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COMMENTS ON THE SAN DIEGO REGIONAL WATER
QUALITY CONTROL BOARD CLEANUP TEAM'S
SEPTEMBER 15, 2010 TENTATIVE CLEANUP AND
ABATEMENT ORDER NO. R9-2011-0001, DRAFT
TECHNICAL REPORT, AND SHIPYARD
ADMINISTRATIVE RECORD

ORIGINAL

Submitted by:

Date: May 26, 2011

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On Behalf of Designated Party:

NATIONAL STEEL AND SHIPBUILDING COMPANY

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May 26, 2011

VIA EMAIL AND MESSENGER

Mr. Frank Melbourn
California Regional Water Quality Control Board
San Diego Region
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File No. 048876-0002

Re: Tentative Cleanup and Abatement Order No. R9-2011-0001 and
Draft Technical Report

Dear Mr. Melbourn:

On behalf of National Steel and Shipbuilding Company ("NASSCO"), we appreciate the opportunity to submit comments to the San Diego Regional Water Quality Control Board ("Regional Board") concerning Tentative Cleanup and Abatement Order No. R9-2011-0001 (September 15, 2010) ("TCAO"), and the accompanying Draft Technical Report ("DTR") for the Shipyard Sediment Site ("Site"). We also appreciate the extraordinary efforts of the Regional Board staff on the Cleanup Team and their counsel that have worked diligently to prepare the TCAO and DTR. NASSCO, as one of the current tenants at the Site, has a particular and significant interest in this matter.

After years of detailed studies of sediment conditions and analyses of the potential risks to human health and the environment from contamination in the sediment at the Site, NASSCO believes that the evidence overwhelmingly demonstrates that the proposed TCAO—which provides for an extensive cleanup to levels unprecedented at similar sites in San Diego Bay and throughout California—is extremely conservative. Indeed, as discussed in detail in the attached comments, Regional Board staff on the Cleanup Team agree that the TCAO is based on extremely conservative assumptions.

As a result of that level of conservatism, areas of the Site are required to be remediated under the TCAO where little or no risk to human health or the environment exists. The Board should recognize that this type of policy decision comes at a significant cost to the parties identified in the TCAO, including the City of San Diego, the U.S. Navy, the San Diego Port District, and others. It is important that the Regional Board carefully consider the record in its entirety, including the absence of evidence of unreasonable impacts to beneficial uses at the NASSCO Site and the substantial, uncontroverted evidence that sediment conditions are

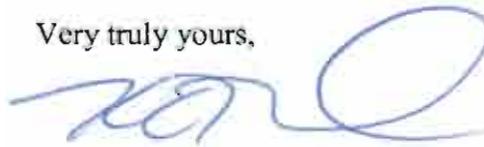
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naturally and steadily improving over time, as demonstrated by comparing sampling results conducted in the early 2000s with sampling done in 2009-2010.

NASSCO has worked cooperatively with the Regional Board Cleanup Team toward developing an appropriate TCAO for the Shipyard Sediment Site for many years. As such, NASSCO recognizes and appreciates the contributions of Regional Board staff and the other Designated Parties that went into the preparation of this order and the associated record and technical documents. Given the magnitude of the contemplated cleanup, however, it is critical to ensure that the conclusions reached in the TCAO and DTR are legally and scientifically sound. As shown in the comments provided below, there is substantial evidence supporting selection by the Regional Board of monitored natural attenuation as the appropriate remedy for site sediments, following source control, to remediate the Site to a risk-based cleanup that achieves remedial goals in a reasonable time consistent with other sediment sites in San Diego Bay. Active remediation, such as dredging, represents a more conservative approach than is required by the evidence presented to the Board.

NASSCO's specific comments concerning the proposed TCAO and DTR are summarized in the attached.¹ For ease of reference, and to achieve compliance with the Advisory Team's Third Amended Order of Proceedings, each discrete comment is followed by a parenthetical citation containing the comment number, as well as the findings and DTR sections to which the comment applies.

Very truly yours,



Kelly E. Richardson
of LATHAM & WATKINS LLP

¹ The evidence cited in each of the comments is representative of the evidence in the administrative record that supports each comment, but it is not intended to be an exhaustive summary of all evidence supporting each comment.

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I. EXECUTIVE SUMMARY OF COMMENTS

The following is a summary of NASSCO's primary comments concerning the TCAO:

A. **The Tentative Cleanup and Abatement Order Is Excessively Conservative And Does Not Accurately Reflect The Favorable Conditions Observed At The Site (Findings 13-28)**

The TCAO is highly conservative and proposes unprecedented cleanup levels, despite the favorable findings and conclusions of a multimillion dollar sediment investigation conducted by Exponent, with substantial input and oversight by Board staff. NASSCO and Southwest Marine Detailed Sediment Investigation, Exponent (October 2003) ("Exponent Report"). This investigation, recognized as the most extensive sediment investigation that the Board has ever required to be conducted in San Diego Bay, concluded that beneficial uses at the Site are not unreasonably impaired, and documented the presence of healthy and mature benthic communities. [Comment No. 1, TCAO, at 13-28, DTR, at 13-28]. To the extent minor differences from reference conditions were observed with respect to aquatic life, such effects were largely attributable to ongoing discharges from Chollas Creek. [Comment No. 2, TCAO, at 14-20, DTR, at 14-20]. Current site conditions were found to already be protective of aquatic-dependent wildlife and human health. [Comment No. 3, TCAO, at 21-28, DTR, at 21-28]. For these reasons, and because active remediation would not produce any clear long-term improvement in beneficial uses relative to current conditions, the Exponent Report concluded that monitored natural attenuation is the preferred remedy. This recommendation was subsequently validated when testing conducted by Exponent in June 2009 documented that shipyard contaminants are, in fact, naturally attenuating. However, in stark contrast to these favorable results, the TCAO concludes that beneficial uses are impaired, utilizing a series of excessively conservative, and unwarranted, assumptions which do not accurately represent the favorable conditions present at the Site. Accordingly, NASSCO is concerned that, in attempting to be conservative, Staff has greatly overstated the risks posed by site sediments. [Comment No. 4, TCAO, at 14-28, DTR, at 14-28].

B. **Chollas Creek And Other Sources Of Off-Site Discharges Must Be Controlled Before The Cleanup Goals In The TCAO Can Be Achieved (Findings 12, 30, 32, 33)**

NASSCO is likewise concerned that Staff has proposed extensive dredging to unprecedented cleanup levels, at a cost of millions of dollars, despite the fact that ongoing uncontrolled discharges from Chollas Creek are impacting the Site, and are not expected to be controlled for at least 20 years. [Comment No. 5, TCAO, at 12, 30, 32, 33, DTR, at 12.1, 30, 32.7.1, 33.1.1]. It is axiomatic that source control must be achieved prior to active remediation and common sense dictates that is a waste of resources to spend millions to remediate a site that is at risk of recontamination. It is also not technologically feasible to require compliance with the exceptionally stringent cleanup levels proposed in the TCAO while the Site continues to be impacted by uncontrolled discharges from Chollas Creek. [Comment No. 6, TCAO, at 12, 30, 32, 33, DTR, at 12.1, 30, 32.7.1, 33.1.1]. Accordingly, Chollas Creek and other sources must be

controlled before the cleanup goals in the TCAO can be achieved through active remediation. [Comment No. 7, TCAO, at 12, 30, 32, 33, DTR, at 12.1, 30, 32.7.1, 33.1.1].

C. The Tentative Cleanup and Abatement Order Treats NASSCO Differently Than Other Similar Sites, In Violation of Law (Findings 32, 36)

The TCAO violates the consistency requirement that is expressly stated in State Water Resources Control Board Resolution No. 92-49 (“Resolution 92-49”), as well as related principles of due process and equal protection by proposing cleanup levels that are far more stringent than what has been required at other similarly situated shipyard and boatyard sites in San Diego Bay and elsewhere. Fundamental fairness dictates that similarly situated sites should be treated similarly, and there is no rational basis for treating NASSCO differently than other comparable sites in the same water body, especially in light of overall condition of the site, as documented in the sediment investigation and Exponent Report. [Comment No. 8, TCAO, at 32, 36, DTR, at 32, 36.4].

D. Monitored Natural Attenuation Is The Proper Remedy (Findings 30, 32)

The Regional Board is required to adopt a technically and legally sound TCAO based upon an accurate risk-based assessment, and reasonable assumptions, in accordance with Resolution 92-49. In light of the generally favorable site conditions and total values at stake, monitored natural attenuation—which has already been shown to be occurring—is the proper remedy for the NASSCO Site. [Comment No. 9, TCAO, at 30, 32, DTR, at 30, 32].

II. REGULATORY FRAMEWORK

A. California Porter-Cologne Water Quality Control Act (Finding 36)

1. The Water Code Recognizes That Beneficial Uses Are Not Unreasonably Affected By All Changes To Chemical Concentrations In Sediments [Comment No. 10, TCAO, at 36, DTR, at 36]

The Porter-Cologne Act (“the Act”) establishes the framework pursuant to which the Regional Board may reasonably protect water quality in California. Cal. Water Code §§ 13000 et seq. .

The Act mandates that a balancing process be followed in regulating activities and factors that affect the state’s water quality. According to the Legislature, such activities “shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.” Cal. Water Code § 13000 (emphasis added). The Act also recognizes that “it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses.” Cal. Water Code § 13241 . The Act therefore identifies factors that the Regional Board must consider in determining what level of protection is reasonable, including economic considerations. Id.

The State Water Resources Control Board (“State Board”) and the Regional Boards are the state agencies with primary responsibility for the coordination and control of water quality, and must conform to and implement the Water Code in exercising their responsibilities. Cal. Water Code § 13001 . The Regional Board discharges its duty to coordinate and control water quality by, among other things, investigating the quality of waters of the state and requiring the cleanup or abatement of waste, including through the issuance of Cleanup and Abatement Orders (“CAOs”) when a discharge “creates, or threatens to create a condition of pollution or nuisance . . .” Cal. Water Code §§13225, 13304 . “Pollution” means “an alteration of the quality of the water of the state by waste to a degree which unreasonably affects either . . . (A) The waters for beneficial uses[,] or (B) Facilities which serve these beneficial uses.” Cal. Water Code § 13050(l) (emphasis added). Restated, it is not considered “pollution” where a past discharge affects beneficial uses, but does not do so unreasonably. Similarly, “nuisance” means “anything which meets all of the following requirements:

- (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
- (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
- (3) Occurs during, or as a result of, the treatment or disposal of wastes.”

Cal. Water Code § 13050(m) . Contaminated sediment does not constitute a nuisance where it is not proven to be injurious to health, or, if injurious to health, does not affect an entire community. Thus, it is clear that the definitions of “pollution” and “nuisance” recognize that at certain concentrations, contaminants in sediment may not unreasonably affect beneficial uses of the waters of the state or be injurious to health. **[Comment No. 11, TCAO, at 36, DTR, at 36].** Indeed, this a logical and reasonable result. If a discharger could never impact sediment quality to any degree, then the Regional Board could never issue NPDES permits or Waste Discharge Requirements that involved the discharge to any water body. Hence, the Water Code allows some minor impacts to sediment quality, as long as those impacts do not *unreasonably* impair beneficial uses.

2. Water Code Section 13304 Allows Dischargers To Cleanup or Abate The Effects Of Wastes **[Comment No. 12, TCAO, at 36, DTR, at 36.1.2]**

Further, under such circumstances, Section 13304, which requires a discharger to “cleanup or abate the effects of the waste,” provides that wastes need not be cleaned up if the effects can be abated, and implicitly acknowledges that cleanup levels can and should be based on site-specific science and risk assessments. **[Comment No. 13, TCAO, at 36, DTR, at 36.1.2].** In light of these parameters and for the reasons discussed in detail below, active remediation at the NASSCO shipyard, as described in the TCAO and DTR, is not supported by the record.

B. State Water Resources Control Board Resolution No. 92-49: Policies and Procedures For Investigation and Cleanup and Abatement or Discharges Under Water Code Section 13304 (Findings 30-32, 36)

1. The Board Must Consider The Totality Of Factors Affecting Water Quality In Selecting Cleanup Levels Under Resolution No. 92-49, Including Economic And Technological Feasibility [**Comment No. 14, TCAO, at 30-32, 36 DTR, at 30, 31.1, 32.1, 32.7, 36.4**]

Resolution 92-49 provides guidance to Regional Boards concerning the application of Water Code Section 13304. The State Board has described the analysis required by Resolution 92-49 as follows:

Resolution 92-49 directs the RWQCBs to ensure that water affected by an unauthorized release attains either background water quality or the best water quality which is reasonable if background water quality cannot be restored, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible; in approving any alternative cleanup levels less stringent than background . . . any such cleanup level shall (1) be consistent with maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of such water; and (3) not result in water quality less stringent than that prescribed in the Water Quality Control Plans and Policies adopted by the State and Regional Water Boards.

See Resolution 92-49, at III. G. See also, In the Matter of the Petition of Unocal Corporation, State Board Order No. WQ 98-12, at 2 (quoting Resolution 92-49); In the Matter of the Petition of Landis Incorporated, State board Order No. WQ 98-13, at 2 (same); In the Matter of the Petition of Unocal Corporation, Order No. 99-10, at 2; In the Matter of the Petition of Chevron Pipe Line Company, State Board Order No. WQ 2002-0002; In the Matter of the Petition of Environmental Health Coalition and Eugene Sprofera, Order No. WQ 92-09, at 4.

Further, the text of Resolution 92-49 requires an analysis of cost-effectiveness and technological and economic feasibility in determining cleanup levels. See Resolution 92-49, at 6-7 (“The Regional Water Board shall . . . ensure that dischargers shall have the opportunity to select cost-effective methods for . . . cleaning up or abating the effects [of wastes discharged and] . . . require the discharger to consider the effectiveness, feasibility, and relative costs of applicable alternative methods for investigation, cleanup and abatement.”) (emphasis added). For the reasons discussed below, active remediation is not economically or technologically feasible within the meaning of Resolution 92-49; rather, monitored natural attenuation is the appropriate remedial alternative considering the demands being made and to be made on the waters at the Site, and the total values involved—beneficial and detrimental, economic and social, and tangible and intangible. [**Comment No. 15, TCAO, at 30-32, 36, DTR, at 30, 31.1, 32.1, 32.7, 36.4**]

III. THE TENTATIVE CLEANUP AND ABATEMENT ORDER RESULTS IN THE DISPARATE TREATMENT OF NASSCO, CONTRARY TO LAW

A. In Violation Of The Mandate Of State Board Resolution 92-49, And Principles Of Due Process And Equal Protection, The Order Would Treat NASSCO Differently Than Similarly Situated Dischargers (Findings 2, 6, 32, 36)

Resolution 92-49 provides that the “Regional Water Board shall . . . prescribe cleanup levels which are *consistent* with appropriate levels set by the Regional Water Board for analogous discharges that involve similar wastes, site characteristics, and water quality considerations.” See also Barker Depo, at 345:12-345:17 (recognizing that a goal of Resolution 92-49 is to ensure that Regional Boards treat similar sites similarly). Principles of due process and equal protection also require both fundamental fairness, and that persons subject to legislation or regulation who are in the same circumstances be treated alike. U.S. Const. amend. XIV, §1; Cal. Const. art. I, §§ 7, 15.

Over the past decade, the Regional Board has prescribed cleanup levels for sediments at other shipyard and boatyard locations on San Diego Bay with analogous discharges involving similar circumstances as the Site. See e.g., San Diego Regional Board Order Nos. 88-86, 88-78, 89-31, 84-100, 94-101, 94-102, 95-21, 97-63, 99-06, 2001-303, R9-2002-0072. Barker Depo, Ex. 1210 at Exhibit A. However, despite substantial similarities between these sites and NASSCO, the Regional Board now seeks to impose radically more stringent cleanup levels upon NASSCO in departure from prior precedent and in violation of both due process and equal protection principles, and the consistency requirement expressly stated in Resolution 92-49. TCAO, at ¶ 32, DTR, at 32-1. [Comment No. 16, TCAO, at 32, 36, DTR, at 32, 36.4].

I. The Proposed Cleanup Levels Are Unprecedented Compared To Other Sediment Remediation Projects In San Diego Bay (Findings 32, 36)

Although similar sites are required to be treated similarly, Staff has proposed unprecedented cleanup levels for the Site, while setting much less stringent levels at other similarly situated sites. Response to NASSCO’s RFAs, at 56. [Comment No. 17, TCAO, at 32, 36, DTR, at 32, 36.4]. Since the early 1990s, the Regional Board has remediated sediments at a number of shipyards, boatyards and other industrial sites in San Diego Bay. Many of these sites, including the Commercial Basin Boatyards, Paco Terminals, Convair Lagoon, and Campbell Shipyard, are similar to NASSCO in many respects, including but not limited to geographical location, water quality considerations, uses, wastes, beneficial uses, and receptors of concern. Barker Depo, at 118:14 – 140:1; 346:25 – 352:15; 354:22 – 361:18; 385:17 – 387:4, 564:25 – 565:23, 567:7 – 567:16; see also Barker Depo, Ex. 1210 at Exhibit A. [Comment No. 18, TCAO, at 32, 36, DTR, at 32, 36.4]. In particular, Campbell and NASSCO have similar physical, biological and chemical conditions, locations, site activities, waste materials and matrices, offsite pollutant inputs, and hydrodynamic and biogeographic zones. Barker Depo, at 362:15 – 365:5. [Comment No. 19, TCAO, at 2, 6, 32, 36, DTR, at 2.3, 6.3, 32, 36.4]. Yet, in spite of these similarities, the cleanup levels proposed for NASSCO are far more stringent than those of the other sites, including Campbell Shipyard, for the same constituents. See e.g., Barker

Depo, 365:8 – 365:23. [Comment No. 20, TCAO, at Comment No. 21, TCAO, at 32, 36, DTR, at 32, 36.4].

For example, at Paco Terminals, Campbell Shipyard, and the Commercial Basin Boatyards requiring cleanup, the copper cleanup levels were 1000 mg/kg, 810 mg/kg, and 530mg/kg, respectively. Thus the copper cleanup levels for all of these sites are well above the post-remedial Surface-Area Weighted Average Concentration (“SWAC”) (159 mg/kg) and dredge concentrations (121 mg/kg) proposed for NASSCO. Similarly, the mercury cleanup levels set for the Commercial Basin boatyards that required remediation were 4.8 mg/kg, which is once again almost ten times above the post-remedial SWAC (0.68) and dredge concentration (0.57) proposed for NASSCO. Cleanup levels for primary risk drivers, such as PCBs and TBT, are also significantly more stringent at NASSCO compared with Campbell. Barker Depo, Ex. 1210 at Exhibit A. [Comment No. 22, TCAO, at Comment No. 23, TCAO, at 32, 36, DTR, at 32, 36.4].

To reach these low cleanup levels, Staff has introduced excessive levels of conservatism in its analysis. [Comment No. 24, TCAO, at 14-28, 32, DTR, at 14-28, 32]. For example, Staff calculated cleanup levels for Campbell using an apparent effects approach; however, at NASSCO, Staff used the lowest apparent effects threshold, and then introduced a 40% safety buffer to further reduce the cleanup level, resulting in exceptionally low cleanup levels compared to other sites in the bay. Barker Depo, 373:14 – 374:22. [Comment No. 25, TCAO, at 14-28, 32, DTR, at 14-28, 32]. Moreover, cleanup levels at NASSCO are also more stringent than similar sites elsewhere in the nation. Barker Depo, at 944:18 – 947:11, 47:16 – 949:21. [Comment No. 26, TCAO, at 32, 36, DTR, at 32, 36.4].

2. The Remedial Monitoring and Post-Remedial Monitoring Programs are unprecedented compared to other sediment remediation projects throughout SD Bay, and California (Findings 34, 36)

Staff has also proposed extensive remedial and post-remedial monitoring programs that are far more stringent than those required for other similar sediment remediation projects in San Diego Bay. Gibson Depo, at 103:23 – 104:12, 133:17 – 135:7 (testifying that the remedial and post-remedial monitoring programs described in the TCAO and DTR are more extensive than any other projects in San Diego Bay). For example, the Regional Board has never before required the implementation of a five- to ten-year post-remedial monitoring plan for a site not involving an engineered cap. *Id.* [Comment No. 27, TCAO, at 34, 36, DTR, at 34.2, 36.4].

In sum, by requiring significantly more stringent cleanup levels and monitoring programs for NASSCO and failing to regulate NASSCO in the same manner as other similarly situated shipyards and boatyards, the TCAO violates the consistency requirement expressly stated in Resolution 92-49, as well as principles of due process and equal protection. [Comment No. 28, TCAO, at 32, 36, DTR, at 32, 36.4].

IV. THE TENTATIVE CLEANUP AND ABATEMENT ORDER IS OVERLY CONSERVATIVE AND TECHNICALLY INFEASIBLE TO ACHIEVE

A. Extensive Scientific Investigation Shows That Beneficial Uses At The Shipyard Are Not Unreasonably Impaired (Findings 13 – 28)

The Regional Board is authorized to adopt CAOs based only on sound scientific evidence that a potentially responsible party has “discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance” Cal. Water Code §13304(a). Here, Staff alleges that NASSCO “caused or permitted the discharge of waste to the Shipyard Sediment Site, resulting in an accumulation of waste in the marine sediment [that] has caused conditions of contamination or nuisance in San Diego Bay that adversely affect aquatic life, aquatic-dependent wildlife, human health, and San Diego Bay beneficial uses.” TCAO, at ¶ 1. However, extensive scientific investigation conducted at the Site, including the sediment quality investigation upon which the findings and conclusions of the TCAO are purportedly based, indicates that beneficial uses at the Site are not unreasonably impaired and that active remediation, beyond monitored natural attenuation, is not warranted. Exponent Report, at 19-12 – 19-13; TCAO, at ¶ 13. [Comment No. 29, TCAO, at 13-28, DTR, at 13-28]

1. The Sediment Investigation Was Extensive and Unparalleled (Finding 13) [Comment No. 30, TCAO, at 13, DTR, at 13.1]

As documented in the TCAO and DTR, Staff’s findings are based primarily upon the results of a “detailed” sediment investigation that was conducted at the site in 2001 and 2002 by NASSCO and BAE Systems San Diego Ship Repair Facility (“BAE Systems”), under the direction and supervision of staff. TCAO, at ¶ 13; DTR, at 13-1 – 13-4. The investigation included sampling of five reference areas selected by Regional Board staff and fifteen triad stations within NASSCO’s leasehold alone, resulting in a comprehensive data set that measured sediment chemistry, sediment toxicity, benthic macroinvertebrate communities, bioaccumulation in fishes and invertebrates, and fish health using multiple independent indicators. Evaluation of Draft Technical Report for Tentative Cleanup and Abatement Order No. R9-2011-0001 for the NASSCO Shipyard Sediment Site, Expert Report of Thomas C. Ginn, Ph.D. (“Ginn Report”), at 11-12. For each sampling station, synoptic measurements were made of sediment chemistry, sediment toxicity, and the structure of benthic macroinvertebrate communities. *Id.* Sediment toxicity was evaluated using three different toxicity tests, and the structure of benthic macroinvertebrate communities was assessed by analyzing five replicate samples from each station. *Id.* In addition, bioaccumulation was measured in invertebrates and fish that are prey to aquatic-dependent wildlife, and fish health was assessed by comparing the condition of 100 fishes caught at, and near the NASSCO leasehold, across a variety of indicators, including weight, length, age, and microscopic evaluation of organs for evidence of lesions or other abnormalities. *Id.* As a result, the investigation—which was conducted with substantial

oversight and input from Staff, stakeholders, and the public—contains ample site-specific evidence, and has been described by Staff as “the most extensive sediment investigation ever conducted for a site in San Diego Bay,” if not California. Exponent Report, at 1-2 – 1-4 (summarizing the directives and guidance provided by Regional Board staff throughout the planning and execution of the sediment investigation and Exponent Report); Deposition of David Barker (“Barker Depo”), at 80:2 – 80:22, 82:3 – 82:4, 2:14 – 83:23 (discussing the scope, quality, and Staff involvement in the sediment investigation); DTR, at 13-2 – 13-3 (summarizing Staff and stakeholder involvement in the sediment investigation).

The results of this extensive and unparalleled investigation, as discussed in detail below, found that risks to human health and aquatic-dependent wildlife at the shipyards “are well within acceptable levels” and that the sediment toxicity and adverse effects on benthic communities observed at certain locations are attributable to pesticides, not metals, butyltins, PCBs, or PAHs. Exponent Report, at 19-1. Moreover, the report found that aquatic life, aquatic-dependent wildlife, and human health beneficial uses are at approximately 95 percent of ideal conditions, and that any benefits from active remediation, such as dredging, would provide minimal incremental benefit at a very high cost. *Id.* at 19-13. As a result, the report concluded that “monitored natural recovery is therefore the most technically and economically feasible approach to addressing current sediment conditions at the shipyard.” *Id.* Yet, despite the favorable results and recommendations from this comprehensive multimillion dollar sediment investigation, overseen by Regional Board Staff, the Cleanup Team now seeks to require large-scale dredging of sediments within, and adjacent to, NASSCO’s leasehold to achieve cleanup levels that are unprecedented in San Diego Bay. [Comment No. 31, TCAO, at 14-32, 36, DTR, at 14-32, 36]. This aggressive approach violates the legal principles embodied in Section 13304 and Resolution 92-49, is contrary to existing scientific and technical evidence, and is not supported by the record. [Comment No. 32, TCAO, at 14-32, 36, DTR, at 14-32, 36].

2. There is No Significant Risk To Aquatic Life (Findings 14 – 20)

The TCAO concludes that aquatic life beneficial uses (Estuarine Habitat (EST), Marine Habitat (MAR), and Migration of Aquatic Organisms (MIGR)) in San Diego Bay are impaired “due to the elevated levels of pollutants present in the marine sediment at the Shipyard Sediment Site.” TCAO, at ¶ 14. However, the results of the sediment investigation indicate that, although contaminants of concern and other pollutants are present in Site sediments in elevated concentrations relative to reference, they do not pose risks to aquatic life because they are not bioavailable, and because many constituents do not bioaccumulate. [Comment No. 33, TCAO, at 14, 18, 19 DTR, at 14, 18, 19.1, Appendix 18, Appendix 19].

Risks to aquatic life at the shipyard were evaluated by sampling and assessing both benthic macroinvertebrates and fish. Ginn Report, at 12. Effects on benthic macroinvertebrates were assessed using a triad approach, involving the synoptic collection of data on sediment chemistry, toxicity, and benthic community structure, and effects on fish were assessed by comparing fish living at the Site to fish caught in reference areas in San Diego Bay. *Id.* The results of these site-specific analyses showed little or no effects on aquatic life; in particular, the results confirmed that (1) sediment toxicity is absent from all but one station, with only one

station showing any significant difference from reference conditions, and even then only by only a few percent; (2) measurements of four indices of benthic macroinvertebrate communities are not different from reference conditions; (3) fish show no elevation in significant liver lesions or other abnormalities related to chemical exposures at the site; and (4) predicted exposures of aquatic-dependent wildlife fall below the thresholds for which adverse effects are expected. Id. at 15-16. [Comment No. 34, TCAO, at 15-19, DTR, at 15-19, Appendix 15, Appendix 18].

Yet, through a series of overly-conservative (and unjustified) assumptions, Staff has erroneously concluded that aquatic beneficial uses are impaired, and that active remediation of Site sediments is needed. However, as discussed below, when analyzed using scientifically defensible methods, the data actually supports the conclusion that Site sediments pose no significant risk to aquatic life at NASSCO. Ginn Report, at 56 (concluding that all stations at NASSCO except for NA22, would be characterized as either unimpacted or likely unimpacted when analyzed using established, conventional assessment criteria). [Comment No. 35, TCAO, at 15, DTR, at 18.1].

- a. Shipyard Chemicals And Other Pollutants Are Present In The Sediment. But Do Not Pose Risks To Aquatic Life (Findings 15 - 19)

The results of the sediment investigation indicate that, although contaminants of concern and other pollutants are present in Site sediments in elevated concentrations relative to reference, they do not pose risks to aquatic life because they are not bioavailable, and because many constituents do not bioaccumulate. [Comment No. 36, TCAO, at 19, DTR, at 19.1]. However, because the Staff's weight of the evidence decision framework emphasizes sediment chemistry, the DTR is skewed towards finding effects, even where the data supports the opposite conclusion. [Comment No. 37, TCAO, at 15, 16, 18 DTR, at 15, 16, 18, Appendix 15, Appendix 18]. Although the use of a weight of the evidence assessment based upon multiple lines of evidence (MLOE) is a generally accepted approach to evaluating sediment quality, the particular weight of the evidence framework described in the DTR does not follow accepted standards of practice for sediment assessments, resulting in a consistent bias in favor of finding impairment. Ginn Report, 13. [Comment No. 38, TCAO, at 15, DTR, at 15.1-15.4]. Because any weight of the evidence analysis necessarily requires the use of "best professional judgment," accuracy is dependent upon the expertise of the personnel interpreting the data, and may be flawed if based on unreasonable assumptions, or manipulation of the individual lines of evidence ("LOE") used in the analysis. Id. at 14. For the reasons discussed below, the DTR analysis is overly-conservative, fails to accurately portray Site conditions, and results in arbitrary cleanup levels with no risk-basis:

- (1) The TCAO Overstates The Sediment Chemistry Prong Of The Triad Analysis (Findings 15-20)

The TCAO overstates the sediment chemistry prong of the triad analysis both because (1) differences in sediment grain size and total organic carbon between the reference pool and shipyard sediments, which are unrelated to shipyard discharges, skew the results in favor of finding higher sediment chemistry at NASSCO, and because (2) Staff's MLOE decision

framework is driven primarily by sediment chemistry, even though most experts place greater weight on biological lines of evidence, particularly benthic community analysis. Ginn Report, at 14, 17-19. [Comment No. 39, TCAO, at 15-20, DTR, at 15-20, Appendix 15, Appendix 18, Appendix 19].

