either bicycle lanes or bicycle routes. SANDAG is planning and implementing additional improvements to improve the bikeway along the east side of the bay. The next stage of the Project would extend the bike path north along the east side of San Diego Bay through Chula Vista and National City. The roadway segment analysis summarized above supports a conclusion that Harbor Drive and Tidelands Avenue will operate at acceptable LOS (LOS D or better) with implementation of the proposed Project. Therefore, existing bike safety and bike routes would not be significantly affected with the addition of Project traffic for the duration of the dredge-and-removal activity. No bike route detours or other mitigation are warranted for the portion of the Bayshore Bikeway on Harbor Drive as a result of the Project. It is possible that Bayshore Bikeway Segment 5 will be implemented prior to or during the active dredge period, and there is the potential for Project-related truck trips to interfere with the implementation and/or operation of the bikeway. However, only several acres of the approximately 145-acre site would be necessary for the dewatering and treatment of the removed sediment. In addition, it is anticipated that the location of the dewatering and treatment activity within the 24th Street Marine Terminal would be close to San Diego Bay or Sweetwater Channel for ease of sediment transport from barge to shore. Therefore, it is anticipated that the relatively small area needed for the dewatering and treatment could be located in such a way as to not interfere with the proposed bikeway in either the physical configuration of the site or in the routing of trucks to and from the site. In addition, it is noted that the 24th Street Marine Terminal is currently used for marine industrial purposes, and there is existing truck traffic on Tidelands Avenue. Should Staging Area 5 be selected, the proposed Project would add approximately 348 PCE trips per day for the duration of the dredging activity. However, mitigation is incorporated to ensure that the respective Lead Agencies coordinate the haul activity and bikeway implementation to ensure that impacts to the Bayshore Bikeway are avoided;

The following mitigation measure(s) will be required for the Bayshore Bikeway:

Mitigation Measure 4.1.2: Should Staging Area 5 be selected, the San Diego Water Board shall consult with the San Diego Association of Governments (SANDAG) and the San Diego Unified Port District (Port District) on the implementation status of Segment 5 of the Bayshore Bikeway in order to locate the staging activity away from the planned bike path. The consultation shall include information regarding the specific location, configuration, and operation of the temporary staging area, as well as appropriate bikeway safety and access considerations. If Staging Area 5 is selected, the contractor shall implement the staging area as agreed to by the agencies.

Implementation of Mitigation Measure 4.1.2 will ensure that the respective Lead Agencies for the bikeway and for the Shipyard Sediment Remediation Project coordinate the treatment and haul activity and bikeway implementation to ensure that impacts to the Bayshore Bikeway are avoided. See also Mitigation Measure 4.5.10, which identifies the western and northern portions of Staging Area 5 as the preferred location for dewatering and treatment. Therefore, the proposed Project results in a less than significant impact to the Bayshore Bikeway with mitigation incorporated.

- iii. Construction Parking (Staging Areas 1-4): Currently, parking near the shipyards during the workday is constrained. Many employees currently commute via trolley or shuttle bus. Staging Areas 3 and 4 are areas currently used for shipyard commuter parking. If ship building and repair activities were to occur concurrently with the dewatering and on-shore treatment on either Staging Area 3 or 4, it is anticipated there will be a parking shortage for shipyard employees. Similarly, portions of Staging Areas 1 and 2 are also used for parking for the 10th Avenue Marine Terminal and other workers. If these areas were used for the dewatering and treatment of sediment, the displacement of parking could result in a shortage of parking needed for employees in these areas. Currently, there is a high level of participation in transit and other alternative transportation modes by shipyard workers (i.e., approximately 30 percent). Based on this high level of participation, it is anticipated there may not be sufficient elasticity in the provision of/demand for transit services to accommodate a substantial increase in alternative modes/reductions in vehicle use by shipyard/Project employees. Therefore, increased transit use is not considered to be a feasible mitigation measure in order to reduce parking demand.

Should one or more of Staging Areas 1 through 4 be selected, the San Diego Water Board, in consultation with the San Diego Unified Port

District (Port District), the shipyards, and the City of San Diego, would prepare a Parking Management Plan (PMP) to identify appropriate substitute parking areas, shuttles, and commuter routes, as necessary, to meet the need created by the short-term loss of employee parking spaces. The need for off-site parking will be based on anticipated net daily employment during the dredge period (which may be reduced compared to existing conditions as a result of the dredge activity displacing some ship building/repair activity), and the loss of parking in the selected staging area.

The following mitigation measure(s) will be required for construction parking should Staging Areas 1 through 4 be selected:

Mitigation Measure 4.1.3: Should one or more of Staging Areas 1 through 4 be selected, the shipyards, in consultation with the San Diego Water Board, San Diego Unified Port District (Port District), and City of San Diego, shall prepare a Parking Management Plan (PMP) to identify appropriate substitute parking areas, shuttles, and commuter routes, as necessary, to meet the need created by the short-term loss of employee parking spaces. The need for off-site parking shall be based on anticipated employment during the dredge period (which may be reduced compared to existing conditions as a result of the dredge activity displacing some ship building/repair activity), and the loss of parking in the selected staging area. The PMP shall be approved by the City of San Diego Traffic Engineer prior to the initiation of dredging, and its implementation shall be verified by the San Diego Water Board.

Implementation of Mitigation Measure 4.1.3 will ensure that the potential short-term parking loss impact during the dredge activity is reduced to less than significant by requiring the identification and securing of sufficient temporary parking for shipyard operations workers and construction workers implementing the proposed Project.

b. Hydrology and Water Quality

- i. Water Quality Impacts: The activities proposed as part of the Project that have the potential to result in adverse water quality impacts include dredging, unloading of dredged material to onshore dewatering area, onshore dewatering, and application of the clean sand covers. The shipyard sediments are known to be contaminated with several pollutants or "constituents of concern." The primary constituents of concern for the proposed Project are copper, mercury, high molecular weight polynuclear aromatic hydrocarbons (HPAHs), PCBs, and tributyltin, and the secondary constituents of concern are arsenic, cadmium, lead, and zinc.

The Project activities listed above could degrade water quality by introducing sediments and contaminants into the water column that could increase turbidity and degrade acceptable levels of habitat quality for organisms in the water column. In addition, the primary and secondary constituents of concern could be released when bed sediments are suspended in the water column. Resuspended contaminants may dissolve into the water column and become available for uptake by biota. Re-deposition may occur near the dredge area or, depending on the environmental conditions and controls, resuspended sediment may be transported to other locations in the water body. Resuspension of contaminated sediments and release of constituents of concern could impact water quality by decreasing dissolved oxygen, changing pH, increasing turbidity, and increasing contaminant levels to levels toxic to aquatic receptors. Changes in water quality could degrade and/or impair the beneficial uses in San Diego Bay and the Pacific Ocean. Sediment dredging activities are planned such that a sufficient volume of contaminated sediment is removed; however, removing all particles of contaminated sediment is neither practical nor feasible.

Accidental oil or fuel spills that could potentially occur during the proposed dredging operations could impair and/or degrade water quality in San Diego Bay, depending on the severity of the spill. Such events are likely to be localized spills of lighter, refined diesel fuels, gasoline, and lubricating oils that are highly toxic to marine life. The potential for the occurrence of petroleum-product leaks or spills is low, but the potential for an adverse effect to marine resources is moderate to high.

Onshore dewatering activities have the potential to impact water quality in the unlikely event that decanted water flows back into San Diego Bay, which could cause turbid conditions, decrease dissolved oxygen, decrease water clarity, and increase existing concentrations of suspended solids. Additionally, if the decanted water flowing back into the water column contains constituents of concern, degradation of water quality and increased toxicity to aquatic organisms could occur. These impacts can impair and degrade beneficial uses in San Diego Bay and the Pacific Ocean.

In addition, there is a potential for disposal of decanted water from the containment cell to exceed City of San Diego requirements for discharge of wastewater to the sanitary sewer system. In addition, disposal of the decanted water into the sanitary sewer system has the potential to exceed the capacity of the sewer system.

The following mitigation measure(s) will be required to protect water quality during the Project; however, it is anticipated that a subsequent discretionary approval(s) will be required to fully comply with the directives of the TCAO Project. Subsequent discretionary approvals will include, at a minimum, a specific Remedial Action Plan (RAP) requiring permitting under sections 404 and 401 of the Clean Water Act. The RAP is expected to contain specific protocols for performing the actual dredging and other tasks associated with implementing the TCAO. To the extent it can be demonstrated to the San Diego Water Board on the basis of substantial evidence that alternative mitigation measures to Mitigation Measures 4.2.1, 4.2.2, 4.2.3, 4.2.7 and 4.2.8, set forth below, are equally or more effective at mitigating the identified potentially significant adverse environmental impacts and at protecting the environment, those mitigation measures may be adopted by the San Diego Water Board in lieu of those set forth herein at the time subsequent discretionary approvals are granted.

Mitigation Measure 4.2.1: During dredging operations, the San Diego Water Board shall verify that the contractor/dredge operator is using automatic rather than manual monitoring of the dredging operations, which will allow continuous data logging with automatic interpretation and adjustments to the dredging operations for real-time feedback for the dredge operator. Automatic systems shall also be used to monitor turbidity and other water quality conditions in the vicinity of the dredging operations to facilitate real-time adjustments by the dredging operators to control temporary water quality effects. The automatic systems shall include threshold level alarms so that the operator or other appropriate Project personnel recognize that a particular system within the operation has failed. If the threshold-level alarms are activated, the dredge operator shall immediately shut down or modify the operations to reduce water quality constituents to within threshold levels. The San Diego Water Board shall further verify that the contractor/operator is using visual monitoring and recording of water turbidity during the dredging operations, including the temporary cessation of dredging if exceedances of the turbidity objective in the Basin Plan occur. Water quality sampling for contaminants of concern (COCs) shall be required if silt curtains are not deployed during any phase of the in-water activities.

Mitigation Measure 4.2.2: During dredging operations, the San Diego Water Board shall verify that the dredge contractor is implementing standard Best Management Practices (BMPs) for minimizing resuspension, spillage, and misplaced sediment during dredging operations, as the deposition of such material would increase turbidity and compromise cleanup efforts. Such BMPs shall include, but not be limited to, the following:

The contractor shall not stockpile material on the bottom of the San Diego Bay floor and shall not sweep or level the bottom surface with the bucket.

The contractor shall use and maintain double silt curtains that encircle the area of dredging and shall minimize the times in which these curtains are temporarily opened, to contain suspended sediments.

The contractor may use air curtains in conjunction with silt curtains to contain re-suspended sediment, to enhance worker safety, and allow barges to transit into and out of the work area without the need to open and close silt curtain gates.

The contractor shall ensure the environmental clamshell bucket is entirely closed when withdrawn from the water and moved to the barge. This action requires extra attention when debris is present to make sure debris does not prevent the bucket from completely closing. Two closure switches shall be on each side of the bucket near the top and bottom to provide an electrical signal to the operator that the bucket is closed. Use of the switches shall minimize the potential of sediment leaking from the bucket into the water column during travel to the surface.

The contractor shall not overfill the digging bucket because overfill results in material overflowing back into the water. Use of instrumentation such as Clam Vision® shall allow the operator to visualize in real time the depth of cut that shall be designed to prevent overfilling.

The contractor shall utilize wide-pocket material barges having watertight containments to prevent return water from re-entering San Diego Bay. The contractor shall not overfill the material barge to a point where overflow or spillage could occur. Each material barge shall be marked in such a way to allow the operator to visually identify the maximum load point. The marking should allow sufficient interior freeboard to prevent spillage in rough water such as ship wakes during transit. Initiating the material barge marking shall minimize impact of load spillage during transit to the unloading area.

The contractor shall not use weirs as a means to dewater the scow and shall allow additional room for sediment placement. Preventing this action shall minimize the introduction of turbidity to the water column.

The contractor shall place material in the material barge such that splashing or sloshing does not occur, which could send sediment back into the water. Splashing can be controlled by restricting the drop height from the bucket.

If the use of a grate to collect debris is required, the contractor shall not allow material to pile up on the grid and flow or slip from the grid back into the water. The debris scalper shall be positioned in such a way as to be totally contained on the shore side of the unloading operations. The dredge operator shall visually monitor for debris build-up and alert the support personnel on the barge to assist in clearing the debris, as necessary. Debris that is derived from dredging activities shall be removed from the grate by the environmental clamshell bucket and placed in a contained area on the dredge barge or in a second material barge for subsequent removal to the onshore dewatering facility.

The contractor shall restrict barge movement and work boat speeds (i.e., reducing propeller wash) in the dredge area. The remedial design should identify the various areas where this operational control should be used.

Mitigation Measure 4.2.3: During dredging operations, the San Diego Water Board shall verify that the contractor is deploying inner- and outer-boundary floating silt curtains fully around the dredging area at all times. Double silt curtains shall be utilized for containment of the dredge area; configurations, technologies, and actual locations of silt curtains in relation to the dredge barge shall be finalized during the design phase of the Project. The floating silt curtain shall be comprised of connected lengths of Type III geotextile fabric. A continuous length of floating silt curtain shall be arranged to fully encircle the dredging equipment and the scow barge being loaded with sediment. The silt curtain shall be supported by a floating boom in open water areas (such as along the bay ward side of the dredging areas). Along pier edges, the contractor shall have the option of connecting the silt curtain directly to the structure. The contractor shall continuously monitor the silt curtain for damage, dislocation, or gaps and immediately fix any locations where it is no longer continuous or where it has loosened from its supports. The bottom of the silt curtain shall be weighted with ballast weights or rods affixed to the base of the fabric. Where feasible and applicable, the floating silt curtains shall be anchored and deployed from the surface of the water to just above the substrate. If necessary, silt curtains with tidal flaps may be installed to facilitate curtain deployment in areas of higher flow. Air curtains may be used in conjunction with silt curtains to contain resuspended

sediment, enhance worker safety, and allow barges to transit into and out of the work area without the need to open and close silt curtain gates.

Mitigation Measure 4.2.4: Throughout the remediation process of dredging and application of the clean sand covers, the contractor shall conduct water quality monitoring to demonstrate that implementation of the remedial activities does not result in violations of water quality objectives in the Basin Plan outside of the construction area. The contractor shall submit weekly water quality reports to the San Diego Water Board. If water quality objectives are violated, the San Diego Water Board may temporarily halt activity and impose additional required measures to protect water quality.

Mitigation Measure 4.2.5: Prior to initiation of dredging activities, the contractor shall determine the swing radius of the unloading equipment and shall place a steel plate (swing tray or spill plate) between the material barge and the hard cape to prevent spillage from falling directly into the water. The steel plate shall be sufficiently large enough to cover the swing radius of the unloading equipment. The spill plate shall be designed to prevent any "drippings" from falling between the material barge and dock where the unloading equipment is stationed. The spill plate shall be positioned so that any "dripped" material/water either runs back into the material barge or onto the unloading dock, which shall be lined with an impermeable material and beamed to contain excess sediment/water. The steel plate shall be designed to prevent any water or sediment from re-entering San Diego Bay. As a secondary containment measure, filter fabric material shall be placed over the spill plate and between edges of the barge and unloading dock to prevent any drippings from falling into San Diego Bay. Upon completion of unloading a material barge, the spill plate shall be thoroughly rinsed so that excess sediment is drained into the material barge or onto the unloading dock (depending on spill plate positioning) and then placed on the lined dock until the next unloading sequence. The San Diego Water Board shall be responsible for ensuring adherence to the requirements of this measure.

Mitigation Measure 4.2.6: During dredging activities, the contractor shall ensure that the environmental clamshell bucket is entirely closed when withdrawn from the barge and moved to the truck. In addition, the contractor shall ensure that the bucket is completely empty of sediment prior to being moved back to the barge to minimize sediment being spilled over the dock. The San Diego Water Board shall be responsible for ensuring adherence to the requirements of this measure.

Mitigation Measure 4.2.7: During final design of the clean sand covers, the sand layer thickness and distribution shall be designed to stabilize the contaminated sediments being covered, control the resuspension and redistribution of existing contaminated sediments, and control substantial perturbation (mixing and overturning) of underlying contaminated sediments. The clean sand cover design may be limited to fill from the placement of clean sand. The clean sand cover design shall be thick enough to physically isolate the sediments from benthic or epigenetic organisms to prevent the uptake of bioaccumulative contaminants (e.g., polychlorinated biphenyls [PCBs]) by aquatic organisms either directly from the sediments or by foraging on benthos. The clean sand covers shall be designed to be thick enough to stabilize the contaminated sediments being covered and minimize the potential for them to be resuspended, eroded, or otherwise transported away from beneath the under pier areas. The final engineering plans shall include the source and type of sand required for subaqueous application of the clean sand covers. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall review and have approval authority for the final engineering plans, and shall verify implementation. A regulatory oversight contractor may be used by the San Diego Water Board.

Mitigation Measure 4.2.8: During application of the clean sand covers, the contractor shall place the initial layers of the clean sand cover in controlled lifts so as to ensure proper placement over the required area, minimize the potential for disturbance and intermixing of the underlying sediments, and ensure that the required sand cover thicknesses are achieved. The sand shall be placed in such a manner as to reduce the vertical impact and lateral spreading of the clean sand cover material and the potential for resuspending the contaminated surface sediments. Controlled placement shall also minimize the mixing of the clean sand covers and underlying sediment by allowing the sediment to slowly gain strength before subsequent layers are deposited. Operational controls such as silt curtains shall also be employed during placement of the clean sand covers. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), with the assistance of a regulatory oversight contractor, shall be responsible for ensuring adherence to the requirements of this measure.