- (a) The Reference Pool Does Not Accurately Reflect Chemical And Biological Conditions At NASSCO In The Absence Of Site-Related Discharges (Findings 17, 29)

Sediment chemistry results at NASSCO are overstated because the reference pool does not accurately represent the chemical and biological conditions at the shipyards in the absence of site-related discharges. See Ginn Report, at 17-18. This is because reference stations (1) contain coarser sediments, (2) more organic carbon, and (3) tend to be located far from the shoreline (and associated generalized sources of contaminants). *Id.* [Comment No. 40, TCAO, at 17, DTR, at 17.1-17.2].

Criteria for selecting acceptable reference stations include, among other things, “sediment total organic carbon (TOC) and grain size profiles similar to the Shipyard Sediment Site.” TCAO, at ¶ 17. This is because sediment chemistry can be affected by both grain size and TOC, due to the chemical behavior of metals. For example, grain size can affect sediment chemistry because metals have a greater affinity to fine sediments than to coarse sediments. Deposition of Tom Alo (“Alo Depo”), at 183:22 – 184:6, 184:13 – 185:15. [Comment No. 41, TCAO, at 17, 29 DTR, at 29.1-29.3]. Accordingly, all else being equal, sediments with a higher proportion of fines will typically display higher concentrations of metals than sediments composed of coarse materials—purely as a result of grain size. *Id.* [Comment No. 42, TCAO, at 17, 29, DTR, at 29.1-29.3]. Differences in grain size can also have a similar effect on benthic community composition and toxicity results, with sediments composed largely of fine particles showing a greater likelihood of apparent toxicity based solely on the size of the particles. *Id.* [Comment No. 43, TCAO, at 17, 29, DTR, at 29.1-29.3]. Similarly, certain chemicals, including PCBs, have a high affinity for TOC. *Id.*, at 193:20 – 194:2, 194:12 – 195:3, 196:14 – 196:25. [Comment No. 44, TCAO, at 17, 29, DTR, at 17, 29]. As a result, assuming there is equal PCB contamination throughout the Bay, one would expect to see higher PCB concentrations in sediments containing higher percentages of organic carbon—purely as a result of differences in TOC content. *Id.* [Comment No. 45, TCAO, at 17, DTR, at 17, 29]. Here, the reference pool stations selected by Staff contained higher percentages of coarse sediments and TOC than the triad stations sampled at NASSCO. [Comment No. 46, TCAO, at 17, DTR, at 17, 29]. Accordingly, some of the apparent effects detected at NASSCO likely are attributable to the fact that there are higher percentages of fine particles and organic carbon at NASSCO relative to sediments at the selected reference pool, rather than to shipyard discharges. *Id.* at 191:6 – 191:12, 203:23 – 204:1. [Comment No. 47, TCAO, at 17, 29, DTR, at 17, 29].

Additionally, sediment pollutant concentrations generally increase closer to shore due to the presence of point source outfalls; accordingly, one would expect the concentration of contaminants of concern to be higher in sediment near-shore than further offshore, even in the

absence of shipyard discharges. *Alo Depo*, at 181:11 – 182:24. [**Comment No. 48, TCAO, at 17, DTR, at 17.1-17.2**].

For these reasons, some of the elevated chemistry and apparent effects detected in toxicity tests and benthic community analyses likely are attributable to differences between reference and shipyard sediments that are unrelated to shipyard discharges. *Ginn Report*, at 17. [**Comment No. 49, TCAO, at 17, DTR, at 17.1-17.2**]. The TCAO is therefore overly conservative in assuming that all observed differences from reference result from shipyard discharges. [**Comment No. 50, TCAO, at 17, DTR, at 17.1-17.2**].

- (b) The MLOE Analysis Places Undue Weight On Sediment Chemistry And Neglects Direct Biological Measures, Contrary To Generally Accepted Guidance (Findings 15, 16, 18, 20)

Additionally, the MLOE analysis supporting the TCAO is inconsistent with other published decision frameworks, and places undue emphasis on the sediment chemistry line of evidence in violation of sound scientific and technical principles. [**Comment No. 51, TCAO, at 15, 16, 18, 20, DTR, at 15, 16, 18, 20**]. Specifically, the TCAO and DTR framework is fundamentally flawed because it concludes that adverse effects on benthic macroinvertebrates are “likely” or “possible” whenever sediment chemistry is characterized as “high”—regardless of whether significant sediment toxicity or adverse effects on benthic invertebrates are also observed. *DTR*, at Table 18-4. [**Comment No. 52, TCAO, at 18, DTR, at 18.2**]. As a result, the chemistry line of evidence unilaterally trumps the others, causing the TCAO and DTR reach conclusions about conditions at the Site that are not technically justified. *Ginn Report*, at 48. Staff’s framework is further biased by its lack of a “no” effects category – meaning that stations will be characterized as having at least “low” levels of effects, even where results are indistinguishable from reference conditions – contrary to methods published by others, including the State Water Resources Control Board. *Id.* [**Comment No. 53, TCAO, at 18, DTR, at 18.2**].

The State and Regional Boards have consistently recognized that sediment is a “complex matrix that makes establishment of an objective” based on a single line of evidence “problematic.” *See, e.g.*, *Staff Report, Water Quality Control Plan for Enclosed Bays and Estuaries, Part 1, Sediment Quality (September 16, 2008)* (“Phase 1 SQO Staff Report”), at 5-8. It is also well-understood that there are significant weaknesses and confounding factors that make sediment chemistry a poor diagnostic tool when used in isolation, and lead to the fundamental principle that impacts due to contaminants should not be inferred unless the weight of the evidence clearly supports such an inference. *Ginn Report*, at 13. [**Comment No. 54, TCAO, at 15, 16, DTR, at 15, 16**]. Staff, too, has correctly recognized that chemistry data alone is insufficient to predict biological impacts, and that it is preferable to rely on biological lines of evidence to assess biological impacts. *DTR*, at 15-1 (“[S]ediment chemistry provides unambiguous measurements of pollutant levels in marine sediment, but provides inadequate information to predict biological impact.”); *Deposition of David Gibson (“Gibson Depo”)*, at 143:7 - 143:21 (“Q. Should this direct line of evidence of toxicity be given more weight than chemistry? A. As a biologist, I would say yes because the reaction of the organism itself is a

better indicator of true risk than the chemistry alone; but they do have to both be considered together.”); *Alo Depo*, at 228:33 – 229:3 (agreeing that “the biologically based lines of evidence are the most important since they are direct measures of what is being protected.”). [Comment No. 55, TCAO, at 15, 16, DTR, at 15-16].

On its face, the direct measurements of biological conditions included in the DTR reveal that only a minimal fraction of the stations at NASSCO do not meet reference conditions. Ginn Report, at 49. Specifically, (1) benthic communities are equivalent to reference conditions at 14 of 15 stations in the NASSCO leasehold, with the only “moderately” impacted station located at the mouth of Chollas Creek; (2) amphipod toxicity was found at only 1 of 15 stations at NASSCO, at which survival, at 70%, was only 3% below the statistical reference range and was equal to one of the reference stations; (3) toxicity to sea urchins was not found at any of the 15 stations at NASSCO; and (4) toxicity to bivalves was found at only 5 of 15 stations at NASSCO. DTR, at Tables 18-8 and 18-13. [Comment No. 56, TCAO, at 18, DTR, at 18.3-18.4]. Note that the bivalve test used in the shipyard investigation, as required by Board Staff, was an experimental method and produced highly inconsistent results, even among replicates of individual samples and for reference samples. Accordingly, applying Staff’s own weight-of-the-evidence framework, the results of this test should carry less weight than the amphipod and sea urchin tests since there is a lower level of confidence associated with this particular test. Ginn Report, at 49-50; *Alo Depo*, at 255:18 – 255:25 (agreeing that the bivalve test is more susceptible to confounding factors and its association with ecological receptors is less certain than the amphipod survival test). [Comment No. 57, TCAO, at 18, DTR, at 18.3-18.4].

Despite these favorable toxicity results, the skewed weight-of-the-evidence scheme in the DTR determines that seven stations at NASSCO have either “possible” or “likely” impacts on benthic macroinvertebrates, based primarily upon the sediment chemistry results for those stations. DTR, at Tables 18-1 and 18-4. [Comment No. 58, TCAO, at 18, DTR, at 18.2]. Where chemical and biological indicators disagree, it is inappropriate to simply assume, without further investigation, that effects on benthic macroinvertebrates are “possible” or “likely,” as was done in the TCAO and DTR. In so doing, Staff overemphasizes elevated sediment chemistry, resulting in a decision framework that is consistently biased in favor of finding impacts, even where toxicity and benthic effects are equivalent to reference conditions. Ginn Report, at 53 – 54. [Comment No. 59, TCAO, at 18, DTR, at 18.1-18.5].

Further, despite Staff’s acknowledgement that relying solely on chemical concentration data does not account for factors that affect bioavailability of contaminants in sediment, Staff inexplicably failed to further investigate stations that were designated as “likely” impaired due to “high” chemistry results (such as NA19 and NA22), or to sufficiently evaluate alternative causal explanations. [Comment No. 60, TCAO, at 18, DTR, at 18.1]. Accordingly, Staff’s approach directly contradicts current regulatory guidance (which recommends placing greater weight on biological lines of evidence when indicators diverge), resulting in the misclassification of NA17 and NA19 as “possibly” and “likely” impaired, respectively, despite little or no indication of toxicity or benthic community effects. Ginn Report, at 52-54, 56 (quoting U.S. EPA Sediment Classification Methods Compendium (U.S. EPA 1992)); see also *Alo Depo*, at 297:3 – 298:3, 298:22 – 299:7, 299:8 – 300:17. The issue is underscored clearly by examining station NA19,

where Staff has categorized the station as “likely” impaired based solely upon high chemistry and the bi-valve larvae test, even though six of the seven lines of direct evidence indicate no significant differences from reference. *Alo Depo*, 263:22 – 265:17. [Comment No. 61, TCAO, at 18, DTR, at 18.1].

A scientifically defensible approach to integrating LOE results is essential to ensure a valid MLOE conclusion, particularly where chemical and biological indicators yield disparate results. *Ginn Report*, at 45-46. Unfortunately, the DTR includes little explanation of how Staff’s decision framework was derived, and fails to provide any citation from scientific literature supporting the framework used or the undue emphasis placed on sediment chemistry. *Ginn Report*, at 46. [Comment No. 62, TCAO, at 18, DTR, at 18.1-18.5]. Staff has also openly acknowledged that its recommended framework has never been published or peer-reviewed. *Alo Depo*, at 297:3 – 298:3. This is particularly concerning considering that Staff’s framework is significantly more conservative than existing, published frameworks—including the State of California Sediment Quality Objective (SQO) framework, in which triad data indicating “high” chemistry, “reference” benthic communities, and “nontoxic” or “low” sediment toxicity would result in a station being designated as “likely unimpacted” (as contrasted with “possibly” or “likely” impacted, under Staff’s framework). [Comment No. 63, TCAO, at 18, DTR, at 18.1-18.5]. Since Staff’s approach simultaneously contravenes accepted guidance and overstates the chemistry prong of the triad analysis relative to direct biological evidence, the resulting conclusions in the TCAO and DTR are not scientifically or technically valid, and do not support the proposed remediation. [Comment No. 64, TCAO, at 15, 16, 18, DTR, at 15, 16, 18.1, 18.2, 18.5].

(2) Shipyard Contaminants Are Present, But Not Bioavailable
(Findings 16, 18, 19)

Another key flaw in Staff’s weight of the evidence approach is the absence of an evaluation of the chemical bioavailability information in Staff’s decision framework, which the EPA has recognized as “critical” to the success of weight of the evidence assessments. *Ginn Report*, at 15. Rather than using causal criteria to determine whether site contaminants are bioavailable, the DTR improperly equates high concentrations of chemicals with possible impacts to aquatic life. DTR, at Table, 18-1. Specifically, the DTR simply assumes that site chemicals are bioavailable, and causing adverse impacts to aquatic life, when chemistry exceeds empirical Sediment Quality Guidelines (“SQGs”), or when any statistically significant difference from reference is observed in toxicity tests. DTR, at 16-1, 18-3. Staff’s failure to consider the bioavailability of chemicals at the Site is both “unscientific” and inconsistent with current standards of practice for sediment assessments. *Id.* [Comment No. 65, TCAO, at 16, 18, 19 DTR, at 16.1, 18.3, 19]. It is also particularly concerning considering that bioavailability analyses and site-specific toxicity and benthic community analyses support the conclusion that Site chemicals are not bioavailable and therefore do not impact beneficial uses at the Site—even where such chemicals are present in elevated concentrations relative to reference. *Ginn Report*, 18-19; Importance of Bioavailability for Risk Assessment of Sediment Contaminants at the NASSCO Site, Expert Report Prepared by Herbert E. Allen, Ph.D. (March 11, 2011) (“Allen Report”), at 9. [Comment No. 66, TCAO, at 18, 19, DTR, at 18.1, 18.3, 18.5, 19].

Bioavailability is a measure of the potential for a chemical to enter into ecological or human receptors; accordingly, the operative risk-measure for benthic invertebrates is not the total concentration of chemicals in sediments, but rather, the portion of such chemicals that are biologically available. Allen Report, at 2. Thus, the form of a chemical substance often dictates whether or not there will be any aquatic impairment. For example, a fish may be unaffected by the addition of a copper wire to its tank, whereas the addition of copper sulfate may be lethal. See, Alo Depo, at 225:13 – 226:16; Barker Depo, at 91:16 – 92:9.

It is thus well-known that chemical concentrations alone do not necessarily predict biological effects, and that conflicting triad data may signal that contaminants are not bioavailable—particularly where sampling indicates that contamination is present, but toxicity or benthic biological results are not significantly different from reference. Ginn Report, at 47, Allen Report, at 9. [Comment No. 67, TCAO, at 19, DTR, at 19.1]. Further, even where chemicals are bioavailable “bioavailability does not necessarily indicate the presence of adverse effects.” DTR, at 19-1. [Comment No. 68, TCAO, at 19, DTR, at 19.1].

The DTR recognizes that causal criteria are preferred in the assessment of sediments, but concludes that contaminants in the sediment are bioavailable using empirical Sediment Quality Guidelines, without applying causal criteria that consider bioavailability. Allen Report, at 7. Using empirical SQGs based on total sediment pollution concentrations as screening levels, rather than causal SQGs, can lead to inaccurate risk predictions because empirical SQGs often mischaracterize sediments as toxic when they are not, and vice versa, and are not predictive of toxicity. Allen Report, at 7-8. [Comment No. 69, TCAO, at 18, DTR, at 18.2].

Given the results of the toxicity tests performed at the Site, it is clear that empirical SQGs have not accurately characterized Site sediments. As discussed in detail above, the toxicity and benthic community tests indicate that only a small fraction of stations in the NASSCO leasehold do not meet the reference conditions, which suggests that even though contaminants may be present, they are not affecting biota at the Site. [Comment No. 70, TCAO, at 18-20, DTR, at 18-20]. Further, Staff has agreed that the shipyard data support the conclusion that contaminants at the Site are not bioavailable:

Q: Okay. So looking at the toxicity test results for the NASSCO stations, would you agree that these results suggest that contaminants in the sediment are not bioavailable?

A: Let's see. For the amphipod survival and urchin fertilization, I would agree with that, yes, that – that the – yeah, the toxicity results are not indicating bioavailability.

* * * * *

Q: This summarizes the benthic community results for the Shipyard Sediment Site; correct?

A: Okay, yes.

Q: Looking at the benthic community results for the NASSCO stations in this table, do these suggest that contaminants in sediment are not bioavailable?

A: Yes.

* * * * *

Q: Wouldn't you agree that the bioavailability of metals in the sediment at NASSCO is less than thresholds such as the ERLs and ERMs?

A: So the – the scenario is at the NASSCO site where the metals are higher than the ERLs and ERMs, you are – you are asking if the site-specific information indicates that that is not bioavailable to the – in the same degree as what the ERM and ERM – yes, I would.

Q: That's correct?

A: Yes.

Barker Depo, at 104:22 – 105:5; 105:15 – 105:22; 111:18 – 112:17. [Comment No. 71, TCAO, at 18, 19, DTR, at 18.3, 19]. Staff also neglected to consider that the potential for toxicity of metals in sediments depends on the degree to which they bind with other constituents in sediment, primarily sulfide and natural organic matter. Allen Report, at 10. [Comment No. 72, TCAO, at 18, 19, DTR, at 18.3, 19]. When these factors are considered, it becomes clear that binding of the metals cadmium, copper, lead, mercury, nickel, and zinc in the sediments at NASSCO is sufficiently strong to render sediments nontoxic to benthic organisms, consistent with the observed toxicity and benthic community results. Allen Report, at 23. [Comment No. 73, TCAO, at 18, 19, DTR, at 18.3, 19].

Staff's failure to consider bioavailability in the DTR is arbitrary and capricious, especially in light of the fact that toxicity and benthic community test results do not show significant impacts to aquatic life. Without an appropriate bioavailability analysis, Staff's assumption that contaminants are bioavailable based on empirical SQGs, and the corresponding conclusion that aquatic life at the Site is therefore impaired, are unjustified—particularly in light of Staff's recognition that direct evidence, including toxicity and benthic community data, suggest that contaminants are, in fact, not bioavailable. [Comment No. 74, TCAO, at 15-18, DTR, at 15.3, 16.1, 17, 18].

(3) Some Shipyard Contaminants Do Not Bioaccumulate
(Findings 15-19)

The DTR cites the finding that “bioaccumulation is occurring at the shipyard” as one basis for concluding that aquatic life at the site is impacted. DTR, at 14-1, 19-1. However, the

DTR's conclusion that Site sediments impact aquatic life is overly-conservative, since substances may bioaccumulate in laboratory tests, but not adversely affect the benthic community and because not all shipyard chemicals were found to bioaccumulate. Barker Depo, at 98:19 - 98:22; DTR, at 19-1. [Comment No. 75, TCAO, at 15-19, DTR, at 15.1- 15.3, 16-19].

Narrative water quality objectives applicable to the Site require that "all waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." DTR, at 1-13 (citing the Water Quality Control Plan for the San Diego Basin, September 8, 1994). However, Staff's *Macoma* tissue bioaccumulation testing indicates only that chemicals are present in the exposed *Macoma*; it does not assess whether the presence of such chemicals are at levels sufficient to cause toxicity or detrimental physiological responses, in violation of the water quality objective. Allen Report, at 20. Requiring cleanup based on the bioaccumulation potential of constituents, without conducting an appropriate risk-assessment to determine whether the observed bioaccumulation poses risks to consumer organisms, is both overly-conservative and unjustified. *Id.* [Comment No. 76, TCAO, at 15-20, DTR, at 15.1- 15.3, 16-20].

Moreover, many chemicals of concern at the Site are not statistically related to biological effects, and some chemicals do not bioaccumulate in aquatic life. *See* DTR, at Table 20-1. For example, for many contaminants of concern—including all primary contaminants of concern—the bioaccumulation test was the only test showing any statistical relationship between the chemical at the Site and a biological response to that chemical. This suggests that the concentrations observed in the *Macoma* laboratory testing did not accurately predict adverse responses in consumer organisms at the Site. Barker Depo, at 95:22 - 98:16. [Comment No. 77, TCAO, at 18-20, DTR, at 18.1, 18.5, 19, 20, Appendix 19]. Moreover, other constituents, including cadmium, chromium, nickel, selenium, silver, and PPT showed no statistical relationship with biological effects and also did not bioaccumulate in laboratory tests. DTR, at Table 20-1. [Comment No. 78, TCAO, at 18-20, DTR, at 18.1, 18.5, 19, 20, Appendix 19]. Similarly, bioaccumulation relationships for arsenic and zinc, although statistically significant, were each controlled by only a single data point. DTR, at 19-1. [Comment No. 79, TCAO, at 18-20, DTR, at 18.1, 18.5, 19, 20, Appendix 19].

Considering the possibility that a substance could bioaccumulate in a laboratory test, yet not be associated with actual adverse effects to the benthic community, these results (together with direct evidence showing a mature and thriving benthic community at the Site), suggest Staff's conclusions concerning benthic harms are overstated. [Comment No. 80, TCAO, at 18-20, DTR, at 18-20].

- b. Sediment Toxicity Is Very Low And Lower Than Most Other Locations In San Diego Bay (As Well As Most Other Bays And Estuaries Throughout The Country) (Findings 14-18)

The DTR is overly-conservative because it concludes that there are impacts on aquatic life, even though the preponderance of sediment toxicity results show that Site sediments are nontoxic. Ginn Report, at 26; DTR, at 14-1, Table 18-8. [Comment No. 81, TCAO, at 18,

DTR, at 18.1, 18.3, 18.5]. In fact, sediment toxicity at NASSCO is not only objectively low, but also lower than most other locations in San Diego Bay (as well as most other bays and estuaries nationwide). [**Comment No. 82, TCAO, at 17-18, DTR, at 17, 18.3, Appendix 18].** Of 42 total toxicity tests conducted (excluding NA22),² 37 tests showed conditions at NASSCO were as protective as background, with respect to toxicity. *Alo Depo*, at 269:2 – 270:21. In particular, (1) amphipod toxicity was found at only 1 of 15 stations at NASSCO, at which survival, at 70%, was only 3% below the statistical reference range and was equal to one of the reference stations; (2) toxicity to sea urchins was not found at any of the 15 stations at NASSCO; and (3) toxicity to bivalves was found at only 5 of 15 stations at NASSCO.³ Accordingly, the data are clear that sediments at NASSCO have “low” toxicity, if any. *DTR*, at Tables 18-8, 18-9; *see also* *Ginn Report*, at 26. [**Comment No. 83, TCAO, at 18, DTR, at 18.1, 18.3, Appendix 18].** However, under Staff’s biased weight of the evidence framework, nine NASSCO stations are characterized as having “low” toxicity, despite data showing no statistical differences from reference conditions under any of the three toxicity tests. *DTR* at Tables 18-9; *Alo Depo*, at 272:3 – 272:20. This is misleading, and Staff’s framework should be revised to include a “no” or “nontoxic” category for toxicity results in order to accurately characterize stations that are not different from reference—as the State Board recognized when developing the State of California Part 1 Sediment Quality Objectives (which include both “nontoxic” and “low” toxicity categories). [**Comment No. 84, TCAO, at 15, 18, DTR, at 15.3, 15.4, 18.1, 18.3, 18.5, Appendix 18].**

- (1) The Amphipod Survival Test Indicates That Shipyard Sediments Do Not Pose A Risk To Aquatic Life (Findings 14-18)

The amphipod survival test, which is the most reliable and widely-used of the three toxicity tests conducted, indicates that Site sediments do not pose risks to aquatic life. *Ginn Report*, at 26; *DTR*, at Table 18-8. Amphipod toxicity was found at only 1 of 15 stations measured at NASSCO (NA11). *DTR*, at Table 18-8. At that station, amphipod survival, at 70%, was only 3% below the statistical reference range of 73% and only 1% lower than the lowest reference station—representing a very small variance from reference conditions. *Id.*; *Alo Depo*,

² Of the 45 toxicity tests, including NA22, 39 were nontoxic at the NASSCO site; the remaining 6 (of which 5 resulted from the experimental bivalve test), were below the statistical limits of the reference pool. *Ginn Report*, at 26.

³ Note that this test used an experimental method, which produced highly inconsistent results, even among replicates of individual samples and for reference samples. Accordingly, applying Staff’s own weight-of-the-evidence framework, the results of this test should carry less weight than the amphipod and sea urchin tests since there is a lower level of confidence associated with this particular test. *Ginn Report*, at 49-50; *Alo Depo*, at 255:18 – 255:25 (agreeing that the bivalve test is more susceptible to confounding factors and its association with ecological receptors is less certain than the amphipod survival test). [**Comment No. 82A, TCAO, at 18, DTR, at 18.3-18.4].**

at 245:22 – 246:19, 247:3 – 247:6. [Comment No. 85, TCAO, at 18, DTR, at 18.3, Appendix 18]. Further, measured solely by the other toxicity and benthic community tests conducted (i.e., BRI, abundance, taxa, Shannon-Weiner diversity, sea urchin fertilization, and bivalve larvae development), NA11 was not impaired compared to reference conditions. Alo Depo, at 248:5 – 250:23. [Comment No. 86, TCAO, at 18, DTR, at 18.3, 18.4, Appendix 18]. Accordingly, it is overly conservative to conclude that NA 11 is “moderately” toxic based solely upon the amphipod survival result described above, when six of the seven direct lines of evidence show that NA11 is equivalent to reference, and the single line of evidence not meeting the reference condition differs by only a few percentage points. See *Id.* [Comment No. 87, TCAO, at 18, DTR, at 18.3, 18.4, Appendix 18]. Taken together, the favorable amphipod survival test data support the conclusion that Site sediments pose no risks to aquatic life. [Comment No. 88, TCAO, at 14-18, DTR, at 14-17, 18.1, 18.3-18.5, Appendix 18].

- (2) The Echinoderm Fertilization Test Indicates That Shipyard Sediments Do Not Pose A Risk To Aquatic Life (Findings 14-18)

The echinoderm fertilization test indicates that Site sediments do not pose risks to aquatic life, because the results showed that there were no statistically significant differences between background reference conditions and Site sediment with respect to sea urchin fertilization. DTR, at Table 18-8; Alo Depo, 252:13 – 253:2. [Comment No. 89, TCAO, at 18, DTR, at 18.3, Appendix 18]. Further, the lowest fertilization rate measured at NASSCO was 72%, which far exceeds the reference 95% lower prediction limit of 41.9%. Ginn Report, at 26. [Comment No. 90, TCAO, at 18, DTR, at 18.3, Appendix 18]. Accordingly, Site sediments pose no risk to echinoderm fertilization, and the favorable results of the echinoderm fertilization test support the conclusion that Site sediments do not pose risks to aquatic life. [Comment No. 91, TCAO, at 14-18, DTR, at 14-17, 18.1, 18.3, 18.5, Appendix 18].

- (3) The Bi-Valve Larvae Test Indicates That Shipyard Sediments Do Not Pose A Risk To Aquatic Life (Findings 14-18)

The bivalve larvae test indicates that Site sediments do not pose risks to aquatic life, because the results showed that 10 of 15 stations had high percentages of normal larvae that exceeded the reference range. Ginn Report, at 26; DTR, at Table 18-8. [Comment No. 92, TCAO, at 18, DTR, at 18.3, Appendix 18]. Although the remaining 5 stations were below reference, the two other toxicity tests showed that amphipod survival and sea urchin fertilization were not significantly different from reference for those stations. DTR, at Table 18-8. [Comment No. 93, TCAO, at 18, DTR, at 18.3, Appendix 18]. These latter indicators should be given more weight because of the experimental nature and variable results of the bi-valve larvae tests, both within replicates at the Site stations and at reference stations. Exponent Report, at Table 6-3; Ginn Report, at 24-26. For example, observed normality in replicate tests on sediment collected at NA01 varied from 6% to 80%, and normality in replicate tests on sediment from reference station 2243 varied from 8% to 79%. *Id.* Overall, 10 of the 30 triad stations tested exhibited variability between replicates of an order of magnitude, or greater, casting

doubts on the reliability of this test as an accurate measure of toxicity. Id. [Comment No. 94, TCAO, at 15, 17, 18, DTR, at 15.1, 17, 18.3, Appendix 18].

Overall, since the majority of stations exhibited rates of normal bi-valve larvae development equal to or better than reference ranges, and the remaining five stations showed no toxicity according to other, more reliable measures, the bi-valve larvae test results support the conclusion that Site sediments do not pose risks to aquatic life. [Comment No. 95, TCAO, at 14-18, DTR, at 14-17, 18.1, 18.3, 18.5, Appendix 18].

(4) Surveys Of Lesions In Fish Show A Greater Prevalence Of Lesions In Fish Caught In Reference Areas Than In Fish Caught At NASSCO (Findings 15, 20)

In addition to sediment chemistry, toxicity, and benthic community composition, the Exponent Report also compared observed contaminant-related lesions in fish caught at five different areas within San Diego Bay (reference stations, Inside NASSCO, Outside NASSCO, Inside BAE Systems, and Outside BAE Systems), and found that shipyard fish are “healthy, with no elevation in significant liver lesions or other abnormalities related to chemical exposures at the site.” Ginn Report, at 15. See also DTR, App. 15, at 15 (discussing the results of the fish histopathology analysis). [Comment No. 96, TCAO, at 15, DTR, at 15.3, Appendix 15].

In particular, the fish histopathology results revealed that:

- Of 70 kinds of lesions evaluated, only three were significantly elevated at one or more shipyard locations relative to reference conditions.⁴ Exponent Report, at 8-42.
- Where lesions were found in shipyard fish, the severity of the lesions found in most individuals were considered mild. Shipyard fish did not display any of the serious liver lesions typically found at heavily contaminated sites in the United States. Id., at 8-48.
- “A greater number of lesions (i.e., 6) were significantly elevated in the reference area compared to the shipyard sites, documenting that pathological conditions occur in parts of San Diego Bay away from the shipyards.” Id.
- Growth and condition of fish were not affected by proximity to the shipyards, or the presence of the two most abundant liver lesions. Id.

⁴ A fourth lesion was nearly significant ($p=0.07$), and was therefore conservatively included as significant in the Exponent analysis. Id.

Because no adverse effects to fish can be associated with specific chemical concentrations in the sediment, it would be inappropriate to derive specific chemical-based cleanup levels from the fish histopathology data in the DTR. Exponent Report, at 9-22. The DTR therefore correctly concludes that “the fish histopathology data does not indicate that the fish lesions observed in the data set can be conclusively attributed to contaminant exposure at the Shipyard Sediment Site.” DTR, at Appendix 15; see also Alo Depo. at 296:18 – 296:22 (testifying that the fish histopathology data was not considered in reaching conclusions on aquatic life impairment). [Comment No. 97, TCAO, at 15, 20, DTR, at 15, 20, Appendix 15].