Mitigation Measure 4.2.9: Prior to dredging operations, a Dredging Management Plan (DMP) shall be prepared. The contractor shall implement the measures listed in the DMP during dredging operations. The San Diego Water Board shall be responsible for review and approval of the DMP. The DMP shall contain Standard Operating

Procedures (SOPs) for the Project to assist the dredge contractor in preventing accidental spills and providing the necessary guidelines to follow in case of an oil or fuel spill. In addition to providing SOPs to prevent accidental oil/fuel spills during construction activities, the DMP shall address the identification of dredging needs, a methodology and process for determining dredging priorities and scheduling, the feasibility and requirements for expedited permitting, Quality Assurance Project Plan (QAPP) to comply with regulatory requirements, alternatives for control and operation of dredging equipment, and Best Management Practices (BMPs) to implement in the event of equipment failure and/or repair. Typical BMPs for equipment failure or repair shall be identified in the DMP and could include: communication to Project personnel, proper signage and/or barriers alerting others of potentially unsafe conditions, all repair work to be conducted on land and not over water, repair work involving use of liquids to be performed with proper spill containment equipment (e.g., spill kit), and a contingency plan identifying availability of other equipment or subcontracting options. Furthermore, the DMP shall specify that water discharges to San Diego Bay are prohibited; therefore, the barge shall implement measures necessary to capture all return water and prevent discharge to San Diego Bay. In addition, the DMP shall include, at a minimum, the following measures to prevent accidental oil/fuel spills during construction activities:

As an operational control element, all oil and fuel shall be housed in a secondary containment structure to ensure that any spill or leakage is prevented from entering the water column.

Personnel involved with dredging and handling the dredged material shall be given training on the potential hazards resulting from accidental oil and/or fuel spills. This operational control shall provide the personnel with an awareness of the materials they are handling as well as the potential impact to the environment.

All equipment shall be inspected by dredge contractor personnel before starting the shift. These inspections are intended to identify typical wear or faulty parts that may contain oil or fuel.

Personnel shall be required to visually monitor for oil or fuel spills during construction activities.

In the event that a sheen or spill is observed, the equipment shall be immediately shut down and the source of the spill identified and contained. Additionally, the spill shall be reported to the applicable agencies presented in the DMP.

The shipyards currently have oil/fuel spill kits located at various locations on site for routine ship repair operations. All personnel associated with dredging activities shall be trained on where these spill kits are located, how to deploy the oil sorbent pads, and proper disposal guidelines. The dredging barge shall have a full complement of oil/fuel spill kits on board to allow for quick and timely implementation of spill containment.

The use of oil booms shall be deployed surrounding the dredging activities. In the event that a spill occurs, the oil and/or fuel shall be contained within the oil boom boundary. This operational control shall be the last line of defense against accidental oil/fuel spill occurrences. The oil boom shall be deployed along the entire length of the outer silt curtain. The San Diego Water Board shall be responsible for verifying adherence to the requirements of this measure.

Mitigation Measure 4.2.10: The containment area constructed around the dewatering containment cell shall be designed to consist of berms (K rails and/or dry dock blocks) surrounding the area that restrict decanted water/storm water to the land adjacent to the dewatering containment and prevent the water from flowing into San Diego Bay or the water table if a breach in the pad were to occur. If any area(s) adjacent to the dewatering containment cell are unpaved, a liner shall be utilized if necessary to prevent infiltration. The containment cell shall be designed as a "no discharge" facility and in a manner that prevents storm water runoff/run-on from adjacent areas to the cell from entering the dewatering area. The San Diego Water Board shall review and approve the design of the dewatering containment cell and verify its implementation in accordance with approved plans.

Mitigation Measure 4.2.11: If a containment liner is used, the San Diego Water Board shall verify that the contractor has provided a salvaging layer of sand that is properly designed and implemented to provide a visual indicator to the excavator operator that he/she is getting close to the containment liner, or the use of closely spaced K-rails and dry dock blocks at key points (i.e., corners) to prevent the operator from getting to the containment liner, in order to prevent a breach in the dewatering pad.

Mitigation Measure 4.2.12: During dewatering operations, the contractor shall comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009-DWQ,

NPDES No. CAS000002), and any subsequent permit, as they relate to activities conducted in the staging areas. This shall include submission of the Permit Registration Documents, including a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement to the State Water Resources Control Board (State Water Board) via the Storm Water Multi-Application and Report Tracking System (SMARTS) at least 7 days prior to the start of dewatering activities at the staging areas. Construction activities shall not commence until a Waste Discharger Identification (WDID) number is received from the SMARTS. The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD); shall meet the requirements of the Construction General Permit; and shall identify potential pollutant sources associated with dewatering activities, identify non-storm water discharges, and identify, implement, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants associated with the construction site. BMPs shall include, but not be limited to, Good Housekeeping, Erosion Control, and Sediment Control. The BMPs identified in the SWPPP shall be implemented during Project construction. An Annual Report shall be submitted using the SMARTS no later than September 1 of each year during dewatering operations. A Notice of Termination (NOT) shall be submitted to the State Water Board within 90 days of completion of dewatering activities and stabilization of the site. The San Diego Water Board shall be responsible for verifying the contractor's adherence to the requirements of this measure.

Mitigation Measure 4.2.13: Prior to any discharge to the sanitary sewer system, the contractor shall ensure that the decanted water is analytically tested following the discharge requirements for the San Diego Publically Owned Treatment Works (POTW). If water samples exceed the City of San Diego requirements for discharge of wastewater to the sanitary sewer system, the water shall be taken off site for treatment and subsequent disposal. In addition, the contractor shall comply with any limits on pollutant concentrations, discharge times, and flow rates required by the City of San Diego. The San Diego Water Board shall be responsible for verifying the contractor's adherence to the requirements of this measure.

Mitigation Measure 4.2.14: The San Diego Water Board shall coordinate water quality monitoring efforts and share water quality monitoring data with other dredging Projects in San Diego Bay throughout the duration of the Project. Considerations for the issuance of dredge permits or General Waste Discharge Requirements (WDRs) shall include distance(s) between sites and proposed timing of in-water activities that shall involve potential impacts to water quality, selection

of appropriate water quality reference sampling locations in San Diego Bay, configuration of silt curtains, and coordination of expected commercial and recreational vessel traffic.

Implementation of Mitigation Measures 4.2.1-14 will ensure that the potential hydrology and water quality impacts during the dredge, transport, and disposal activities are reduced to less than significant by requiring the implementation of source and treatment control best management practices for the proposed Project.

c. Hazards and Hazardous Materials

- i. Dredging - Dredging involves removal of sediment from the bottom of San Diego Bay and placement onto a barge.
 1. Accidental Oil or Fuel Spills. Accidental oil or fuel spills from the crane or tugboat could occur during dredging operations, which could impair and/or degrade water quality in San Diego Bay, depending on the severity of the spill. The potential for the occurrence of petroleum-product leaks or spills is low, but the potential for long-term impacts is moderate to high if a leak or spill were to occur.
 2. Resuspension of Sediment. During Silt Curtain Placement. There is the potential for resuspended sediment to be introduced into the water column during silt curtain placement or redeployment if the curtain is extended too close to San Diego Bay floor. Resuspension of sediment could disturb contaminated sediment.
 3. Resuspension Due to Operator Overfilling Bucket. Overfilling of the dredge bucket during sediment removal operations would result in resuspension. Resuspended sediment from environmental dredging operations can settle onto areas already dredged and reduce the ability of the dredging program to reach target cleanup goals due to increased residual COC concentrations in the dredge area.
 4. Debris Preventing the Dredge Bucket from Fully Closing. If large debris is present in the dredge area, it may lodge in the dredge bucket and prevent its full closure, thereby allowing sediment to escape from the bucket and causing resuspension of sediment.
 5. Resuspension of Sediment During Barge Positioning Due to Vessel Propeller Wash. Resuspension of sediment particles within the water column due to vessel propeller wash is a common issue during operations in shallow waters. Resuspension of sediment

particles within the dredge area would lead to reduced effectiveness of dredging operations due to increased residual COC concentrations in the dredge area.

6. Resuspension of Sediment Due to Damage of Silt Curtain During Dredging. Damage to the silt curtain during the dredging operations typically occurs when the dredge bucket comes in contact with the curtain, the curtain becomes entangled with the propellers of the tug moving either the dredge or material barges, or passing ships are too close to the operations and draw the curtain into their propellers. Not only does this cause an instantaneous release of suspended sediments from the dredging containment area, but also causes Project delays until the silt curtain can be repaired or replaced. The failure or damage of a silt curtain during dredge operations may lead to impacted sediment settling outside of the treatment area, resulting in a larger area impacted by site-related COCs.
7. Spillage of Sediment into the Water Column Due to Overloading of the Dredged Material Barge. This type of impact usually occurs when operators attempt to maximize the load within the material barges. Overloaded barges can result in the sloughing of dredged sediment from the barge during transport to the off-loading area. Sediment sloughing off a loaded barge may lead to either resuspension of sediment within the treatment area, as described above, or dispersal of contaminated sediment outside the treatment footprint if the incident occurs outside of the dredge area during transport to the dewatering area.
8. Contact with Sediment On or Around the Barge During Loading. Some contact with sediment by workers during loading would occur regardless of the standard of care taken during the loading process. Contact with impacted sediment by personnel may lead to acute and/or chronic health effects depending on the contaminant type, concentration, and exposure route.
9. Cable Snap Allowing Loaded Bucket to Enter Water Column. Poor dredging equipment maintenance could potentially lead to a snapped cable on the clamshell bucket, allowing a loaded bucket to enter the water column. This may lead to resuspension of sediment.
10. Shear Pin Breakage Allowing Bucket to Open Prematurely. Poor dredging equipment maintenance could potentially lead to the breakage of a shear pin on the clamshell bucket, which would allow a loaded bucket to open before proper positioning over the barge

and dredged material to enter the water column. This would lead to resuspension of sediment from the loaded bucket.

- ii. Sediment Transport to Unloading Area: Once the materials barge is loaded, the sediment would be transported to the unloading area and transferred to dry land.
 - 1. Barge or Tug Collision with Merchant or Military Vessel. The movement of barges and tugs to and from the Project site contains inherent risks associated with maritime operations. There is the potential for a release of sediments stored on the barge during a vessel-on-vessel collision.
- iii. Sediment Unloading/Transport to Staging Area: This involves placement of the sediment in the staging area.
 - 1. Transferring Sediment from Barge to Land. There is the potential for the operator to overfill the bucket, causing spillage into the water column and/or on the dock adjacent to the barge, which would lead to sediment suspension and potential contamination of the bay floor adjacent to the offloading area.
 - 2. Sediment Spilling from Transport Vehicle during Transport to the Staging Area. Overfilling of a transport vehicle can cause sediment to overflow from the vehicle during transport to the sediment staging and dewatering areas. Similarly, excess vehicle speed, rapid deceleration or acceleration, or tight cornering during transport to the treatment area could result in spillage of sediment during transport. These situations have the potential to spread sediment-related impacts along the designated sediment haul route.
- iv. Sediment Drying/Dewatering: Once the sediment is placed in the staging area, it undergoes a drying/dewatering process.
 - 1. Airborne Release of Drying Agent. If drying agents are used, there is the potential for airborne dispersal of the agent if it is applied as a dry powder. The fine dust can be a respiratory irritant to workers and nearby receptors.
 - 2. Airborne Release of Sediment Contaminants through Volatilization or Particulate Transport. There is the potential for sediment-related contaminants to be transported through volatilization to the atmosphere or for wind-blown particulate transport of dry sediment.

The airborne distribution of sediment-related contaminants has the potential to result in COC-related health impacts to receptors in the vicinity of the staging areas.

3. Breach in Dewatering Pad Containment by Excavator. A breach in the dewatering pad could potentially occur if an excavator penetrates through the bottom of the pad while attempting to load sediment for transport. A breach in the dewatering pad could result in impacts from the impacted sediment to the soil or groundwater in the vicinity of the breach.
 4. Decanted Water and Storm Water Containment Failure. There is the potential for the decanted water and storm water containment area to fail, resulting in release of untreated water from the treatment area. A release of storm water or decanted water from the containment area could result in impacts to soil or groundwater in the vicinity of the release and potentially flow back into the bay.
- v. Load Out, Transport, Disposal: This process involves the removal and disposal of the sediment once it has dried out.
1. Worker Contact with Treated Sediment. Similar to contact with sediment in and around the barge during loading, worker contact with treated (solidified) sediment is unavoidable. There is the potential for contact with impacted sediment by personnel that may lead to acute and/or chronic health effects depending on the contaminant type, concentration, and exposure route.
 2. Sediment Spillage During Loading. During loading of vehicles for off-site disposal, some sediment may fall from the loading bucket onto the exterior of the vehicle or onto the hardscape of the loading area. This has the potential to impact soil, groundwater, or storm water in the vicinity of the loading area.
 3. Overfilling Transport Vehicles and Increasing Potential to Spill onto the Roadway. Overfill of transport vehicles can still lead to potential incidental spills of sediment onto the roadway. This has the potential to spread sediment-related impacts along the transport route.
 4. Transport and Disposal of Hazardous Materials. It is estimated that up to 15 percent (21,500 cubic yards [cy]) of the excavated sediment may be classified as California hazardous material. It is estimated that up to 1,500 truck trips would be required over an approximately 12.5-month period to transport this volume of sediment to Kettleman Hills Landfill, which is located approximately

300 miles north of the site. There is the potential for spills or accident conditions to occur during transportation, resulting in the release of sediment-related impacts to soil or groundwater in the vicinity of the accident. Depending on the concentration of COCs within the sediment, there may also be the potential for health effects to receptors in the vicinity of the accident. Sediment that is not hazardous will be disposed of at Otay Landfill.

5. Small quantities of hazardous materials such as fuels and oils will be routinely transported to the Shipyard Sediment Site for ongoing operations and maintenance of equipment for the duration of the Project.

The following mitigation measure(s) will be required during the phases described above:

Mitigation Measure 4.3.1: Secondary Containment. As an operational control element, the contractor shall ensure, and the San Diego Water Board will verify, that all oil and fuel is housed in a secondary containment structure to ensure that spilled or leaked oil or fuel will be prevented from entering the water column.

Mitigation Measure 4.3.2: Dredging Management Plan. The contractor shall ensure that a Dredging Management Plan (DMP) containing Standard Operating Procedures (SOPs) for the Project is developed prior to the initiation of dredging and implemented for the duration of the dredging activity. The DMP will include the following measures to prevent release of hazardous materials during construction activities:

Personnel involved with dredging and handling the dredged material will be given training on their specific task areas, including:

- Potential hazards resulting from accidental oil and/or fuel spills;
- Proper dredging equipment operation; and
- Proper silt curtain deployment techniques.
- Proper response in the event that ordnance or munitions are encountered.

All equipment will be inspected by the dredge contractor and equipment operators before starting the shift. These inspections are intended to identify typical wear or faulty parts.

Required instrumentation to avoid spillage of dredging material will be identified for each piece of equipment used during dredging operations.

Personnel will be required to visually monitor for oil or fuel spills during construction activities.

In the event that a sheen or spill is observed, the equipment will be immediately shut down and the source of the spill identified and contained. Additionally, the spill will be reported to the applicable agencies presented in the DMP.

All personnel associated with dredging activities will be trained as to where oil/fuel spill kits are located, how to deploy the oil-absorbent pads, and proper disposal guidelines. The dredging barge shall have a full complement of oil/fuel spill kits on board to allow for quick and timely implementation of spill containment.

The use of oil booms will be deployed surrounding the dredging activities. In the event that a spill occurs, the oil and/or fuel will be contained within the oil boom boundary. The oil boom shall be deployed along the entire length of the outer silt curtain.

Shallow areas along the haul route will be mapped and provided to the dredge operator for review. These areas will be avoided to the extent possible to prevent propeller wash resuspension of sediment.

Load-controlled barge movement, line attachment, and horsepower requirements of tugs and support boats at the Project site will be specified to avoid resuspension of sediment.

Barge load limits and loading procedures will be identified, and the appropriate draft level will be marked on the materials barge hull.

A protocol will be developed for the Project in conjunction with the U.S. Department of the Navy to address any munitions and ordnance that have been found during the Project. As required for Projects within San Diego Bay Ship Channels, the Project shall be coordinated with the Navy NAVFAC Southwest Division in San Diego for munitions clearance. Implementation of the DMP will be verified by the San Diego Water Board. The Department of the Navy will be provided an opportunity to review and comment on the DMP, particularly with respect to ordnance and munitions that have been identified in proximity to the Shipyard Site.

Mitigation Measure 4.3.3: Contingency Plan. The contractor shall ensure that a Contingency Plan has been developed prior to the initiation of dredging and implemented for the duration of the dredging

activity to address equipment and operational failures that could occur during dredging operations. The Contingency Plan will also address the potential to encounter munitions or ordnance. The Contingency Plan will include the following measures to prevent release of hazardous materials during construction activities:

Actions to implement in the event of equipment failure, repair, or silt curtain breach. These include:

- Communication to Project personnel;
- Proper signage and/or barriers alerting others of potentially unsafe conditions;
- Specification for repair work to be conducted on land and not over water;
- Identification of proper spill containment equipment (e.g., spill kit);
- A plan identifying availability of other equipment or subcontracting options;
- Emergency procedures to follow in the event of a silt curtain breach;
- Incident reporting and review procedure to evaluate the causes of an accidental silt curtain breach and steps to avoid further breaches; and
- Response procedures in the event of barge overfill.

Actions to implement in the event that munitions or ordnance are encountered during Project activities. These include:

- Immediate stoppage of all in-water work activities until further notice to proceed is received;
- Contact the Site Safety Manager;
- Refer to the Contingency Plan section that presents the emergency contact name(s) and telephone number(s) for NAVFAC Southwest Division; and
- Contact NAVFAC Southwest Division personnel. The recovery and disposal of munitions and/or ordnance item(s) found will become the responsibility of NAVFAC Southwest Division.

Implementation of the Contingency Plan will be verified by the San Diego Water Board.

Mitigation Measure 4.3.4: Health and Safety Plan. The contractor shall ensure that a Health and Safety Plan (H&S Plan) has been developed prior to the initiation of dredging and implemented for the duration of the dredging activity to protect workers from exposure to contaminated sediment. The H&S Plan will include the following requirements at a minimum:

Training for operators to prevent spillage of sediment on the bridges during dredging activities

Training for operators in decontamination and waste containment procedures

Training for operators in appropriate notification/handling procedures for munitions/ordnance

Identification of appropriate Personal Protection Equipment (PPE) for all activities, including sediment removal, management, and disposal

Certification of personnel under safety regulations such as Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120

Documentation that requires that health and safety procedures have been implemented

Implementation of the H&S Plan will be verified by the San Diego Water Board.

Mitigation Measure 4.3.5: Communication Plan. The contractor shall ensure that a Communication Plan and operational guidelines are developed between the Port of San Diego and/or the Harbor Master and all vessel operators prior to the initiation of dredging to ensure the safe movement of Project vessels from the dredge to the unloading area. Features of the Communication Plan will include:

Identification of vessel speed limitations (wake/no wake); and

Notification to Project personnel using air horns as necessary.

Implementation of the Communication Plan for the duration of the dredging activity will be verified by the San Diego Water Board.

Mitigation Measure 4.3.6: Sediment Management Plan. The contractor shall implement Best Management Practices (BMPs) and follow Standard Operating Procedures (SOPs) during sediment unloading, transport, drying/dewatering, and disposal operations for the duration of the dredging activity. At a minimum, these BMPs/SOPs will include:

Mechanical stops to limit the swing arm of the crane;

Placement of a spillage plate to prevent any dropped sediment from impacting the water column;

Conveyance of sediment on the spillage plate to a collection sump;

Utilization of a power wash arm to clean sediment from equipment into the collection sump;

Contractor identification of haul truck load limits on first load each day;

Driver training and enforcement of safe driving procedures;

Only liquid drying agents will be utilized to avoid airborne release of these materials;

Implementation of a dust control and monitoring plan during sediment staging;

The stockpile liner will be protected from excavator penetration by a visual indicator such as sand, or by physical barriers such as railroad rails or K-rails;

Decanted water from sediment and any storm water in the staging area will be managed by sloping the staging area to a common sump or pond (containment cell) or pumped to a series of tanks. The containment device(s) will be designed to meet a performance standard of "no discharge" so that storm water runoff cannot enter the bay or adjacent areas and to ensure that storm water surrounding areas cannot penetrate the containment area. The containment device(s) will be inspected daily during sediment staging. Prior to discharge, the liquid will be tested to evaluate whether it meets discharge criteria for the San Diego Publically Owned Treatment Works (POTW) or if treatment is required prior to discharge;

Sediment loading for transport off site will be conducted in a contained area, and haul trucks will be power washed prior to exit to prevent sediment from being discharged to the bay or surrounding area; and

All hazardous materials (liquid, sediment, or chemicals used during the Project) will be handled, transported, and disposed of at the proper disposal facility in accordance with state regulations.

Implementation of these BMPs/SOPs will be verified by the San Diego Water Board.

Mitigation Measure 4.3.7: Hazardous Materials Transportation Plan. Prior to the initiation of dredging, the contractor shall prepare and implement a Hazardous Materials Transportation Plan for the duration of the dredging activity that specifies the following procedures:

- Sediment containment procedures

- Emergency notification procedures

The Hazardous Materials Transportation Plan will be subject to review by, and its implementation will be verified by, the San Diego Water Board.

Mitigation Measure 4.3.8: Traffic Control Plan. The contractor shall prepare a Traffic Control Plan that will be developed prior to the initiation of dredging and implemented for off-site transport of the sediment, and will include, but not be limited to, the following information:

- Planned haul truck routes

- Haul truck escorts, if required

- In case of accidental spillage, emergency vehicle access and sediment containment and removal procedures

The Traffic Control Plan will be subject to approval by the City of San Diego and/or the National City Traffic Engineer, and implementation for the duration of the dredging activity will be verified by the San Diego Water Board.

Implementation of Mitigation Measures 4.3.1-8 will ensure that potential hazard and hazardous materials impacts during the dredge, transport, and disposal activities are reduced to less than significant by requiring the implementation of source and treatment control best management practices for the proposed Project.

- d. **Noise:** Noise was identified in the EIR as having less than significant impacts. However, the EIR and MMRP have identified specific measures that will be implemented regarding noise:

Mitigation Measure 4.4.1: The contractor shall ensure, and the San

Diego Water Board and City of San Diego Noise Control Officer shall verify, that treatment and haul activity in the City of San Diego is prohibited between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in section 21.04 of the San Diego Municipal Code, with the exception of Columbus Day and Washington's Birthday, or on Sundays, that would create disturbing, excessive, or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator in conformance with San Diego Municipal Code section 59.5.0404.

Mitigation Measure 4.4.2: The contractor shall ensure, and the National City Noise Control Officer and San Diego Water Board shall verify, that treatment and haul activity in National City is prohibited between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on weekends or holidays as specified in section 12.10.160 of the City of National City Municipal Code.

Mitigation Measure 4.4.3: The contractor shall implement, and the San Diego Water Board shall verify, the following for the duration of Project implementation (dredging, treatment, and loading) in order to reduce potential construction noise impacts on nearby sensitive receptors:

All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards.

All stationary construction equipment shall be placed so that emitted noise is directed away from sensitive receptors nearest the Project site.

All equipment staging shall be located to create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the Project site.

e. Biological Resources

- i. Impacts to Vegetation/Sensitive Natural Communities: As stated in the Initial Study, patches and beds of eelgrass are present within the Project area and would be adversely affected by dredging activities through direct removal. Eelgrass bed habitat has been identified as a sensitive marine resource by the CDFG, NMFS, and U.S. FWS. Eelgrass beds serve as refuges, foraging areas, and nursery habitats for various coastal and bay invertebrates, fishes, and birds.

The following mitigation measure(s) will be required for eelgrass during and following the dredging activities:

Mitigation Measure 4.5.1: A pre-construction eelgrass habitat mapping survey for the Shipyard Sediment Site shall be completed by the shipyards within 120 days of the proposed start dates of each Project phase in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP) (National Marine Fisheries Service [NMFS], 1991 as amended) to document the amount of eelgrass that will likely be affected by dredging activity. The results of these surveys shall be integrated into a Final Eelgrass Mitigation Plan prepared by the shipyards for the Project and used to calculate the amount of eelgrass to be mitigated. The Final Eelgrass Mitigation Plan shall be subject to approval by the San Diego Water Board and NMFS, and shall include the following elements:

A detailed map of the area including distribution, density and relationship to depth contours of any eelgrass beds likely to be impacted by Project construction.

The identification of mitigation site factors such as distance from Project, depth, sediment type, distance from ocean connection, water quality, and currents should be considered in evaluating potential sites.

Techniques for the construction and planting of the eelgrass mitigation site consistent with the best available technology at the time of the Project.

Proposed mitigation timing schedule.

Proposed mitigation monitoring activities.

A post-dredging Project eelgrass survey shall be completed by the shipyards within 30 days of the completion of each dredging episode in accordance with the SCEMP and shall be submitted to the NMFS, United States Fish and Wildlife Service (U.S. FWS), California Department of Fish and Game (CDFG), and the Executive Director of the California Coastal Commission (CCC), as well as the San Diego Water Board.

Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions¹ per square meter) between the Project adjusted impact area (original impact area multiplied by 1.2 or the amount of eelgrass habitat to be

successfully mitigated at the end of 5 years) and the mitigation site(s). The extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than 1 meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control or transplant bed.

Specific criteria are as follows:

The mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted Project impact area after the first year.

The mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted Project impact area after the second year.

The mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted Project impact area for the third, fourth, and fifth years.

The amount to be transplanted shall be based upon the guidelines in the SCEMP. If remedial transplants at the Project site are unsuccessful, then eelgrass mitigation shall be pursued at the secondary eelgrass transplant location. The San Diego Water Board shall verify implementation of this mitigation measure.

The Mitigation Measures identified above reduce potential impacts to eelgrass because they require that eelgrass mapping occur within 120 days of the start date of in-the-water activity, and that mitigation be conducted in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP), including mitigation monitoring and performance standards for transplant success. The Mitigation measures also require on-going monitoring of Project activities for the purpose of avoiding impacts to eelgrass located adjacent to the Project footprint.

Mitigation Measure 4.5.3: The Project marine biologist shall meet with the construction crews prior to dredging as well as periodically throughout the Project to review pre-dredge survey areas of eelgrass beds to avoid those located adjacent to the Project site and to review proper construction techniques. A training log shall be maintained by the Project marine biologist and shall be submitted monthly to the San Diego Water Board, who shall verify implementation of this measure.

Mitigation Measure 4.5.4: The contractor shall ensure that throughout the duration of dredge and clean sand cover placement activities,

Project-related barges and work vessels operating in areas where eelgrass beds exist shall be operated in a manner to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other activities that may disturb the seafloor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels. The Project marine biologist shall periodically confirm that these measures are implemented and shall submit a monthly monitoring report to the San Diego Water Board.

Implementation of Mitigation Measures 4.5.1, 4.5.3 and 4.5.4 will ensure that potential biological resources impacts during the dredging activities are reduced to less than significant by requiring the implementation of best management practices during the dredging and mitigation for the loss of eelgrass removed by the dredging.

- ii. Impacts to Fish/EFH: Sediment and water quality effects on marine biological resources from dredging would include temporary and localized increases in turbidity. Turbidity may also increase if vessel propellers impact the bay floor or prop wash stirs up bottom sediments.

Dredging activities will also have a potential to release detectable levels of sediment-bound contaminants into the water column that could be redistributed through the tidally-induced movement of the turbidity plume. Organically enriched sediments resuspended into the water column during dredging will also cause a slight decrease in dissolved oxygen levels. Tidal currents will slowly dissipate the oxygen-poor water mass and replenish ambient oxygen levels within one to several tidal exchanges.

Accidental oil or fuel spills that could potentially occur during the proposed dredging operations could result in adverse effects on water quality, and subsequently the fish and wildlife of San Diego Bay, depending on the severity of the spill. Such events, if they were to occur, would likely be localized spills of lighter, refined diesel fuels, gasoline, and lubricating oils that are highly toxic to marine life. The potential for the occurrence of petroleum-product leaks or spills would be low, but the potential for significant, long-term effect on marine resources if such spills occurred would be moderate to high.

There is no mortality anticipated of open water schooling fishes (atheriniids or anchovies) or fishes associated with piling habitats (i.e., black surfperch, pile perch, kelpfish, and pipefish). Water column and bottom dwelling fishes (such as halibut and gobies) are expected to swim away from the immediate work area during active deployment of the silt curtain. It is uncertain if any water column biota will become entrapped within the silt curtain after deployment; however, if a few

individual fish are entrapped and subsequently perish, it is not anticipated to adversely affect the local population.

Potential impacts to special-status fish species with the potential to occur in the Shipyard Sediment Site are as follows:

1. California Halibut: Adult and juvenile halibut are found in many areas of San Diego Bay, and they will potentially be present within the Project site and the waters adjacent to the potential staging areas. During dredging activities, adults/juveniles in the immediate area will swim to areas outside the immediate impacted zone. During offloading activities, adults/juveniles will be able to swim freely under the material barge as this mimics normal vessel docking conditions in the bay. No mortality is anticipated as a result of Project activities. Therefore, the level of impact on halibut is expected to be less than significant.
2. Coastal Pelagic FMP Species – Northern Anchovy: Project activities that would affect identified Coastal Pelagic FMP species (northern anchovy) include increased water turbidity caused by dredging and sand covering activities proposed for the Project. These impacts could result in northern anchovy temporarily avoiding the Project areas, and a minimal potential for mortality of larval anchovy. An increase in the suspended sediment load would temporarily increase the exposure of these species to potentially toxic levels of contaminants and clog their gills, resulting in a reduced ability to feed. Pacific Groundfish FMP Species: Of the 83 species managed under the Pacific Groundfish FMP (NMFS, 2008), two have been found in San Diego Bay, each with very low occurrences. In the event that Pacific Groundfish species are present in San Diego Bay during dredging activities, the deployment of the silt curtains will act as a preventive barrier for any groundfish entering the construction area. The impact of turbidity created during dredging activities will be short-term and localized. Therefore, the potential impact of the Project on FMP groundfish species is expected to be less than significant.

Mitigation Measures 4.2.1 through 4.2.11 in Section 4.2, Hydrology and Water Quality, require the implementation of Best Management Practices (BMPs), which are proposed to prevent the spread of any turbidity plume or release of sediment-bound contaminants out of the dredging area, and thereby reduce potential adverse impacts to marine resources, sensitive species, and rare and endangered species. BMPs include use of an environmental dredge bucket, installation of silt curtains, operational controls, and water quality monitoring. The measures also require the inclusion and implementation of a Dredging

Management Plan (DMP) for the Project, which will assist in preventing accidental spills and providing the necessary guidelines to follow in case of an oil or fuel spill, and is expected reduce the potential for a significant long-term impact to biological marine resources to less than significant. Mitigation Measures 4.2.1 through 4.2.11 are as follows:

Mitigation Measure 4.2.1: During dredging operations, the San Diego Water Board shall verify that the contractor/dredge operator is using automatic rather than manual monitoring of the dredging operations, which will allow continuous data logging with automatic interpretation and adjustments to the dredging operations for real-time feedback for the dredge operator. Automatic systems shall also be used to monitor turbidity and other water quality conditions in the vicinity of the dredging operations to facilitate real-time adjustments by the dredging operators to control temporary water quality effects. The automatic systems shall include threshold level alarms so that the operator or other appropriate Project personnel recognize that a particular system within the operation has failed. If the threshold-level alarms are activated, the dredge operator shall immediately shut down or modify the operations to reduce water quality constituents to within threshold levels. The San Diego Water Board shall further verify that the contractor/operator is using visual monitoring and recording of water turbidity during the dredging operations, including the temporary cessation of dredging if exceedances of the turbidity objective in the Basin Plan occur. Water quality sampling for contaminants of concern (COCs) shall be required if silt curtains are not deployed during any phase of the in-water activities.

Mitigation Measure 4.2.2: During dredging operations, the San Diego Water Board shall verify that the dredge contractor is implementing standard Best Management Practices (BMPs) for minimizing resuspension, spillage, and misplaced sediment during dredging operations, as the deposition of such material would increase turbidity and compromise cleanup efforts. Such BMPs shall include, but not be limited to, the following:

- The contractor shall not stockpile material on the bottom of the San Diego Bay floor and shall not sweep or level the bottom surface with the bucket.

- The contractor shall use and maintain double silt curtains that encircle the area of dredging and shall minimize the times in which these curtains are temporarily opened, to contain suspended sediments.

- The contractor may use air curtains in conjunction with silt curtains

to contain re-suspended sediment, to enhance worker safety, and allow barges to transit into and out of the work area without the need to open and close silt curtain gates.

The contractor shall ensure the environmental clamshell bucket is entirely closed when withdrawn from the water and moved to the barge. This action requires extra attention when debris is present to make sure debris does not prevent the bucket from completely closing. Two closure switches shall be on each side of the bucket near the top and bottom to provide an electrical signal to the operator that the bucket is closed. Use of the switches shall minimize the potential of sediment leaking from the bucket into the water column during travel to the surface.

The contractor shall not overfill the digging bucket because overfill results in material overflowing back into the water. Use of instrumentation such as Clam Vision® shall allow the operator to visualize in real time the depth of cut that shall be designed to prevent overfilling.

The contractor shall utilize wide-pocket material barges having watertight containments to prevent return water from re-entering San Diego Bay. The contractor shall not overfill the material barge to a point where overflow or spillage could occur. Each material barge shall be marked in such a way to allow the operator to visually identify the maximum load point. The marking should allow sufficient interior freeboard to prevent spillage in rough water such as ship wakes during transit. Initiating the material barge marking shall minimize impact of load spillage during transit to the unloading area.

The contractor shall not use weirs as a means to dewater the scow and shall allow additional room for sediment placement. Preventing this action shall minimize the introduction of turbidity to the water column.

The contractor shall place material in the material barge such that splashing or sloshing does not occur, which could send sediment back into the water. Splashing can be controlled by restricting the drop height from the bucket.

If the use of a grate to collect debris is required, the contractor shall not allow material to pile up on the grid and flow or slip from the grid back into the water. The debris scalper shall be positioned in such a way as to be totally contained on the shore side of the unloading operations. The dredge operator shall visually monitor for debris

build-up and alert the support personnel on the barge to assist in clearing the debris, as necessary. Debris that is derived from dredging activities shall be removed from the grate by the environmental clamshell bucket and placed in a contained area on the dredge barge or in a second material barge for subsequent removal to the onshore dewatering facility.

The contractor shall restrict barge movement and work boat speeds (i.e., reducing propeller wash) in the dredge area. The remedial design should identify the various areas where this operational control should be used.

Mitigation Measure 4.2.3: During dredging operations, the San Diego Water Board shall verify that the contractor is deploying inner- and outer-boundary floating silt curtains fully around the dredging area at all times. Double silt curtains shall be utilized for containment of the dredge area; configurations, technologies, and actual locations of silt curtains in relation to the dredge barge shall be finalized during the design phase of the Project. The floating silt curtain shall be comprised of connected lengths of Type III geotextile fabric. A continuous length of floating silt curtain shall be arranged to fully encircle the dredging equipment and the scow barge being loaded with sediment. The silt curtain shall be supported by a floating boom in open water areas (such as along the bay ward side of the dredging areas). Along pier edges, the contractor shall have the option of connecting the silt curtain directly to the structure. The contractor shall continuously monitor the silt curtain for damage, dislocation, or gaps and immediately fix any locations where it is no longer continuous or where it has loosened from its supports. The bottom of the silt curtain shall be weighted with ballast weights or rods affixed to the base of the fabric. Where feasible and applicable, the floating silt curtains shall be anchored and deployed from the surface of the water to just above the substrate. If necessary, silt curtains with tidal flaps may be installed to facilitate curtain deployment in areas of higher flow. Air curtains may be used in conjunction with silt curtains to contain resuspended sediment, enhance worker safety, and allow barges to transit into and out of the work area without the need to open and close silt curtain gates.