Overall, however, the results of the fish histopathology analysis do suggest that spotted sand bass are not adversely affected by chemicals present in the sediments, water, or prey at NASSCO. Ginn Report, at 41-42. [Comment No. 98, TCAO, at 15, DTR, at 15.3, Appendix 15]. For example, as indicated above, the growth and condition of spotted sand bass near the shipyards were comparable to fish in reference areas. Id. [Comment No. 99, TCAO, at 15, DTR, at 15.3, Appendix 15]. The survey also revealed a greater prevalence of lesions in fish caught in reference areas than in fish caught at the shipyards (i.e., the total number of lesions that were significantly elevated was greater in fish caught at the reference sites than caught at the shipyards). Exponent Report, at 9-22. [Comment No. 100, TCAO, at 15, DTR, at 15.3, Appendix 15]. Of the 70 lesions evaluated the incidence of only four were considered as being significantly elevated near the shipyards, whereas the incidence of six were significantly elevated at reference areas, when compared with one or more shipyard sites. Id. [Comment No. 101, TCAO, at 15, DTR, at 15.3, Appendix 15]. Additionally, most of the lesions found in shipyard fish were “mild,” and the pathologist observed no serious liver lesions of the types commonly associated with contaminated sites. Id. [Comment No. 102, TCAO, at 15, DTR, at 15.3, Appendix 15]. Taken together, these results indicate that sediments at the shipyard do not pose risks to aquatic life. [Comment No. 103, TCAO, at 14, 15, 20, DTR, at 14, 15, 20, Appendix 15].

- (5) The CUT’s Analysis Of PAHs In Fish Bile Does Not Support The Conclusion That Shipyard Sediments Adversely Impact Aquatic life (Findings 14, 15, 20)

The DTR correctly concludes that “the [fluorescent aromatic compound] concentrations observed in the fish collected cannot be conclusively attributed to contaminant exposure at the Shipyard Sediment Site.” DTR, at A15-14. In fact, fish bile analyses conducted at the Site suggest that fish at the shipyards are no more greatly exposed to PAHs than fish at other locations in San Diego Bay. Exponent Report, at 8-49. [Comment No. 104, TCAO, at 15, DTR, at 15.3, Appendix 15]. No statistically significant differences in PAH breakdown products were found at the shipyards relative to the reference location, and concentrations of bile breakdown products in fish from within the Site were generally less than concentrations in fish from outside the leaseholds. [Comment No. 105, TCAO, at 15, DTR, at 15.3, Appendix 15]. Taken together, these data support the conclusion that that Site sediments are not impairing aquatic life beneficial uses. Exponent Report, at xxxiii, 8-49. [Comment No. 106, TCAO, at 14, 15, 20, DTR, at 14, 15, 20, Appendix 15].

c. The Benthic Community Assessment Shows That Shipyard Sediments Are Not Causing Impacts To Aquatic Life (Findings 14-20)

The benthic macroinvertebrate assessment—which is perhaps the most informative test since it measures the actual responses of organisms living in, or on, sediments at the Site—shows a mature and thriving benthic community at the Site, and provides direct evidence that Site sediments are not negatively impacting aquatic life.⁵ Ginn report, at 28; DTR, at Tables 18-8, 18-12. [Comment No. 107, TCAO, at 14-20, DTR, at 14-20, Appendix 18]. The benthic community assessment evaluated benthic communities at the site according to four metrics: BRI-E, abundance, taxa, and Shannon-Wiener diversity. DTR, at Table 18-12. Of these 60 individual comparisons, there were only three significant differences from reference pools—all of which occurred at stations NA20 (number of taxa) and NA22 (number of taxa and abundance). *Id.*, at 31. [Comment No. 108, TCAO, at 18, DTR, at 18.4]. When the benthic macroinvertebrate metrics are combined into an overall line of evidence, all of the NASSCO stations, except for NA20 and NA22, show no significant differences whatsoever from reference. DTR, at Table 18-13. [Comment No. 109, TCAO, at 18, DTR, at 18.4]. Yet, these remaining stations are categorized as having “low” effects—even though there are no significant differences from reference under any of the four benthic community metrics. *Id.* These stations are properly categorized as having “no” effects, since there are no significant differences from reference conditions; suggesting that there are “low” effects is misleading and inaccurate. Ginn Report, at 32. [Comment No. 110, TCAO, at 18, DTR, at 18.4].

Additionally, NA20 is erroneously designated as having “moderate” benthic effects, on the grounds that one of the four benthic community metrics (number of taxa) showed statistically significant differences from reference. *Id.*, at 32-33; DTR, at Table 18-12. However, the number of benthic taxa observed at NA 20 was 22, which is equal to the 95% LPL of the reference pool, and therefore should not be classified as statistically different. Ginn Report, at 32; DTR, at Table 18-12. [Comment No. 111, TCAO, at 18, DTR, at 18.4]. Additionally, NA20 is located in the vicinity of active piers; given that chemical concentrations at NA20 are generally much lower than in other areas, it is likely that any effects observed are the result of physical disturbances rather than contaminated sediments. Ginn Report, at 36. [Comment No. 112, TCAO, at 18, DTR, at 18.1, 18.2, 18.4]. Taking these results into consideration, the only station to show any statistically significant difference from reference benthic community conditions is NA22, which is located adjacent to the mouth of Chollas Creek and, as discussed below, is influenced by sources beyond the shipyard and physical disturbances. [Comment No. 113, TCAO, at 18, DTR, at 18.4].

In sum, and as detailed further below, nearly all of the benthic macroinvertebrate sampling stations at NASSCO show no adverse effects when compared with reference conditions

⁵ In a recent study concerning the consistency of best professional judgment in triad analyses, panel members placed the greatest weight on the benthic community leg of the triad. Ginn Report, at 14.

based on the DTR assessment (and one of the two stations showing effects was inappropriately classified based on one metric). Ginn Report, at 40. [Comment No. 114, TCAO, at 18, DTR, at 18.4]. Multiple measures indicate that there are healthy benthic macroinvertebrate communities at the Site, with the possible exception of one station located adjacent to Chollas Creek. Id. [Comment No. 115, TCAO, at 18, DTR, at 18.4]. Accordingly, the direct assessment of benthic macroinvertebrate communities at NASSCO directly refutes the conclusion in the DTR that some areas at NASSCO have “likely” or “possible” effects on benthic macroinvertebrates as a result of shipyard discharges. [Comment No. 116, TCAO, at 14-18, 20, DTR, at 14-17, 18.1, 18.4, 18.5, 20].

- (1) The Benthic Community Analysis Shows That The Number Of Organisms In Shipyard Sediments Is Not Significantly Different From Reference (Findings 14, 15, 16, 18, 20)

The benthic community analyses indicate that the assemblage of organisms in Site sediments is not significantly different from reference. DTR, Table 18-12; Ginn Report, at 34. [Comment No. 117, TCAO, at 18, DTR, at 18.4]. If substantial alterations of benthic communities were occurring, one would expect to see sparse communities, comprised of the few organisms and taxa able to tolerate chemical toxicity; however, such conditions were not observed at any of the NASSCO stations. Exponent Report, at 8-38. [Comment No. 118, TCAO, at 18, DTR, at 18.4]. Instead, communities at the Site are similar to communities in reference areas. Exponent Report, at 8-8; Ginn Report, at 34. [Comment No. 119, TCAO, at 18, DTR, at 18.4]. Of particular note, the number of crustaceans, which are known to be especially sensitive to sediment pollutants, are present in similar percentages at Site and reference stations, and the overall abundance of benthic macroinvertebrates in Site and reference stations are not statistically different. Ginn Report, at 33-34. [Comment No. 120, TCAO, at 18, DTR, at 18.4].

- (2) The Benthic Community Analysis Shows That The Types Of Organisms In Shipyard Sediments Is Not Significantly Different From Reference (Findings 14-18)

The benthic community analyses indicate that the number of taxa in Site sediments is not significantly different from reference. DTR, at Table 18-12. The only station to show statistically significant differences from reference with respect to number of taxa is NA22. [Comment No. 121, TCAO, at 18, DTR, at 18.4]. As discussed above, the number of taxa at NA20 was incorrectly identified as statistically different, despite falling within the reference range. Id. [Comment No. 122, TCAO, at 18, DTR, at 18.4]. Accordingly, with the minor exception of NA22, which is not part of the cleanup footprint, none of the stations at NASSCO differed significantly from reference in terms of number of taxa. Id. [Comment No. 123, TCAO, at 18, DTR, at 18.4].

(3) Sediment Profile Images Confirm That The Benthos Is Mature And Thriving (Findings 14-20)

Photographs of sediments at the Site provide additional direct confirmation that the benthos is mature and thriving. Exponent Report, at 8-5. In addition to benthic community analyses, sediment profile images were collected throughout the Site and at reference stations. Exponent Report, at Appendix A. These photographs confirm the presence of mature benthic communities at the Site, and refute Staff's conclusions that benthic macroinvertebrates at the Site are impaired. [Comment No. 124, TCAO, at 14-16, 18, 20, DTR, at 14, 16, 18.1, 18.4, 18.5, 20].

d. The TCAO Is Overly Conservative Because The CUT Did Not Adjust For Multiple Comparisons With The Reference Pool (Findings 15, 16, 18)

Staff's failure to adjust for multiple statistical comparisons is excessively conservative because it increases the probability of false-positive results. Ginn Report, at 51. As a result, some of the apparently significant results for toxicity and benthic community comparisons in the DTR may be erroneous, since failure to adjust for multiple comparisons across 15 comparisons for each toxicity and benthic community metric at NASSCO results in a 54% probability that at least one apparently significant result will occur as a result of chance alone. *Id.* [Comment No. 125, TCAO, at 18, DTR, at 18, Appendix 18]. Considering that only one station at NASSCO showed apparently significant differences from reference in the amphipod toxicity test, and only four stations (aside from NA22) showed apparently significant differences from reference in the bivalve larvae test under the DTR analysis, the overall triad results could be substantially affected if any of those hits were simply due to chance. *Id.* [Comment No. 126, TCAO, at 18, DTR, at 18]. This degree of "conservatism" is unwarranted, and extends beyond any reasonable or scientifically accepted means of achieving protectiveness. [Comment No. 127, TCAO, at 15, 16, 18, DTR, at 15, 16, 18].

e. Under The CUT's Triad Approach, Shipyard Sediments Generally Show "Low" Likelihood Of Impacts On Aquatic Life (Findings 14-20)

Despite the aforementioned structural biases that skew Staff's decision framework in favor of finding impacts on aquatic wildlife at the Site, Site sediments still generally show "low" likelihood of impacts on aquatic life under Staff's triad approach. [Comment No. 128, TCAO, at 18-20, DTR, at 18-20]. For example, Staff has concluded that the health of the benthic community is "unlikely" to be adversely impacted by Site sediments at a majority of NASSCO stations (8 of 15), and is either "possibly" or "likely" impacted at only 5 and 2 stations, respectively. DTR, at Table 18-1. [Comment No. 129, TCAO, at 18, DTR, at 18.1, 18.4, 18.5].

Moreover, as discussed in detail above, Staff's benthic community analysis—which is the most direct evidence of impacts to benthic macroinvertebrates—categorized 13 of 15 stations at NASSCO as having only a "low" likelihood of benthic community degradation, even under

Staff's extremely conservative framework. *Id.*; *see also* Ginn Report, at 44-45 (concluding that these stations actually present "no" likelihood of adverse effects, due to the lack of significant difference from reference conditions for all benthic community metrics and the mature benthic communities observed). [Comment No. 130, TCAO, at 18-20, DTR, at 18.1, 18.4, 18.5, 19, 20].

NASSCO appreciates Staff's efforts to ensure that the TCAO is adequately protective of aquatic life beneficial uses; however, Staff's framework is replete with excessively conservative assumptions and structural biases towards finding impairment to aquatic life. As a result, the conclusions in the TCAO are not reflective of the true condition of the Site, and lead to an overly conservative result, which should instead have been based upon a realistic site-specific risk assessment, as is required under Section 13304 and Resolution 92-49. [Comment No. 131, TCAO, at 14-20, DTR, at 14-20].

3. There Is No Significant Risk To Aquatic-Dependent Wildlife (Findings 19, 21-24, 32)

The TCAO concludes that aquatic-dependent wildlife uses (Wildlife Habitat (WILD); Preservation of Biological Habitats of Special Significance (BIOL); and Rare, Threatened, or Endangered Species (RARE)) in San Diego Bay are impaired "due to the elevated levels of pollutants present in the marine sediment at the Shipyard Sediment Site." TCAO, at ¶ 21.

As noted above, however, the results of the sediment investigation indicate that, although contaminants of concern and other pollutants are present in Site sediments in elevated concentrations relative to reference, they do not pose risks to aquatic wildlife because they are not bioavailable, and because many constituents do not bioaccumulate. [Comment No. 132, TCAO, at 19, 21-24, DTR, at 19, 21-24].

By the same token, the two-tier risk assessment conducted for aquatic-dependent wildlife was overly conservative, employed unrealistic assumptions, and did not comply with relevant state and federal guidance in the process of concluding that "ingestion of prey items . . . 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) . . . [including] BAP, PCBs, copper, lead, mercury, and zinc." TCAO, at ¶ 24. [Comment No. 133, TCAO, at 21-24, DTR, at 21-24]. For the reasons set forth below, the TCAO and DTR should have concluded that sediment at the Shipyard Sediment Site poses no significant risk to aquatic-dependent wildlife. [Comment No. 134, TCAO, at 21-24, DTR, at 21-24].

a. Regional Board Staff's Analysis Employs Assumptions That Are Overly Conservative And Unrealistic, And Bias The Results

In the process of conducting a Tier-II risk analysis, Staff made several assumptions that were overly conservative and biased the results of the analysis in a way that preordained the conclusion that aquatic-dependent wildlife uses were impaired by Shipyard sediment. [Comment No. 135, TCAO, at 24, DTR, at 24].

First, Staff assumed an area use factor (“AUF”) of 1.0 for all receptors. This means that Staff assumed that the six receptors of concern—including the California least tern, California brown pelican, Western grebe, Surf scoter, California sea lion, and East Pacific green turtle—all derived 100% of their diet from prey obtained from the Shipyard. DTR, at Section 24.2.2, Table 24-6. This assumption is wholly unrealistic for all six receptors, and significantly magnified the hazard quotient for every single receptor. Not only are the home ranges of all six species substantially greater than the 43 acre NASSCO Shipyard area, but also it defies belief that any receptor would choose to only forage an active industrial Shipyard where the habitat quality is low for all six indicator species. See Ginn Report, at 59-61. [Comment No. 136, TCAO, at 24, 32, DTR, at 24.2.2-24.2.4, 24.2.6, 32.2, Appendix 24].

As demonstrated in Table 6 of the Ginn Report, by assuming that the 43 acre NASSCO leasehold was the entire forage area of the six receptor species, as opposed to choosing the available habitat within San Diego Bay, the Staff ensured that the maximum hazard quotient for every receptor was well over 1.0. In contrast, using a realistic assumption of forage area based on San Diego Bay Habitat demonstrates that no hazard quotient would be over 0.20, well below 1.0. Accordingly, the TCAO/DTR conclusion that aquatic-dependent wildlife are impaired from sediment contamination at NASSCO is driven by this single policy decision. [Comment No. 137, TCAO, at 21-24, 32.2, DTR, at 21-24, 32.2].

Table 6. Dependence of hazard quotient on habitat usage

| Receptor | San Diego Bay Habitat (acres) | Maximum NASSCO AUF ^a | Maximum Hazard Quotient for Receptor | |
|---------------------------|-------------------------------|---------------------------------|--------------------------------------|---------------------------------|
| | | | DTR AUF = 1.0 ^b | Maximum NASSCO AUF ^c |
| East Pacific green turtle | 3,734 | 0.011 | 6.8 | 0.07 |
| California least tern | 13,374 | 0.003 | 25 | 0.08 |
| California brown pelican | 11,219 | 0.004 | 20 | 0.07 |
| Western grebe | 11,219 | 0.004 | 25 | 0.09 |
| Surf scoter | 11,375 | 0.004 | 50 | 0.18 |
| California sea lion | 10,396 | 0.004 | 1.0 | 0.0039 |

Note: AUF - area use factor
 DTR - Detailed Technical Report (RWQCB 2010)

^a Assumes that entire forage range is limited to habitat in San Diego Bay. Area of aquatic habitat within NASSCO leasehold is 43 acres.

^b Value from DTR.

^c All parameters from DTR, except AUF.

Furthermore, Staff’s failure to consider the actual AUF for the six indicator species did not comport with U.S.E.P.A. or California Department of Toxic Substances Control guidance documents on how to perform an ecological risk assessment. Ginn Report, at 61-63. Nor did Staff rely on any studies, guidelines, or agency documents when it made this policy decision, or conduct any study of its own to determine the actual use the six receptors at the NASSCO Shipyard. Alo Depo, at 333:11-334:2; 345:8-346:13. [Comment No. 138, TCAO, at 24, DTR, at 24.2]. Accordingly, not only did Staff’s resolve to utilize an AUF of 1.0 lead to the

conclusion of impairment, but also it was an arbitrary policy decision, which neither comports with realistic assumption nor standard ecological risk assessment guidance. Therefore, it is an arbitrary and capricious determination in the TCAO and DTR that should be reversed, and aquatic-dependent wildlife conclusions reworked. [Comment No. 139, TCAO, at 24, DTR, at 24.2, Appendix 24].

Second, it is standard practice to set a limit for acceptable dietary exposure for any chemical by picking a point between an established no-observed-adverse-effect-level (“NOAEL”) (a level of exposure that is believed to have no adverse effects on receptors of concern) and the lowest-observed-adverse-effect-level (“LOAEL”) (the lowest level of exposure shown to have adverse effects on receptors of concern). In fact, “[e]xposure levels between the no-effect and expected effect thresholds fall into an undefined area with regard to predicted risk, in which careful interpretation and professional judgment are required to assess risk.” Ginn Report, at 66; DTR, at 24-12 (“the actual threshold of adverse effects is predicted to lie somewhere between these two thresholds”). [Comment No. 140, TCAO, at 24, DTR, at 24.2.3, 24.2.4].

Instead of carefully exercising such judgment, however, the Staff simplistically looked for any chemical that exceeded a hazard quotient of 1.0 for any effect threshold—whether it be a no-effect or expected-effect threshold—that was also higher than reference exposure. DTR, at Figure 24-1; Alo Depo, at 360:11-361:7. [Comment No. 141, TCAO, at 24, DTR, at 24.2.5]. As demonstrated in Table 24-3, the only hazard quotients that exceeded 1.0 for any receptor of concern and for any pollutant were no-effect thresholds – in fact, in no instance were any expected-effect thresholds exceeded. DTR, at 24-6, Table 24-3. Despite acknowledging that the “actual threshold of adverse effects is predicted to lie somewhere between” a no-effect and expected-effect threshold, the Staff made no attempt to calculate where that point may be for any chemical with respect to any receptor. DTR, at 24-12; Alo Depo., at 357:2-358:2. [Comment No. 142, TCAO, at 24, DTR, at 24.1, 24.2.3, 24.2.4, Appendix 24].

As with Staff’s selection of an unrealistic and overly conservative area-use factor, described above, the decision to use an exceedence of a hazard quotient of 1.0 for no-effect thresholds drives the determination that aquatic-dependent wildlife beneficial uses are impaired. [Comment No. 143, TCAO, at 24, DTR, at 24.1, 24.2.5]. Furthermore, because the AUF contributes to the calculation of ingestion rates of sediment, the unrealistic assumption described above compounds the unrealistic nature of Staff’s analysis and contributes to the conclusion that aquatic-dependent wildlife uses are impaired. [Comment No. 144, TCAO, at 24, DTR, at 24, Appendix 24].

Neither the DTR nor the TCAO provide any rationale for this approach, despite the fact that U.S.E.P.A. staff have recommended using the geometric mean between no-effect and expected-effect thresholds as an appropriate way to calculate hazard quotients. [Comment No. 145, TCAO, at 24, DTR, at 22, 24.2.3, 24.2.4]. Furthermore, had Staff used the geometric mean between no-effect and expected-effect thresholds to calculate hazard quotients, the result would have been no hazard quotient greater than 1.0 for any receptor for any chemical, even with the unrealistic AUF assumption of 1.0, except for lead. Ginn Report, at 67-69, Table 7.

[**Comment No. 146, TCAO, at 24, DTR, at 24, Appendix 24**]. Furthermore, the Ginn Report notes that the only reason why a hazard quotient greater than 1.0 using the geometric mean would be reached for lead is because Staff selected an unrealistic toxic reference value for lead. Ginn Report, at 71-72. [**Comment No. 147, TCAO, at 24, DTR, at 24.2.3, 24.2.4**]. Regardless, the TCAO and DTR do not select lead as a primary contaminant of concern for the Shipyard Site, and no alternative cleanup level for lead has been proposed. [**Comment No. 148, TCAO, at 24, 29, 32, DTR, at 24, 29.3, 32.3**].

b. Direct Evidence Supports The Conclusion That Wildlife Are Not Impaired (Findings 15, 18, 21-24)

If direct evidence of observed conditions aquatic life uses are not impaired, it also stands to reason that aquatic-dependent wildlife uses also are not impaired. [**Comment No. 149, TCAO, at 15, 18, 23, 24, DTR, at 15, 18.4, 23, 24, Appendix 15**]. Direct evidence presented in the DTR demonstrates that when compared to reference conditions, the number of fish, crustaceans, polychaetes, mollusks, and other organisms found at the NASSCO Shipyard is not significantly different. See Ginn Report, at 34-35 (Figures 3-4). [**Comment No. 150, TCAO, at 15, 18, 23, 24, DTR, at 15, 18.4, 23, 24**]. Furthermore, the Exponent Report demonstrates that PCB concentrations in fish and lobsters are higher in reference areas and in the "outside NASSCO" area of the leasehold (furthest from NASSCO's activities) than within the NASSCO Shipyard. Exponent Report, at Tables 10-2, 10-3, 10-4. [**Comment No. 151, TCAO, at 24, 28, DTR, at 24, 28**]. As described in Sections IV.A.2, above, there are very good reasons to conclude that aquatic life beneficial uses are not impaired at the NASSCO Shipyard, and the direct evidence to that effect supports that conclusion. [**Comment No. 152, TCAO, at 14-20, 28 DTR, at 14-20, 28**].

Moreover, it is worth noting that the neither the DTR nor the TCAO cite any studies demonstrating adverse impacts on the California least tern, California brown pelican, Western grebe, Surf scoter, California sea lion, or East Pacific green turtle in San Diego Bay. [**Comment No. 153, TCAO, at 21-24, DTR, at 21-24**].

c. Any Potential Negative Effects From Shipyard Contaminants Are Not Observed In Fish Beyond The Leasehold (Findings 15, 21-24, 28)

The DTR employed a weight-of-evidence approach to evaluate the exposure to and potential for adverse impacts from the Shipyard Site. As part of this approach, the DTR analyzed the tissue concentrations of contaminants of concern in fish caught inside the NASSCO leasehold, and compared them to concentrations in fish caught outside the leasehold and in reference conditions in San Diego Bay. DTR, at Table 28-9. The results demonstrated that there was no significant difference in the level of tissue concentrations for contaminants of concern between fish caught inside the NASSCO Shipyard, and at reference areas around San Diego Bay. Finley Report, at 28, 49-50 (Tables 13-14). [**Comment No. 154, TCAO, at 21-24, 28, DTR, at 21-24, 28.3**]. Rather, mercury in fish captured within the NASSCO leasehold was actually lower than reference conditions, and are not impacted for mercury at unsafe levels. DTR, at Table 28-9; Alo Depo, at 115:13 – 115:21, 116:8 – 116:20, 117:7 – 117:21. [**Comment No. 155, TCAO,**

at 21-24, 28, DTR, at 21-24, 28.3]. In fact, the mercury levels of fillets from fish caught within the leasehold satisfy EPA's recommended guidance threshold for what constitutes "lower levels of mercury in fish." *Alo Depo*, at 116:8 – 116:20. [Comment No. 156, TCAO, at 21-24, 28, DTR, at 21-24, 28.3]. Additionally, the mean chemical concentrations measured in the edible fish tissues collected inside the NASSCO leasehold were not statistically different from those measured outside (but adjacent to) the leasehold. *Finley Report*, at 28-29, 50. Similarly, the mean chemical concentrations in fish caught outside (but adjacent to) the leasehold were not statistically different from those caught at reference stations, which were specifically selected to represent background conditions. *Id.* Thus, the fish tissue concentrations observed in fish did not vary significantly by location, suggesting that (1) spotted sand bass at the Site are meet regional background conditions and (2) shipyard chemicals do not adversely affect fish inside, or beyond, the leasehold. [Comment No. 157, TCAO, at 21-24, 28, DTR, at 21-24, 28.3].

In addition to assessing chemical concentrations in fish tissue, the DTR also analyzed fish histopathology results for fish caught (1) inside the leasehold, (2) just outside the leasehold, and (3) at reference stations. These data corroborated the results of the fish tissue analysis, and found that fish inside the leasehold were "healthy, with no elevation in significant liver lesions or other abnormalities related to chemical exposures at the site." *Ginn Report*, at 15. As discussed previously in Section IV.a.2.b.(4), a conservative analysis of the results showed that only four of the 70 lesions were evaluated were found to be significantly elevated in shipyard fish (compared to six of 70 in reference fish). [Comment No. 158, TCAO, at 15, 21-24, DTR, at 15, 21-25, Appendix 15]. The results also indicated that the health of spotted sand bass was not adversely affected by proximity to the shipyards, and that fish caught just outside, but adjacent to, the NASSCO leasehold were generally no different from reference fish, with respect to both microscopic and macroscopic fish lesions. Section IV.A.2.b.(4); *see also* DTR, App. 15, at 15-8 – 15-9, Table A15-5. [Comment No. 159, TCAO, at 15, 21-24, DTR, at 15, 21-25, Appendix 15]. In fact, only one of the 70 types of lesions evaluated was found to be significantly elevated in fish caught just outside the NASSCO leasehold, compared to reference fish. DTR, at Tables A15-4 and A15-5. [Comment No. 160, TCAO, at 15, 21-24, DTR, at 15, 21-24, Appendix 15]. Accordingly, these results suggest that, even if there are potential negative effects on fish within the leasehold, shipyard contaminants are not affecting fish beyond the leasehold and potentially contaminated fish are not migrating beyond the leasehold. [Comment No. 161, TCAO, at 15, 21-24, DTR, at 15, 21-24, Appendix 15].

4. There is No Significant Risk To Human Health (Findings 25-28)

The TCAO concludes that human health beneficial uses for San Diego Bay (Contact Water Recreation (REC-1); Non-contact Water Recreation (REC-2); Shellfish Harvesting (SHELL); and Commercial and Sport Fishing (COMM)) are impaired "due to the elevated levels of pollutants present in the marine sediment at the Shipyard Sediment Site." TCAO, at ¶ 25.

Although the results of the sediment investigation indicate that contaminants of concern and other pollutants are present in Site sediments in elevated concentrations relative to reference, they do not pose risks to human health because the NASSCO Shipyard is a secured facility that prohibits the public from engaging any of these beneficial uses, fish and shellfish beyond the

NASSCO Shipyard do not exhibit elevated levels of Shipyard contaminants, and even if the public were able to catch fish and shellfish in the Shipyard, using well-established and reasonable assumptions to assess risk demonstrates that fish and shellfish from the Shipyard do not pose a threat to human health. [Comment No. 162, TCAO, at 25-28, DTR, at 25-28, Appendix 28].

As observed above for aquatic-dependent wildlife, Staff's two-tier risk assessment conducted for human health was overly conservative, employed unrealistic assumptions, and did not comply with relevant state and federal guidance. [Comment No. 163, TCAO, at 27-28, DTR, at 27.2, 28.2]. For the reasons set forth below, there TCAO and DTR should have concluded that sediment at the Shipyard Sediment Site poses no significant risk to human health.

- a. Human Health Cannot Be Impacted From Contamination In Fish Because Fishing Does Not Occur In The Shipyard (Findings 15-28)

The NASSCO Shipyard is a high-security area due to its work for the U.S. Navy, and is characterized by a lack of public access. In San Diego Bay, a security boom prevents unauthorized vessels from approaching any closer than 300 feet from the Shipyard. Expert Report of Brent L. Finley, Prepared in Regards to the California Regional Water Quality Control Board's Draft Technical Report for Tentative Cleanup and Abatement Order No. R9-2011-0001 (San Diego Bay) (March 11, 2011) ("Finley Report"), at 4. From the shore, unauthorized personnel are prohibited from accessing the Shipyard by security guards, buildings, eight foot fences with razor wire, video surveillance, and alarm systems, and even approved guests are escorted around the site at all times. *Id.* These security measures absolutely prevent any unauthorized access to the NASSCO Shipyard. [Comment No. 164, TCAO, at 27-28, DTR, at 27.2.1, 28.2.2].

Furthermore, there is no documented instance of any fishing or shellfish collection – beyond that required by the Regional Board as part of the sediment investigation – taking place at the NASSCO Shipyard, and fishing is strictly prohibited at the NASSCO Shipyard. Alo Depo, 88:4-7. [Comment No. 165, TCAO, at 27-28, DTR, at 27.2.1, 28.2.2]. Accordingly, there is no justification for the DTR's assertion that "it is possible that NASSO or BAE Systems employees or U.S. Navy personnel may fish off of the piers, bulkheads, riprap, ships, etc." DTR, at 28-10. [Comment No. 166, TCAO, at 27-28, DTR, at 27.2.1, 28.2.2]. By the same token, although the Environmental Health Coalition has maintained that fishing has taken place at the Shipyards, that assertion is based completely on an unsubstantiated conversation that Ms. Laura Hunter claims to have had with some person at some point over the past twenty years. Deposition of Laura Hunter ("Hunter Depo"), at 20:24-22:2; 151:15-153:14. [Comment No. 167, TCAO, at 27-28, DTR, at 27.2.1, 28.2.2].

Furthermore, there is no indication that the security measures at the NASSCO Shipyard will be relaxed any time soon. NASSCO lease with the Port of San Diego continues through the year 2040, and the Port Master Plan indicates that the area is intended to be used as an industrial shipyard for the foreseeable future. Alo Depo, at 106-21-107:8. [Comment No. 168, TCAO, at 27-28, DTR, at 27.2.1, 28.2.2]. Furthermore, if at any point in the future the land use plan for

the NASSCO Shipyard changed, the Regional Board could at that time determine whether the risk to human health posed by the new land use would change in any way. *Id.* at 107:23-108:6. [Comment No. 169, TCAO, at 27-28, DTR, at 27.2.1, 28.2.2].

Accordingly, it is completely unrealistic to expect that the public will engage in any of the beneficial uses found to be impaired in Finding 25 at the NASSCO Shipyard. [Comment No. 170, TCAO, at 25, 27-28, DTR, at 25, 27-28].

- b. Fish Beyond The Shipyard Do Not Exhibit Significantly Elevated Levels Of Shipyard Contaminants And Do Not Present Risks To Human Health Relative To Reference Conditions (Finding 28)

It would be a concern if fish and shellfish picked up contaminants at the NASSCO Shipyard, and then migrated into areas where they could be caught by San Diego Bay anglers. Accordingly, fish and lobster were caught inside the NASSCO Shipyard and at reference areas around San Diego Bay, and tissue concentrations of contaminants of concern were compared. The results demonstrated that there was no significant difference in the level of tissue concentrations for contaminants of concern between fish caught inside the NASSCO Shipyard, and at reference areas around San Diego Bay. Finley Report, at 49-50 (Tables 13-14). [Comment No. 171, TCAO, at 28, DTR, at 28, Appendix 28]. The fact that fish tissue data collected from the NASSCO Shipyard is no different from tissue data collected from the reference areas “strongly suggests the discharges from the leasehold do not appear to have influenced fish tissue concentrations.” *Id.* at 28. [Comment No. 172, TCAO, at 28, DTR, at 28, Appendix 28].

- c. The Tier I Risk Assessment Employed In the DTR Inappropriately used *Macoma Nasuta* Tissue (Findings 26, 27)

The Tier I Risk Assessment conducted by Staff used *Macoma nasuta* tissue from laboratory exposures to conduct the screening level assessment for human health risk. This was inappropriate because an appropriate “surrogate” species should show ecological and physiological similarities to a species that would naturally occur at the Shipyard and be harvested by humans. Ginn Report, at 77-78. [Comment No. 173, TCAO, at 26-27, DTR, at 26, 27.2]. In fact, *Macoma nasuta* is relatively rare at the NASSCO Shipyard, and is not subject to recreational harvesting by humans in California or elsewhere. *Id.* at 78. [Comment No. 174, TCAO, at 26-27, DTR, at 26, 27.2].

- d. Staff’s Reliance on High-End, Implausible Exposure Scenarios For The Tier II Risk Assessment Does Not Provide A Scientifically Valid Estimate of Risk (Finding 28)

Staff were aware that U.S.E.P.A guidance indicates that Tier II Risk Assessment exposure assumptions “should be based on an estimate of the reasonable maximum exposure (RME) expected to occur under both current and future conditions at the site. The RME is defined as the highest exposure that is reasonably expected to occur at a site.” DTR, at 28-12 (emphasis added). Yet Staff’s Tier II Risk Assessment assumes “that a person will somehow

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visit the NASSCO leasehold (despite the lack of access from both land and water) and consume fish/shellfish containing the maximum measured concentrations every day for 30 years. This clearly does not fit the definition of a reasonable maximal exposure and is in fact a worst-case screening analysis.” Finley Report, at 9. [Comment No. 175, TCAO, at 28, DTR, at 28.2.2, 28.2.6].

Under the guise of being “conservative,” Staff ignored relevant federal guidance and presented a Tier II Risk Assessment that is based on “a series of high-end, implausible exposure assumptions that do not involve common sense or reasonableness” Ginn Report, at 80. [Comment No. 176, TCAO, at 28, DTR, at 28]. As explained below, assumptions employed in Staff’s Tier II Risk Assessment flawed it to such an extent that it “does not provide scientifically valid estimates of risk associated with the NASSCO site, and is of no value in making risk management decisions for the site.” *Id.* at 80-81. [Comment No. 177, TCAO, at 28, DTR, at 28].

The Ginn Report succinctly summarizes four compounding assumptions employed by Staff:

1. All of the fish or shellfish tissue consumed each day comes from the shipyard site (i.e., FI [Fractional Intake] = 1.0)
2. Four percent of the arsenic in seafood is in the inorganic form
3. Risks for subsistence anglers are unrealistic
 - a. The only species consumed are spotted sand bass and spiny lobster.
 - b. The theoretical subsistence angler consumes only the whole-bodies of the fish and invertebrate species
4. Anglers have complete access to the highly-restricted shipyard site.

Ginn Report, at 81. The Finley Report concurs with Ginn’s recitation of errors, and identifies several additional compounding errors:

- a) There is no basis for assuming that a subsistence angler would only consume entire fish or shellfish,
- b) The use of maximum chemical concentrations to represent tissue chemical concentrations yields a biased and potentially inaccurate estimate of health risk,
- c) Considering the lack of access and industrial nature of the shipyard leasehold, the use of unmodified fish consumption rates from the Santa Monica Bay Study, which was conducted in a highly accessible recreational area, is inappropriate and inconsistent with EPA guidance,

- d) The assumption that 4% of the measured arsenic in fish/lobster tissue is inorganic is unjustified, and
- e) There is no basis for the assumption of a 30-year exposure duration at this location.

Finley Report, at 22.

First, Staff assume that the Fractional Intake (“FI”) of recreational and subsistence anglers that catch and eat fish and/or lobster from San Diego Bay would come entirely from fish and/or lobsters caught at the Shipyard Site. DTR, at 28-13 (Table 28-7), 28-17. This assumption is unrealistic on many levels. As noted above, Shipyard Site security measures absolutely bar public access. [Comment No. 178, TCAO, at 28, DTR, at 28.2.2, 28.2.5]. Moreover, the NASSCO Shipyard area is only 43 acres in size – there is no indication that this small area could support the angling demand of all of San Diego Bay’s recreational and subsistence anglers every day for thirty years, even if it was publicly accessible for fishing and lobstering. [Comment No. 179, TCAO, at 28, DTR, at 28.2.2, 28.2.5].

Second, Staff assume that four percent of arsenic is in the inorganic form. As described in the Ginn Report, this is a highly conservative assumption. Ginn Report, at 85-87. The Finley Report goes even further, pointing out that Staff chose this estimate without any justification, and noting that Staff did not collect or analyze fish tissue from the NASSCO Shipyard for inorganic arsenic. Finley Report, at 21. [Comment No. 180, TCAO, at 28, DTR, at 28]. The Ginn Report concludes that the “the DTR’s conclusion that inorganic arsenic in seafood theoretically harvested at the NASSCO site ‘poses a theoretical increased’ cancer risk when compared to reference areas is not valid, and does not form the basis for concluding that beneficial uses are impaired or that any active remediation of sediments would be required to reduce arsenic exposure.” Ginn Report, at 87. [Comment No. 181, TCAO, at 28, DTR, at 28, Appendix 28].

Third, Staff assume that subsistence anglers always consume the entire fish or shellfish, including the skin, guts, filter organs, etc., and not just the filet or edible portion. DTR, at 28-17. However, assuming that all subsistence anglers always consume the entire fish is excessively conservative, particularly when Staff has not shown that any subsistence anglers actually fish at or near the shipyard, or investigated how often such anglers, if any exist, would consume the entire fish. Finley Report, at 10-12. [Comment No. 182, TCAO, at 28, DTR, at 28.2]. With respect to lobsters, there is no evidence in the DTR that subsistence anglers could harvest enough lobsters from the shipyard to maintain a 30 year daily consumption rate of 161 g/day, or that all such lobsters would be eaten whole, including the shell, internal organs and meat. *Id.* [Comment No. 183, TCAO, at 28, DTR, at 28.2]. Regarding fish, while it is true that certain ethnic groups may use the whole body of harvested fish in soups or stews, members of such groups typically “gut” the fish to remove the liver and other soft organs prior to consumption.⁶

⁶ The distinction between consuming whole fish “gutted” or “not gutted” is important because the liver and other fatty internal organs in fishes typically contain much higher concentrations of PCBs than muscle tissue. *Id.* Thus, failing to account for the fact that

Ginn Report, at 89. [Comment No. 184, TCAO, at 28, DTR, at 28.2, 28.3]. In fact, the Santa Monica Bay seafood consumption study—which formed the basis for the consumption rates used in the DTR—found that only one percent of surveyed anglers consumed whole fish that had not been gutted. *Id.* [Comment No. 185, TCAO, at 28, DTR, at 28.2, 28.3]. Thus, rather than blindly assuming that all anglers always consume un-gutted whole body fish, it would have been more reasonable to assume that a certain proportion of harvested seafood is consumed in this manner based on site-specific data. [Comment No. 186, TCAO, at 28, DTR, at 28.2, 28.3].

Fourth, Staff assume that subsistence anglers only consume spotted sand bass or lobster, even though data from other species commonly available to anglers were available. For example, topsmelt (*atherinops affinis*) and jacksmelt (*atherinops californiensis*), both of which had much lower maximum concentrations of PCBs than spotted sand bass, typically comprise a significant proportion of the sport catch from shore and pier areas. Ginn Report, at 88. [Comment No. 187, TCAO, at 28, DTR, at 28, Appendix 28]. Accordingly, to avoid overestimating exposure, the dietary portion assumed to be comprised of un-gutted whole body fish should have been apportioned across species according to expected catch rates since (1) San Diego Bay anglers very likely will catch many species other than lobster or spotted sand bass, and (2) chemical concentrations vary widely amongst different fish species. *Id.*, at 88. [Comment No. 188, TCAO, at 28, DTR, at 28, Appendix 28]. Moreover, it is clear from San Diego Bay-specific fishing reference materials that fish are not equally distributed throughout the Bay, but rather, fish are “attracted to certain habitats based on prey availability, physical structures, and hydrodynamic conditions.” *Id.*, at 92. [Comment No. 189, TCAO, at 28, DTR, at 28, Appendix 28].

Fifth, Staff assumes that maximum measured chemical concentrations are representative of typical exposure for recreational and subsistence fishers, despite the fact that multiple samples were collected at each sampling station. DTR, at 28-17. This simplistic approach “gives no insight as to the potential variability in the risk estimates as a function of the range and frequency of measured contaminant levels. In essence, each of the risk estimates presented by the RWQCB relies on a single measured (in this case, maximum) value, which can yield a highly biased risk estimate, particularly if the underlying data set is skewed.” Finley Report, at 14. [Comment No. 190, TCAO, at 28, DTR, at 28, Appendix 28]. In support of its approach, the DTR cites a 1989 EPA guidance document, however, the Finley Report cites to recent 2005 EPA risk assessment guidance, which states that, “significant risk management decisions will often benefit from a more comprehensive assessment...such assessments should provide central estimates of potential risks in conjunction with lower and upper bounds (e.g., confidence limits) and a clear statement of the uncertainty associated with these estimates” (USEPA 2005); p. 1-9 – 1-10). [emphasis added].” *Id.* [Comment No. 191, TCAO, at 28, DTR, at 28, Appendix 28]. At the very least, the DTR should have included risk estimates based on measures of central tendency, such as means or averages, and/or distributions of the underlying measured concentrations, as

many people will either fillet or gut fish prior to consuming them will result in an overestimation of risk.

opposed to single-point measurements. [Comment No. 192, TCAO, at 28, DTR, at 28, Appendix 28].

Sixth, Staff's risk assessment presumes that anglers have free and complete access to the shipyard, even though access to the shipyard is currently highly restricted, and is expected to remain so for the foreseeable future.⁷ See Section IV.A.4.a, above. [Comment No. 193, TCAO, at 28, DTR, at 28.2.2]. In light of the strict security regulations at NASSCO, described in Section IV.A.4.a, above, it is patently unreasonable to assume that anglers could access the shipyard, let alone fish every day for 30 years and subsist solely fish and shellfish caught at the leasehold. *Id.* [Comment No. 194, TCAO, at 28, DTR, at 28.2.2]. In addition, according to a recent fishing guide, the closest fishing area to the NASSCO Shipyard is approximately 0.7 miles away, with no marked fishing areas or important fishing habitats anywhere near the NASSCO Shipyard. Ginn Report, at 92-94, Figure 7. [Comment No. 195, TCAO, at 28, DTR, at 28.2.2]. Based on these practical fishing realities, it is "inconceivable that an angler would fish 100 percent of the time for 30 years and obtain all seafood at the NASSCO shipyard site." *Id.* at 94. [Comment No. 196, TCAO, at 28, DTR, at 28.2.2, 28.2.6].

Likewise, it is inappropriate, and contrary to EPA guidance, to assume that unmodified fish consumption rates from a highly accessible recreational area, such as Santa Monica Bay, are representative of fish consumption rates from a secure, industrial facility, such as NASSCO. [Comment No. 197, TCAO, at 28, DTR, at 28.2.2, 28.2.6]. "The Santa Monica Bay study assessed anglers in an area where fishing is freely allowed via party or private boats, numerous piers and/or jetties, and the beach. Given the severe access restrictions of the NASSCO shipyard from land (the shore or from piers/jetties) and water (anglers on boats), it is obvious that fish consumption rates in the NASSCO leasehold are not comparable to those in Santa Monica Bay." Finley Report, at 17. [Comment No. 198, TCAO, at 28, DTR, at 28.2.2, 28.2.6].

- e. A Tier II Risk Assessment Using Reasonable Assumptions Demonstrates That Even If Fish Were Caught Within The Shipyard, They Do Not Present A Significant Risk To Human Health (Finding 28)

Even if Staff assume that security restrictions do not make it impossible for the public to fish and collect shellfish in the NASSCO Shipyard, using realistic exposure estimates to prepare a Tier II Risk Assessment reveals that fish and shellfish caught at the NASSCO Shipyard do not pose a significant risk to human health. [Comment No. 199, TCAO, at 28, DTR, at 28, Appendix 28]. The Finley Report performs just this analysis, and concludes that a properly conducted Tier II Risk Assessment, with reasonable but conservative assumptions, demonstrates that fish and shellfish caught at the NASSCO Shipyard do not pose a significant risk to human health. Finley Report, at 23-28. Accordingly, the DTR and TCAO should be revised to

⁷ Staff's further suggestion that sediment pollutants may migrate to areas where angler access remains possible is unsubstantiated, and at most, would support risk assessment at those fishing areas, not at the shipyards.

incorporate this analysis, and the conclusion that human health beneficial uses are impaired should be removed. [Comment No. 200, TCAO, at 28, DTR, at 28, Appendix 28].

B. The Tentative Cleanup and Abatement Order Is Technically Infeasible to Achieve Because Uncontrolled Sources Of Pollution Unrelated To NASSCO Are Impacting Sediment At The Shipyard (Findings 12, 30, 32, 33)

Contrary to Staff's conclusion in Finding 30 of the TCAO, it is neither technically feasible, nor prudent, to carry out the proposed cleanup while uncontrolled sources of pollution continue to impact the Site. See TCAO, at ¶ 30, DTR, at 30-7. [Comment No. 201, TCAO, at 30, DTR, at 30, 32.7.1]. Chollas Creek has been recognized as contributing to the accumulation of pollutants observed in marine sediments at the Site, and is not expected to be fully controlled for decades. Deposition of Craig Carlisle ("Carlisle Depo"), at 200:5-200:13. [Comment No. 202, TCAO, at 12, 33, DTR, at 12.1, 33.1.1]. If source control of Chollas Creek is not achieved before the cleanup is conducted, pollutants from Chollas Creek "could influence contaminant levels in sediment" and possibly cause the Site to become recontaminated. Barker Depo, 172:4 – 174:11. [Comment No. 203, TCAO, at 33, DTR, at 33.1-33.4].

Regulators have long recognized that "control[ing] other sources of contamination is crucial to successful remediation, regardless of the remedy selected, and should be implemented by regulatory agencies as a component of remedial action." Committee on Contaminated Marine Sediments, National Research Council, Contaminated Marine Sediments: Assessment and Remediation (1989), at 15, 17, 29. Ideally, source control should be achieved prior to active remediation because "the long-term effectiveness of any remedial option can be reduced if sediment transport acts to recontaminate the site." Interim Guide for Assessing Sediment Transport at Navy Facilities, SAR373164; see also Transcript, Meeting, State of California Lands Commission (October 20, 2007) (statement of Sylvia Rios), at 248:18 – 250:1 ("It is reasonable to conclude that storm water/urban runoff is now the most significant contributor of contamination into San Diego Bay. It is also reasonable to conclude that ongoing contamination from urban runoff must be resolved in order to effectively address the sediment contamination in this area. To do . . . otherwise, . . . is . . . to simply spend large amounts of money cleaning sediment of the bay only to find that stormwater runoff from upland sources has over time recontaminated the same area that has just been cleaned."). [Comment No. 204, TCAO, at 12, DTR, at 12.1].

Chollas Creek is immediately adjacent to the NASSCO shipyard and discharges contaminated storm water at extraordinarily high volumes during rain events, along with dry weather run-off. See Attachment A, NASSCO Photos of Chollas Creek Stormwater Plume (2005); see also Total Maximum Daily Loads for Dissolved Copper, Lead, and Zinc in Chollas Creek, Tributary to San Diego Bay, Draft Technical Report (March 9, 2007) ("[E]ach season's major storms will effectively remove any metals accumulated in the [Chollas] Creek sediment and transport them downstream to San Diego Bay."). [Comment No. 205, TCAO, at 4, 33, DTR, at 4, 33.1-33.4]. The plume of contaminated water from Chollas Creek during rain events has been shown to extend more than a kilometer from the discharge point including the area within NASSCO's leasehold, and contributes an array of pollutants to the Site. DTR, at 4-1, 4-

14 – 4-15; see also Deposition of Cynthia Gorham (“Gorham Depo”), at 74:20 – 76:18 (confirming that some fine sediment from Chollas Creek is deposited in the vicinity of NA22). The storm water contains PCBs, pyrogenic hydrocarbons, oil and grease, synthetic organics, and heavy metals, among other pollutants, with estimated average annual pollutant loads of 429 kg copper, 301 kg lead, 2906 kg zinc, 2.7 kg PAH, 20g chlordane, 0.4g PCBs, 850 g arsenic, and 80g mercury. DTR, at 4-5 – 4-6; Watershed Monitoring and Modeling in Switzer, Chollas, and Paleta Creek Watersheds (Schiff, January 30, 2007 Stakeholder Work Group Meeting). Id. Chollas Creek has also been identified as a significant, if not exclusive, source of pesticides in the sediment at the leaseholds. Exponent Report, at § 19-1, Figures 4-18, 4-20. Storm water containing similar pollutants also drains into the leaseholds both directly and indirectly, from a number of sources, including adjacent city streets, and large city storm drains. DTR, at 4-5; see also Barker Depo, at 160:16 – 161:23, 162:22 – 164:8. As discussed below, these discharges are associated with observed effects at the Site, and active remediation is therefore inappropriate unless and until these discharges are completely controlled:

1. To The Extent Minor Impacts Are Observed, Shipyard Contaminants Are Not The Source (Findings 4, 14-18, 30, 32, 33)

Sediment conditions at the Site are generally favorable; however, to the extent minor impacts are observed at NASSCO, triad results suggest that contaminants from Chollas Creek, not the shipyards, are linked to the observed environmental impacts. Ginn Report, at 44-45. [Comment No. 206, TCAO, at 4, DTR, at 4.3.1, 4.5, 4.7]. For example, stations NA20 and NA22—which are not associated with shipyard-related chemicals, but are within the area of apparent sediment deposition from the Chollas Creek storm water plume—are the only stations in the NASSCO leasehold with apparent benthic effects under the DTR analysis. Id. [Comment No. 207, TCAO, at 33, DTR, at 33.1-33.4]. Further, as discussed in detail below, toxicity results indicate that the observed sediment toxicity is correlated with pesticides, rather than shipyard chemicals.

- a. There Is No Correlation Between Concentrations of Shipyard Contaminants And Sediment Toxicity (Findings 14 – 18)

Chemicals potentially associated with the shipyards are generally not correlated with sediment toxicity and benthic macroinvertebrate community effects, even where such chemicals are present in concentrations above reference—suggesting that observed toxicity and benthic effects are not due to shipyard chemicals. Exponent Report, at 13-2. [Comment No. 208, TCAO, at 14-18, DTR, at 14-18]. Moreover, there are no demonstrable causal relationships between shipyard-associated chemicals and observed biological effects. Id.; see also DTR, at Table 20-1. [Comment No. 209, TCAO, at 14-18, DTR, at 14-18].

- b. Correlations Are Observed Between Pesticide Concentrations And Sediment Toxicity (Findings 14 – 18)

By contrast, there is clear evidence that pesticides—which are not shipyard-associated chemicals—may be responsible for adverse biological effects observed at the shipyards, particularly adverse effects to bivalves. Exponent Report, at 9-6 – 9-7. [Comment No. 210,

TCAO, at 18, DTR, at 4.7.1.3, 18.1-18.5]. Pesticide concentrations, specifically of chlordanes and DDTs, are more strongly correlated with impacts to aquatic life (including adverse effects on bivalve development and bivalve abundance) than are any of the shipyard-associated chemicals. Id. [Comment No. 211, TCAO, at 4, 18, DTR, at 4.7.3, 4.7.1.3, 18.1-18.5]. These results are consistent with the results of the SFEI Study, which also found correlations between pesticide concentrations and sediment toxicity in San Diego Bay, and suggest that observed toxicity responses, particularly at NA20 and NA22, are attributable to Chollas Creek. Exponent Report, at 9-6 – 9-7, 13-2; Thompson et al., Estimated Sediment Contaminant Concentrations Associated with Biological Impacts at San Diego Bay Clean-up Sites, at 6 (Jul. 2009) (“[C]hlordanes and DDTs had the highest correlations with all biological and SQO indicators.”); Cleanup Team’s Responses and Objections to Designated Party NASSCO’s Second Set of Requests For Admissions (“Response to NASSCO’s RFAs”), at RFA No. 28 (admitting that correlations between pesticide concentrations in sediment and sediment toxicity have been observed in San Diego Bay). [Comment No. 212, TCAO, 18, DTR, at 18.1-18.5].

c. Uncontrolled Sources of Contamination Unrelated to NASSCO Impact the Shipyard (Findings 4, 30, 32, 33)

Taken together, these results confirm that uncontrolled storm water and municipal separate storm sewer discharges, have impacted, and will continue to impact, the shipyard. DTR, at 4-1, et seq. [Comment No. 213, TCAO at 4, 30, 32, 33 DTR, at 4.1-4.7.3, 30, 32.7, 33.1.1]. Moreover, as discussed below, the ongoing Chollas Creek TMDL proceedings indicate that such discharges are unlikely to be controlled for decades:

(1) Urban Runoff From Chollas Creek Is A Significant Contributor Of Pollutants To The Shipyard (Findings 4, 30, 32, 33)

Significant regulatory efforts aimed at addressing conditions at Chollas Creek affirm that Chollas Creek is heavily polluted and a significant contributor of metals, pesticides, and other pollutants to sediments at the Site. DTR, at 4-1, 4-19. Since 1994, Chollas Creek storm water samples have frequently exceeded Basin Plan narrative water quality objectives for toxicity, and California Toxics Rule criteria for copper, lead, and zinc. DTR, at 4-12. As a result, Chollas Creek was placed on the Clean Water Act Section 303(d) List of Water Quality Limited Segments in 1996 for cadmium, copper, lead, zinc, and toxicity, with zinc, copper, and diazinon subsequently identified as causes of observed toxicity. Chollas Creek TMDL for Metals, Background, (available at http://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/chollascreekmetals.shtml). It was also designated as a priority hot spot due to the presence of copper, DDT, chlordane, and diazinon in the sediments, and the presence of impacts to aquatic life. SDRWQCB, Proposed Regional Hot Spot Cleanup Plan (Dec. 1997), at 1-16; Exponent Report, at 1-16 -1-17. In 2002 and 2005, respectively, TMDLs were adopted for diazinon and metals in Chollas Creek, and the Regional Board is currently in the process of developing TMDLs for PCBs, PAHs, and chlordane at the mouth of Chollas Creek. Id.

These TMDLs and other regulatory efforts document severe pollution problems in Chollas Creek that ultimately affect the Site, since “each season’s major storms will effectively

remove any metals accumulated in the creek sediment and transport then downstream to San Diego Bay.” Total Maximum Loads for Dissolved Copper, Lead, and Zinc in Chollas Creek Tributary to San Diego Bay, Draft Technical Report (Dec. 1997), at 1-16. [**Comment No. 214, TCAO, at 4, DTR, at 4.7.12**]. Such plumes “are toxic to marine life and can introduce a large fraction of the total storm event’s production of suspended solids, copper, zinc, and lead to the Shipyard Sediment Site through settling of particles.” DTR, at 4-10; see also Barker Depo, at 921:14 – 922:15 (confirming that storm water outflows from Chollas Creek have contributed to the accumulation of pollutants in marine sediment at the Shipyard Sediment Site, and reach the inner portion of the leasehold). [**Comment No. 215, TCAO, at 4, 30, 32, 33, DTR, at 4.1-4.7, 30, 32.7, 33.1.1**]. Further, there is evidence that these discharges could influence the inner portions of the leasehold, including the areas slated for remediation. Barker Depo, at 923:8 – 923:15 (confirming that NA19, NA06, NA15 and NA17 are potentially subject to influence from Chollas Creek); Carlisle Depo, at 104:5 – 105:3 (same). [**Comment No. 216, TCAO, at 4, 30, 32, 33, DTR, at 4.1-4.7, 30, 32.7, 33.1.1**].

(2) Observed Toxicity And Benthic Community Effects Are Attributable To Discharges Of Municipal Storm Water (Findings 4, 14 – 18, 30, 32, 33)

Notably, the toxicity and benthic community hits described in the DTR occur at stations located in the vicinity of Chollas Creek or other discharges of municipal storm water, suggesting that non-shipyard sources are responsible for observed impacts to sediments at NASSCO. DTR, at Table 18-8; DTR at 4-5. By contrast, sediment toxicity is not statistically associated with shipyard chemicals; thus, elevated concentrations of shipyard chemicals (as measured by exceedance of LAET) were determined not to be the cause of any observed reductions in beneficial uses. Exponent Report, at 18-5. [**Comment No. 217, TCAO, at 4, 15, 16, 18, DTR, at 4, 15, 16, 18**]. Instead, the presence of pesticides, and the observed correlations between pesticides and toxicity, suggest that Chollas Creek and storm sewer discharges from areas outside the shipyards are contributing toxic levels of pesticides (and other chemicals) to shipyard sediments, and are responsible for any observed effects. Exponent Report, at 13-2 – 13-3, 18-5; see also DTR, at 4-19. [**Comment No. 218, TCAO, at 4, 30, 32, 33, DTR, at 4.1-4.7, 30, 32.7, 33.1.1**].

2. Remediation Goals Cannot Be Met Due To Re-Contamination From Other Sources (Findings 30, 32, 33, 36)

It is axiomatic that source control should be achieved prior to active remediation of sediment. See, e.g., Resolution 92-49, at ¶ III.E.1; EPA’s Contaminated Sediment Management Strategy, EPA-823-R-98-001 (Apr. 1998), at 54 (recognizing pollution prevention and source control as methods that will allow contaminated sediments to recover naturally without unacceptable impacts to beneficial uses). [**Comment No. 219, TCAO, at 36, DTR, at 36.4**].

As discussed above, the administrative records both in this proceeding and the various Chollas Creek TMDL proceedings demonstrate unequivocally that Chollas Creek is adversely impacting sediments at NASSCO. See Section III. B. 1. supra. [**Comment No. 220, TCAO, at 4, 30, 32, 33, DTR, at 4.1-4.7, 30, 32.7, 33.1.1**]. Staff also admits that discharges from Chollas

Creek impact sediment quality within the leasehold, that pesticide discharges to San Diego Bay are uncontrolled and correlated with toxic effects, and that sediment at NASSCO is adversely affected by sources of pollution unrelated to NASSCO or its operations. Response to NASSCO's RFAs, at 11, 13, 15, 17. [Comment No. 221, TCAO, at 4, 30, 32, 33, DTR, at 4.7.1.3, 4.7.3, 30, 32.7, 33.1.1]. However, despite extensive regulatory efforts, it is clear that complete source control cannot, and will not, be achieved in the foreseeable future. No reductions are required under the Chollas Creek metals TMDL until 2018, and full compliance is not required until October of 2028. Barker Depo, at 925:19 – 927:25 (admitting that Chollas Creek TMDL is not expected to be fully implemented until 20 years after adoption, and that no reduction is required for the first ten year period). [Comment No. 222, TCAO, at 12, DTR, at 12.1]. Further, it is "probable" that full compliance with the TMDLs will not be achieved within the timeframe set forth in the TMDL, because existing technology cannot reliably meet the TMDL and is cost-prohibitive. Deposition of Benjamin Tobler ("Tobler Depo"), at 90:6 – 92:5 ("[W]ithout getting into space-age technology, which is extremely cost-prohibitive, the only possible fix for the problem is sand filters. Sand filters do filter out metals, but even sand filters only get you into the general ballpark for meeting compliance. In other words, the best sand filters right now only just barely get you to the ballpark of compliance. There's no margin of safety with it."). [Comment No. 223, TCAO, 30, DTR, at 30.1-30.2]. Thus, according to Staff, it is "probable" that full compliance will not be achieved, even after 20 years and significant infrastructure improvements, "unless technology comes to the rescue." *Id.* [Comment No. 224, TCAO, at 12, DTR, at 12.1].

In sum, it is nonsensical to require massive dredging of site sediments before sources are fully controlled. Failing to fully implement source control risks recontamination from upland sources and Chollas Creek, and may end up requiring enormous sums of public and private money to be spent on successive CAOs, without achieving significant permanent changes in sediment conditions.⁸ [Comment No. 225, TCAO, at 4, 30, 32, 33, DTR, at 4.7.1.3, 4.7.3, 30, 32.7, 33.1.1, 33.4].