Mitigation Measure 4.2.4: Throughout the remediation process of dredging and application of the clean sand covers, the contractor shall conduct water quality monitoring to demonstrate that implementation of the remedial activities does not result in violations of water quality objectives in the Basin Plan outside of the construction area. The contractor shall submit weekly water quality reports to the San Diego Water Board. If water quality objectives are violated, the San Diego

Water Board may temporarily halt activity and impose additional required measures to protect water quality.

Mitigation Measure 4.2.5: Prior to initiation of dredging activities, the contractor shall determine the swing radius of the unloading equipment and shall place a steel plate (swing tray or spill plate) between the material barge and the hard cape to prevent spillage from falling directly into the water. The steel plate shall be sufficiently large enough to cover the swing radius of the unloading equipment. The spill plate shall be designed to prevent any "drippings" from falling between the material barge and dock where the unloading equipment is stationed. The spill plate shall be positioned so that any "drilled" material/water either runs back into the material barge or onto the unloading dock, which shall be lined with an impermeable material and beamed to contain excess sediment/water. The steel plate shall be designed to prevent any water or sediment from re-entering San Diego Bay. As a secondary containment measure, filter fabric material shall be placed over the spill plate and between edges of the barge and unloading dock to prevent any drippings from falling into San Diego Bay. Upon completion of unloading a material barge, the spill plate shall be thoroughly rinsed so that excess sediment is drained into the material barge or onto the unloading dock (depending on spill plate positioning) and then placed on the lined dock until the next unloading sequence. The San Diego Water Board shall be responsible for ensuring adherence to the requirements of this measure.

Mitigation Measure 4.2.6: During dredging activities, the contractor shall ensure that the environmental clamshell bucket is entirely closed when withdrawn from the barge and moved to the truck. In addition, the contractor shall ensure that the bucket is completely empty of sediment prior to being moved back to the barge to minimize sediment being spilled over the dock. The San Diego Water Board shall be responsible for ensuring adherence to the requirements of this measure.

Mitigation Measure 4.2.7: During final design of the clean sand covers, the sand layer thickness and distribution shall be designed to stabilize the contaminated sediments being covered, control the resuspension and redistribution of existing contaminated sediments, and control substantial perturbation (mixing and overturning) of underlying contaminated sediments. The clean sand cover design may be limited to fill from the placement of clean sand. The clean sand cover design shall be thick enough to physically isolate the sediments from benthic or epigenetic organisms to prevent the uptake of bioaccumulative contaminants (e.g., polychlorinated biphenyls [PCBs]) by aquatic organisms either directly from the sediments or by

foraging on benthos. The clean sand covers shall be designed to be thick enough to stabilize the contaminated sediments being covered and minimize the potential for them to be resuspended, eroded, or otherwise transported away from beneath the under pier areas. The final engineering plans shall include the source and type of sand required for subaqueous application of the clean sand covers. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall review and have approval authority for the final engineering plans, and shall verify implementation. A regulatory oversight contractor may be used by the San Diego Water Board.

Mitigation Measure 4.2.8: During application of the clean sand covers, the contractor shall place the initial layers of the clean sand cover in controlled lifts so as to ensure proper placement over the required area, minimize the potential for disturbance and intermixing of the underlying sediments, and ensure that the required sand cover thicknesses are achieved. The sand shall be placed in such a manner as to reduce the vertical impact and lateral spreading of the clean sand cover material and the potential for resuspending the contaminated surface sediments. Controlled placement shall also minimize the mixing of the clean sand covers and underlying sediment by allowing the sediment to slowly gain strength before subsequent layers are deposited. Operational controls such as silt curtains shall also be employed during placement of the clean sand covers. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), with the assistance of a regulatory oversight contractor, shall be responsible for ensuring adherence to the requirements of this measure.

Mitigation Measure 4.2.9: Prior to dredging operations, a Dredging Management Plan (DMP) shall be prepared. The contractor shall implement the measures listed in the DMP during dredging operations. The San Diego Water Board shall be responsible for review and approval of the DMP. The DMP shall contain Standard Operating Procedures (SOPs) for the Project to assist the dredge contractor in preventing accidental spills and providing the necessary guidelines to follow in case of an oil or fuel spill. In addition to providing SOPs to prevent accidental oil/fuel spills during construction activities, the DMP shall address the identification of dredging needs, a methodology and process for determining dredging priorities and scheduling, the feasibility and requirements for expedited permitting, Quality Assurance Project Plan (QAPP) to comply with regulatory requirements, alternatives for control and operation of dredging equipment, and Best Management Practices (BMPs) to implement in the event of equipment failure and/or repair. Typical BMPs for

equipment failure or repair shall be identified in the DMP and could include: communication to Project personnel, proper signage and/or barriers alerting others of potentially unsafe conditions, all repair work to be conducted on land and not over water, repair work involving use of liquids to be performed with proper spill containment equipment (e.g., spill kit), and a contingency plan identifying availability of other equipment or subcontracting options. Furthermore, the DMP shall specify that water discharges to San Diego Bay are prohibited; therefore, the barge shall implement measures necessary to capture all return water and prevent discharge to San Diego Bay. In addition, the DMP shall include, at a minimum, the following measures to prevent accidental oil/fuel spills during construction activities:

As an operational control element, all oil and fuel shall be housed in a secondary containment structure to ensure that any spill or leakage is prevented from entering the water column.

Personnel involved with dredging and handling the dredged material shall be given training on the potential hazards resulting from accidental oil and/or fuel spills. This operational control shall provide the personnel with an awareness of the materials they are handling as well as the potential impact to the environment.

All equipment shall be inspected by dredge contractor personnel before starting the shift. These inspections are intended to identify typical wear or faulty parts that may contain oil or fuel.

Personnel shall be required to visually monitor for oil or fuel spills during construction activities.

In the event that a sheen or spill is observed, the equipment shall be immediately shut down and the source of the spill identified and contained. Additionally, the spill shall be reported to the applicable agencies presented in the DMP.

The shipyards currently have oil/fuel spill kits located at various locations on site for routine ship repair operations. All personnel associated with dredging activities shall be trained on where these spill kits are located, how to deploy the oil sorbent pads, and proper disposal guidelines. The dredging barge shall have a full complement of oil/fuel spill kits on board to allow for quick and timely implementation of spill containment.

The use of oil booms shall be deployed surrounding the dredging activities. In the event that a spill occurs, the oil and/or fuel shall be contained within the oil boom boundary. This operational control

shall be the last line of defense against accidental oil/fuel spill occurrences. The oil boom shall be deployed along the entire length of the outer silt curtain. The San Diego Water Board shall be responsible for verifying adherence to the requirements of this measure.

Mitigation Measure 4.2.10: The containment area constructed around the dewatering containment cell shall be designed to consist of berms (K rails and/or dry dock blocks) surrounding the area that restrict decanted water/storm water to the land adjacent to the dewatering containment and prevent the water from flowing into San Diego Bay or the water table if a breach in the pad were to occur. If any area(s) adjacent to the dewatering containment cell are unpaved, a liner shall be utilized if necessary to prevent infiltration. The containment cell shall be designed as a "no discharge" facility and in a manner that prevents storm water runoff/run-on from adjacent areas to the cell from entering the dewatering area. The San Diego Water Board shall review and approve the design of the dewatering containment cell and verify its implementation in accordance with approved plans.

Mitigation Measure 4.2.11: If a containment liner is used, the San Diego Water Board shall verify that the contractor has provided a salvaging layer of sand that is properly designed and implemented to provide a visual indicator to the excavator operator that he/she is getting close to the containment liner, or the use of closely spaced K-rails and dry dock blocks at key points (i.e., corners) to prevent the operator from getting to the containment liner, in order to prevent a breach in the dewatering pad.

- iii. Impacts to Sea Turtles: Although green sea turtles are known to be in San Diego Bay, the potential for adverse impacts to an individual during dredging activities is low. Dredging, sand covering, and vessel movements within the Project area would potentially result in a behavioral modification to sea turtles that would include a change in swimming behavior to avoid increased noise, turbidity, or the vessel movements. Additionally, the deployment of silt curtains surrounding the dredging/sand covering activities will act as a preventive barrier for green sea turtles entering the construction area.

Material barges transporting dredged material to potential sediment staging sites within San Diego Bay would be traversing a short distance through areas where green sea turtles may occur. Therefore, there is a potential that green sea turtles may be in the general Project barge transit lanes when barge transport activities are occurring. Similar to typical ongoing vessel traffic occurring in San Diego Bay, it is likely that green sea turtles would change their swimming behavior to

avoid vessel movements.

To ensure that any potential impacts remain less than significant, Mitigation Measure 4.5.2-8 are proposed:

Mitigation Measure 4.5.2: In order to protect sea turtles that could potentially forage within and among eelgrass beds identified at or near the Project site, the Project marine biologist shall mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to turtles foraging within eelgrass beds outside the construction zone. The San Diego Water Board shall verify that buoys have been properly placed.

Mitigation Measure 4.5.3: The Project marine biologist shall meet with the construction crews prior to dredging as well as periodically throughout the Project to review pre-dredge survey areas of eelgrass beds to avoid those located adjacent to the Project site and to review proper construction techniques. A training log shall be maintained by the Project marine biologist and shall be submitted monthly to the San Diego Water Board, who shall verify implementation of this measure.

Mitigation Measure 4.5.4: The contractor shall ensure that throughout the duration of dredge and clean sand cover placement activities, Project-related barges and work vessels operating in areas where eelgrass beds exist shall be operated in a manner to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other activities that may disturb the seafloor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels. The Project marine biologist shall periodically confirm that these measures are implemented and shall submit a monthly monitoring report to the San Diego Water Board.

Mitigation Measure 4.5.5: The contractor shall ensure that throughout the duration of dredge and clean sand cover placement activities, barges and work vessels shall be operated in a manner to ensure that sea turtles and marine mammals are not injured or harassed through excessive vessel speed or propeller damage. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels. The Project marine biologist shall periodically confirm that these measures are implemented and shall submit a monthly monitoring report to the San Diego Water Board.

Mitigation Measure 4.5.6: The contractor shall ensure that construction crews and work vessel crews are briefed daily on the potential for sea turtles and marine mammals to be present and provided with identification characteristics of sea turtles, seals, sea

lions, and dolphin. The Project marine biologist shall periodically confirm that this measure is implemented and include verification in a monthly monitoring report.

Mitigation Measure 4.5.7: The contractor shall ensure that all construction activity be temporarily stopped if a sea turtle or marine mammal is sighted within 100 meters of the construction zone until the sea turtle or marine mammal is safely outside the outer perimeter of Project activities. The biological monitor, who will be on site periodically during dredging activities, shall have the authority to halt construction operation and shall determine when construction operations can proceed. The San Diego Water Board shall verify implementation of this mitigation measure.

Mitigation Measure 4.5.8: The biological monitor shall prepare an incident report of any green sea turtle or marine mammal activity in the Project area and shall inform the contractor to have his/her crews be aware of the potential for additional sightings. The report shall be provided within 24 hours to the California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS). In the event a sea turtle, pinniped, or cetacean is injured or killed as consequence of a collision, the vessel operator and the appointed shipyard safety personnel shall be required to immediately notify the NMFS (Southwest Division) and shall submit a written, follow-up report within 24 hours of the incident. Any injured sea turtle or marine mammal shall be transported to an agency-approved treatment facility. The San Diego Water Board shall verify implementation of this mitigation measure.

Mitigation Measures 4.5.2 through 4.5.8 would specifically reduce impacts to sea turtles to less than significant by minimizing activity and damage within nearby eelgrass beds, assigning a marine biologist to provide crew training, ensuring that operation of barges and work vessels is conducted in a manner to minimize potential harm to turtles, providing daily briefings of turtle occurrence probability, temporarily halting activities if a turtle is sighted, and coordinating with/notifying resource agencies. Impacts to this species will be less than significant with mitigation incorporated.

- iv. Birds: Impacts to birds would occur as a result of activities associated with dredging, placement of clean sand cover, and landside activities processing the dredged materials, and would primarily affect seabirds (e.g., gulls, cormorants, terns, pelicans, scoters) and waterfowl (e.g., brants and sea-going ducks). No birds are known to nest within or immediately adjacent to the dredging/clean sand cover placement area, and any birds nesting in the vicinity would be accustomed to

various shipyard-related activities. Impacts to seabirds and waterfowl are expected to primarily consist of increased noise and human disturbance to foraging and roosting seabirds and waterfowl, and may result in avoidance of areas where Project-related activities are in progress. Impacts to marine invertebrates and fish may also affect the prey base available for foraging birds within the limits of the silt curtains at the Project site during Project-related activities.

Impacts to birds nesting within landscaped areas within and adjacent to potential staging areas could also occur, including California horned lark, Costa's hummingbird, and Cooper's hawk. Impacts are anticipated to be short term (for the duration of the Project, up to 2.5 years), and, provided the shipyards comply with all applicable regulations (e.g., MBTA, California Fish and Game Code), would be less than significant for these species and other common bird species.

Impacts to special-status seabirds are discussed below.

1. California Least Tern: Construction activities may disturb the California least tern if it is present during dredging activities. If construction activities are performed during the scheduling option that includes approximately 7-month dredging episodes extending over 2 to 2.5 years, potential impacts to the California least tern are likely to be less than significant due to work being performed outside the breeding season. If construction activities are performed during the scheduling option of a continuous dredging cycle over a 12.5-month period, impacts could occur during the nesting season. However, the Project site represents a very small area of San Diego Bay, and only small areas of the site are to be affected at any one time regardless of the dredge schedule, which leaves other open water areas available for this species to forage. The majority of the sediment remediation site is in an area with relatively low abundance of prey species, although a narrow band of higher abundance occurs adjacent to the shoreline. There is no shallow water foraging habitat at the Project site, limiting feeding opportunities. The least tern may choose to avoid the immediate construction work area based on the lack of foraging habitat and the fact that no known nests have been recorded at the site. If so, impacts would be limited to potentially affecting flight patterns through site avoidance and incremental reduction of available prey, with the possibility of increasing the effort for the species to travel to and from foraging sites. These impacts, on their own, are unlikely to significantly affect nesting success; however, if other Projects are proposed in the vicinity that also affect available foraging areas, the cumulative effect could be significant.

2. Elegant Tern, Black Skimmer: Impacts to these species would be similar to those described above for the California least tern, consisting of construction-related impacts to foraging habitat during Project-related activities that occur during the breeding season. These two species nest primarily in the South San Diego Bay Unit of the San Diego Bay NWR; therefore, impacts to flight patterns of foraging birds are less likely.
3. California Brown Pelican: Construction activities may disturb the California brown pelican, if present during such activities. Impacts to marine invertebrates and fish may also affect the prey base available for foraging birds within the limits of the silt curtains at the Project site during Project-related activities. However, the Project site represents a very small area of San Diego Bay, and only small areas of the site are to be affected at any one time regardless of the dredge schedule, leaving available other open water areas for this species to forage. Furthermore, California brown pelicans in the region are relatively tolerant of most human activities conducted within the bay, including dredging. Therefore, because construction is confined to a small area within the bay, because this species is fairly tolerant, and because it is no longer considered a threatened species, potential impacts to California brown pelicans will be less than significant.
4. Double-Crested Cormorant: Construction activities may disturb the double-crested cormorant, if present during such activities. However, disturbance from construction will be limited to small areas of the Project site at any one time, leaving other open water areas available for this species. Because cormorants are opportunistic feeders and alter their diets in response to fish stocks available at the time, this species is not expected to forage at the dredging site due to the absence of prey as a result of the silt curtains. Double-crested cormorants within the area have become accustomed to human activity at the shipyards and within the bay. Therefore, because construction is confined to a small area within the bay, and because suitable prey will not be available at the shipyard sediment site, potential impacts to double-crested will be less than significant.
5. Brant: Dredging and other Project activities may disturb this species, if present during such activities. However, disturbance from construction will be limited to small areas of the Project site at any one time, leaving available other open water areas for this species. Impacts to eelgrass beds would temporarily reduce available foraging areas for brant within the Project area; however, this impact would be limited to the duration of the Project plus the

reestablishment period for eelgrass and would be less than significant.

To ensure that any potential impacts remain less than significant, Mitigation Measure 4.5.9 is proposed requiring a qualified biologist to monitor least terns and other special-status seabirds and waterfowl during all construction activities.

Mitigation Measure 4.5.9: A qualified biologist familiar with the California least tern and other special-status seabirds and waterfowl shall be retained and be on site to assess the roosting and foraging behavior of special-status seabirds and waterfowl at the Shipyard Sediment Site and selected staging area(s) immediately prior to and during the initial start-up phase of dredging and clean sand cover placement activities. Once it has been determined that activities are not adversely affecting seabirds and waterfowl, the biologist shall not be required to be on site continuously; however, monitoring shall be performed at least once per week (or more often if required by the resource agencies) to adequately assess whether substantial adverse impacts to special-status seabirds and waterfowl are resulting from Project activities (e.g., disrupting nesting or foraging activities, harassing roosting birds). The biologist shall be present during either of the selected dredge scheduling options. In the event of an imminent threat to California least tern and/or other special-status species, the monitor shall immediately contact the contractor's construction manager. In the event the construction manager/contractor is not available, the monitor shall have the authority to redirect or halt construction activities if determined to be necessary. The San Diego Water Board shall verify implementation of this mitigation measure

Mitigation Measure 4.5.9 reduces potential impacts to sensitive bird species to less than significant because it required monitoring to adequately assess whether substantial adverse impacts to special-status seabirds and waterfowl are resulting from Project activities (e.g., disrupting nesting or foraging activities, harassing roosting birds), and provides for redirecting or halting construction activities if determined to be necessary to protect sensitive bird species. Impacts to this species will be less than significant with mitigation incorporated.