V. MONITORED NATURAL ATTENUATION IS THE PROPER REMEDY

A. Natural Attenuation Is Occurring And Should Be The Preferred Remedy (Findings 30, 36)

Resolution 92-49 provides that, in determining the appropriate cleanup level, the Regional Board shall take into account the demands being made and to be made on the waters and the total values involved—beneficial and detrimental, economic and social, and tangible and

⁸ A prime example of the need for source control prior to remediation is the Convoir Lagoon site: after significant funds were expended constructing a cap to remediate PCBs, PCBs were subsequently found on top of the cap, due to incomplete source control. The Board must avoid the risk of repeating a similar outcome at NASSCO by ensuring that Chollas Creek and other municipal storm water discharges are fully controlled prior to any active remediation.

intangible. Resolution 92-49 does not require, however, that the requisite level of water quality be met at the time of site closure; rather, a site may be closed if the level will be attained “within a reasonable time frame,” such as through monitored natural attenuation. Resolution 92-49, at III.A. [**Comment No. 226, TCAO, at 36, DTR, at 36.4**]. Site conditions and factors conducive to monitored natural attenuation include: (1) the presence of relatively low contaminant levels; (2) evidence that natural attenuation is occurring, or is reasonably certain to occur; (3) bioavailability and toxicity to benthic organisms under current conditions; (4) site activities and anticipated land uses; (5) stable sediment beds; and (6) the ability to monitor sediment concentrations and limit short-term exposure during the recovery period. DTR, at 30-2, Gibson Depo, at 151:1 – 153:8, 152:14 – 153:9; Attachment B, Exponent Memorandum (May 25, 2011). Based on these factors, monitored natural attenuation following source control is the appropriate remedy for the Site for the following reasons [**Comment No. 227, TCAO, at 30, DTR, at 30.1.1**].:

1. Source Control Issues Affect All Potential Primary Remedies (Findings 4, 30, 32, 34)

The DTR acknowledges that monitored natural attenuation is a “readily employable and proven remediation strateg[y],” and that natural recovery processes are “active” at the Site. DTR, at 30-1, 30-3; see also Barker Depo, at 255:19 – 256:1. Although, Staff did not recommend natural recovery as the primary remedy for the Site because “[c]omplete control of site sources has not been fully demonstrated to a level that would assure adequate rates of recovery,” Staff’s “person most knowledgeable” on the issue testified that recontamination from off-site sources would affect all potential remedies. DTR, at 30-3; Barker Depo, at 278:6 – 279:2. Thus, lack of source control should not serve to favor dredging, at the expense of monitored natural attenuation. Barker Depo, at 278:6 – 279:2. [**Comment No. 228, TCAO, at 4, 30, 32, 34, DTR, at 4.3, 4.7, 30, 32.7, 34.4**].

2. The 2009 Testing Demonstrates That Natural Attenuation Is Occurring (Findings 30, 32, 36)

Recent testing conducted by Exponent on behalf of the Parties in 2009 (“2009 Testing”) confirms that the already favorable sediment conditions observed in 2002 are improving through natural attenuation. [**Comment No. 229, TCAO, at 30, 32, DTR, at 30.1.1, 32.2 – 32.6**]. Specifically, the 2009 Testing indicates that the SWACs for the five primary contaminants of concern have decreased substantially since 2001/2002, and in many cases are only slightly higher than post-remedial SWACs, suggesting that Staff’s cleanup goals can be achieved in a reasonable time through monitored natural attenuation. Barker Depo, Ex. 1228. [**Comment No. 230, TCAO, at 30, 32, DTR, at 30.1.1, 32.2 – 32.6**]. In fact, for the locations sampled in 2009, which were selected because they are considered representative of site-wide conditions, three of the five SWACs for primary contaminants of concern have already attained the post-remedial SWACs that would be required by the TCAO, and the remaining two are only slightly above the post-remedial SWACs. [**Comment No. 231, TCAO, at 30, 32, DTR, at 30, 32**].

For example, the copper SWAC at the five 2009 Testing stations decreased from 183.3 mg/kg in 2001/2002 to 167.8 mg/kg in 2009, representing an 8.5% decrease attributable to

monitored natural attenuation. Barker Depo, Ex. 1228, at A. Further, the 2009 copper SWAC for these locations was only slightly higher than the required post-remedial SWAC of 159 mg/kg, suggesting that Staff's site-wide cleanup goals are likely to be achieved for copper in a reasonable time simply by allowing natural attenuation to continue. *Id.* The results are even more dramatic with respect to other primary contaminants of concern, where the 2009 sampling data showed that: (1) the mercury SWAC has decreased by 49% to 0.8 mg/kg, only slightly above the required post-remedial SWAC of 0.68 mg/kg; (2) the HPAH SWAC has decreased by 18.8% to 2,293.3 ug/kg, and is actually lower than the required post-remedial SWAC of 2,451 ug/kg indicating that the post-remedial HPAH SWAC has already been achieved for at least five stations via natural processes; (3) the PCB SWAC has decreased by 23.6% to 188.7 ng/g, which is already lower than the required SWAC of 194 ng/g indicating that the post-remedial PCB SWAC has already been achieved for at least five stations via natural processes; and (4) the TBT SWAC has decreased by 71.6% to 23.3 ug/kg and is already substantially lower than the required post-remedial SWAC of 110 ug/kg indicating that the post-remedial TBT SWAC has already been achieved for at least five stations via natural processes. *Id.* at B – E. In fact, the latter data for TBT is also consistent with previous Regional Board findings at the Commercial Basin boatyards, where TBT was found to naturally degrade quickly and was therefore not actively remediated. RWQCB Order No. 88-79, at ¶¶ 18- 19. [Comment No. 232, TCAO, at 30, 32, 36, DTR, at 30, 32, 36.4].

Additionally, NASSCO incorporates by reference the arguments and evidence submitted by BAE with respect to the AMEC sampling conducted in late 2010, which shows similar results as the 2009 Testing and further confirms that natural attenuation is occurring at the Site. [Comment No. 233, TCAO, at 30, 32, 36, DTR, at 30, 32, 36.4].

Based on these data, it is clear that on a SWAC basis, natural remediation is already occurring at the site for all five primary contaminants of concern, suggesting that Staff's proposed cleanup levels will be achieved in a reasonable time without active dredging. [Comment No. 234, TCAO, at 30, 32, DTR, at 30, 32]. This is particularly true considering that natural attenuation is occurring despite the physical disturbances associated with shipyard activities. Since Site contaminants are also not generally bioavailable, and toxicity to benthic organisms under current conditions is low, the Site is a prime candidate for natural attenuation. Because natural attenuation is already occurring and is expected to achieve the cleanup levels in the TCAO within a reasonable time, requiring dredging would be inappropriately conservative. [Comment No. 235, TCAO, at 18, 19, 30, 32, DTR, at 18, 19, 30, 32].

3. Site-Specific Circumstances Support Monitored Natural Attenuation As The Preferred Remedy (Finding 18, 23-24, 27-28, 30)

In addition to the fact that monitored natural attenuation is already occurring, the following site-specific circumstances support monitored natural attenuation as the preferred remedy for the Site:

a. The NASSCO Site Will Remain A Secured Shipyard Until At Least 2040 (Findings 28, 30)

The fact that NASSCO will remain a secured shipyard until at least 2040 supports implementation of monitored natural attenuation because security measures will prevent human exposure to site contaminants and wildlife during the recovery period. Exponent Report, at 18-6; Finley Report, at 6. [Comment No. 236, TCAO, at 28, 30, DTR, at 28.2, 30]. Additionally, the demands being made, and to be made, on the waters at the Site, given its use as an active shipyard, also support monitored natural attenuation. [Comment No. 237, TCAO, at 28, 30, DTR, at 28.2, 30].

Based on the operative land use plans, NASSCO property is required to be used for marine-oriented industrial uses, and is classified as prime industrial land. Finley Report, at 3; Alo Depo, at 106:21 – 107:8. Further, under the terms of NASSCO's current lease, NASSCO will remain a secured shipyard until at least 2040. Attachment C, San Diego Unified Port District Lease to NASSCO, and Amendments thereto ("Lease"). As an active industrial facility, the shipyard does not permit fishing, swimming, recreation, or other such uses at the Site. Armed military personnel, and other safeguards, including a 300 foot security boom, ensure that these restrictions are enforced. [Comment No. 238, TCAO, at 28, 30, DTR, at 28.2, 30]. Moreover, there is no indication that NASSCO will be used as a recreational area in the foreseeable future, indicating that existing security measures will continue to prevent exposure to humans during the recovery period. See Finley Report, at 3. [Comment No. 239, TCAO, at 28, 30, DTR, at 28.2, 30]. It is both common and appropriate to take these types of land use considerations into account in choosing an appropriate remedy. Alo Depo, at 107:23 – 108:6, 109:4 – 109:7. Yet, the TCAO is based upon conservative assumptions that account for recreational, and other uses that are simply not relevant to the Site, especially considering that monitored natural attenuation is expected to remediate the sediments to the proposed levels long before NASSCO's lease expires. [Comment No. 240, TCAO, at 12, 18, 23-24, 27-28, 30, DTR, at 12, 18, 23-24, 27-28, 30].

b. NASSCO Implements Extensive Pollution Prevention Mechanisms To Eliminate The Possibility Of Direct Releases Of Contaminants (Finding 2, 30)

The shipyard has incorporated extensive pollution prevention controls to eliminate the possibility of direct releases of contamination, Exponent Report, at 18-6. These measures include (1) the collection and treatment of all rainwater and other liquids released within the shipyard's paved areas, with subsequent discharge to the sewer system; (2) onsite treatment of bilge and ballast water; (3) the implementation of state of the art Best Management Practices; and (4) ongoing training of all personnel in pollution prevention practices. *Id.* As a result, any significant future contribution of contaminants from shipyard sources is unlikely. *Id.* [Comment No. 241, TCAO, at 2, 30, DTR, at 2.3.1, 2.5, 30].

Taken together, the site-specific factors present at NASSCO strongly support monitored natural attenuation, and meet the criteria identified in the DTR that indicate that a site is

“particularly conducive” to monitored natural attenuation. See DTR, at 30-2. [Comment No. 242, TCAO, at 2, 28, 30, DTR, at 2.3.1, 2.5, 28, 30].

B. Implementing The Order Will Cause Greater Harm To Beneficial Uses Than No Action (Findings 30, 32, 34)

Implementing the large-scale dredging described in the TCAO will result in greater harm to beneficial uses than leaving sediments in place and allowing contaminants to attenuate naturally. See Exponent Report, at § 18. [Comment No. 243, TCAO, at 30, 32, 34, DTR, at 30, 32, 34].

First, sediments buried below approximately 10 cm do not impact the water or marine environment because they are below the biologically active zone, and are therefore not biologically available. Gibson Depo, at 156:3 – 157:12. However, if dredging is required, these contaminants may be re-suspended in the water column, causing the concentrations of contaminants in the water phase to increase. Response to NASSCO’s RFAs, at RFA No. 42 – 43. [Comment No. 244, TCAO, at 32, 34, DTR, at 32.5, 32.7, 34].

Second, Site sediments are currently supporting a mature and thriving benthic community, with total abundance and richness comparable to reference areas. See discussion at Section III.A.2.c., supra. Sediment profile imaging also shows that the benthic community has attained a “mature equilibrium,” as classified by an independent testing organization. Id. Dredging sediments from portions of the leasehold would (1) result in the immediate destruction of many of the existing mature benthic macroinvertebrate communities located at the Site; (2) destroy existing eelgrass beds; (3) risk re-suspension of buried contaminants; and (4) risk re-colonization of Site sediments by invasive species. See Exponent Report, at 18-9; Barker Depo, at 306:22 – 307:21. Accordingly, if significant portions of the leasehold are dredged, there is no guarantee that the healthy, mature benthic communities presently occupying the Site will return. Barker Depo, at 912:6 – 915:19 (confirming that Staff is unable to predict with any level of confidence what type of benthic community may be reestablished after dredging). [Comment No. 245, TCAO, at 18, 32, 34, DTR, at 18.4, 32.5, 32.7, 34].

Further, any positive impacts resulting from dredging would depend on the extent and timeframe in which dredged sediments recover to the equivalent of reference conditions following the cleanup. Id. at 18-8. Because observed impairments are attributable to continuing off-site discharges from storm drains and Chollas Creek, the recovery of benthic communities in dredged areas could be impeded as contaminants from urban runoff continue to be deposited at the Site, resulting in minimal benefits. Id., at 18-9. [Comment No. 246, TCAO, at 4, 12, 30, 32, 33, 34, DTR, at 4, 12.1, 30.1, 30.2, 32.5, 32.7, 33.1-33.4, 34].

Thus, dredging confers minimal benefits over natural attenuation, and risks serious detriment to beneficial uses. These negative impacts can and should be avoided, without compromising beneficial uses, by selecting monitored natural attenuation as the recommended remedy. [Comment No. 247, TCAO, at 30, 32, 33, 34, DTR, at 30, 32, 33, 34].

C. Implementing The Tentative Cleanup And Abatement Order Would Have Significant Negative Economic and Social Impacts On NASSCO And The Community (Findings 30, 31, 32, 37)

Under Resolution 92-49, the Regional Board must take into account the total values involved, including economic and social values. The DTR concludes that dredging to alternative cleanup levels is technologically and economically feasible. TCAO, at ¶¶ 30, 31, DTR, at 30-7, 31-3. However, extensive dredging at NASSCO would result in significant negative impacts to NASSCO and the surrounding community; thus, taking these values into account, dredging is costly and unjustified, especially since there are little or no corresponding benefits to human health or the environment. [Comment No. 248, TCAO, at 30, 31, 32, 37, DTR, at 30, 31, 32, 37].

In particular, dredging in certain areas at NASSCO may jeopardize the integrity of slopes and structures at the leasehold, and is technologically infeasible in certain areas. Barker Depo, at 154:25 – 155:22, 156:23 – 157:16. For example, there are significant structural stability problems associated with dredging around piers, pilings, and steep slopes, such as those surrounding the floating drydock sump, which render dredging in such areas technologically infeasible. *Id.* Further, vital ship repair and construction activities will be significantly disrupted by dredging, and could result in delays or contractual breaches with the U.S. Navy and other customers. *See, e.g.*, Exponent Report, at §§ 18.2, 18.4. [Comment No. 249, TCAO, at 30, 32, 33, DTR, at 30, 32.7, 33.1].

Large-scale dredging will also impact the surrounding community, and potentially present environmental justice issues, due to impacts including, but not limited to increased truck traffic, diesel emissions from trucks and heavy equipment, noise, accident risks, transportation of large volumes of waste through the neighborhood, increased traffic on local streets, and the need to establish large staging areas for dewatering activities. *Id.* [Comment No. 250, TCAO, at 32, 33, 37, DTR, at 32.7, 33.3, 37].

D. The Difference In Risk Reduction Between The Proposed Footprint And Monitored Natural Attenuation Is Insignificant And Does Not Meet The State Board's Test For Economic Feasibility (Finding 30-32, 36)

Resolution 92-49 requires that Regional Board “shall concur with any . . . cleanup and abatement proposal which the discharger demonstrates and the Regional Board finds to have a substantial likelihood to achieve compliance, within a reasonable time frame, with cleanup goals and objectives” that implement permanent solutions that do not require ongoing maintenance, wherever feasible. Resolution 92-49, at III.A. Further, the selected alternative must be economically feasible. *Id.* Economic feasibility refers to the objective balancing of the incremental benefit of attaining more stringent cleanup levels compared with the incremental cost of achieving those levels.; it does not refer to the discharger’s ability to pay the costs of the cleanup. DTR, at 31-1. According to the DTR, the benefits of remediation are best expressed as the reduction in exposure of human, aquatic wildlife, and benthic receptors to site-related contaminants of concern. *Id.*

Applying this standard, it is clear that the difference in risk-reduction between dredging and monitored natural attenuation is insufficient to justify the ample additional costs associated with dredging. Dredging the NASSCO site alone in accordance with the TCAO is expected to cost many millions of dollars; however, there are minimal, if any, benefits associated with dredging that will not also be achieved through monitored natural attenuation. [Comment No. 251, TCAO, at 30, 31, 32, 36, DTR, at 30, 31, 32.7, 36.4].

First, as shown extensively throughout this letter and in the record, current conditions are protective of aquatic wildlife, aquatic-dependent wildlife, or human health when examined using realistic, risk-based assumptions under a neutral and scientifically appropriate decision framework. See Section III. [Comment No. 252, TCAO, at 14-28, DTR, at 14-28]. Second, observed risks generally are not correlated to shipyard chemicals. See Section III.B.1. Sediment toxicity is not statistically associated with any shipyard-associated chemicals, and causation analysis demonstrates that LAET exceedances are not the cause of observed reductions in aquatic life beneficial uses; rather, such effects are attributable to off-site sources and should abate once those sources are controlled. *Id.* Likewise, alterations of benthic macroinvertebrate communities are generally not related to shipyard chemicals. *Id.* Given these already favorable site conditions, any incremental benefits associated with dredging will be minimal, and not justified by the incremental costs, particularly where there is evidence that such dredging will cause greater environmental harm than leaving the sediment in place. [Comment No. 253, TCAO, at 30, 31, 32, 34, DTR, at 30, 31, 32, 34].

Additionally, the June 2009 sediment testing suggests that monitored natural attenuation is already occurring at rates that will attain the proposed post-remedial SWACs within a reasonable time; in fact, such levels have already been achieved through monitored natural attenuation at certain stations for the five primary contaminants of concern. See Section V.A.1. [Comment No. 254, TCAO, at 30, 32, DTR, at 30.1.1, 32.2 – 32.6]. The DTR also estimates that new sediments are deposited at a rate of 2 cm/yr, suggesting that clean sediments will quickly bury any residual contamination. Response to NASSCO's RFAs, at RFA No. 56. [Comment No. 255, TCAO, at 30, DTR, at 30.1]. Accordingly, the incremental benefits of dredging, if any, are minimal, and do not justify the substantial additional financial, social, and environmental costs associated with dredging. [Comment No. 256, TCAO, at 30, 31, 32, 36, DTR, at 30, 31, 32.7, 36.4].

VI. ADDITIONAL ISSUES

NASSCO offers the following points as additional clarification of the findings reached in the TCAO and the DTR.

A. The TCAO and DTR Should Be Corrected To Identify The Correct Number of Likely Stations (Findings 18, 32)

Table 18-1 in Volume II of the DTR, and the sections that follow, correctly summarize the outcome of the DTR Triad analysis. According to this analysis, there are six "likely" stations, two of which are at NASSCO (NA19 and NA22), and four of which are at BAE (SW04, SW13, SW22, and SW23). NA22 is footnoted in Table 18-1 as being excluded from the TCAO.

In Volume III of the DTR, however, there is a discussion of the Site-Specific Median Effects Quotient (SS-MEQ) derivation in Section 32.5.2, where these six “likely” stations are incorrectly described as three “likely” and three “possible” stations.

The SS-MEQ was derived by calculating the median concentration of individual COCs at 6 of the 30 Triad stations (Table 32-20). Three of the six included stations identified as likely impaired under the weight of evidence analysis described in Section 18 of this Technical Report (NA22, SW04, and SW13). Three possibly-impaired stations with the highest potential for chemically-associated effects (among possibly-impaired stations) were also included in SS-MEQ derivation (NA19, SW22, and SW23). These stations exhibited both “Moderate” toxicity and chemical concentrations just below levels indicative of the “High” LOE category by the Triad sediment chemistry ranking criteria (Table 18-1). The SS-MEQ threshold was then established by conservatively optimizing the performance of the quotient in predicting likely effects or the three most chemically-impaired possible stations (true positives) while minimizing false negatives.

DTR, at pp. 32-31 – 32-32 [**Comment No. 257, TCAO at 32, DTR, at 32**].

To correct any potential for misunderstanding, pages 32-31 and 32-32 of the DTR should be amended to reflect the following changes:

The SS-MEQ was derived by calculating the median concentration of individual COCs at 6 of the 30 Triad stations (Table 32-20). ~~Three of the~~ All six included stations were identified as likely impaired under the weight of evidence analysis described in Section 18 of this Technical Report (NA19, NA22, SW04, SW13, SW22, and SW23). ~~Three possibly-impaired stations with the highest potential for chemically-associated effects (among possibly-impaired stations) were also included in SS-MEQ derivation (NA19, SW22, and SW23). These stations exhibited both “Moderate” toxicity and chemical concentrations just below levels indicative of the “High” LOE category by the Triad sediment chemistry ranking criteria (Table 18-1). The SS-MEQ threshold was then established by conservatively optimizing the performance of the quotient in predicting likely effects on~~ the ~~three~~six most chemically-impaired possible stations (true positives) while minimizing false negatives.

The TCAO correctly describes the Triad results. Finding 18 correctly summarizes that the Triad analysis resulted in six “likely” stations. Although the SS-MEQ derivation text is not directly reproduced, there is a footnote on page 17 that references this text, so the discrepancy is

indirectly reproduced in the TCAO. So long as the edits to pages 32-31 and 32-32 are implemented, the TCAO's reference to Section 32.5.2 will not introduce any confusion.

B. The Use of Lowest Apparent Effects Threshold (LAETs) and Site-Specific Median Effects Quotient (SS-MEQ) Benchmarks Ensured That The Remediation Footprint Was Overly Protective (Finding 32)

The site-wide Triad study measured synoptic chemistry, toxicity, and surveyed the benthic community at 30 of the 66 Shipyard sediment investigation stations. Potential impacts of sediment chemicals to the benthic community at the 36 Non-Triad stations, for which no biological data were collected, was inferred through the use of site-specific chemistry benchmarks, developed from the Triad data. Two independent benchmarks were developed: The Site-Specific Median Effects Quotient (SS-MEQ) and Lowest Adverse Effects Threshold (LAET).

The SS-MEQ is a multiple chemical benchmark calculated from the median sediment concentration of the five primary COCs at the six stations that were scored as "likely impacted" in the DTR Triad analysis (NA19, NA22, SW04, SW13, SW22, and SW23). For each station, effects quotients (the ratio of measured concentration to median "likely impacted" concentration) were calculated for each of the primary COCs, and these were averaged to yield the multi-chemical SS-MEQ. See DTR at 32.5.2.

Furthermore, for each primary COC, apparent effects thresholds (AETs) were developed for each of the seven biological endpoints evaluated in the DTR Triad analysis (three toxicity tests and four benthic community parameters or indices). The AET is simply the concentration above which adverse effects always occur. Accordingly, the lowest adverse effects threshold (LAET) is the lowest concentration of any of the seven AETs calculated for a given chemical.

Both the SS-MEQ and LAET values were used as benchmarks to identify the possibility of adverse effects on benthos at the non-Triad stations. Both benchmarks were tested and determined to be conservative measures for benthic community conditions at non-Triad stations. To test the protectiveness of the SS-MEQ and LAET values, SS-MEQ and LAET values were calculated for the 30 Triad stations (for which actual benthic condition assessment had been performed) to determine how well the SS-MEQ and LAET values predicted "likely" impacts to benthic communities. When compared to the 30 Triad stations, the 60% LAET results were completely protective with respect to predicting "likely" benthic impairment, since an AET is, by definition, a no-effect level, while inaccurately identifying one "false positive" (at NA07, as discussed above), where the LAET analysis suggested possible benthic impairment but the Triad analysis demonstrated no such impairment. Notably, the DTR used a benchmark equal to 60% of the LAET, which is highly protective because it builds in a buffer below the established no-effect level.

The SS-MEQ benchmark (which was set equal to 90% of the SS-MEQ) had only one false negative out of 30 Triad stations, with respect to predicting "likely" impairment of the benthic community (at Station NA22, which is being addressed outside the current remedial

design), and eight false positives, which indicates that using 90% of the SS-MEQ is overly protective by including stations that were not in fact likely impaired stations.

Accordingly, the proposed cleanup was judged to be protective of benthos because it includes all non-Triad stations that exceed either of the 60% LAET or 90% SS-MEQ benchmarks, and both metrics incorporate a significant safety factor.

It is worth noting that the highest LAET and SS-MEQ multiples found outside the cleanup footprint at NASSCO occur at Station NA07 (HPAH = 63% LAET; SS-MEQ = 0.91). Station NA07 is a Triad station for which no impacts to the benthic community were identified, however, and a realistic analysis of food web risks to wildlife and human receptors shows that there are no significant risks. In fact, NA07 is one of the “false positives” identified above, because the benthic community assessment demonstrates “unlikely” benthic impacts. Therefore, no risk-based justification for remediating NA07 exists, and NA07 was properly excluded from the proposed remedial footprint in the DTR. See Attachment B, Exponent Memorandum (May 25, 2011) at 10.

On behalf of San Diego Coastkeeper, Donald D. MacDonald submitted a report entitled, “Review and Evaluation of Tentative Clean-up and Abatement Order (No. R9-2011-001) for the Shipyard Sediment Site, San Diego Bay, San Diego, California” (March 11, 2011) (March MacDonald Report). At page 11, Mr. MacDonald notes that Table 33-6 is incorrect in that it states that for NA07, “All COCs [fall] below 60% LAET values.” DTR, at Table 33-6. As described above, Mr. MacDonald is correct, and Table 33-6 should be edited to state, “Only one All COCs slightly above below 60% LAET values (HPAH = 63% LAET).” Triad data demonstrates that there are no impacts to aquatic life at this station. [Comment No. 258, TCAO at 33, DTR, at 33.1].

C. The March MacDonald Report Improperly Interprets Composite SWAC Ranking Values As A Remediation Trigger

In the March MacDonald Report, Mr. MacDonald alleges that the DTR does not adequately explain why ten Shipyard Site stations with Composite SWAC Ranking Values greater than 5.5 were excluded from the proposed remedial footprint.⁹ March MacDonald Report, at 11. Although he does not identify the ten stations, it appears that Mr. MacDonald is referring to Stations SW29, SW25, SW15, NA01, SW18, NA16, NA03, SW30, NA04, and SW11. See DTR Appendix for Section 33, at Table 33-1 (excluding the five stations identified in DTR, Table 33-6). Accordingly, Mr. MacDonald asserts that the DTR’s rationale “for excluding stations with Composite SWAC Ranking Values greater than 5.5 is arbitrary and does not justify the exclusions.” Id.

⁹ Mr. MacDonald appears to have picked 5.5 as his cut-off value for Composite SWAC Ranking, because Station NA09’s 5.5 Composite SWAC Value is the lowest Composite SWAC Value of all the stations included in the remedial footprint.

Mr. MacDonald's allegation is premised on his assumption that a Composite SWAC Ranking Value of 5.5 or greater alone is a remediation trigger sufficient to include a station in the remedial footprint. This is a foundational misunderstanding of the analysis performed in the DTR. In fact, the station-by-station Composite SWAC Ranking analysis (Section 33.1.2), station-by-station SS-MEQ analysis (Section 33.1.3), and the highest concentrations of individual COCs analysis (Section 33.1.4) were all considered simultaneously, along with Triad data and feasibility issues, to determine the remedial footprint.

A brief review of the station-by-station SWAC Composite Ranking analysis found at DTR Section 33.1.2 (and supported by Table 33-1 in Appendix 33), demonstrates that it cannot alone be considered a remediation trigger. For example, if a SWAC Composite Ranking of 5.5 or greater alone had been considered a remediation trigger, then Station NA09 (currently part of the remedial footprint) would have been excluded because its SWAC Composite Ranking is only 5.4. DTR, Appendix for Section 33, at Table 33-1. [**Comment No. 259, TCAO at 33, DTR, at 33.1, Appendix 33**]. By the same token, there would be no discussion of Station NA22 with its low SWAC Composite Ranking of only 3.6. Id.

Furthermore, based on the weight of the evidence approach employed by the DTR, the ten stations with Composite SWAC Rankings of greater than 5.5 (including Stations SW29, SW25, SW15, NA01, SW18, NA16, NA03, SW30, NA04, and SW11) identified were properly excluded from the remedial footprint. In fact:

- None of the ten stations have a SS-MEQ value greater than the 0.90 benchmark. See DTR, Appendix for Section 32, at Table A32-12. In fact, none of the stations have SS-MEQ values of greater than 0.71. Id.
- None of the ten stations have high individual concentrations of COCs. See DTR, Tables 33-3, 33-4, and 33-5 (demonstrating that none of the ten stations rank among those stations with the highest concentrations of COCs).
- None of the ten stations exceed the 60% LAET benchmark. See DTR, Table 32-23 (no LAET exceedence for SW29 or SW30); Appendix to Section 32, Table A32-9.
- None of the ten stations have a "Likely" impaired Triad ranking.

Accordingly, it is of no moment that the DTR does not offer an explanation why the ten stations with SWAC Composite Rankings greater than 5.5 (including Stations SW29, SW25, SW15, NA01, SW18, NA16, NA03, SW30, NA04, and SW11) are not included in the remedial footprint simply because the SWAC Composite Ranking is not a remedial trigger, and numerous other analyses in the DTR demonstrate why those stations were not included in the remedial footprint. [**Comment No. 260, TCAO at 33, DTR, at 33.1, Appendix 33**].

D. Stations NA07, NA08, NA23, and NA27 Were Properly Excluded From the Remediation Footprint Because Dredging There Is Technologically Infeasible

The March MacDonald Report asserts that the DTR's exclusion of Stations NA07 and NA23 from the remedial footprint based on technical infeasibility was erroneous. March MacDonald Report, at 17. According to the March MacDonald Report:

In order to be scientifically valid, these conclusions of technical infeasibility must be supported by detailed engineering studies of the existing slope and the impacts that various dredging techniques would have on the slope. The DTR provides no information about the existing sediment slope and includes no engineering studies to support its conclusion that dredging these polygons is technically infeasible. For this reason, the technical infeasibility conclusion for these polygons is not scientifically defensible.

Id.

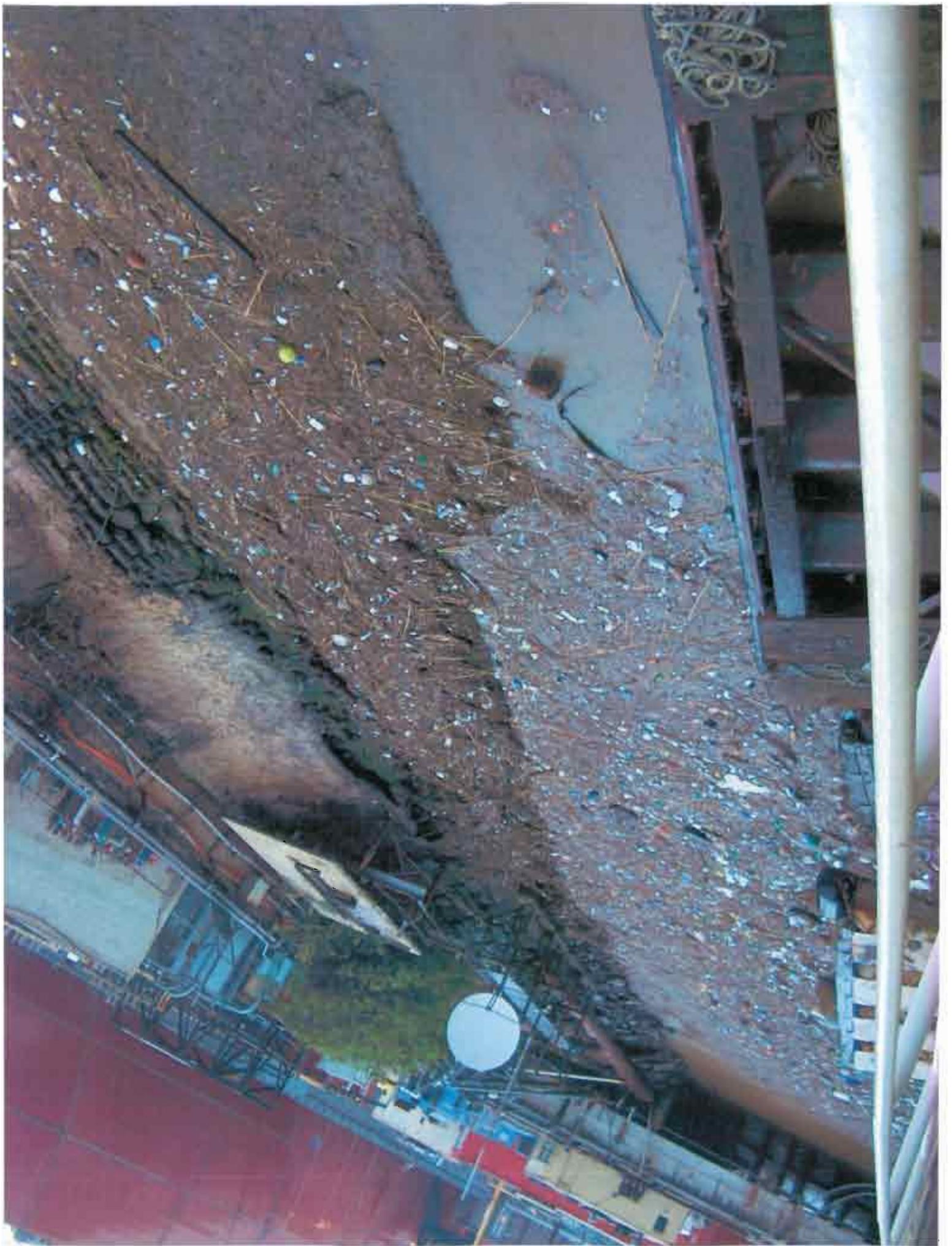
Contrary to the March MacDonald Report's assertion, the DTR does provide information about the technical infeasibility posed by dredging in Stations NA07, NA08, NA23, and NA27 (see DTR, Section 33.1.4). Furthermore, as discussed in the attached memorandum from Anchor QEA, no engineering studies are necessary to conclude that dredging in these stations is technologically infeasible. In fact, it is possible to determine that dredging is technically infeasible due to site characteristics alone. Attachment D, Memorandum by Michael Whelan, Anchor QEA (May 25, 2011) (Anchor QEA Memo), at 2-4. [**Comment No. 261, TCAO at 33, DTR at 33**].

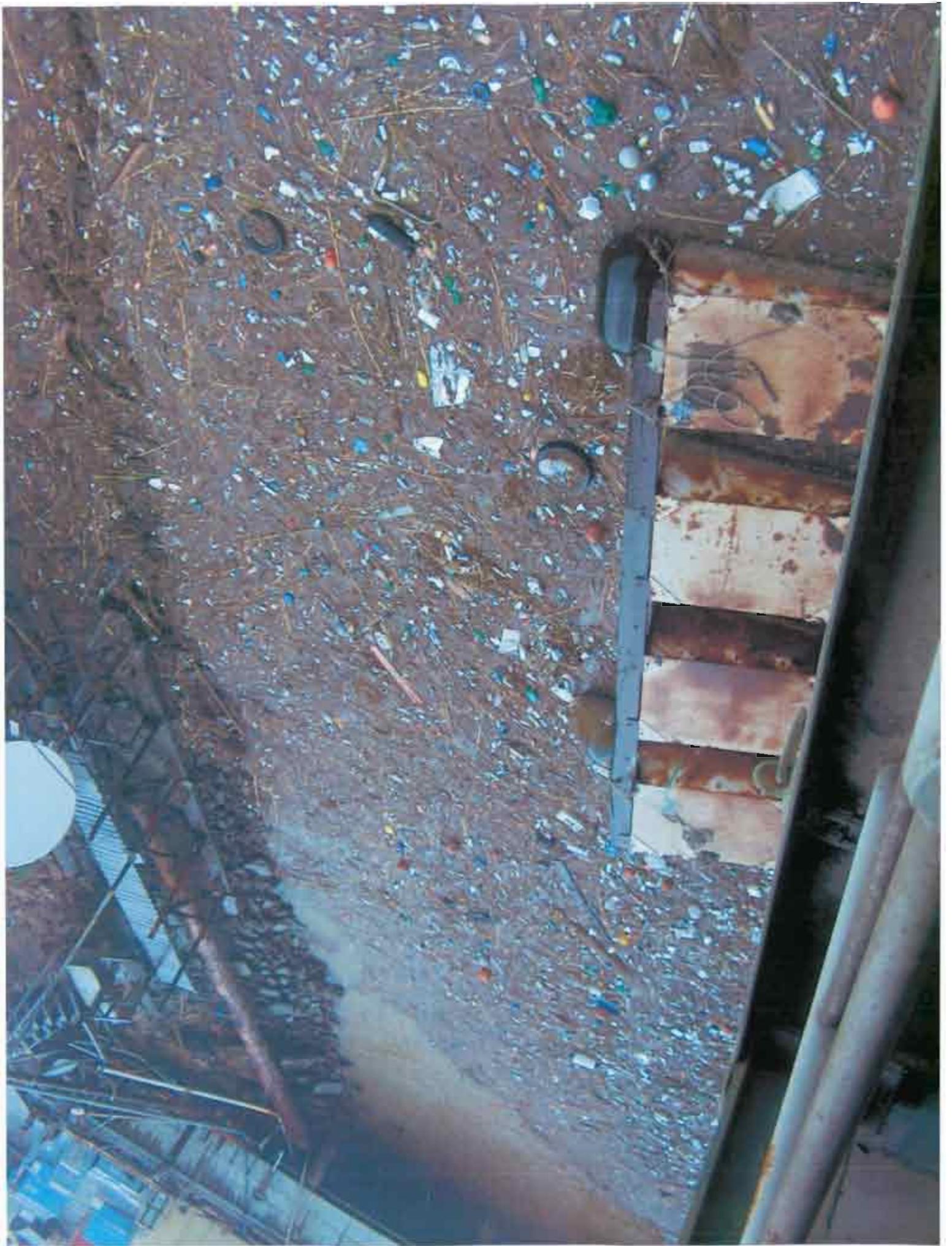
VII. CONCLUSION

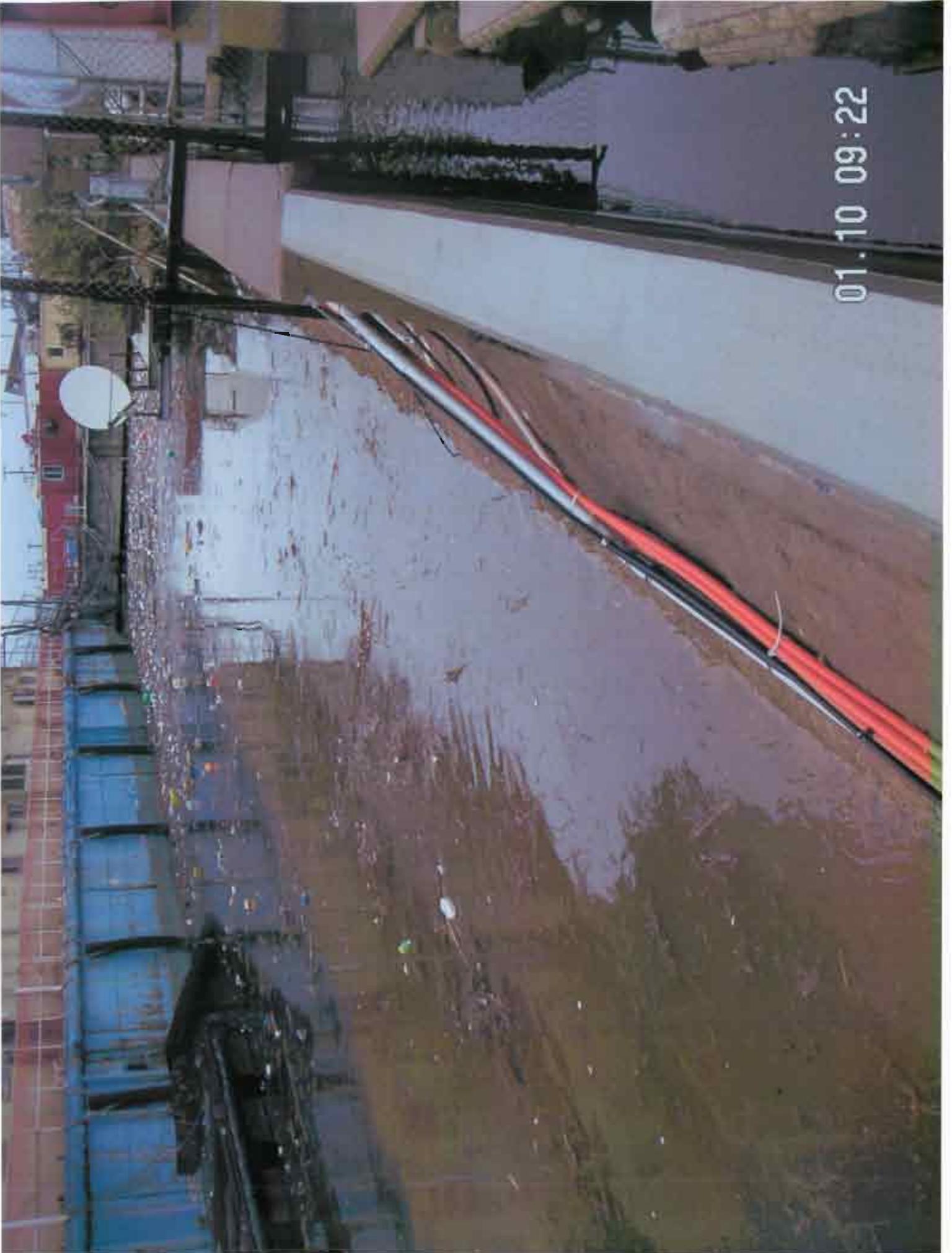
For the reasons discussed herein, NASSCO proposes that the Site be addressed using monitored natural attenuation, as recommended in the Exponent Report.

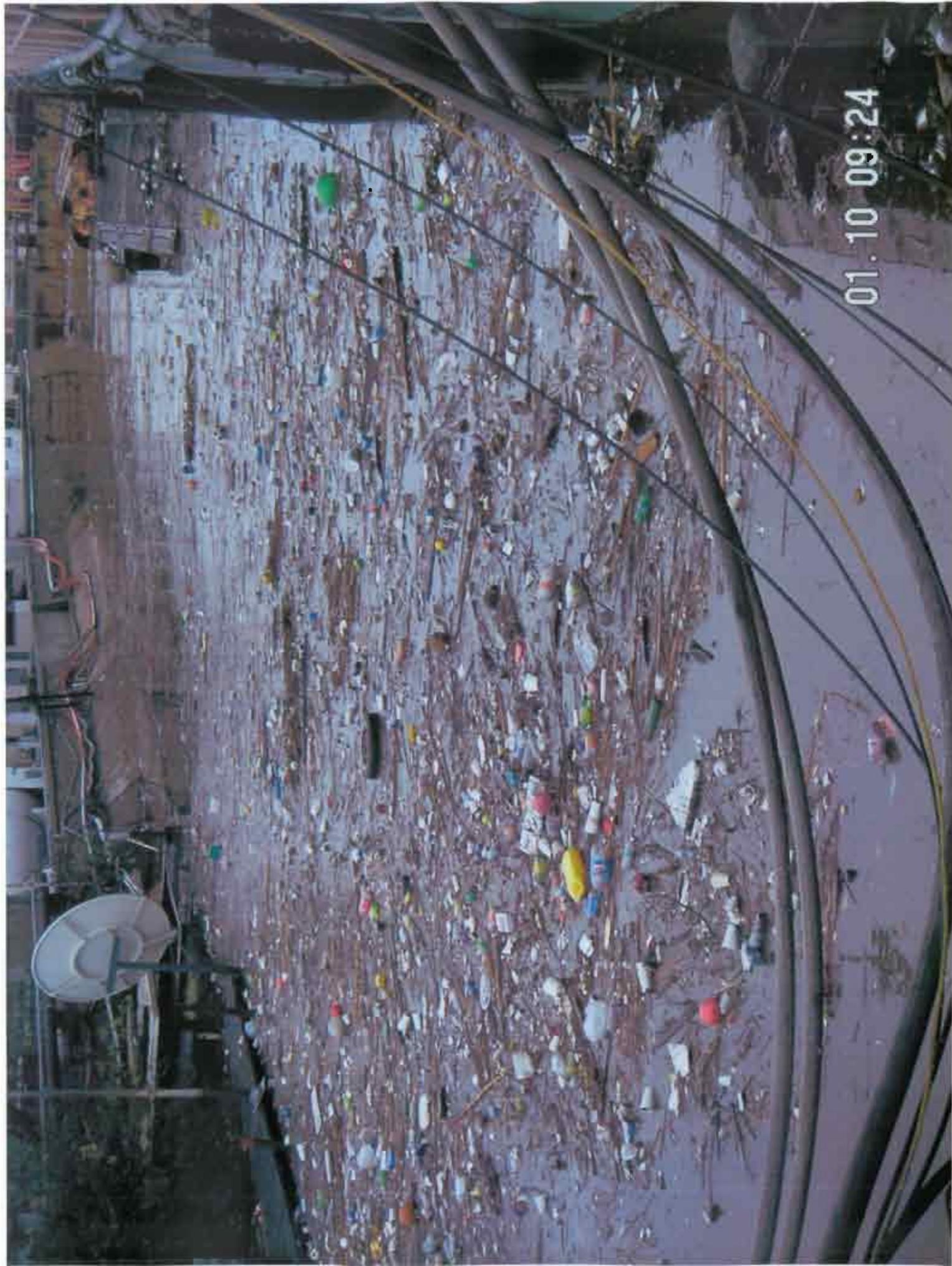
* * * * *

ATTACHMENT A



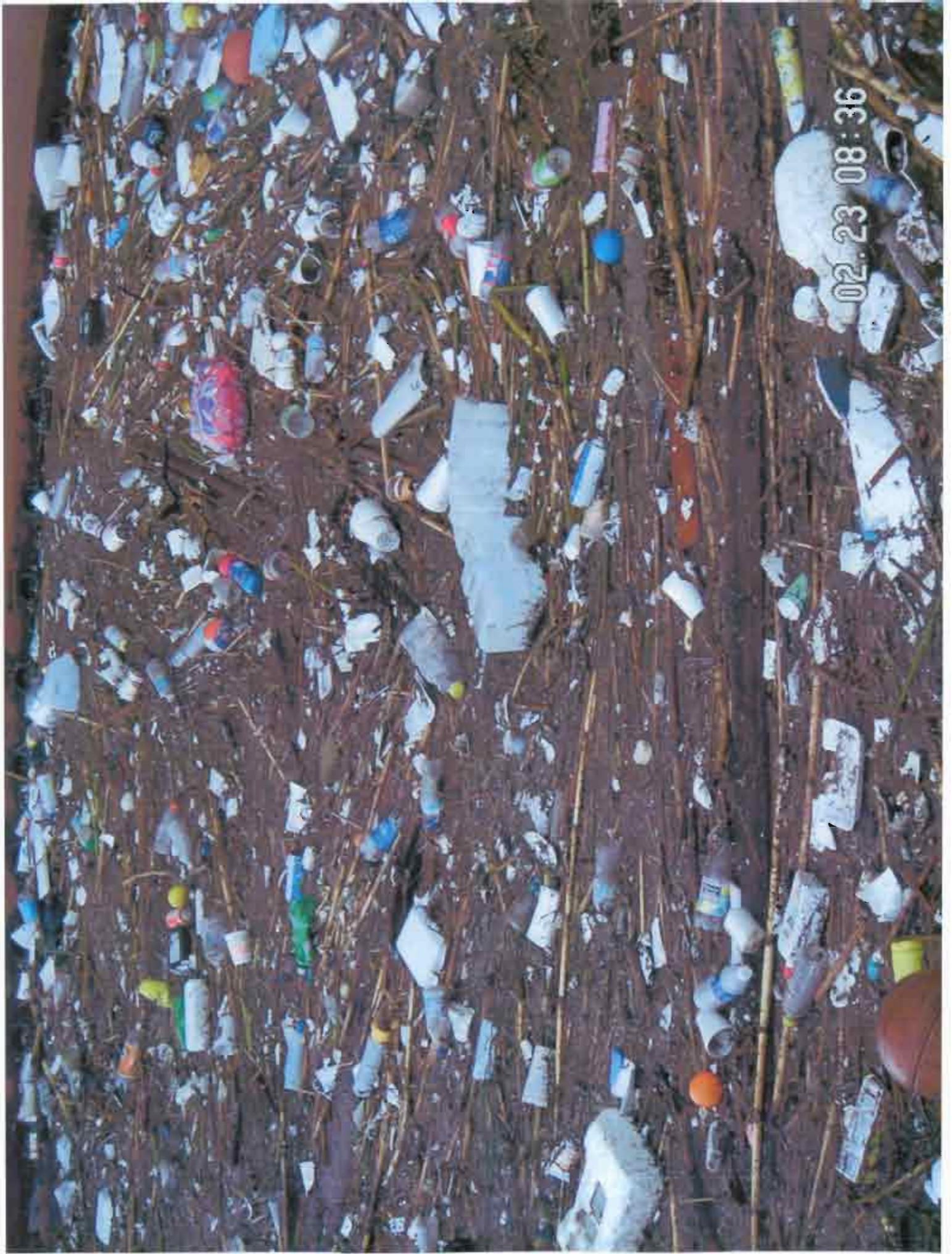








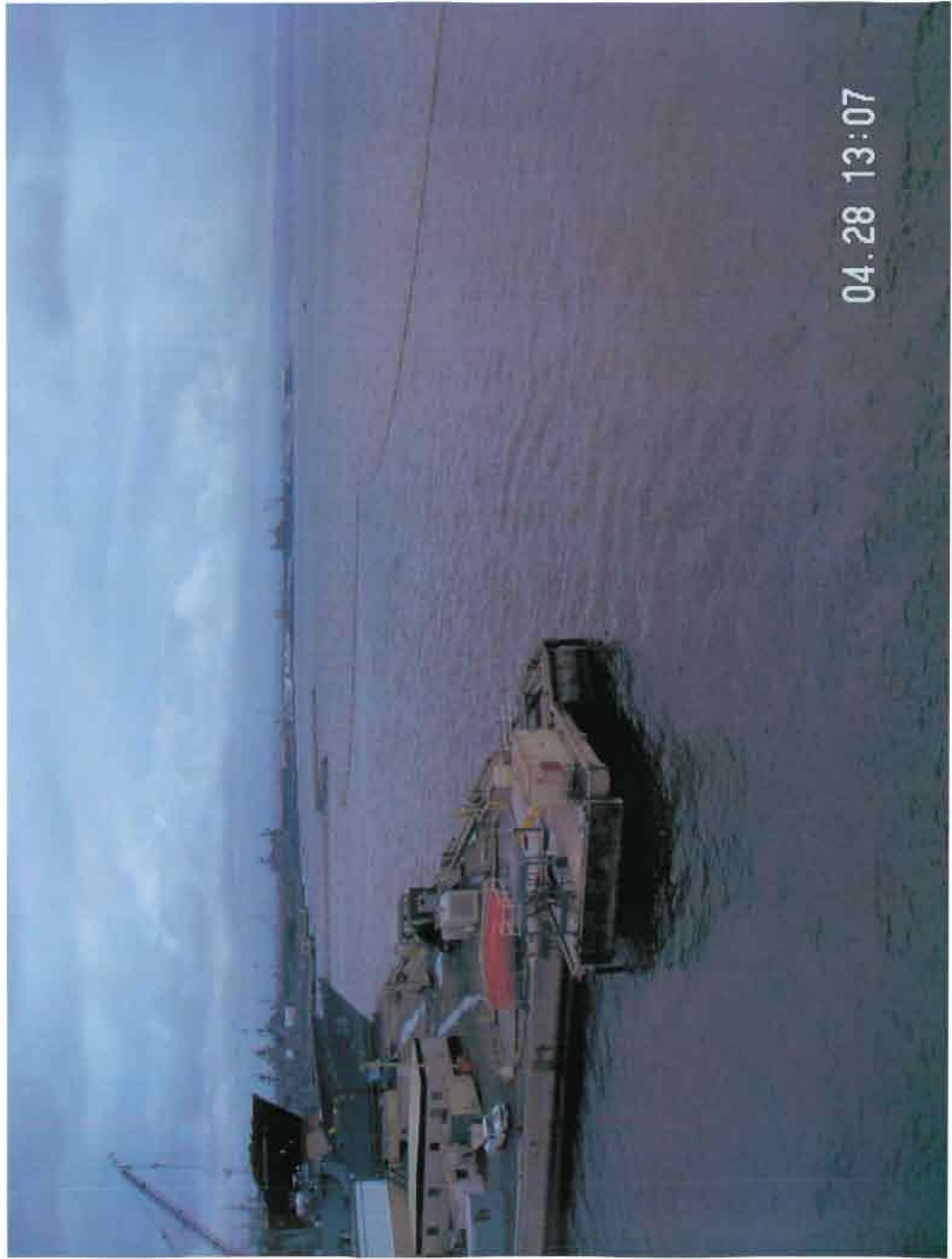
02.23 08:36



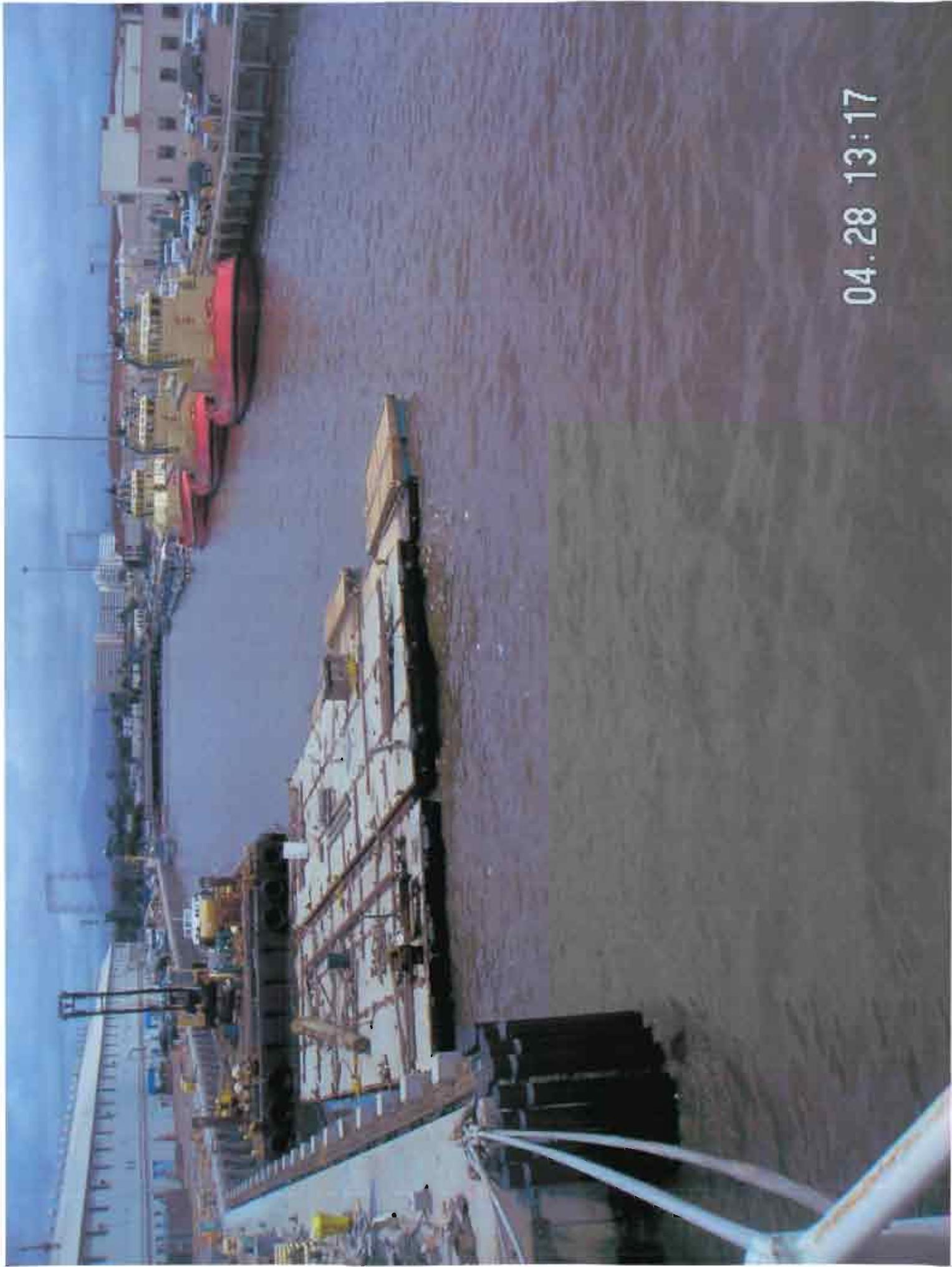




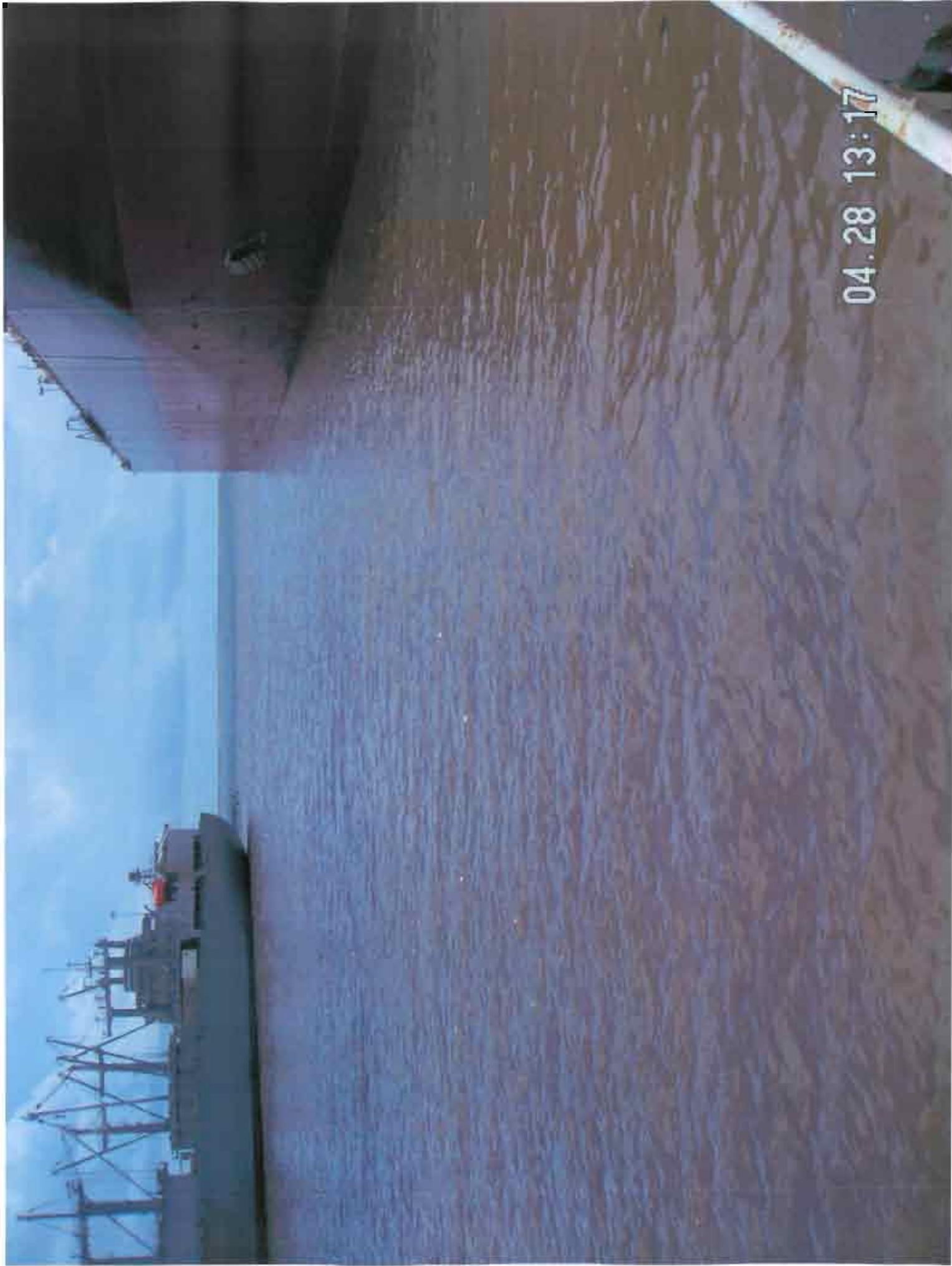
02.23.08:38



04.28 13:07



04.28 13:17



ATTACHMENT B



EXTERNAL MEMORANDUM

TO: T. Michael Chee
FROM: Rick Bodishbaugh
DATE: May 25, 2011
PROJECT: PH10719.001
SUBJECT: Summary of Need to Remediate NASSCO Stations

At your request, Exponent has reviewed the findings of the September 15, 2010 Tentative Cleanup and Abatement Order, as well as all lines of evidence presented therein for the proposed cleanup project. Our technical opinion remains unchanged from the one we reached in our 2003 Detailed Sediment Investigation Report. There is presently no evidence of significant impairment of beneficial uses due to NASSCO sediment contamination, and active remediation would not produce any clear long-term improvement in beneficial uses relative to current conditions. Current impacts to the benthic community are extremely limited in extent and severity, and are more likely the result of physical disturbance than chemical toxicity. There is presently no significant risk to aquatic dependent wildlife or human receptors, under realistic and reasonable exposure scenarios. Monitored natural recovery is therefore equivalent to or better than all other alternatives, and should be the preferred alternative of any remedial decision-making process.