- v. Impacts to Mammals: Project-related activities may disturb marine mammals, if present during such activities. Noises created during dredging would be attributed to the clamshell operating in the submerged aquatic environment. The measured sound exposure levels of a clamshell dredge may range between 75 and 88 A-weighted.

decibels (dBA) at 50 feet from the source. It is possible that marine mammals may modify their behavior as a result of the noise produced by dredging operations. Based on Port of Los Angeles response to comments for the Port of Los Angeles Channel Deepening Project EIR/EIS (2009), underwater noise from the clamshell dredging associated with that Project would be below the NMFS-designated Level A Harassment threshold for pinnipeds. This would imply that clamshell and dredging effects for marine mammals near the Shipyard Sediment Site would also be less than significant.

Dredging operations could disturb sediments containing sediment-bound contaminants that are potentially harmful to marine mammals. Exposure to these contaminants that could cause acute toxicity or bioaccumulation to marine mammals and sea birds would be avoided by implementation of standard conditions of the requirements of the San Diego Water Board for Section 401 Certification.

Barges transporting dredge material to and from the Project site have a low potential to collide with marine mammals. Marine mammals are generally capable of avoiding boat traffic, particularly at the speeds at which the vessels will likely be transiting. Marine mammals in San Diego Bay have also likely habituated to vessel traffic since vessels commonly transit within and in and out of the Bay. According to the South Coast Marine Protected Areas Final EIR (Figure 7-20), there are no established marine mammal rookeries or haul-out areas in the vicinity of the site.

Use of silt curtains throughout the entire Project, as required by Mitigation Measures 4.2.2 and 4.2.3 in Section 4.2, Hydrology and Water Quality, will act as a preventive barrier to reduce marine mammal exposure to dredging activities. Mitigation Measure 4.3.5 in Section 4.3, Hazards and Hazardous Materials, of this PEIR requires the contractor to establish and follow a communication plan that will identify vessel speed limitations. In addition, Mitigation Measures 4.5.3 through 4.5.8 would specifically reduce impacts to marine mammals to less than significant by assigning a marine biologist to provide crew training, ensuring that operation of barges and work vessels is conducted in a manner to minimize potential harm to turtles, providing daily briefings of turtle occurrence probability, temporarily halting activities if a turtle is sighted, and coordinating with/notifying resource agencies. Impacts to marine mammals are anticipated to be less than significant with mitigation incorporated.

- vi. Indirect Effects on Sweetwater Marsh Unit of the San Diego Bay NWR: Potential Staging Area 5 is adjacent to the Sweetwater Marsh Unit of the San Diego Bay NWR, which provides habitat for a variety of

special-status species. Offsite indirect effects associated with the proposed Project that could affect areas within the San Diego Bay NWR would be limited to potential increases in noise and human activity at potential Staging Area 5. According to the EIS prepared for the Comprehensive Conservation Plan for the San Diego Bay NWR, existing noise levels vary throughout the Sweetwater Marsh Unit, with the most significant noise generated by the military, commercial, and private fixed wing and rotary wing aircraft that fly over San Diego Bay NWR lands. Other sources of noise in the vicinity of the Sweetwater Marsh Unit include vehicle traffic on I-5, boat operations in the adjacent navigation channel, and Port and other industrial activities that occur immediately to the north and northwest (presumably including at potential Staging Area 5).

Noises created during offloading at each of the potential staging areas would be attributed to the excavator operating on the dock and a bulldozer spreading dredged sediment at the dewatering pad. A standard-size excavator and bulldozer produce approximately 80-90 dBA sound levels during operation. Noise levels decrease with distance, and may be further reduced if the activities are obstructed by on-site structures. The duration of the excavator noise will occur during material barge unloading episodes, and bulldozer activity will occur during the dumping of dredged material at the dewatering pad and subsequent spreading. It is assumed that each piece of machinery would be operating approximately 7 hours per workday. Noise attributed to offloading a material barge or spreading dredged sediment is not expected to significantly affect aquatic marine life. It is anticipated that noise produced from the offloading and dewatering activities will not significantly affect foraging seabirds and waterfowl (e.g., California least tern) as these species will not be foraging in these upland areas.

The southern parcel of potential Staging Area 5 is approximately 1,100 feet from the D Street Fill least tern nesting location (Figure 4.5-2). The typical noise levels from an excavator and bulldozer 50 feet from the source are 82 and 85 dBA, respectively. If Staging Area 5 is selected as an offloading/dewatering site for the Project, the noise produced from site machinery will not significantly affect the D Street Fill least tern nesting location because the sound levels from each source will be below 70 dBA due to the approximate distance (1,100 feet) between the proposed staging area and the least tern nesting location. However, portions of the usable areas of potential Staging Area 5 are within 100–200 feet of the salt marsh area associated with Paradise Marsh, part of the Sweetwater Marsh Unit of the San Diego Bay NWR, which provides potential nesting habitat for several special-status and/or listed species. If activities are conducted within the breeding

season of special-status species that may occur in the Paradise Marsh area, there is a potential for disruption of nesting activities of listed species, including Belding's savannah sparrow and light-footed clapper rail, resulting in potentially significant impacts.

To ensure that any potential impacts remain less than significant, Mitigation Measure 4.5.10 and 4.5.11 are proposed should Staging Area 5 be selected:

Mitigation Measure 4.5.10: If Staging Area 5 is selected, prior to initiation of dredging and during final design, the contractor shall endeavor to restrict dewatering and treatment activities to within the western and northern portions of the staging area to the extent feasible. To the extent practicable, activities shall be conducted in locations where existing buildings obstruct sensitive habitat areas from noise sources. The staging area layout shall be submitted to the San Diego Water Board (and to the resource agencies, if required) for review and approval.

Mitigation Measure 4.5.11: If Staging Area 5 is selected, the California Department of Fish and Game (CDFG) shall be notified not less than 30 days in advance and shall be given the opportunity to provide recommended measures to minimize impacts from increased noise and human activity to species in the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge (NWR). All agency-recommended measures (or agency-approved substitute measures, if recommended measures are infeasible) shall be implemented throughout the duration of Project activities in Staging Area 5. At a minimum, the applicant shall conduct pre-activity nesting bird surveys within 300 feet of all noise-intensive activities if such activities will be initiated within the breeding season for special-status species (conservatively February 1 through August 31). If nesting birds are identified within 300 feet of activities, a qualified (and, if appropriate based on the species, agency-permitted) biological monitor shall be present on site to observe the behavior of the nesting birds during initiation of activities. The biological monitor shall have the authority to temporarily halt or redirect activities in the event that adverse effects to the birds are evident (e.g., there is a risk of nest failure or other indication of harassment, as defined by the Endangered Species Act). If adverse effects to nesting birds appear to be likely, the monitor shall recommend additional measures (e.g., installation of sound barriers, limiting duration of activities, relocating activities to another area, or postponing activities until the nest is no longer active) in concert with resource agency personnel.

Regardless of whether nesting birds are identified during pre-activity nesting bird surveys, the biological monitor shall inspect the site and

any adjacent areas supporting potential nesting habitat at least every 2 weeks during Project activities that are conducted during the nesting season (conservatively February 1 through August 31) and shall report monthly to the State Water Resources Control Board (State Water Board).

Implementation of Mitigation Measures 4.5.10 and 4.5.11 will avoid or minimize impacts to special-status species occurring within Paradise Marsh and the Sweetwater Marsh Unit of the San Diego Bay NWR, because they require that, 1) to the extent practicable, staging activities shall be conducted in locations where existing buildings obstruct sensitive habitat areas from staging activity noise sources; 2) once the activity area within Staging Area 5 is identified, the CDFG be consulted to identify any appropriate additional or substitute measures to minimize impacts from increased noise and human activity to species in the Sweetwater Marsh Unit for the duration of the staging activities; and 3) biological resource monitoring during Project activities that are conducted during the nesting season, with regular reports to the State Water board so that adjustments to the activities can be made if warranted. Therefore, implementation of Mitigation Measures 4.5.10 and 4.5.11 will reduce indirect impacts to special-status species within the San Diego Bay NWR to less than significant.

f. Air Quality

- i. Fugitive Dust was identified in the EIR as having less than significant impacts. However, the EIR and MMRP have identified specific measures that will be implemented regarding fugitive dust should measures be warranted.
- ii. Odors: The heavy-duty construction equipment used in the Project area during construction would result in odor emissions. However, these odors would be limited to the time that construction equipment is operating during the construction period for the Project. Adherence to the mitigation measures identified for equipment, specifically Mitigation Measure 4.4.3 that requires equipment to be located as to create the greatest distance between construction-related noise sources and sensitive receptors nearest the Project site, would reduce impacts associated with objectionable odors from the operation of diesel-powered construction equipment.

Mitigation Measure 4.4.3: The contractor shall implement, and the San Diego Water Board shall verify, the following for the duration of Project implementation (dredging, treatment, and loading) in order to reduce potential construction noise impacts on nearby sensitive receptors:

All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards

All stationary construction equipment shall be placed so that emitted noise is directed away from sensitive receptors nearest the Project site.

All equipment staging shall be located to create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the Project site.

In addition to odors generated by diesel-powered construction equipment, odors from the dredged sediment would also be generated. During the dredging phases of the proposed Project, the dredged materials will be dewatered and treated with a binding agent. While the dredge material is drying, the decomposition of organic matter as it is exposed to air may generate unpleasant odors. Therefore, the dredged material may result in odor impacts at nearby sensitive land uses. The actual content and odor of the dredge material will not be known until dredging is underway. Should the material prove to be odorous at sensitive receptors (residential uses and parks near the selected staging area), adherence to Mitigation Measure 4.6.15 would be triggered. Mitigation Measure 4.6.15 requires the application of a mixture of Simple Green and water to the dredged material

Mitigation Measure 4.6.15: To accelerate the decomposition process and reduce odor impacts, the contractor shall apply a mixture of Simple Green and water (a ratio of 10:1) to the dredged material to the extent odor issues arise with respect to particular portions of the dredged material. Contract specifications shall be included in the proposed Project construction documents, which shall be reviewed by the San Diego Water Board prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.

Mitigation Measure 4.6.15 will reduce odors because the addition of Simple Green to the dredged material accelerates the decomposition process and would have the overall result of shortening the duration of odor emissions. In addition, staging activities will be located to provide the greatest feasible distance between the staging activities (including sediment drying) and any nearby sensitive receptors. Therefore, the combination of Mitigation Measure 4.6.15 and the setback distance to sensitive receptors would reduce odor impacts to less than significant with the adherence to identified mitigation measures.

Significant and Unavoidable Impacts

24. Under Public Resources Code sections 21081(a)(3) and 21081(b), and CEQA Guidelines sections 15091, 15092, and 15093, and to the extent reflected in the EIR and the MMRP, the San Diego Water Board finds that the following impacts of the Project remain significant and unavoidable, notwithstanding the imposition of all feasible mitigation measures, as set forth below. The San Diego Water Board also finds that any alternative discussed in the EIR that may reduce the significance of these impacts is rejected as infeasible for the reasons given below.
25. Air Quality: Construction equipment/vehicle emissions during the dredging and treatment of the sediment would result in NOX emissions that would exceed the City-established daily emissions threshold. While adherence to San Diego APCD rules and regulations (including Mitigation Measures 4.6.1 through 4.6.3 listed below) would reduce this impact, impacts associated with this issue would remain significant and adverse because the City-established daily threshold for NOX would be exceeded.

The EIR finds that the Project would result in significant unavoidable construction-related adverse air quality impacts of oxides of nitrogen (NOX) (which is a precursor to ozone [O₃]) emissions, even after the implementation of feasible standard conditions and mitigation measures. Adherence to San Diego Air Pollution Control District (APCD) rules and regulations (including Mitigation Measures 4.6.1 through 4.6.3 listed below) would reduce this impact, as would Mitigation Measures 4.6.8 through 4.6.14 through the use of retrofitted diesel-powered equipment, low-NO_x diesel fuel, and alternative fuel sources.

Mitigation Measure 4.6.1: The contractor shall be required by contract specifications to ensure that dredging, treatment, and haul activities are timed so as not to interfere with peak-hour traffic and to minimize obstruction of through traffic lanes adjacent to the site. If necessary, a flag person shall be retained by the construction supervisor to maintain safety adjacent to existing roadways. Contract specifications shall be included in the proposed Project construction documents, which shall be reviewed by the San Diego Water Board prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.

Mitigation Measure 4.6.2: During dredging and dewatering activities, the contractor shall support and encourage ridesharing and transit incentives for the construction crew. These specifications shall be included in the proposed Project's construction documents, which shall be reviewed by the San Diego Water Board prior to the issuance of a construction permit.

Mitigation Measure 4.6.3: During dredging and dewatering activities, the contractor shall ensure that on-site vehicle speed shall be limited to 15 miles per

hour (mph). Contract specifications shall be included in the proposed Project construction documents, which shall be reviewed by the San Diego Water Board prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.

However, the proposed Project is an environmental cleanup Project and it is intended to be implemented as soon as all of the necessary permits are secured. It is not possible to ensure that that retrofitted diesel-powered equipment, low-NO_x diesel fuel, and alternative fuel sources would be available during the construction period; therefore, this impact remains significant and unavoidable because the City of San Diego and National City daily thresholds for NO_x would be exceeded. There are no other feasible mitigation measures that are available to offset this significant impact. This potential unavoidable significant impact is overridden as set forth in the Statement of Overriding Considerations.

26. Air Quality: The EIR finds that the Project construction activities would also contribute to construction-related adverse cumulative air quality impacts because the San Diego Air Basin (SDAB) is presently in nonattainment for O₃, and the proposed Project, in conjunction with other planned Projects, would contribute to the existing nonattainment status for O₃. Therefore, the cumulative construction air quality impacts of the proposed Project would remain significant even after the implementation of mitigation measures identified above. This potential unavoidable significant impact is overridden as set forth in the Statement of Overriding Considerations.

Findings Regarding Alternatives

27. The San Diego Water Board finds that specific economic, social, environmental, technological, legal, and/or other considerations make infeasible the alternatives to the Project as described in the EIR despite remaining impacts, as more fully set forth in the Statement of Overriding Considerations below. The only remaining significant unavoidable impacts of the Project that cannot be fully mitigated through the mitigation measures and standard conditions described in the EIR are impacts to air quality associated with Project construction.
28. The EIR evaluated a reasonable range of alternatives to the original Project that was described in the Draft Program EIR. The Draft Program EIR identified eight alternatives to the proposed Project. The San Diego Water Board adopts the EIR's analysis and conclusions eliminating an alternative site from further consideration.
29. The four potentially feasible alternatives analyzed in the EIR represent a reasonable range of potentially feasible alternatives that reduce one or more significant impacts of the Project. These alternatives include: (1) No Project/No Development Alternative; (2) Confined Aquatic Disposal Site; (3) Convair Lagoon Confined Disposal Facility; and (4) Nearshore Confined Disposal Facility with Beneficial Reuse of Sediments. As presented in the EIR, the alternatives were

described and compared with each other and with the proposed Project. The No Project Alternative was identified as the environmentally superior alternative. Under CEQA Guidelines section 15126.6(e)(2), if the No Project Alternative is identified as the environmentally superior alternative, the EIR must also identify an environmentally superior alternative among the other alternatives. Based on the analysis contained in the EIR, there is no clear Environmentally Superior Alternative to the proposed Project that is capable of achieving the Project objective. No one alternative would eliminate the significant and adverse impacts of the proposed Project.

30. The San Diego Water Board certifies that it has independently reviewed and considered the information on alternatives provided in the EIR and in the record. The EIR reflects the San Diego Water Board's independent judgment as to alternatives. The San Diego Water Board finds that the Project provides the best balance between the Project goals and objectives and the Project's benefits as described below in the Statement of Overriding Considerations. The four CEQA alternatives proposed and evaluated in the EIR are rejected for the following reasons. Each individual reason presented below constitutes a separate and independent basis to reject the Project alternative as being infeasible, and, when the reasons are viewed collectively, provide an overall basis for rejecting the alternative as being infeasible.
31. No Project/No Development Alternative: Under the No Project/No Development Alternative, the Project would not be undertaken and the site would remain in its current condition with the contaminated sediment remaining and the condition of pollution and/or nuisance persisting in San Diego Bay. This alternative would avoid all of the Projects potentially significant and mitigable impacts, as well as the significant and unavoidable impacts. This alternative is rejected as infeasible because:
 - a. It would not attain the cleanup levels and would not remediate areas as identified in the Tentative CAO because the Tentative CAO would not be implemented. Therefore, the No Project/No Development alternative would not protect the quality of the waters of San Diego Bay for the use and enjoyment by the people of the state and it is not capable of achieving the Project objective;
 - b. It would not reduce or minimize adverse effects to aquatic life beneficial uses, aquatic-dependent wildlife beneficial uses, or human health beneficial uses because the contaminated sediments would remain in place and the condition of pollution and/or nuisance would persist;
 - c. It would not implement a cleanup plan and would not realize any long-term public benefits associated with the cleanup of the contaminated marine sediments;
 - d. The site would continue to constitute a public nuisance by being injurious to human health obstructing the free use of property, and interfering with the comfortable enjoyment of life and property.

- e. Because there is no construction or dredging activity associated with the No Project/No Development alternative, the alternative would not result in any long-term or short-term loss of use of shipyard and other San Diego Bay-dependent facilities; however, the nuisance and public health effects of the contaminated sediments would continue to have a negative impact on San Diego Bay-dependent facilities and beneficial uses.
32. Confined Aquatic Disposal Site (CAD): Under the CAD alternative the contaminated sediments would be dredged and deposited in a constructed CAD facility at a yet to be determined location. A CAD facility is a submerged containment area where dredged material is placed. This alternative would reduce some potentially significant impacts, but would not avoid or reduce the significant unavoidable impacts. This alternative would also increase some potentially significant impacts, thus requiring additional mitigation measures. This alternative was rejected as infeasible because:
- a. It would increase air quality emissions associated with dredging activities due to the need for additional construction vessels and equipment to remove and dispose of the additional sediment associated with constructing the CAD facility itself.
 - b. It would slightly increase the potentially significant marine biological impacts in the area where the CAD facility would be constructed, requiring additional mitigation measures.
 - c. It would increase the potential water quality impacts in the area where the CAD facility would be constructed, which would require additional mitigation measures and permitting.
 - d. It includes additional unidentified areas within San Diego Bay waters that would be disturbed due to the construction and filling of the CAD facility.
 - e. It would require monitoring of the CAP for a significant time period to ensure the stability of the CAD, and its success in sequestering the contaminants.
 - f. It could have greater impacts if the CAD facility did not effectively sequester underlying contaminants and the marine biological community did not re-establish itself.
33. Convair Lagoon Confined Disposal Facility (Convair CDF): Under the Convair CDF alternative the contaminated sediments would be dredged and deposited in a created nearshore CDF at Convair Lagoon in the northern portion of San Diego Bay. A CDF is an engineered structure consisting of dikes or other retaining structures that extend above any adjacent water surface and enclose a disposal area for containment of dredged material, thereby isolating the dredged material from adjacent waters or land. A nearshore CDF typically creates new shoreline. This alternative would reduce some potentially significant impacts, but would not avoid or reduce the significant unavoidable impacts. This alternative would also significantly increase some potentially significant impacts, thus requiring additional mitigation measures. This alternative was rejected as infeasible because:
- a. It would increase air quality emissions associated with dredging activities (due to construction vessels and equipment) due to the removal and construction

- activities associated with the building of the CDF. These air quality impacts would remain a significant adverse impact.
- b. It would increase the potentially significant traffic impacts due to CDF construction, requiring additional mitigation measures.
 - c. It would significantly increase the potential marine biological impacts due to CDF construction, which would require significantly more mitigation measures.
 - d. It would increase the potential water quality impacts, which would require additional mitigation measures and permitting.
 - e. It would require monitoring of the CDF for a significant time period to ensure the stability of the CDF, and its success in sequestering the contaminants.
 - f. It could have greater impacts if the CDF facility did not effectively sequester underlying contaminants.
34. Nearshore Confined Disposal Facility with Beneficial Reuse of Sediments (Nearshore CDF): This alternative is similar to the Convair CDF Alternative in that it would create a nearshore CDF. However, this alternative includes the beneficial use of placing the contaminated sediment as cover for areas under existing piers that cannot be dredged. The placed sediment would be contained by sheet pile walls on both sides. The area under the piers that cannot be dredged is not large enough to contain all of the contaminated sediment; consequently, landfill disposal will be necessary for the excess. This alternative would reduce some potentially significant impacts from traffic, hazards and noise, but would not avoid or reduce the significant unavoidable impacts. This alternative would also increase some potentially significant impacts, requiring additional mitigation measures. This alternative was rejected as infeasible because:
- a. It would increase air quality emissions associated with dredging activities (due to construction vessels and equipment) due to the removal and construction activities associated with the building of the CDF. These air quality impacts would remain a significant adverse impact.
 - b. It would increase the potential marine biological impacts due to CDF construction, which would require additional mitigation measures.
 - c. It would increase the potential water quality impacts, which would require additional mitigation measures and permitting.
 - d. It would require monitoring of the CDF for a significant time period to ensure the stability of the CDF, and its success in sequestering the contaminants.
 - e. It could have greater impacts if the CDF facility did not effectively sequester underlying contaminants.
35. Comments received on the Draft and proposed Final Program EIR suggested the San Diego Water Board should consider monitored natural attenuation as an alternative to the Project. The San Diego Water Board, in accordance with CEQA Guidelines at 15126.6(a), considered a reasonable range of alternatives to the proposed Project, or the location of the Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project. Monitored natural attenuation was not

considered as an alternative to the Project, as monitored natural attenuation fails to achieve the majority of the Project objectives, as identified in the Final Program EIR.

Statement of Overriding Considerations

The proposed Shipyard Sediment Remediation Project would result in significant unavoidable construction-related adverse air quality impacts of oxides of nitrogen (NO_x) (which is a precursor to ozone [O_3]) emissions, even after the implementation of feasible standard conditions and mitigation measures. While the adherence to San Diego Air Pollution Control District (APCD) rules and regulations and identified mitigation measures would reduce this impact, it would remain significant and adverse because the City daily threshold for NO_x would be exceeded. There are no other feasible mitigation measures that are available to offset this significant impact.

Construction activities for the Shipyard Sediment Remediation Project would also contribute to construction-related adverse cumulative air quality impacts because the San Diego Air Basin (SDAB) is presently in nonattainment for O_3 , and the proposed Project, in conjunction with other planned Projects, would contribute to the existing nonattainment status for O_3 . Therefore, the cumulative construction air quality impacts of the proposed Project would remain significant.

36. The San Diego Water Board finds that each of the specific economic, legal, social, technological, environmental, or other considerations and the benefits of the Project separately and independently outweigh these remaining significant, adverse impacts and is an overriding consideration independently warranting approval. The remaining significant adverse impacts identified above are acceptable in light of each of these overriding considerations.
37. The Project will restore and protect the quality of the waters of San Diego Bay, which are currently impaired by the presence of pollutants, for use and enjoyment by the people of the state by executing a shipyard sediment cleanup Project consistent with the provisions of Tentative CAO No. R9-2012-0024.
38. The Project will attain cleanup levels for contaminated sediment that result in the restoration of beneficial uses designated under the San Diego Basin Plan as included in the Tentative CAO No. R9-2012-0024 (judged to be technologically and economically feasible as defined in section 2550.4 of CCR Title 23, pursuant to Resolution No. 92-49).
39. The Project will implement a cleanup plan that will have long-term effectiveness and restore waters 303(d) listed as impaired under the Clean Water Act.
40. The Project will minimize the adverse effects of existing pollutants on aquatic life beneficial uses, including Estuarine Habitat (EST), Marine Habitat (MAR), and Migration of Aquatic Organisms (MIGR) while restoring those beneficial uses

through final implementation of the Project.

41. The Project will minimize the adverse effects of existing pollutants on aquatic-dependent wildlife beneficial uses, including Wildlife Habitat (WILD), Preservation of Biological Habitats of Special Significance (BIOL), and Rare, Threatened, or Endangered Species (RARE) while restoring those beneficial uses through final implementation of the Project.
42. The Project will minimize the adverse effects of existing pollutants on human health beneficial uses, including Shellfish Harvesting (SHELL), and Commercial and Sport Fishing (COMM) while restoring those beneficial uses through final implementation of the Project.
43. The Project will result in the removal of a substantial mass of pollutants, including PCBs, HPAHs, tributyltin, copper, mercury and other metals from the environment.
44. The San Diego Water Board finds that the benefits to beneficial uses in San Diego Bay from implementation of Tentative CAO R9-2012-0024 are highly important to the protection of not only benthic invertebrates, fish and wildlife, but also for human health. In the absence of implementation of Tentative CAO R9-2012-0024, designated aquatic life, aquatic-dependent wildlife, and human health beneficial uses would continue to be impaired. The Project will result in long term benefits to human health and the environment by removing pollutants from the site, while the identified significant unavoidable impacts are temporary and expected to occur only for the duration of the cleanup activities. To the extent that Tentative CAO R9-2012-0024 and this decision does not fully mitigate the adverse effects of the Project, as discussed above, the San Diego Water Board finds that overriding considerations of the greater public interest requires this action. Implementing the Project objective is in the greater public interest. The environmental, economic, and social benefits of implementing Tentative CAO R9-2012-0024 outweigh the potential adverse environmental effects that are not avoided or fully mitigated.

EXHIBIT 4

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

MITIGATION MONITORING AND REPORTING PROGRAM

**SHIPYARD SEDIMENT REMEDIATION PROJECT
ENVIRONMENTAL IMPACT REPORT (EIR)
(SCH #2009111098)**

March 14, 2012

Introduction

The Mitigation Monitoring and Reporting Program (MMRP) has been prepared in compliance with California Environmental Quality Act (Pub. Resources Code § 21000 et seq.; CEQA) and the specific requirements of Public Resources Code section 21081.6. The MMRP describes the requirements and procedures to be followed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) to ensure that all mitigation measures adopted as part of the Cleanup and Abatement Order project (the CAO Project) will be carried out as described in this Program EIR. It is anticipated that a subsequent discretionary approval(s) will be required to fully comply with the directives of the CAO Project. Subsequent discretionary approvals will include, at a minimum, a specific Remedial Action Plan requiring a Clean Water Act permit. To the extent it can be demonstrated to the San Diego Water Board on the basis of substantial evidence that alternative mitigation measures to those set forth herein are equally or more effective at mitigating the identified potentially significant adverse environmental impacts and at protecting the environment, those mitigation measures may be adopted in lieu of those set forth herein at the time subsequent discretionary approvals are granted.

This MMRP incorporates changes made regarding mitigation measures in response to comments received on the Draft Program EIR and proposed Final Program EIR during the public comment period.

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>4.1 Traffic and Circulation</p> <p>Mitigation Measure 4.1.1: Should one or more of Staging Areas 1 through 4 be selected, the contractor shall require, and the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify, that the project-related truck traffic is routed on Harbor Drive (southbound) to the Civic Center Drive access to Interstate 5 (I-5) for the duration of the dredge-and-haul activity and sand import activity. This requirement will be reflected in the contract documents for the primary contractor and sub-contractors. Haul, delivery, and employee traffic shall be discouraged at the I-5 southbound ramp/Boston Avenue intersection and on the roadway segment of Boston Avenue between 28th Street and the I-5 southbound ramp.</p>	<p>San Diego Water Board</p>	<p>Ongoing during the dredge and haul activity</p>
<p>Mitigation Measure 4.1.2: Should Staging Area 5 be selected, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall consult with the San Diego Association of Governments (SANDAG) and the San Diego Unified Port District (Port District) on the implementation status of Segment 5 of the Bayshore Bikeway in order to locate the staging activity away from the planned bike path. The consultation shall include information regarding the specific location, configuration, and operation of the temporary staging area, as well as appropriate bikeway safety and access considerations. If Staging Area 5 is selected, the contractor shall implement the staging area as agreed to by the agencies.</p>	<p>San Diego Water Board, in consultation with SANDAG and the Port District</p>	<p>Ongoing during the dredge and haul activity</p>
<p>Mitigation Measure 4.1.3: Should one or more of Staging Areas 1 through 4 be selected, the shipyards, in consultation with the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), San Diego Unified Port District (Port District), and City of San Diego, shall prepare a Parking Management Plan (PMP) to identify appropriate substitute parking areas, shuttles, and commuter routes, as necessary, to meet the need created by the short-term loss of employee parking spaces. The need for off-site parking shall be based on anticipated employment during the dredge period (which may be reduced compared to existing conditions as a result of the dredge activity displacing some ship building/repair activity), and the loss of parking in the selected staging area. The PMP shall be approved by the City of San Diego Traffic Engineer prior to the initiation of dredging, and its implementation shall be verified by the San Diego Water Board.</p>	<p>Shipyards, in consultation with the San Diego Water Board, the Port District and the City of San Diego</p>	<p>Plan approval prior to the initiation of dredging, and implementation ongoing during the dredge and haul activity</p>

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>4.2 Hydrology and Water Quality</p> <p>Mitigation Measure 4.2.1: During dredging operations, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify that the contractor/dredge operator is using automatic rather than manual monitoring of the dredging operations, which will allow continuous data logging with automatic interpretation and adjustments to the dredging operations for real-time feedback for the dredge operator. Automatic systems shall also be used to monitor turbidity and other water quality conditions in the vicinity of the dredging operations to facilitate real-time adjustments by the dredging operators to control temporary water quality effects. The automatic systems shall include threshold level alarms so that the operator or other appropriate project personnel recognize that a particular system within the operation has failed. If the threshold-level alarms are activated, the dredge operator shall immediately shut down or modify the operations to reduce water quality constituents to within threshold levels. The San Diego Water Board shall further verify that the contractor/operator is using visual monitoring and recording of water turbidity during the dredging operations, including the temporary cessation of dredging if exceedances of the turbidity objective in the Basin Plan occur. Water quality sampling for contaminants of concern (COCs) shall be required if silt curtains are not deployed during any phase of the in-water activities.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging operations</p>
<p>Mitigation Measure 4.2.2: During dredging operations, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify that the dredge contractor is implementing standard Best Management Practices (BMPs) for minimizing resuspension, spillage, and misplaced sediment during dredging operations, as the deposition of such material would increase turbidity and compromise cleanup efforts. Such BMPs shall include, but not be limited to, the following:</p> <ul style="list-style-type: none"> • The contractor shall not stockpile material on the bottom of the San Diego Bay floor and shall not sweep or level the bottom surface with the bucket. • The contractor shall use and maintain double silt curtains that encircle the area of dredging and shall minimize the times in which these 	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging operations</p>

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>curtains are temporarily opened, to contain suspended sediments.</p> <ul style="list-style-type: none"> • The contractor may use air curtains in conjunction with silt curtains to contain re-suspended sediment, to enhance worker safety, and allow barges to transit into and out of the work area without the need to open and close silt curtain gates. • The contractor shall ensure the environmental clamshell bucket is entirely closed when withdrawn from the water and moved to the barge. This action requires extra attention when debris is present to make sure debris does not prevent the bucket from completely closing. Two closure switches shall be on each side of the bucket near the top and bottom to provide an electrical signal to the operator that the bucket is closed. Use of the switches shall minimize the potential of sediment leaking from the bucket into the water column during travel to the surface. • The contractor shall not overflow the digging bucket because overflow results in material overflowing back into the water. Use of instrumentation such as Clam Vision® shall allow the operator to visualize in real time the depth of cut that shall be designed to prevent overflowing. • The contractor shall utilize wide-pocket material barges having watertight containments to prevent return water from re-entering San Diego Bay. The contractor shall not overflow the material barge to a point where overflow or spillage could occur. Each material barge shall be marked in such a way to allow the operator to visually identify the maximum load point. The marking should allow sufficient interior freeboard to prevent spillage in rough water such as ship wakes during transit. Initiating the material barge marking shall minimize impact of load spillage during transit to the unloading area. • The contractor shall not use weirs as a means to dewater the scow and shall allow additional room for sediment placement. Preventing this action shall minimize the introduction of turbidity to the water column. • The contractor shall place material in the material barge such that splashing or sloshing does not occur, which could send sediment back 		

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>into the water. Splashing can be controlled by restricting the drop height from the bucket.</p> <p>If the use of a grate to collect debris is required, the contractor shall not allow material to pile up on the grid and flow or slip from the grid back into the water. The debris scalper shall be positioned in such a way as to be totally contained on the shore side of the unloading operations. The dredge operator shall visually monitor for debris build-up and alert the support personnel on the barge to assist in clearing the debris, as necessary. Debris that is derived from dredging activities shall be removed from the grate by the environmental clamshell bucket and placed in a contained area on the dredge barge or in a second material barge for subsequent removal to the onshore dewatering facility.</p> <p>The contractor shall restrict barge movement and work boat speeds (i.e., reducing propeller wash) in the dredge area. The remedial design should identify the various areas where this operational control should be used.</p>		
<p>Mitigation Measure 4.2.3: During dredging operations, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify that the contractor is deploying inner- and outer-boundary floating silt curtains fully around the dredging area at all times. Double silt curtains shall be utilized for containment of the dredge area; configurations, technologies, and actual locations of silt curtains in relation to the dredge barge shall be finalized during the design phase of the project. The floating silt curtain shall be comprised of connected lengths of Type III geotextile fabric. A continuous length of floating silt curtain shall be arranged to fully encircle the dredging equipment and the scow barge being loaded with sediment. The silt curtain shall be supported by a floating boom in open water areas (such as along the bay ward side of the dredging areas). Along pier edges, the contractor shall have the option of connecting the silt curtain directly to the structure. The contractor shall continuously monitor the silt curtain for damage, dislocation, or gaps and immediately fix any locations where it is no longer continuous or where it has loosened from its supports. The bottom of the silt curtain shall be weighted with ballast weights or rods affixed to the base of the fabric. Where feasible and applicable, the floating silt curtains shall be anchored and deployed from the surface of the water to just above the</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging operations</p>

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>substrate. If necessary, silt curtains with tidal flaps may be installed to facilitate curtain deployment in areas of higher flow. Air curtains may be used in conjunction with silt curtains to contain resuspended sediment, enhance worker safety, and allow barges to transit into and out of the work area without the need to open and close silt curtain gates.</p> <p>Throughout the remediation process of dredging and application of the clean sand covers, the contractor shall conduct water quality monitoring to demonstrate that implementation of the remedial activities does not result in violations of water quality objectives in the Basin Plan outside of the construction area. The contractor shall submit weekly water quality reports to the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board). If water quality objectives are violated, the San Diego Water Board may temporarily halt activity and impose additional required measures to protect water quality.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging operations</p>
<p>Mitigation Measure 4.2.4:</p> <p>Prior to initiation of dredging activities, the contractor shall determine the swing radius of the unloading equipment and shall place a steel plate (swing tray or spill plate) between the material barge and the hard cape to prevent spillage from falling directly into the water. The steel plate shall be sufficiently large enough to cover the swing radius of the unloading equipment. The spill plate shall be designed to prevent any "drippings" from falling between the material barge and dock where the unloading equipment is stationed. The spill plate shall be positioned so that any "dripped" material/water either runs back into the material barge or onto the unloading dock, which shall be lined with an impermeable material and beamed to contain excess sediment/water. The steel plate shall be designed to prevent any water or sediment from re-entering San Diego Bay. As a secondary containment measure, filter fabric material shall be placed over the spill plate and between edges of the barge and unloading dock to prevent any drippings from falling into San Diego Bay. Upon completion of unloading a material barge, the spill plate shall be thoroughly rinsed so that excess sediment is drained into the material barge or onto the unloading dock (depending on spill plate positioning) and then placed on the lined dock until the next unloading sequence. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall be responsible for ensuring adherence to the requirements of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to initiation of and ongoing during dredging and sediment unloading operations</p>
<p>Mitigation Measure 4.2.6:</p> <p>During dredging activities, the contractor shall ensure that the</p>	<p>Contractor, as verified</p>	<p>Ongoing during</p>