A station-by-station summary for NASSCO stations of the primary lines of evidence concerning risk, beneficial use impairment, and the need for remediation follows.

Glossary of Key Terms in Summary

Primary COCs – The five principle contaminants of concern addressed in the Tentative Cleanup and Abatement Order, including copper, mercury, High Molecular Weight Polynuclear Aromatic Hydrocarbons (HPAHs), polychlorinated biphenyls (PCBs), and tributyltin (TBT).

Composite SWAC – The spatially weighted average concentration (SWAC) in sediments, calculated using Thiessen polygon areas. Thiessen polygons are areas whose boundaries define the area that is closest to each sample station relative to all other stations, and are mathematically defined by the perpendicular bisectors of the lines between adjacent points. Each Thiessen polygons is interpreted to be the area represented by a single sediment sample.

60% LAET – The lowest adverse effects threshold (LAET) is the lowest concentration of any of the seven apparent effect thresholds (AETs) developed from the Triad study. An AET is the concentration above which adverse effects to benthic invertebrates always occur. AETs were developed for the three toxicity tests and four benthic community parameters assessed in the DTR Triad analysis. The 60% LAET was selected as a highly protective site-specific benchmark of potential henthic community impairment.

SS-MEQ – Site-Specific Median Effects Quotient (SS-MEQ) is a multiple chemical benchmark calculated from the median sediment concentration of the five primary chemicals of concern (COCs) at six stations that were scored as “likely impaired” in the DTR Triad analysis. These stations are NA19, NA22, SW04, SW13, SW22 and SW23. For each station, the effects quotients (the ratio of measured concentration to the median “likely impaired” concentration) were calculated for each of the primary COCs, and these were averaged to yield the multi-chemical SS-MEQ. A benchmark of 90% of the SS-MEQ was used as a protective site-specific benchmark of benthic community impairment.

Triad Station – Of the 66 stations in the Shipyard Site, 30 Triad station were established where all three lines of evidence were collected, including benthic community conditions data, sediment chemistry data, and sediment toxicity data.

DTR – Draft Technical Report. The technical document supporting the conclusions reached in the Tentative Cleanup and Ahatement Order.

SQGQ1 – Sediment Quality Guideline Quotient 1 (SQGQ1) as defined in Fairey et al. (2001). The SQGQ1 is the mean sediment quality guideline quotient chemical combination using the effects median probable effects level and other individual sediment quality guideline values. The chemicals included in the SQGQ1 mean calculation are cadmium, copper, lead, silver, zinc, total chlordan, dieldrin, total PCBs and total PAHs.

BRI – Benthic Response Index (BRI) is a metric developed by scientists at the Southern California Coastal Water Research Project (SCCWRP) to measure the relative likelihood of benthic community degradation in coastal marine environments in California.

Shannon-Weiner Diversity Index – Shannon-Weiner Diversity Index (Diversity Index) is a measure of both the number of species and the distribution of individuals among species; higher

values indicate that more species are present or that individuals are more evenly distributed among species.

Reference LPL and UPL – the reference lower prediction limit (LPL) and upper prediction limit (UPL) are the one-tailed 95% prediction limits of the reference pool of stations. Site biological indicators outside the prediction limits (below LPL or above UPL) are judged to be significantly different from the reference condition.

SPI – sediment profile imaging (SPI) is a photographic method of assessing benthic community structure. Photographs are taken with a probe-mounted camera mounted above a prism that penetrates into the sediment and photographs a vertical cross-section of the sediment. The resulting photographs provide information on physical conditions in the sediment as well as a direct assessment of the presence condition of the benthic fauna.

Stage 1 - refers to the succession of benthic colonization and interaction with sediment soon after disturbance or defaunation of the soft-bottom marine sediment. Stage 1 represents the first stage at which small tube-dwelling polychaetes that feed at the sediment surface colonize the sediment soon after disturbance in the sediment.

Stage 2 – refers to the benthic colonization phase after Stage 1, in which the succession is characterized by organisms that burrow shallowly into the sediment but nevertheless feed at or near the sediment surface. Burrowing activity loosens and aerates the sediment, a process that makes it more suitable for further colonization.

Stage 3 – refers to the climax phase of benthic colonization, which is characterized by organisms that burrow well into the anaerobic sediment and feed at depth off of organic matter and microbial decomposers. These deep burrowing organisms typically irrigate their burrows with oxygenated surface water. This community is regarded as the mature stage of a fully developed benthic community.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA01

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 28 of 66 polygons
 - Copper ranking = 26 of 66 polygons
 - Mercury ranking = 19 of 66 polygons
 - HPAH ranking = 25 of 66 polygons
 - PCB ranking = 30 of 66 polygons
 - TBT ranking = 31 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LA:Ts
 - SS-MEQ = 0.69 (less than 0.90 benchmark)

3. **No impacts to benthic community:**
 - **Triad Station: "Unlikely" benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. Only 2 chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = low**
No evidence of toxicity. Amphipod, urchin, and bivalve tests all scored above reference LPL.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI data indicate Stage I and III successional stages present**

CONCLUSION

Based on relatively low chemistry, and the absence of benthic impacts, NA01 was properly excluded from the proposed remedial footprint in the DTR

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA02

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 46 of 66 polygons
 - Copper ranking = 44 of 66 polygons
 - Mercury ranking = 46 of 66 polygons
 - HPAH ranking = 44 of 66 polygons
 - PCB ranking = 41 of 66 polygons
 - TBT ranking = 46 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.41 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - SPI data indicate Stage I and III successional stages present

CONCLUSION

Based on relatively low chemistry, and a lack of evidence for benthic impacts, NA02 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA03

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 32 of 66 polygons
 - Copper ranking = 36 of 66 polygons
 - Mercury ranking = 13 of 66 polygons
 - HPAH ranking = 26 of 66 polygons
 - PCB ranking = 31 of 66 polygons
 - TBT ranking = 24 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.67 (less than 0.90 benchmark)

3. **No impacts to benthic community:**
 - **Triad Station: “Unlikely” benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. Only 2 chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = low**
No evidence of toxicity. Amphipod, urchin, and bivalve tests all scored above reference LPL.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI data indicate Stage I and III successional stages present.**

CONCLUSION

Based on relatively low chemistry, and the absence of benthic impacts, NA03 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA04

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 34 of 66 polygons
 - Copper ranking = 22 of 66 polygons
 - Mercury ranking = 13 of 66 polygons
 - HPAH ranking = 34 of 66 polygons
 - PCB ranking = 39 of 66 polygons
 - TBT ranking = 13 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.69 (less than 0.90 benchmark)

3. **No impacts to benthic community:**
 - **Triad Station: "Unlikely" benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. Only 1 chemical exceeds both DTR SQG and UPL.

 - **DTR toxicity score = low**
No evidence of toxicity. Amphipod, urchin, and bivalve tests all scored above reference LPL.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI data indicate Stage I and III successional stages present.**

CONCLUSION

Based on relatively low chemistry, and the absence of benthic impacts, NA04 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA05

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 47 of 66 polygons
 - Copper ranking = 44 of 66 polygons
 - Mercury ranking = 50 of 66 polygons
 - HPAH ranking = 44 of 66 polygons
 - PCB ranking = 47 of 66 polygons
 - TBT ranking = 40 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.40 (less than 0.90 benchmark)

3. **No impacts to benthic community:**
 - **Triad Station: “Unlikely” benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. No chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = low**
No evidence of toxicity. Amphipod, urchin, and bivalve tests all scored above reference LPL.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI data indicate Stage I and III successional stages present.**

CONCLUSION

Based on relatively low chemistry, and the absence of benthic impacts, NA05 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA06

SUMMARY OF STATION CONDITIONS

1. **Only mercury and copper are relatively high:**
 - Composite SWAC ranking = 19 of 66 polygons
 - Copper ranking = 9 of 66 polygons
 - Mercury ranking = 2 of 66 polygons
 - HPAH ranking = 31 of 66 polygons
 - PCB ranking = 15 of 66 polygons
 - TBT ranking = 18 of 66 polygons

2. **Chemistry is below or slightly exceeds conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 1.11 (greater than 0.90 benchmark)

3. **No impacts to benthic community:**
 - **Triad Station: "Unlikely" benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. Only 3 chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = low**
No evidence of toxicity. Amphipod, urchin, and bivalve tests all scored above reference LPL

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI data indicate Stage I and III successional stages present**

CONCLUSION

There are no impacts to the benthic community at this station. NA06 was included in the DTR proposed remedial footprint because of relatively high mercury and copper, which are potential food web risk drivers. However, a realistic analysis of food web risks to wildlife and human receptors shows that there are no significant risks. Therefore, no risk-based justification for remediating NA06 exists.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA07

SUMMARY OF STATION CONDITIONS

1. **Only mercury and HPAH are relatively high:**
 - Composite SWAC ranking = 17 of 66 polygons
 - Copper ranking = 35 of 66 polygons
 - Mercury ranking = 7 of 66 polygons
 - HPAH ranking = 6 of 66 polygons
 - PCB ranking = 21 of 66 polygons
 - TBT ranking = 39 of 66 polygons

2. **Chemistry is below or slightly exceeds conservative biological benchmarks:**
 - Only slight exceedance of 60% HPAH LAET (63%)
 - SS-MI:Q = 0.91 (slightly more than 0.90 benchmark)

3. **No impacts to benthic community:**
 - Triad Station: "Unlikely" benthic impacts

 - DTR chemistry score = moderate
SQGQ1 is less than 1.0. Only 2 chemicals exceed both DTR SQG and UPL.

 - DTR toxicity score = low
No evidence of toxicity. Amphipod, urchin, and bivalve tests all scored above reference LPL.

 - DTR benthic disturbance score = low
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - SPI data indicate Stage III successional stage present.

CONCLUSION

HPAH and mercury are relatively elevated at this station. HPAH is a potential benthic and food web risk driver, while mercury is a potential food web risk driver. There are no impacts to the benthic community at this station, and a realistic analysis of food web risks to wildlife and human receptors shows that there are no significant risks. Therefore, no risk-based justification for remediating NA07 exists, and NA07 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA08

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 40 of 66 polygons
 - Copper ranking = 18 of 66 polygons
 - Mercury ranking = 36 of 66 polygons
 - HPAH ranking = 34 of 66 polygons
 - PCB ranking = 35 of 66 polygons
 - TBT ranking = 40 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.56 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and a lack of evidence for benthic impacts, NA08 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA09

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 38 of 66 polygons
 - Copper ranking = 22 of 66 polygons
 - Mercury ranking = 10 of 66 polygons
 - HPAH ranking = 44 of 66 polygons
 - PCB ranking = 37 of 66 polygons
 - TBT ranking = 36 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60th LAETs
 - SS-MEQ = 0.62 (less than 0.90 benchmark)

3. **No clear indication of impacts to benthic community:**
 - **Triad Station: "Possible" benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. Only 2 chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = moderate**
Bivalve test scored below reference LPL. Amphipod and urchin tests scored above reference LPLs.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI data indicated Stage I and III present.**

CONCLUSION

There are no clear impacts to the benthic community at this station. NA09 was included in the DTR proposed remedial footprint because of a "possible impacts" score in the DTR Triad analysis and relatively high mercury levels. However, none of the four benthic community indicators evaluated is significantly different from reference conditions. Only one of the three toxicity tests (bivalve larval development) was different from reference, and this is the least reliable of the three tests performed. Mercury is a potential food web risk driver. However, a realistic analysis of food web risks to wildlife and human receptors shows that there are no significant risks. Therefore, no risk-based justification for remediating NA09 exists.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA10

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 54 of 66 polygons
 - Copper ranking = 48 of 66 polygons
 - Mercury ranking = 51 of 66 polygons
 - HPAH ranking = 54 of 66 polygons
 - PCB ranking = 54 of 66 polygons
 - TBT ranking = 44 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.35 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - SPI data indicate Stage III successional stage present.

CONCLUSION

Based on relatively low chemistry, and a lack of evidence for benthic impacts, NA10 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA11

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 49 of 66 polygons
 - Copper ranking = 43 of 66 polygons
 - Mercury ranking = 34 of 66 polygons
 - HPAH ranking = 44 of 66 polygons
 - PCB ranking = 45 of 66 polygons
 - TBT ranking = 56 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.42 (less than 0.90 benchmark)

3. **No clear indication of impacts to benthic community:**
 - **Triad Station: "Possible" benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. Only 1 chemical exceeds both DTR SQG and UPL.

 - **DTR toxicity score = moderate**
Amphipod test scored slightly below reference LPL. Bivalve and urchin tests scored above reference LPLs.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI data indicate Stage I and III successional stages present.**

CONCLUSION

There are no highly elevated COC levels at this station. There are no clear impacts to the benthic community. None of the four benthic community indicators evaluated is significantly different from reference conditions. Only one of the three toxicity tests (amphipod survival) was lower than reference. Due to a lack of high chemistry and no clear indication of benthic impacts, NA11 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA12

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 55 of 66 polygons
 - Copper ranking = 50 of 66 polygons
 - Mercury ranking = 49 of 66 polygons
 - HPAH ranking = 52 of 66 polygons
 - PCB ranking = 57 of 66 polygons
 - TBT ranking = 47 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.35 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - **Triad Station: "Possible" benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. No chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = moderate**
Bivalve test scored below reference LPL. Amphipod and urchin tests scored above reference LPLs.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI indeterminate, due to poor probe penetration.**

CONCLUSION

There are no highly elevated COC levels at this station. There are no clear impacts to the benthic community. None of the four benthic community indicators evaluated is significantly different from reference conditions. Only one of the three toxicity tests (bivalve larval development) was lower than reference, and this is the least reliable of the three tests performed. Due to a lack of high chemistry and no clear indication of benthic impacts, NA.12 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA13

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 53 of 66 polygons
 - Copper ranking = 42 of 66 polygons
 - Mercury ranking = 48 of 66 polygons
 - HPAH ranking = 54 of 66 polygons
 - PCB ranking = 52 of 66 polygons
 - TBT ranking = 48 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.38 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - SPI data indicate Stage I and III successional stages present.

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA13 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA14

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 60 of 66 polygons
 - Copper ranking = 55 of 66 polygons
 - Mercury ranking = 53 of 66 polygons
 - HPAH ranking = 59 of 66 polygons
 - PCB ranking = 59 of 66 polygons
 - TBT ranking = 54 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.28 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA14 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA15

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 22 of 66 polygons
 - Copper ranking = 28 of 66 polygons
 - Mercury ranking = 24 of 66 polygons
 - HPAH ranking = 38 of 66 polygons
 - PCB ranking = 34 of 66 polygons
 - TBT ranking = 7 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.87 (less than 0.90 benchmark)

3. **No impacts to benthic community:**
 - **Triad Station: “Unlikely” benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. Only 2 chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = low**
No evidence of toxicity. Amphipod, urchin, and bivalve tests all scored above reference LPL.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI data indicate Stage I and III successional stages present.**

CONCLUSION

There are no impacts to the benthic community at this station. NA15 was included in the DTR proposed remedial footprint because of relatively TBT, which can potentially impact gastropods and pose a food web risk. However, a realistic analysis of food web risks to wildlife and human receptors shows that there are no significant risks, and there is no evidence of an impacted gastropod population at the shipyard. Therefore, no risk-based justification for remediating NA15 exists.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA16

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 30 of 66 polygons
 - Copper ranking = 26 of 66 polygons
 - Mercury ranking = 18 of 66 polygons
 - HPAH ranking = 39 of 66 polygons
 - PCB ranking = 17 of 66 polygons
 - TBT ranking = 25 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.69 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - **Triad Station: "Possible" benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. Only 2 chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = moderate**
Bivalve test scored below reference LPL. Amphipod and urchin tests scored above reference LPLs.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

CONCLUSION

There are no highly elevated COPC levels at this station. There are no clear impacts to the benthic community. None of the four benthic community indicators evaluated is significantly different from reference conditions. Only one of the three toxicity tests (bivalve larval development) was lower than reference, and this is the least reliable of the three tests performed. Due to a lack of high chemistry and no clear indication of benthic impacts, NA16 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA17

SUMMARY OF STATION CONDITIONS

1. **Only copper and TBT were relatively high:**
 - Composite SWAC ranking = 10 of 66 polygons
 - Copper ranking = 7 of 66 polygons
 - Mercury ranking = 35 of 66 polygons
 - HPAH ranking = 42 of 66 polygons
 - PCB ranking = 18 of 66 polygons
 - TBT ranking = 3 of 66 polygons
2. **Chemistry is below or slightly exceeds conservative biological benchmarks:**
 - Only TBT exceeds the 60% LAET
 - SS-MEQ = 1.41 (greater than 0.90 benchmark)
3. **No direct evidence of impacts to benthic community:**
 - **Triad Station: "Possible" benthic impacts**

 - **DTR chemistry score = high**
SQGQ1 is greater than 1.0 and 4 chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = low**
No evidence of toxicity. Amphipod, urchin, and bivalve tests all scored above reference LPL.

 - **DTR benthic disturbance score = low**
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.

 - **SPI data indicate Stage I and III successional stages present.**

CONCLUSION

There are no clear impacts to the benthic community at this station. NA17 was included in the DTR proposed remedial footprint because of a "possible impacts" score in the DTR Triad analysis and relatively high TBT and copper levels. However, none of the four benthic community indicators evaluated is significantly different from reference conditions, and none of the three toxicity tests was different from reference. In other words, the "possible" disturbance score was due solely to high chemistry, not to any biological indicator. TBT can potentially impact gastropods and pose a food web risk. However, a realistic analysis of food web risks to wildlife and human receptors shows that there are no significant risks, and there is no evidence of an impacted gastropod population at the shipyard. Copper is primarily a benthic risk driver, and can pose a food web risk. Again, there is no evidence of either benthic impacts or food web risk from copper, based on a realistic analysis of risk to wildlife and human receptors. Therefore, no risk-based justification for remediating NA17 exists.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA18

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 39 of 66 polygons
 - Copper ranking = 31 of 66 polygons
 - Mercury ranking = 37 of 66 polygons
 - HPAH ranking = 49 of 66 polygons
 - PCB ranking = 32 of 66 polygons
 - TBT ranking = 19 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.56 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA18 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA19

SUMMARY OF STATION CONDITIONS

1. **Only PCB and TBT are relatively high:**
 - Composite SWAC ranking = 18 of 66 polygons
 - Copper ranking = 18 of 66 polygons
 - Mercury ranking = 38 of 66 polygons
 - HPAH ranking = 40 of 66 polygons
 - PCB ranking = 10 of 66 polygons
 - TBT ranking = 8 of 66 polygons
2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.92 (slightly greater than 0.90 benchmark)
3. **No direct evidence of impacts to benthic community:**
 - Triad Station: "Likely" benthic impacts
 - DTR chemistry score = high
SQGQ1 is greater than 1.0 and 4 chemicals exceed both DTR SQG and UPL.
 - DTR toxicity score = moderate
Bivalve test scored below reference LPL.
 - DTR benthic disturbance score = low
No evidence of disturbance. BRI is below reference UPL. Abundance, # taxa, and diversity index are all above reference LPL.
 - SPI data indicate Stage I and III successional stages present.

CONCLUSION

NA19 was included in the DTR proposed remedial footprint because of a "likely" impacted score in the DTR Triad analysis and relatively high TBT and PCB levels. However, none of the four benthic community indicators evaluated is significantly different from reference conditions, and only one of the three toxicity tests (bivalve larval development, the least reliable of the three tests) was different from reference. In other words, the "likely" disturbance score was due solely to high chemistry, and one of seven biological indicators being different from reference conditions. TBT can potentially impact gastropods and pose a food web risk. However, a realistic analysis of food web risks to wildlife and human receptors shows that there are no significant risks, and there is no evidence of an impacted gastropod population at the shipyard. PCBs are a potential food web risk driver, and again, there is no evidence of food web risk from PCBs, based on a realistic analysis of risk to wildlife and human receptors. Therefore, no risk-based justification for remediating NA19 exists.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA20

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 50 of 66 polygons
 - Copper ranking = 61 of 66 polygons
 - Mercury ranking = 65 of 66 polygons
 - HPAH ranking = 43 of 66 polygons
 - PCB ranking = 60 of 66 polygons
 - TBT ranking = 14 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MLQ = 0.34 (less than 0.90 benchmark)

3. **No impacts to benthic community:**
 - **Triad Station: "Unlikely" benthic impacts**

 - **DTR chemistry score = low**
SQGQ1 is less than 1.0. No chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = low**
Amphipod, urchin, and bivalve tests all scored above reference LPL.

 - **DTR benthic disturbance score = moderate**
The number of taxa present is below that found in the reference condition. However, the other three indicators show no sign of disturbance. BRI is below the reference UPL. Abundance and diversity index are above reference LPL. The relatively low number of taxa present is likely the result of physical disturbance in this area.

 - **SPI data indicate Stage I and III successional stages present.**

CONCLUSION

Based on relatively low chemistry, and the absence of clear evidence of benthic impacts, NA20 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA21

SUMMARY OF STATION CONDITIONS

1. **Only TBT is relatively high:**
 - Composite SWAC ranking = 41 of 66 polygons
 - Copper ranking = 50 of 66 polygons
 - Mercury ranking = 58 of 66 polygons
 - HPAH ranking = 50 of 66 polygons
 - PCB ranking = 51 of 66 polygons
 - TBT ranking = 12 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.50 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA21 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA22

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 51 of 66 polygons
 - Copper ranking = 50 of 66 polygons
 - Mercury ranking = 63 of 66 polygons
 - HPAH ranking = 33 of 66 polygons
 - PCB ranking = 47 of 66 polygons
 - TBT ranking = 36 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.35 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - **Triad Station: "Likely" benthic impacts**

 - **DTR chemistry score = moderate**
SQGQ1 is less than 1.0. No chemicals exceed both DTR SQG and UPL.

 - **DTR toxicity score = moderate**
Bivalve test scored below reference LPL.

 - **DTR benthic disturbance score = moderate**
No evidence of disturbance. BRI is below reference UPL. Abundance and number of taxa are above reference LPL. Diversity index is above reference LPL.

 - **SPI data indicate Stage I and III successional stages present.**

CONCLUSION

Station NA22 has relatively low COPC levels. This station received a "likely" impacted score in the DTR Triad analysis. However, none of the four benthic community indicators evaluated is significantly different from reference conditions, and only one of the three toxicity tests (bivalve larval development, the least reliable of the three tests) was different from reference. In other words, the "likely" disturbance score was due solely to high chemistry, and one of seven biological indicators being different from reference conditions. Furthermore, this area is under the influence of deposition from Chollas Creek, and will be assessed as part of the Chollas Creek Mouth TMDL process. For this reason, NA22 was not included and the DTR proposed remedial footprint, and no risk-based justification for remediation exists.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA23

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 31 of 66 polygons
 - Copper ranking = 11 of 66 polygons
 - Mercury ranking = 13 of 66 polygons
 - HPAH ranking = 36 of 66 polygons
 - PCB ranking = 20 of 66 polygons
 - TBT ranking = 36 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.72 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA23 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA24

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 45 of 66 polygons
 - Copper ranking = 40 of 66 polygons
 - Mercury ranking = 29 of 66 polygons
 - HPAH ranking = 50 of 66 polygons
 - PCB ranking = 37 of 66 polygons
 - TBT ranking = 49 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.47 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA24 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA25

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 64 of 66 polygons
 - Copper ranking = 63 of 66 polygons
 - Mercury ranking = 62 of 66 polygons
 - HPAH ranking = 59 of 66 polygons
 - PCB ranking = 64 of 66 polygons
 - TBT ranking = 63 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.20 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA25 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA26

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 61 of 66 polygons
 - Copper ranking = 64 of 66 polygons
 - Mercury ranking = 60 of 66 polygons
 - HPAH ranking = 64 of 66 polygons
 - PCB ranking = 47 of 66 polygons
 - TBT ranking = 58 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.23 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA26 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA27

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 36 of 66 polygons
 - Copper ranking = 10 of 66 polygons
 - Mercury ranking = 10 of 66 polygons
 - HPAH ranking = 44 of 66 polygons
 - PCB ranking = 40 of 66 polygons
 - TBT ranking = 42 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.69 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA27 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA28

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 42 of 66 polygons
 - Copper ranking = 14 of 66 polygons
 - Mercury ranking = 31 of 66 polygons
 - HPAH ranking = 36 of 66 polygons
 - PCB ranking = 47 of 66 polygons
 - TBT ranking = 45 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAI:Ts
 - SS-MEQ = 0.55 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA28 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA29

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 58 of 66 polygons
 - Copper ranking = 58 of 66 polygons
 - Mercury ranking = 53 of 66 polygons
 - HPAH ranking = 53 of 66 polygons
 - PCB ranking = 45 of 66 polygons
 - TBT ranking = 50 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.30 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA29 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA30

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 59 of 66 polygons
 - Copper ranking = 54 of 66 polygons
 - Mercury ranking = 45 of 66 polygons
 - HPAH ranking = 62 of 66 polygons
 - PCB ranking = 61 of 66 polygons
 - TBT ranking = 64 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.30 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI Data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA30 was properly excluded from the proposed remedial footprint in the DTR.

**TENTATIVE CLEANUP AND ABATEMENT ORDER
NO. R9-2011-0001**

STATION NA31

SUMMARY OF STATION CONDITIONS

1. **Primary COCs are relatively low:**
 - Composite SWAC ranking = 66 of 66 polygons
 - Copper ranking = 65 of 66 polygons
 - Mercury ranking = 64 of 66 polygons
 - HPAH ranking = 66 of 66 polygons
 - PCB ranking = 65 of 66 polygons
 - TBT ranking = 65 of 66 polygons

2. **Chemistry is below conservative biological benchmarks:**
 - No exceedances of 60% LAETs
 - SS-MEQ = 0.16 (less than 0.90 benchmark)

3. **No direct evidence of impacts to benthic community:**
 - Non-Triad Station
 - No SPI data

CONCLUSION

Based on relatively low chemistry, and the lack of evidence of benthic impacts, NA31 was properly excluded from the proposed remedial footprint in the DTR.

ATTACHMENT C

Document No. 27624

Filed
SD UNIFIED PORT DISTRICT Clark's Office

SAN DIEGO UNIFIED PORT DISTRICT
LEASE TO
NATIONAL STEEL AND SHIPBUILDING COMPANY
OF PROPERTY LOCATED AT
HARBOR DRIVE AND 28TH STREET
SAN DIEGO, CALIFORNIA
FOR FIFTY (50) YEARS
COMMENCING JANUARY 1, 1991
AND ENDING DECEMBER 31, 2040

195101
DSH/iks

DUPLICATE-ORIGINAL

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LEASE

THIS LEASE, made and entered into this 22nd day of October, 1991, between the SAN DIEGO UNIFIED PORT DISTRICT, a public corporation, hereinafter called "Lessor," and NATIONAL STEEL AND SHIPBUILDING COMPANY, a Nevada corporation, hereinafter called "Lessee," WITNESSETH:

Lessor, for the consideration hereinafter set forth, hereby leases to Lessee for the term and upon the conditions hereinafter set forth, a portion of those lands conveyed to the San Diego Unified Port District by that certain Act of the Legislature of the State of California entitled "San Diego Unified Port District Act," Stats. 1962, 1st Ex. Sess., c. 67, as amended, which lands are more particularly described as follows:

Approximately 5,498,071 square feet of tideland area in the City of San Diego, California, more particularly described and delineated on the attached five-page legal description and three-page Drawing No. 2516-B revised June 10, 1983, attached here to as Exhibits "A" and "B" and by this reference made a part hereof.

TO HAVE AND TO HOLD said leased premises for the term of the Lease and upon the conditions as follows:

1. TERM: The term of the Lease shall be for a period of fifty (50) years commencing on January 1, 1991, and ending on December 31, 2040, unless sooner terminated as herein provided.

2. RENTAL: Lessee agrees to pay to Lessor rent in accordance with the following schedules and procedures:

(a) The term of this Lease shall be divided into a series of rental periods. The first rental period shall commence on the commencement date of this Lease and shall end on March 31, 1991. The second rental period shall commence on April 1, 1991, and end on October 31, 1991. The third rental period shall commence on November 1, 1991, and end on September 30, 1993. Each successive rental period shall consist of sixty (60) months and shall commence at the expiration of the immediately preceding rental period. The last rental period shall be reduced in term in order to coincide with the expiration of this Lease.