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>environmental clamshell bucket is entirely closed when withdrawn from the barge and moved to the truck. In addition, the contractor shall ensure that the bucket is completely empty of sediment prior to being moved back to the barge to minimize sediment being spilled over the dock. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall be responsible for ensuring adherence to the requirements of this measure.</p>	<p>by the San Diego Water Board</p>	<p>dredging operations</p>
<p>Mitigation Measure 4.2.7: During final design of the clean sand covers, the sand layer thickness and distribution shall be designed to stabilize the contaminated sediments being covered, control the resuspension and redistribution of existing contaminated sediments, and control substantial perturbation (mixing and overturning) of underlying contaminated sediments. The clean sand cover design may be limited to fill from the placement of clean sand. The clean sand cover design shall be thick enough to physically isolate the sediments from benthic or epigenetic organisms to prevent the uptake of bioaccumulative contaminants (e.g., polychlorinated biphenyls [PCBs]) by aquatic organisms either directly from the sediments or by foraging on benthos. The clean sand covers shall be designed to be thick enough to stabilize the contaminated sediments being covered and minimize the potential for them to be resuspended, eroded, or otherwise transported away from beneath the under pier areas. The final engineering plans shall include the source and type of sand required for subaqueous application of the clean sand covers. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall review and have approval authority for the final engineering plans, and shall verify implementation. A regulatory oversight contractor may be used by the San Diego Water Board.</p>	<p>San Diego Water Board</p>	<p>Ongoing during application of clean sand cover</p>
<p>Mitigation Measure 4.2.8: During application of the clean sand covers, the contractor shall place the initial layers of the clean sand cover in controlled lifts so as to ensure proper placement over the required area, minimize the potential for disturbance and intermixing of the underlying sediments, and ensure that the required sand cover thicknesses are achieved. The sand shall be placed in such a manner as to reduce the vertical impact and lateral spreading of the clean sand cover material and the potential for resuspending the contaminated surface sediments. Controlled placement shall also minimize the mixing of</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during application of clean sand cover</p>

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>the clean sand covers and underlying sediment by allowing the sediment to slowly gain strength before subsequent layers are deposited. Operational controls such as silt curtains shall also be employed during placement of the clean sand covers. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), with the assistance of a regulatory oversight contractor, shall be responsible for ensuring adherence to the requirements of this measure.</p> <p>Mitigation Measure 4.2.9: Prior to dredging operations, a Dredging Management Plan (DMP) shall be prepared. The contractor shall implement the measures listed in the DMP during dredging operations. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall be responsible for review and approval of the DMP. The DMP shall contain Standard Operating Procedures (SOPs) for the project to assist the dredge contractor in preventing accidental spills and providing the necessary guidelines to follow in case of an oil or fuel spill. In addition to providing SOPs to prevent accidental oil/fuel spills during construction activities, the DMP shall address the identification of dredging needs, a methodology and process for determining dredging priorities and scheduling, the feasibility and requirements for expedited permitting, Quality Assurance Project Plan (QAPP) to comply with regulatory requirements, alternatives for control and operation of dredging equipment, and Best Management Practices (BMPs) to implement in the event of equipment failure and/or repair. Typical BMPs for equipment failure or repair shall be identified in the DMP and could include: communication to project personnel, proper signage and/or barriers alerting others of potentially unsafe conditions, all repair work to be conducted on land and not over water, repair work involving use of liquids to be performed with proper spill containment equipment (e.g., spill kit), and a contingency plan identifying availability of other equipment or subcontracting options. Furthermore, the DMP shall specify that water discharges to San Diego Bay are prohibited; therefore, the barge shall implement measures necessary to capture all return water and prevent discharge to San Diego Bay. In addition, the DMP shall include, at a minimum, the following measures to prevent accidental oil/fuel spills during construction activities:</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to initiation of and ongoing during dredging operations</p>

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<ul style="list-style-type: none"> • As an operational control element, all oil and fuel shall be housed in a secondary containment structure to ensure that any spill or leakage is prevented from entering the water column. • Personnel involved with dredging and handling the dredged material shall be given training on the potential hazards resulting from accidental oil and/or fuel spills. This operational control shall provide the personnel with an awareness of the materials they are handling as well as the potential impact to the environment. • All equipment shall be inspected by dredge contractor personnel before starting the shift. These inspections are intended to identify typical wear or faulty parts that may contain oil or fuel. • Personnel shall be required to visually monitor for oil or fuel spills during construction activities. • In the event that a sheen or spill is observed, the equipment shall be immediately shut down and the source of the spill identified and contained. Additionally, the spill shall be reported to the applicable agencies presented in the DMP. • The shipyards currently have oil/fuel spill kits located at various locations on site for routine ship repair operations. All personnel associated with dredging activities shall be trained on where these spill kits are located, how to deploy the oil sorbent pads, and proper disposal guidelines. The dredging barge shall have a full complement of oil/fuel spill kits on board to allow for quick and timely implementation of spill containment. • The use of oil booms shall be deployed surrounding the dredging activities. In the event that a spill occurs, the oil and/or fuel shall be contained within the oil boom boundary. This operational control shall be the last line of defense against accidental oil/fuel spill occurrences. The oil boom shall be deployed along the entire length of the outer silt curtain. <p>The San Diego Water Board shall be responsible for verifying adherence to the requirements of this measure.</p>		

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>Mitigation Measure 4.2.10: The containment area constructed around the dewatering containment cell shall be designed to consist of berms (K-rails and/or dry dock blocks) surrounding the area that restrict decanted water/storm water to the land adjacent to the dewatering containment and prevent the water from flowing into San Diego Bay or the water table if a breach in the pad were to occur. If any area(s) adjacent to the dewatering containment cell are unpaved, a liner shall be utilized if necessary to prevent infiltration. The containment cell shall be designed as a "no discharge" facility and in a manner that prevents storm water runoff/run-on from adjacent areas to the cell from entering the dewatering area. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall review and approve the design of the dewatering containment cell and verify its implementation in accordance with approved plans.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to initiation of and ongoing during dewatering operations</p>
<p>Mitigation Measure 4.2.11: If a containment liner is used, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify that the contractor has provided a salvaging layer of sand that is properly designed and implemented to provide a visual indicator to the excavator operator that he/she is getting close to the containment liner, or the use of closely spaced K-rails and dry dock blocks at key points (i.e., corners) to prevent the operator from getting to the containment liner, in order to prevent a breach in the dewatering pad.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dewatering operations</p>
<p>Mitigation Measure 4.2.12: During dewatering operations, the contractor shall comply with the provisions of the <i>National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities</i> (Construction General Permit) (Order No. 2009-0009-DWQ, NPDES No. CAS000002), and any subsequent permit, as they relate to activities conducted in the staging areas. This shall include submission of the Permit Registration Documents, including a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement to the State Water Resources Control Board (State Water Board) via the Storm Water Multi-Application and Report Tracking System (SMARTS) at least 7 days prior to the start of dewatering activities at the staging areas. Construction activities shall not commence until a Waste Discharger Identification (WDID) number is received from the SMARTS. The SWPPP shall be prepared by a Qualified SWPPP Developer (QSD);</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dewatering operations</p>

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>shall meet the requirements of the Construction General Permit; and shall identify potential pollutant sources associated with dewatering activities, identify non-storm water discharges, and identify, implement, and maintain Best Management Practices (BMPs) to reduce or eliminate pollutants associated with the construction site. BMPs shall include, but not be limited to, Good Housekeeping, Erosion Control, and Sediment Control. The BMPs identified in the SWPPP shall be implemented during project construction. An Annual Report shall be submitted using the SMARTS no later than September 1 of each year during dewatering operations. A Notice of Termination (NOT) shall be submitted to the State Water Board within 90 days of completion of dewatering activities and stabilization of the site. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall be responsible for verifying the contractor's adherence to the requirements of this measure.</p>		
<p>Mitigation Measure 4.2.13: Prior to any discharge to the sanitary sewer system, the contractor shall ensure that the decanted water is analytically tested following the discharge requirements for the San Diego Publically Owned Treatment Works (POTW). If water samples exceed the City of San Diego requirements for discharge of wastewater to the sanitary sewer system, the water shall be taken off site for treatment and subsequent disposal. In addition, the contractor shall comply with any limits on pollutant concentrations, discharge times, and flow rates required by the City of San Diego. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall be responsible for verifying the contractor's adherence to the requirements of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to any discharge to the sanitary sewer system</p>
<p>Mitigation Measure 4.2.14: The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall coordinate water quality monitoring efforts and share water quality monitoring data with other dredging projects in San Diego Bay throughout the duration of the project. Considerations for the issuance of dredge permits or General Waste Discharge Requirements (WDRs) shall include distance(s) between sites and proposed timing of in-water activities that shall involve potential impacts to water quality, selection of appropriate water quality reference sampling locations in San Diego Bay, configuration of silt curtains, and coordination of expected commercial and recreational vessel traffic.</p>	<p>San Diego Water Board</p>	<p>Ongoing during dredging operations</p>
<p>4.3 Hazards and Hazardous Waste</p>		

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>Mitigation Measure 4.3.1: Secondary Containment. As an operational control element, the contractor shall ensure, and the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) will verify, that all oil and fuel is housed in a secondary containment structure to ensure that spilled or leaked oil or fuel will be prevented from entering the water column.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging and dewatering operations</p>
<p>Mitigation Measure 4.3.2: Dredging Management Plan. The contractor shall ensure that a Dredging Management Plan (DMP) containing Standard Operating Procedures (SOPs) for the project is developed prior to the initiation of dredging and implemented for the duration of the dredging activity. The DMP will include the following measures to prevent release of hazardous materials during construction activities:</p> <ul style="list-style-type: none"> • Personnel involved with dredging and handling the dredged material will be given training on their specific task areas, including: <ul style="list-style-type: none"> ○ Potential hazards resulting from accidental oil and/or fuel spills; ○ Proper dredging equipment operation; and ○ Proper silt curtain deployment techniques. • Proper response in the event that ordnance or munitions are encountered. • All equipment will be inspected by the dredge contractor and equipment operators before starting the shift. These inspections are intended to identify typical wear or faulty parts. • Required instrumentation to avoid spillage of dredging material will be identified for each piece of equipment used during dredging operations. • Personnel will be required to visually monitor for oil or fuel spills during construction activities. • In the event that a sheen or spill is observed, the equipment will be immediately shut down and the source of the spill identified and contained. Additionally, the spill will be reported to the applicable agencies presented in the DMP. 	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to and ongoing during dredging operations</p>

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<ul style="list-style-type: none"> All personnel associated with dredging activities will be trained as to where oil/fuel spill kits are located, how to deploy the oil-absorbent pads, and proper disposal guidelines. The dredging barge shall have a full complement of oil/fuel spill kits on board to allow for quick and timely implementation of spill containment. The use of oil booms will be deployed surrounding the dredging activities. In the event that a spill occurs, the oil and/or fuel will be contained within the oil boom boundary. The oil boom shall be deployed along the entire length of the outer silt curtain. Shallow areas along the haul route will be mapped and provided to the dredge operator for review. These areas will be avoided to the extent possible to prevent propeller wash resuspension of sediment. Load-controlled barge movement, line attachment, and horsepower requirements of tugs and support boats at the project site will be specified to avoid resuspension of sediment. Barge load limits and loading procedures will be identified, and the appropriate draft level will be marked on the materials barge hull. A protocol will be developed for the project in conjunction with the U.S. Department of the Navy to address any munitions and ordnance that have been found during the project. As required for projects within San Diego Bay Ship Channels, the project shall be coordinated with the Navy NAVFAC Southwest Division in San Diego for munitions clearance. 		
<p>Implementation of the DMP will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board). The Department of the Navy will be provided an opportunity to review and comment on the DMP, particularly with respect to ordnance and munitions that have been identified in proximity to the Shipyard Site.</p> <p>Mitigation Measure 4.3.3: Contingency Plan. The contractor shall ensure that a Contingency Plan has been developed prior to the initiation of dredging and implemented for the duration of the dredging activity to address equipment and operational failures that could occur during dredging operations. The Contingency Plan will also address the potential to encounter munitions or ordnance. The</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to and ongoing during dredging operations</p>

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>Contingency Plan will include the following measures to prevent release of hazardous materials during construction activities:</p> <ul style="list-style-type: none"> • Actions to implement in the event of equipment failure, repair, or silt curtain breach. These include: <ul style="list-style-type: none"> ○ Communication to project personnel; ○ Proper signage and/or barriers alerting others of potentially unsafe conditions; ○ Specification for repair work to be conducted on land and not over water; ○ Identification of proper spill containment equipment (e.g., spill kit); ○ A plan identifying availability of other equipment or subcontracting options; ○ Emergency procedures to follow in the event of a silt curtain breach; ○ Incident reporting and review procedure to evaluate the causes of an accidental silt curtain breach and steps to avoid further breaches; and ○ Response procedures in the event of barge overflow. • Actions to implement in the event that munitions or ordnance are encountered during project activities. These include: <ul style="list-style-type: none"> ○ Immediate stoppage of all in-water work activities until further notice to proceed is received; ○ Contact the Site Safety Manager; ○ Refer to the Contingency Plan section that presents the emergency contact name(s) and telephone number(s) for NAVFAC Southwest Division; and ○ Contact NAVFAC Southwest Division personnel. The recovery 		

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>and disposal of munitions and/or ordnance item(s) found will become the responsibility of NAVFAC Southwest Division.</p> <p>Implementation of the Contingency Plan will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).</p>		
<p>Mitigation Measure 4.3.4: Health and Safety Plan. The contractor shall ensure that a Health and Safety Plan (H&S Plan) has been developed prior to the initiation of dredging and implemented for the duration of the dredging activity to protect workers from exposure to contaminated sediment. The H&S Plan will include the following requirements at a minimum:</p> <ul style="list-style-type: none"> • Training for operators to prevent spillage of sediment on the bridges during dredging activities • Training for operators in decontamination and waste containment procedures • Training for operators in appropriate notification/handling procedures for munitions/ordnance • Identification of appropriate Personal Protection Equipment (PPE) for all activities, including sediment removal, management, and disposal • Certification of personnel under safety regulations such as Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120 • Documentation that requires that health and safety procedures have been implemented 	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to and ongoing during dredging operations</p>
<p>Implementation of the H&S Plan will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).</p> <p>Mitigation Measure 4.3.5: Communication Plan. The contractor shall ensure that a Communication Plan and operational guidelines are developed between the Port of San Diego and/or the Harbor Master and all vessel operators prior to the initiation of dredging to ensure the safe movement of project vessels from the dredge to the unloading area. Features of the Communication Plan will include:</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to and ongoing during dredging operations</p>

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>• Identification of vessel speed limitations (wake/no wake); and</p> <p>• Notification to project personnel using air horns as necessary.</p> <p>Implementation of the Communication Plan for the duration of the dredging activity will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).</p> <p>Mitigation Measure 4.3.6: Sediment Management Plan. The contractor shall implement Best Management Practices (BMPs) and follow Standard Operating Procedures (SOPs) during sediment unloading, transport, drying/dewatering, and disposal operations for the duration of the dredging activity. At a minimum, these BMPs/SOPs will include:</p> <ul style="list-style-type: none"> • Mechanical stops to limit the swing arm of the crane; • Placement of a spillage plate to prevent any dropped sediment from impacting the water column; • Conveyance of sediment on the spillage plate to a collection sump; • Utilization of a power wash arm to clean sediment from equipment into the collection sump; • Contractor identification of haul truck load limits on first load each day; • Driver training and enforcement of safe driving procedures; • Only liquid drying agents will be utilized to avoid airborne release of these materials; • Implementation of a dust control and monitoring plan during sediment staging; • The stockpile liner will be protected from excavator penetration by a visual indicator such as sand, or by physical barriers such as railroad rails or K-rails; • Decanted water from sediment and any storm water in the staging area will be managed by sloping the staging area to a common sump or 	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging and dewatering operations</p>

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<p>pond (containment cell) or pumped to a series of tanks. The containment device(s) will be designed to meet a performance standard of "no discharge" so that storm water runoff cannot enter the bay or adjacent areas and to ensure that storm water surrounding areas cannot penetrate the containment area. The containment device(s) will be inspected daily during sediment staging. Prior to discharge, the liquid will be tested to evaluate whether it meets discharge criteria for the San Diego Publically Owned Treatment Works (POTW) or if treatment is required prior to discharge;</p> <ul style="list-style-type: none"> • Sediment loading for transport off site will be conducted in a contained area, and haul trucks will be power washed prior to exit to prevent sediment from being discharged to the bay or surrounding area; and • All hazardous materials (liquid, sediment, or chemicals used during the project) will be handled, transported, and disposed of at the proper disposal facility in accordance with state regulations. <p>Implementation of these BMPs/SOPs will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).</p>		
<p>Mitigation Measure 4.3.7: Hazardous Materials Transportation Plan. Prior to the initiation of dredging, the contractor shall prepare and implement a Hazardous Materials Transportation Plan for the duration of the dredging activity that specifies the following procedures:</p> <ul style="list-style-type: none"> • Sediment containment procedures • Emergency notification procedures <p>The Hazardous Materials Transportation Plan will be subject to review by, and its implementation will be verified by, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to and ongoing during dredging and transportation operations</p>
<p>Mitigation Measure 4.3.8: Traffic Control Plan. The contractor shall prepare a Traffic Control Plan that will be developed prior to the initiation of dredging and implemented for off-site transport of the sediment, and will include, but not be limited to, the following information:</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Prior to and ongoing during dredging and off-site transportation operations</p>

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<ul style="list-style-type: none"> • Planned haul truck routes • Haul truck escorts, if required • In case of accidental spillage, emergency vehicle access and sediment containment and removal procedures <p>The Traffic Control Plan will be subject to approval by the City of San Diego and/or the National City Traffic Engineer, and implementation for the duration of the dredging activity will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).</p>		
<p>4.4 Noise</p> <p>Mitigation Measure 4.4.1: The contractor shall ensure, and the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) and City of San Diego Noise Control Officer shall verify, that treatment and haul activity in the City of San Diego is prohibited between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in section 21.04 of the San Diego Municipal Code, with the exception of Columbus Day and Washington's Birthday, or on Sundays, that would create disturbing, excessive, or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator in conformance with San Diego Municipal Code section 59.5.0404.</p>	Contractor, as verified by the San Diego Water Board and City of San Diego Noise Control Officer	Ongoing during treatment and haul operations
<p>Mitigation Measure 4.4.2: The contractor shall ensure, and the National City Noise Control Officer and California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify, that treatment and haul activity in National City is prohibited between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on weekends or holidays as specified in section 12.10.160 of the City of National City Municipal Code.</p>	Contractor, as verified by the San Diego Water Board and the National City Noise Control Officer	Ongoing during treatment and haul operations
<p>Mitigation Measure 4.4.3: The contractor shall implement, and the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify, the following for the duration of project implementation (dredging, treatment, and loading) in order to reduce potential construction noise impacts on nearby sensitive receptors:</p>	Contractor, as verified by the San Diego Water Board	Ongoing during dredging, treatment and loading operations

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<ul style="list-style-type: none"> • All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards. • All stationary construction equipment shall be placed so that emitted noise is directed away from sensitive receptors nearest the project site. • All equipment staging shall be located to create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site. 		
<p>4.5 Biological Resources</p> <p>Mitigation Measure 4.5.1:</p> <p>A pre-construction eelgrass habitat mapping survey for the Shipyard Sediment Site shall be completed by the shipyards within 120 days of the proposed start dates of each project phase in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP) (National Marine Fisheries Service [NMFS], 1991 as amended) to document the amount of eelgrass that will likely be affected by dredging activity. The results of these surveys shall be integrated into a Final Eelgrass Mitigation Plan prepared by the shipyards for the project and used to calculate the amount of eelgrass to be mitigated. The Final Eelgrass Mitigation Plan shall be subject to approval by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) and NMFS, and shall include the following elements:</p> <ul style="list-style-type: none"> • A detailed map of the area including distribution, density and relationship to depth contours of any eelgrass beds likely to be impacted by project construction. • The identification of mitigation site factors such as distance from project, depth, sediment type, distance from ocean connection, water quality, and currents should be considered in evaluating potential sites. • Techniques for the construction and planting of the eelgrass mitigation site consistent with the best available technology at the time of the project. 	<p>Shipyards, as verified by the San Diego Water Board, in concert with the appropriate resource agencies</p>	<p>Prior to dredging and post-dredging operations</p>

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<ul style="list-style-type: none"> • Proposed mitigation timing schedule. • Proposed mitigation monitoring activities. <p>A post-dredging project eelgrass survey shall be completed by the shipyards within 30 days of the completion of each dredging episode in accordance with the SCEMP and shall be submitted to the NMFS, United States Fish and Wildlife Service (U.S. FWS), California Department of Fish and Game (CDFG), and the Executive Director of the California Coastal Commission (CCC), as well as the San Diego Water Board.</p> <p>Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions' per square meter) between the project adjusted impact area (original impact area multiplied by 1.2 or the amount of eelgrass habitat to be successfully mitigated at the end of 5 years) and the mitigation site(s). The extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than 1 meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control or transplant bed.</p> <p>Specific criteria are as follows:</p> <ul style="list-style-type: none"> • The mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted project impact area after the first year. • The mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted project impact area after the second year. • The mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted project impact area for the third, fourth, and fifth years. <p>The amount to be transplanted shall be based upon the guidelines in the SCEMP. If remedial transplants at the project site are unsuccessful, then</p>		

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>eelgrass mitigation shall be pursued at the secondary eelgrass transplant location. The San Diego Water Board shall verify implementation of this mitigation measure.</p> <p>Mitigation Measure 4.5.2: In order to protect sea turtles that could potentially forage within and among eelgrass beds identified at or near the project site, the project marine biologist shall mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to turtles foraging within eelgrass beds outside the construction zone. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify that buoys have been properly placed.</p>	<p>Project Marine Biologist as verified by the San Diego Water Board</p>	<p>Prior to and throughout dredging operations and application of clean sand cover</p>
<p>Mitigation Measure 4.5.3: The project marine biologist shall meet with the construction crews prior to dredging as well as periodically throughout the project to review pre-dredge survey areas of eelgrass beds to avoid those located adjacent to the project site and to review proper construction techniques. A training log shall be maintained by the project marine biologist and shall be submitted monthly to the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), who shall verify implementation of this measure.</p>	<p>Project Marine Biologist as verified by the San Diego Water Board</p>	<p>Prior to and periodically throughout dredging operations and application of clean sand cover</p>
<p>Mitigation Measure 4.5.4: The contractor shall ensure that throughout the duration of dredge and clean sand cover placement activities, project-related barges and work vessels operating in areas where eelgrass beds exist shall be operated in a manner to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other activities that may disturb the seafloor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels. The project marine biologist shall periodically confirm that these measures are implemented and shall submit a monthly monitoring report to the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).</p>	<p>Contractor and Project Marine Biologist, as verified by the San Diego Water Board</p>	<p>Ongoing throughout dredging operations and application of clean sand cover</p>
<p>Mitigation Measure 4.5.5: The contractor shall ensure that throughout the duration of dredge and clean sand cover placement activities, barges and work vessels shall be operated in a manner to ensure that sea turtles and marine mammals are not injured or harassed through excessive vessel speed or propeller damage. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels. The project marine biologist shall periodically confirm that these measures are implemented and shall submit a monthly monitoring report to the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).</p>	<p>Contractor and Project Marine Biologist, as verified by the San Diego Water Board</p>	<p>Ongoing throughout dredging operations and application of clean sand cover</p>

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>Mitigation Measure 4.5.6: The contractor shall ensure that construction crews and work vessel crews are briefed daily on the potential for sea turtles and marine mammals to be present and provided with identification characteristics of sea turtles, seals, sea lions, and dolphin. The project marine biologist shall periodically confirm that this measure is implemented and include verification in a monthly monitoring report.</p>	<p>Contractor and Project Marine Biologist, as verified by the San Diego Water Board</p>	<p>Ongoing throughout dredging operations and application of clean sand cover</p>
<p>Mitigation Measure 4.5.7: The contractor shall ensure that all construction activity be temporarily stopped if a sea turtle or marine mammal is sighted within 100 meters of the construction zone until the sea turtle or marine mammal is safely outside the outer perimeter of project activities. The biological monitor, who will be on site periodically during dredging activities, shall have the authority to halt construction operation and shall determine when construction operations can proceed. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify implementation of this mitigation measure.</p>	<p>Contractor and Project Marine Biologist, as verified by the San Diego Water Board</p>	<p>Ongoing throughout dredging operations and application of clean sand cover</p>
<p>Mitigation Measure 4.5.8: The biological monitor shall prepare an incident report of any green sea turtle or marine mammal activity in the project area and shall inform the contractor to have his/her crews be aware of the potential for additional sightings. The report shall be provided within 24 hours to the California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS). In the event a sea turtle, pinniped, or cetacean is injured or killed as consequence of a collision, the vessel operator and the appointed shipyard safety personnel shall be required to immediately notify the NMFS (Southwest Division) and shall submit a written, follow-up report within 24 hours of the incident. Any injured sea turtle or marine mammal shall be transported to an agency-approved treatment facility. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify implementation of this mitigation measure.</p>	<p>Project Marine Biologist, as verified by the San Diego Water Board</p>	<p>Upon sighting or green sea turtle or marine mammal during dredging operations and application of clean sand cover</p>
<p>Mitigation Measure 4.5.9: A qualified biologist familiar with the California least tern and other special-status seabirds and waterfowl shall be retained and be on site to assess the roosting and foraging behavior of special-status seabirds and waterfowl at the Shipyard Sediment Site and selected staging area(s) immediately prior to and during the initial start-up phase of dredging and clean sand cover placement activities. Once it has been determined that activities are not adversely affecting seabirds and waterfowl, the biologist shall not be required to be on site continuously; however, monitoring shall</p>	<p>Project Biologist, as verified by the San Diego Water Board</p>	<p>Prior to and ongoing throughout dredging operations and application of clean sand cover</p>

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>be performed at least once per week (or more often if required by the resource agencies) to adequately assess whether substantial adverse impacts to special-status seabirds and waterfowl are resulting from project activities (e.g., disrupting nesting or foraging activities, harassing roosting birds). The biologist shall be present during either of the selected dredge scheduling options. In the event of an imminent threat to California least tern and/or other special-status species, the monitor shall immediately contact the contractor's construction manager. In the event the construction manager/contractor is not available, the monitor shall have the authority to redirect or halt construction activities if determined to be necessary. The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify implementation of this mitigation measure.</p>	<p>Shipyards and San Diego Water Board</p>	<p>Prior to initiation of dredging operations</p>
<p>Mitigation Measure 4.5.10: If Staging Area 5 is selected, prior to initiation of dredging and during final design, the contractor shall endeavor to restrict dewatering and treatment activities to within the western and northern portions of the staging area to the extent feasible. To the extent practicable, activities shall be conducted in locations where existing buildings obstruct sensitive habitat areas from noise sources. The staging area layout shall be submitted to the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) (and to the resource agencies, if required) for review and approval.</p>	<p>Project Biologist, as verified by the San Diego Water Board</p>	<p>Not less than 30 days prior to initiation of dredging operations and ongoing every 2 weeks or more frequently during nesting season</p>
<p>Mitigation Measure 4.5.11: If Staging Area 5 is selected, the California Department of Fish and Game (CDFG) shall be notified not less than 30 days in advance and shall be given the opportunity to provide recommended measures to minimize impacts from increased noise and human activity to species in the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge (NWR). All agency-recommended measures (or agency-approved substitute measures, if recommended measures are infeasible) shall be implemented throughout the duration of project activities in Staging Area 5. At a minimum, the applicant shall conduct pre-activity nesting bird surveys within 300 feet of all noise-intensive activities if such activities will be initiated within the breeding season for special-status species (conservatively February 1 through August 31). If nesting birds are identified within 300 feet of activities, a qualified (and, if appropriate based on the species, agency-permitted) biological monitor shall be present on site to observe the behavior of the nesting birds during initiation of</p>		

Mitigation Monitoring and Reporting Program (MMRP)

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>activities. The biological monitor shall have the authority to temporarily halt or redirect activities in the event that adverse effects to the birds are evident (e.g., there is a risk of nest failure or other indication of harassment, as defined by the Endangered Species Act). If adverse effects to nesting birds appear to be likely, the monitor shall recommend additional measures (e.g., installation of sound barriers, limiting duration of activities, relocating activities to another area, or postponing activities until the nest is no longer active) in concert with resource agency personnel.</p> <p>Regardless of whether nesting birds are identified during pre-activity nesting bird surveys, the biological monitor shall inspect the site and any adjacent areas supporting potential nesting habitat at least every 2 weeks during project activities that are conducted during the nesting season (conservatively February 1 through August 31) and shall report monthly to the State Water Resources Control Board (State Water Board).</p>		
<p>4.6 Air Quality</p>		
<p>Mitigation Measure 4.6.1:</p> <p>The contractor shall be required by contract specifications to ensure that dredging, treatment, and haul activities are timed so as not to interfere with peak-hour traffic and to minimize obstruction of through traffic lanes adjacent to the site. If necessary, a flag person shall be retained by the construction supervisor to maintain safety adjacent to existing roadways. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging, treatment and haul activity</p>
<p>Mitigation Measure 4.6.2:</p> <p>During dredging and dewatering activities, the contractor shall support and encourage ridesharing and transit incentives for the construction crew. These specifications shall be included in the proposed project's construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to the issuance of a construction permit.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging, and dewatering operations</p>
<p>Mitigation Measure 4.6.3:</p> <p>During dredging and dewatering activities, the contractor shall ensure that on-site vehicle speed shall be limited to 15 miles per hour (mph). Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging, and dewatering operations</p>

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>Quality Control Board, San Diego Region (San Diego Water Board) prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.</p>		
<p>Mitigation Measure 4.6.4: During dredging and dewatering activities, the contractor shall ensure that all on-site roads are paved. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging, and dewatering operations</p>
<p>Mitigation Measure 4.6.5: During dredging and dewatering activities, the contractor shall adhere to San Diego Air Pollution Control District (APCD) Rule 55 to ensure that all material excavated or graded is sufficiently watered to prevent airborne dust from being visible beyond the property line. Watering with complete coverage, and/or surfactants shall be applied to stockpiles of dirt, inactive construction areas, and construction roads if and as necessary. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging, and dewatering operations</p>
<p>Mitigation Measure 4.6.6: During dredging and dewatering activities, the contractor shall ensure that all earthmoving activities cease during periods of high winds (i.e., greater than 25 mph averaged over 1 hour). Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging, and dewatering operations</p>
<p>Mitigation Measure 4.6.7: During dredging and dewatering activities, the contractor shall ensure that all material transported off site is either sufficiently wet or securely covered to prevent excessive amounts of dust. In addition, per San Diego Air Pollution Control District (APCD) Rule 55, the construction contractor shall ensure that visible roadway dust from track-out/carry-out be minimized. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging, treatment and haul activity</p>

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>Water Board) prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.</p> <p>Mitigation Measure 4.6.8: The contractor shall be required by contract specifications to ensure that all diesel-powered equipment used are retrofitted with after-treatment products (e.g., engine catalysis) to the extent that they are readily available in the San Diego Air Basin (SDAB). Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to issuance of a construction permit. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dewatering and treatment operations</p>
<p>Mitigation Measure 4.6.9: The contractor shall be required by contract specifications to ensure that all heavy-duty diesel-powered equipment operating and refueling at the project site use low oxides of nitrogen (NO_x) diesel fuel to the extent that it is readily available and cost effective (up to 125 percent of the cost of California Air Resources Board [ARB] diesel) in the San Diego Air Basin (SDAB). (This does not apply to diesel-powered trucks traveling to and from the project site.) Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to issuance of a construction permit. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dewatering and treatment operations</p>
<p>Mitigation Measure 4.6.10: The contractor shall be required by contract specifications to ensure that alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) are utilized to the extent 1) that the equipment is readily available and 2) if such equipment is available in the San Diego Air Basin (SDAB), it is also cost effective. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to issuance of a construction permit. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dewatering and treatment operations</p>
<p>Mitigation Measure 4.6.11: The contractor shall be required by contract specifications to ensure that construction equipment engines are maintained in good condition and in proper tune per manufacturer's specification for the duration of construction. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dewatering and treatment operations</p>

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Mitigation Measures	Responsible Party	Timing for Mitigation Measure
<p>Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to issuance of a construction permit. The San Diego Water Board shall verify implementation of this measure.</p> <p>Mitigation Measure 4.6.12: The contractor shall be required by contract specifications to ensure that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, is turned off when not in use for more than 5 minutes. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to issuance of a construction permit. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dewatering and treatment operations</p>
<p>Mitigation Measure 4.6.13: The contractor shall be required by contract specifications to ensure that construction operations rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines to the extent feasible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to issuance of a construction permit. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dewatering and treatment operations</p>
<p>Mitigation Measure 4.6.14: The contractor shall utilize alternative-fueled construction equipment to the maximum extent feasible. All diesel-powered construction equipment shall meet or exceed Tier III standards, or shall be equipped with ARB-verified oxidation catalysts and diesel particulate filter emission controls, using the greatest control efficiency for the specific category of equipment where feasible. The construction contractor shall demonstrate that these verified/certified technologies are available to be used at the time of project dredging and dewatering activities. These specifications shall be included in the proposed project's construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to the issuance of a construction permit. The San Diego Water Board shall verify implementation of this measure.</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dewatering and treatment operations</p>
<p>Mitigation Measure 4.6.15: To accelerate the decomposition process and reduce odor impacts, the contractor shall apply a mixture of Simple Green and water (a ratio of 10:1) to the dredged material to the extent odor issues arise with respect to particular portions of the dredged material. Contract specifications shall be</p>	<p>Contractor, as verified by the San Diego Water Board</p>	<p>Ongoing during dredging and dewatering operations</p>

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<p>included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to the issuance of construction permits. The San Diego Water Board shall verify implementation of this measure.</p>		
<p>4.7 Global Climate Change There are no additional mitigation measures for this topic</p>		

A turion is a specialized overwintering bud produced by aquatic herbs.

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10 IN THE MATTER OF TENTATIVE
11 CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001 (SHIPYARD
12 SEDIMENT CLEANUP)

DECLARATION OF SERVICE

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6 Jeannette L. Bashaw
7 Legal Analyst
8 Office of Chief Counsel
9 State Water Resources Control Board
10 P.O. Box 100
11 Sacramento, CA 95812-0100
12 E-mail: jbashaw@waterboards.gov
13 Fax: (916) 341-5199

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17 Executed on April 13, 2012, at San Diego, California.

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20 Ginger Calderon

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April 13, 2012

To: Jeannette L. Bashaw
Legal Analyst
Office of Chief Counsel
State Water Resources Control Board

Fax: (916) 341-5199 Tel:

From: Kelly Richardson

Re: In the Matter of Tentative Cleanup and Abatement Order
No. R9-2011-0001 (Shipyard Sediment cleanup)

Original with Exhibits to follow via Overnight Mail

Number of pages, including cover: 14

Please see attached:

PETITION OF SAN DIEGO REGIONAL WATER QUALITY CONTROL
BOARD CLEANUP AND BATEMENT ORDER NO. R9-2012-0024 AND
RESOLUTION NO. R9-2012-0025.