(b) The rental for the first rental period of this Lease shall be One Hundred Eighty-Two Thousand Seven Hundred Twenty-Four Dollars (\$182,724) per month. The rental for the second

rental period shall be Two Hundred Eight Thousand Four Hundred Eighty-Eight Dollars (\$208,488) per month. The rental for Parcel Nos. 1, 2 and 3 for the third rental period shall be One Hundred Ninety-Seven Thousand Eight Hundred Eighty Dollars (\$197,880) per month, which is calculated on the basis of sixty-four cents (64c) per square foot per year for Parcel No. 1 and nine cents (9c) per square foot per year for Parcel Nos. 2 and 3. Said rental sums shall be payable in advance on or before the tenth (10th) day of each month. For the fourth and each successive rental period of this Lease and any extension thereof the rental shall be a sum agreed upon by Lessor and Lessee provided, however, during the fourth and each successive rental period the rents shall be adjusted upward or downward after the expiration of the first thirty (30) months of each rental period (the adjustment date) according to the following computation: "The base figure for computing the adjustment is the arithmetic average of the three monthly index figures for the sixth, fifth, and fourth months immediately preceding the existing rental period as shown in the Consumer Price Index for All Urban Consumers for Los Angeles/Anaheim/Riverside, CA/All Items based on the period 1982-84 = 100 as published by the United States Department of Labor's Bureau of Labor Statistics. The index figure for the adjustment date is the arithmetic average of the three monthly index figures of said Consumer Price Index for All Urban Consumers for the sixth, fifth, and fourth months immediately preceding the adjustment date.

"The index for the adjustment date shall be computed as a percentage of the base figure. For example, assuming the base figure is 110 and the index figure for the adjustment date is 121, the percentage to be applied is $121/110 = 1.10 = 110\%$.

"That percentage of the base figure shall be applied to the initial rent in effect at the beginning of the then existing rental period and will continue for the remaining thirty (30) months of the rental period.

"In the event the Consumer Price Index for All Urban Consumers for Los Angeles/Anaheim/Riverside, CA/All Items is no longer published, the index for the adjustment date shall be the one reported in the U. S. Department of Labor's comprehensive official index most nearly answering the foregoing description of the index. If an index is calculated from a base different from the base period 1982-84 = 100, the base figure used for calculating the adjustment percentage shall first be converted under a formula supplied by the Bureau.

"If the above described Department of Labor indices are no longer published, another index generally recognized as authoritative shall be substituted by agreement of the parties. If they are unable to agree within sixty (60) days

after demand by either party, a substitute index will be selected by the Chief Officer of the San Francisco Regional Office of the Bureau of Labor Statistics or its successor.

"Notwithstanding the publication dates of the index, the effective date of the rent adjustment is at the expiration of the first thirty (30) months of each rental period. Until said rent adjustment can be reasonably determined by index publication, Lessee shall continue to make rental payments pursuant to this Lease at the same rent in effect at the then existing rental period. Because of this provision, overpayment of rents shall be credited to the Lessee's rental account and underpayments of rent shall be immediately paid to the Lessor."

- (c) In the event the parties cannot agree to the rent for the fourth or any subsequent rental period, the controversy as to rent for said period shall be determined by three arbitrators. After notice by either party to the other requesting arbitration, one arbitrator shall be appointed by each party. Notice of the appointment shall be given by each party to the other when made. The two arbitrators shall immediately choose a third arbitrator to act with them. If they fail to select a third arbitrator, on application by either party, the third arbitrator shall be promptly appointed by the then presiding judge of the Superior Court of the State of California, County of San Diego, acting in his individual capacity. The party making the application shall give the other party notice of his application. All of the arbitrators shall be qualified real estate appraisers. Each party shall bear the expense of its own appointed arbitrator and shall bear other expenses pursuant to Section 1284.2 of the Code of Civil Procedure of California. Hearings shall be held in the City of San Diego, California. The award shall be the decision of not less than two of the arbitrators. Said award shall be the rent which Lessor would derive from Lessor's property if it was vacant land and water, without any improvements thereon, and made available on the open market for new leasing purposes at the commencement of the rental period under arbitration. For the purpose of this arbitration procedure, the arbitrators shall assume that the Lessor has a fee simple absolute estate. The arbitrators shall take into consideration the size of the premises and any benefits or burdens granted or imposed by the terms of this lease, other than limitations as to Lessee's use as provided in other paragraphs herein, and other than Lessee's obligation to construct improvements as provided in Paragraph 4 herein. In determining what rent Lessor could derive from said property if it were made available on the open market for new leasing purposes, the arbitrators shall consider the property as if it were available to be leased for marine-related industrial uses. Said uses shall not be confined to those permitted Lessee herein nor to Lessee's actual use of the leased premises. In determining the rates, returns,

rents and/or percentage rentals for said use and/or uses, the arbitrators shall use and analyze only the market data that is found in the open marketplace, such as is demanded and received by other Lessors for the same or similar uses as those referenced above. In all cases, the award shall be based upon recognized real estate appraisal principles and methods. The award determined by the arbitrators shall be effective and retroactive to the first day of the rental period under arbitration. The award shall be in writing in the form of a report that is in accordance with the powers of the arbitrators herein, supported by facts and analysis and in accordance with law. The arbitrators shall make copies of their report available to any ethical practice committee of any recognized professional real estate organization. The arbitration shall be conducted under and subject to Sections 1280 through 1294.2 of the Code of Civil Procedure of California.

- (d) In addition to the rentals provided in Paragraphs 2(a), (b), and (c), Lessee shall pay the sum of Two Hundred Dollars (\$200) per month as rent for the use of the Lessor-owned building as described in Paragraph 6. Said sum shall not be subject to adjustment nor shall it be considered in establishing the rental amounts under this lease.
- (e) Notwithstanding Paragraph 2 of this Lease, no rent shall be charged to Lessee during the term of this Lease or any extension thereof for Parcel No. 4, shown on attached Exhibits "A" and "B" unless and until such time as Lessor determines rent shall be paid for said Parcel No. 4. Said rent shall be effective thirty (30) days after delivery of a written notice to Lessee from Lessor that Lessor elects to charge rent for said Parcel No. 4. If Lessor makes the election to charge rent, the additional rent for said Parcel No. 4 shall be based upon the square foot water rent for Parcel Nos. 2 and 3 in effect at the time Lessor makes said determination and subsequent adjustments in rent for said Parcel No. 4 shall be made concurrent with and in accordance with the provisions of Paragraphs 2 (a), (b), and (c) of this Lease.
- (f) In the event Lessee is delinquent in rendering to Lessor an accounting of rent due or in remitting the rent due in accordance with the rental provisions of this Lease, then the rent not paid when due shall bear interest at the rate of ten percent (10%) per annum from the date due until paid; provided, however, that the Port Director of Lessor shall have the right to waive for good cause any interest payment upon written application of Lessee for any such delinquency period.
- (g) Rentals shall be delivered to the Treasurer of the San Diego Unified Port District at Post Office Box 488, San Diego, California 92112. The designated place of payment may be changed at any time by Lessor upon ten (10) days' written

notice to Lessee. Lessee assumes all risk of loss if payments are made by mail.

3. USE: Lessee agrees that the leased premises shall be used only and exclusively for the repairing and building of ships and for occasional and incidental uses for steel fabricating, foundry, and general metal manufacturing and for no other purposes whatsoever without the written consent of Lessor, evidenced by resolution, first had and obtained.

4. CONSTRUCTION OF IMPROVEMENTS:

(a) On or before December 31, 1993, Lessee shall commence the construction and diligently proceed to completion of real property improvements related to the permitted uses described in Paragraph 3. The improvements shall be of the nature described on the EXAMPLES OF REAL PROPERTY IMPROVEMENTS, which is marked Exhibit "C" and is attached hereto and by this reference made a part hereof. Lessee shall make an investment for the improvements to be constructed as described in this Paragraph in an amount which shall equal or exceed Eighty-Five Million Five Hundred Fifty Thousand Dollars (\$85,550,000) hereinafter referred to as "minimum investment". Such minimum investment is consideration for the term of this Lease, and is not a portion of the rental obligations contained in Paragraph 2 of this Lease, and neither such investment or improvements nor any other Lessee investment or improvement shall be considered by the parties or any arbitrator (in the event of arbitration) in determining any rent during the term of this Lease. In the event Lessee fails to invest the entire minimum investment by no later than December 31, 2010, the term of this Lease shall be reduced. The reduction in term shall be one year for every One Million Seven Hundred Eleven Thousand Dollars (\$1,711,000), prorated monthly; that Lessee's actual investment in improvements to be constructed as described in this Paragraph is less than the minimum investment. In no event, however, shall the term of the Lease be reduced by operation of the terms of this Paragraph so as to result in termination of this Lease prior to September 30, 2005.

The construction of certain improvements contemplated by this Lease may be subject to the California Environmental Quality Act and other laws which may be in effect in the future. If Lessor determines any proposed improvements are within the scope of any then applicable environmental quality act and laws, it may then be necessary for Lessor either to approve or

disapprove (and thereby prohibit) the construction of such improvements in accordance with any such act or laws and other applicable provisions of this Lease. In the event there is such a disapproval, the cost of such a proposed improvement shall not be credited toward the cost of any improvement nor shall the time for completion of any improvements be extended, waived, or suspended.

- (b) No construction of any improvement upon the leased premises shall commence without the prior approval of the Port Director of Lessor, as evidenced in writing, and all such construction shall be in accordance with plans and specifications which must be submitted to and approved by the Port Director in writing prior to the commencement of any such construction.
- (c) When required by Lessor, Lessee shall pave or plant ground cover, at its own cost and expense, over the entire area of the leased premises not covered by buildings. All paving or ground cover shall be in accordance with plans and specifications approved by the Port Director in writing prior to the commencement of any such paving or planting.
- (d) By no later than March 31 of each year, beginning with March 31, 1992 and ending with March 31, 2011, Lessee shall furnish Lessor an itemized statement of the actual construction cost of any improvements required by the terms of this paragraph, which were completed during the preceding calendar year. The statement of cost shall be sworn to and signed by Lessee or his responsible agent under penalty of perjury.
- (e) The time during which Lessee is delayed by acts of God, war, invasion, rebellion, revolution, insurrection, riots, labor problems, unavailability of materials, government intervention, or acts or omissions of the Lessor, shall be added to the times for the commencement of construction and completion of construction of improvements as referred to in this Lease and otherwise to perform its obligations referred to in this Lease; provided, that in no event shall the period of excused delay exceed 365 days in the aggregate.

5. IMPROVEMENTS: Lessee may, at its own expense, make any alterations or changes in the leased premises or cause to be built, made or installed thereon any structures, machines, appliances, utilities, signs or other improvements necessary or desirable for the use of said premises and may alter and repair

any such structures, machines or other improvements; provided, however, that no alterations and changes shall be made and no structures, machines, appliances, utilities, signs or other improvements shall be made, built or installed, and no major repairs thereto shall be made except in accordance with plans and specifications previously submitted to and approved in writing by the Port Director of Lessor. Notwithstanding the foregoing, Lessee shall have the right within the interior of any enclosed building structure to install and/or remove machines, equipment, appliances and trade fixtures to/from the leased premises without the prior consent of the Port Director of Lessor.

Lessee further agrees that no banners, pennants, flags, eye-catching spinners or other advertising devices, nor any temporary signs shall be permitted to be flown, installed, placed, or erected on the premises without written consent of the Port Director of Lessor.

6. TITLE TO IMPROVEMENTS: On the commencement date of the term of this Lease, all existing structures, buildings, installations, and improvements of any kind located on the leased premises are owned by and title thereto is vested in Lessee, except for a building of approximately 2,879 square feet located at the foot of the southerly extension of 28th Street on Parcel No. 1, formerly known as "Lyon's Cafe" and now commonly known as "NASSCO Building 42," which building is owned by Lessor. All said existing structures, buildings, installations and improvements as well as structures, buildings, installations and improvements of any kind placed on the leased premises by Lessee subsequent to the commencement date of the term of this Lease shall at the option of Lessor be removed by Lessee at Lessee's expense. Lessor may exercise said option as to any or all of the structures, buildings, installations and improvements either before or after the expiration or sooner termination of this Lease. If Lessor exercises such option, Lessee shall remove such structures, buildings, installations or improvements within sixty (60) days after the expiration of the term of this Lease or sooner termination thereof. If Lessee fails to remove such structures, buildings, installations or improvements within said sixty (60) days, Lessor shall have the right to have such structures, buildings, installations or improvements removed at the expense of Lessee. As to any or all structures, buildings, installations or improvements owned by Lessee for which Lessor does not exercise said option for removal, title thereto shall vest in the Lessor without cost to Lessor and without any payment to Lessee.

Machines, appliances, equipment and trade fixtures of any kind now existing or hereafter placed on the leased premises by Lessee are owned by and title thereto is vested in Lessee and shall be removed by Lessee within sixty (60) days after the expiration of the term of this Lease or sooner termination thereof; provided, however, Lessee agrees to repair any and all damage occasioned by the removal thereof. If any such machines, appliances, equipment and trade fixtures are not removed within sixty (60) days after

the termination of this Lease, the same may be considered abandoned and shall thereupon become the property of Lessor without cost to the Lessor and without any payment to Lessee; except that Lessor shall have the right to have the same removed at the expense of Lessee.

During any period of time employed by Lessee under this Paragraph to remove structures, buildings, installations, improvements, machines, appliances, equipment and trade fixtures, Lessee shall continue to pay the full rental to Lessor in accordance with this Lease which said rental shall be prorated daily.

7. LIENS: Lessee agrees that it will at all times save Lessor free and harmless and indemnify it against all claims for labor or materials in connection with improvements, repairs, or alterations on the leased premises, and the costs of defending against such claims, including reasonable attorney's fees.

In the event that any lien or levy of any nature whatsoever is filed against the lease premises or the leasehold interests of the Lessee therein, the Lessee shall, upon written request of Lessor, deposit with Lessor a bond conditioned for the payment in full of all claims upon which said lien or levy has been filed. Such bond shall be acknowledged by Lessee as principal and by a corporation, licensed by the Insurance Commissioner of the State of California to transact the business of a fidelity and surety insurance company, as surety. Lessor shall have the right to declare this Lease in default in the event the bond required by this Paragraph has not been deposited with the Lessor within ten (10) days after written request has been delivered to Lessee.

8. LEASE ENCUMBRANCE: Lessee understands and agrees that it cannot encumber the Lease, leasehold estate and the improvements thereon by a deed of trust, mortgage or other security instrument to assure the payment of the promissory note of Lessee without the prior express written consent by resolution of Lessor in each instance. If any deed of trust, mortgage or other security instrument that encumbers the Lease, leasehold estate and the improvements thereon is entered into by Lessee without Lessor's prior express written consent, Lessor shall have the right to declare this Lease in default.

If a deed of trust, mortgage, or other security instrument which Lessor has consented to by resolution, should at any time be in default, before Lessee's interest under said Lease may be sold as part of any foreclosure or trustee's sale or be assigned in lieu of foreclosure, the prior express written consent by resolution of Lessor shall be obtained in each instance. However, the original beneficiary of the deed of trust, the original mortgagee of the mortgage, and the original holder of the security instrument which the Lessor has consented to by resolution may purchase the Lessee's interest at a foreclosure or trustee's sale or accept assignment of the Lease in lieu of foreclosure, without the requirement of any further consent on the part of Lessor provided said party, as an express condition precedent, agrees in

writing to assume each and every obligation under the Lease. Furthermore, before any said original beneficiary, mortgagee, or holder of a security instrument, or any other consented-to assignee or purchaser may subsequently assign or sublet any of the leasehold or Lessee's interest, it shall obtain the Lessor's prior express written consent by resolution. The decision of the Board of Port Commissioners of Lessor as to such assignee, purchaser, or subtenant shall be final.

9. ASSIGNMENT-SUBLEASE: Lessee agrees not to assign or transfer the whole or any part of this Lease or any interest therein, nor to sublease the whole or any part of the leased premises, nor contract for the management or operation of the whole or any part of the leased premises, nor to permit the occupancy of any part thereof by any other person, nor to permit transfer of the Lease or possession of the leased premises by merger, consolidation, or dissolution, without the consent of Lessor, evidenced by resolution, first had and obtained in each instance. Lessee further agrees that no assignment, voluntary or involuntary, in whole or in part of this Lease, or any interest therein, and no sublease of the whole or any part of the leased premises, and no contract for the management or operation of the whole or any part of the leased premises, and no permission to any person to occupy the whole or any part of the leased premises shall be valid or effective without the consent of Lessor, first had and obtained in each instance; provided, however, that nothing herein contained shall be construed to prevent the occupancy of said premises by any employee, or business invitee of Lessee.

In the event any consent of Lessor is given for any Lease assignment or transfer, the following shall apply in each instance: (i) the Lessor shall be paid additional rent, which may be percentage rate or rates, to equal the full fair market rent, commencing on the effective date of such proposed assignment or transfer, unless on that date the rent being paid under this Lease is equal to the full fair market rent; (ii) the Assignee hereby agrees and assumes each and every obligation under the Lease, and (iii) other conditions and qualifications determined by the Board of Port Commissioners of Lessor. Notwithstanding, items (i) and (iii) shall not apply in the event of: (a) a Lease assignment or transfer to a third party from a consented-to lender which acquired title to the Lease by foreclosure or deed in lieu of foreclosure or a new Lease pursuant to the provisions of Paragraph 10 or (b) assignment or transfer of the Lease to a consented-to lender by deed in lieu of foreclosure, or to a consented-to lender or a third party as the successful bidder at a foreclosure sale. The rent under this Lease and any change resulting therein effective upon any Lease assignment or transfer as provided in this Paragraph shall be for the remainder of the rental period during which it occurs, and any said rent shall thereafter be subject to rental review at the commencement of subsequent and succeeding rental periods in accordance with the provisions of Paragraph 2 of this Lease. Notwithstanding the foregoing, if a change in rent is made which becomes effective upon any Lease assignment or transfer, the rent

shall be subject to any adjustment applicable during the remainder of said rental period during which the Lease assignment or transfer occurred based on the change in the Consumer Price Index if such adjustment is provided for in Paragraph 2 of this Lease; provided, however, the "base figure for computing the adjustment" shall be the arithmetic average of the three monthly index figures for the sixth, fifth and fourth months immediately preceding the effective date of such proposed assignment or transfer for which the Assignee pays additional rent to Lessor to equal the full fair market rent and the "index figure for the adjustment date" shall be the arithmetic average of the three monthly index figures of said Consumer Price Index for the sixth, fifth and fourth months immediately preceding the date such adjustment is effective.

In the event any consent of Lessor is given to sublease, the following shall apply in each instance: (i) the Lessor shall be paid additional rent, which may be percentage rate or rates, to equal the full fair market rent for the sublease area, commencing on the effective date of such proposed sublease and continuing for a specified period of time which shall not extend beyond the remainder of the master Lease rental period during which it occurs or until the termination of the sublease, whichever occurs first, unless on that date the rent being paid under this Lease for said area is equal to the full fair market rent, and (ii) other conditions and qualifications determined by the Board of Port Commissioners of Lessor. As long as said sublease is in effect, said rent for the sublease area shall thereafter be subject to rental review at the commencement of subsequent and succeeding master Lease rental periods, in accordance with the provisions of Paragraph 2 of this Lease.

In the event the parties cannot agree to an amount that is equal to the full fair market rent described in this paragraph, the full fair market rent shall be determined by the arbitration procedure described in Paragraph 2 of this Lease, except that the arbitration award shall be for a limited period of time commencing and ending as provided in this Paragraph and not for a "rental period" as specified in said Paragraph 2. Until said full fair market rent is determined pursuant to said Paragraph 2, the Lessee shall continue to make rental payments as required by this Lease at the same rate or rates in effect on the effective date of the Lease assignment or sublease. Because of this provision, underpayment of rent, if any, shall be paid to Lessor within ten (10) days of the date that the full fair market rent is determined by said arbitration procedure.

10. DEFAULT: It is mutually understood and agreed that if any default be made in the payment of rental herein provided or in the performance of the covenants, conditions, or agreements herein (any covenant or agreement shall be construed and considered as a condition), or should Lessee fail to fulfill in any manner the uses and purposes for which said premises are leased as above stated, and such default shall not be cured within five (5) days after written notice thereof if default is

in the submittal of a report of gross income if required in this Lease or ten (10) days after written notice thereof if default is in the performance of the use obligation provisions pursuant to Paragraph 14 of this Lease, or thirty (30) days after written notice thereof if default is in the payment of rent, or sixty (60) days after written notice thereof if default is in the performance of any other covenant, condition and agreements (any covenant or agreement shall be construed and considered as a condition), Lessor shall have the right to immediately terminate this Lease; and that in the event of such termination, Lessee shall have no further rights hereunder and Lessee shall thereupon forthwith remove from said premises and shall have no further right to claim thereto, and Lessor shall immediately thereupon, without recourse to the courts, have the right to reenter and take possession of the leased premises. Lessor shall further have all other rights and remedies as provided by law, including without limitation the right to recover damages from Lessee in the amount necessary to compensate the Lessor for all the detriment proximately caused by the Lessee's failure to perform his obligations under the Lease or which in the ordinary course of things would be likely to result therefrom.

In the event Lessor consents to an encumbrance of the Lease for security purposes in accordance with Paragraph 8 of this Lease, it is understood and agreed that Lessor shall furnish copies of all notices of defaults to the beneficiary or mortgagee under said encumbrance by certified mail contemporaneously with the furnishing of such notices to Lessee, and in the event Lessee shall fail to cure such default or defaults within the time allowed above, said beneficiary or mortgagee shall be afforded the right to cure such default at any time within fifteen (15) days following the expiration of the period within which Lessee may cure such default, provided, however, Lessor shall not be required to furnish any further notice of default to said beneficiary or mortgagee.

In the event of the termination of this Lease pursuant to the provisions of this Paragraph, Lessor shall have any rights to which it would be entitled in the event of the expiration or sooner termination of this Lease under the provisions of Paragraph 6.

11. BANKRUPTCY: In the event Lessee becomes insolvent, makes an assignment for the benefit of creditors, becomes the subject of a bankruptcy proceeding, reorganization, arrangement, insolvency, receivership, liquidation, or dissolution proceedings, or in the event of any judicial sale of Lessee's interest under this Lease, Lessor shall have the right to declare this Lease in default.

The conditions of this Paragraph shall not be applicable or binding on Lessee or the beneficiary in any deed of trust, mortgage, or other security instrument on the demised premises which is of record with Lessor and has been consented to by resolution of Lessor, or to said beneficiary's successors in interest consented to by resolution of Lessor, as long as there

resalus any monies to be paid by Lessee to such beneficiary under the terms of such deed of trust; provided that such beneficiary or its successors in interest, continuously pay to the Lessor all rent due or coming due under the provisions of this Lease and the premises are continuously and actively used in accordance with Paragraph 14 of this Lease.

12. EMINENT DOMAIN: If the whole or a substantial part of the premises hereby leased shall be taken by any public authority under the power of eminent domain, then the term of this Lease shall cease as to the part so taken, from the day the possession of that part shall be taken for any public purpose, and the rent shall be paid up to that day, and from that day Lessee shall have the right either to cancel this Lease and declare the same null and void or to continue in the possession of the remainder of the same under the terms herein provided, except that the minimum rent shall be reduced in proportion to the amount of the premises taken. All damages awarded for such taking shall belong to and be the property of Lessor whether such damages shall be awarded as compensation for diminution in value to the leasehold or to the fee of the premises herein leased; provided, however, that Lessor shall not be entitled to any award made for the taking of any installations or improvements on the leased premises belonging to Lessee.

13. SUPERSEDURE: It is mutually agreed that this Lease upon becoming effective shall supersede that certain Lease, as amended, made and entered into the 20th day of December, 1977, with National Steel and Shipbuilding Company, a Nevada corporation, which Lease shall thereafter be void and of no effect except as to any rentals, fees which may have accrued thereunder, or any rights or remedies granted or accruing during or under such agreement.

Any such remaining rights, duties, or obligations of the parties pursuant to the terms, covenants, and conditions in or arising during the Lease dated December 20, 1977 shall continue in full force and effect and shall not be affected by this Lease. Nothing herein is intended nor shall be construed as a waiver of any such rights or as a release of any such duties or obligations, whether known or unknown at this time or upon the effective date of this Lease.

14. USE OBLIGATION: Lessee shall actively and continuously use and operate the premises for the limited particular exclusive use as expressly provided for in the Use paragraph of this Lease, except for failure to so use caused by reason of wars, strikes, riots, civil commotion, acts of public enemies, and acts of God. Said active and continuous use and operation enhances the value of the tidelands, provides needed public service, provides additional employment, taxes, and other benefits to the general economy of the area. Lessee, however, shall not and is expressly prohibited from using the premises for any other purpose or use whatsoever, whether it is purported to be in addition to or in

lieu of the particular exclusive use expressed in said Use paragraph.

15. MAINTENANCE AND REPAIR: As part of the consideration for the leasing thereof, Lessee agrees to assume full responsibility for the operation, maintenance, including painting, and repair of the premises, throughout the term and without expense to the Lessor. Lessee will perform all maintenance, repairs and replacements necessary to maintain and preserve the premises in a good, safe, healthy and sanitary condition satisfactory to Lessor and in compliance with all applicable laws. Lessee further agrees to provide approved containers for trash and garbage and to keep premises free and clear of rubbish and litter, or any other fire hazards. Lessee waives all right to make repairs at the expense of Lessor as provided in Section 1942 of the California Civil Code and all rights provided by Section 1941 of said Code.

For the purpose of keeping the premises in a good, safe, healthy and sanitary condition, Lessor shall always have the right but not the duty, to enter, view, inspect, determine the condition of and protect its interests in, the premises. If inspection discloses that the premises are not in the condition described, Lessee must perform the necessary maintenance work within ten (10) days after written notice from Lessor. Further, if at any time Lessor determines that the premises are not in the condition described, Lessor may require Lessee to file and pay for a faithful performance bond, to assure prompt correction without additional notice. The amount of this bond shall be adequate, in Lessor's opinion, to correct the unsatisfactory condition. Notwithstanding, Lessor shall not be required at any time to maintain or to make any improvements or repairs whatsoever on or for the benefit of the leased premises. The rights reserved in this section shall not create any obligations or increase any obligations for Lessor elsewhere in this Lease.

16. PERFORMANCE BOND: No major construction shall be commenced upon the demised premises by Lessee until Lessee has secured and submitted to Lessor performance bonds in the amount of the total estimated construction cost of improvements to be constructed by Lessee. In lieu of said performance bonds, the Port Director of Lessor may at his sole discretion accept the performance and labor and material bonds supplied by Lessee's contractor or subcontractors, or performance guarantees, or other satisfactory evidence that said construction will be timely completed. Said bonds must be issued by a company qualified to do business in the State of California and be in a form acceptable to Lessor.

17. TAXES AND UTILITIES: This Lease may result in a taxable possessory interest and be subject to the payment of property taxes. Lessee agrees to and shall pay before delinquency all taxes and assessments of any kind assessed or levied upon Lessee or the leased premises by reason of this Lease or of any buildings, machines, or other improvements of any nature whatsoever erected, installed or maintained by Lessee or by reason of the business or other activities of Lessee upon or in

connection with the leased premises. Lessee shall also pay any fees imposed by law for licenses or permits for any business or activities of Lessee upon the leased premises or under this Lease, and shall pay before delinquency any and all charges for utilities at or on the leased premises.

18. CONFORMANCE WITH RULES AND REGULATIONS: Lessee agrees that in all activities on or in connection with the leased premises and in all uses thereof, including the making of any alterations or changes and the installation of any machines or other improvements, it will abide by and conform to all rules and regulations prescribed by the San Diego Unified Port District Act, any ordinances of the City in which the leased land is located, including the Building Code thereof, and any ordinances and general rules of the Lessor, including tariffs, and any applicable laws of the State of California and Federal Government, as any of the same now exist or may hereafter be adopted or amended.

19. NON-DISCRIMINATION: Lessee agrees not to discriminate against any person or class of persons by reason of sex, color, race, religion, or national origin. If the use provided for in this Lease allows the Lessee to offer accommodations or services to the public, such accommodations or services shall be offered by the Lessee to the public on fair and reasonable terms.

20. PARTIAL INVALIDITY: If any term, covenant, condition, or provision of this Lease is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.

21. HOLD HARMLESS: Lessee shall defend, indemnify, and hold harmless Lessor, its officers and employees against causes of action, liability, damage, and expense, including reasonable attorney's fees, for judicial relief of any kind, for damage to property of any kind whatsoever and to whomever belonging, including without limitation Lessee or its employees, or injury or death of any person or persons, including without limitation Lessee or its employees, resulting directly or indirectly from granting and performance of this Lease or arising from the use and operation of the leased premises or any defect in any part thereof. Nothing herein is intended to exculpate Lessor from its own negligence.

22. SUCCESSORS IN INTEREST: Unless otherwise provided in this Lease, the terms, covenants and conditions herein shall apply to and bind the heirs, successors, executors, administrators, and assigns of all the parties hereto, all of whom shall be jointly and severally liable hereunder.

23. EASEMENTS: This Lease and all rights given hereunder are subject to all easements and rights-of-way previously granted or reserved by Lessor in, to, or over the leased premises for any

purpose whatsoever, and shall be subject to future easements and rights-of-way for access, gas, electricity, water, sewer, drainage, telephone, telegraph, television transmission, and other Lessor or public facilities as may be determined from time to time by Lessor to be in the best interests of the development of the tidelands. Lessor agrees that an effort shall be made so that such future easements and rights-of-way shall be so located and facilities installed as to produce a minimum amount of interference to the business of Lessee. Lessee shall not be entitled to any monetary payment or other remuneration for any such future easements.

24. TITLE OF LESSOR: Lessor's title is derived from the provisions of the San Diego Unified Port District Act, Appendix 1, Harbors & Navigation Code, and is subject to the provisions of said Act. This Lease is granted subject to the terms and conditions of said Act.

25. INSURANCE: Lessee shall maintain insurance acceptable to Lessor in full force and effect throughout the term of this Lease. The policies for said insurance shall, as a minimum, provide the following:

(a) Forms of Coverage

(1) "OCCURRENCE" form Commercial General Liability covering premises and operations in the amount of not less than One Million Dollars (\$1,000,000) combined single limit per occurrence for bodily injury, personal injury and property damage. Either the general aggregate limit shall apply separately to this location or the general aggregate limit shall be twice the required occurrence limit.

If alcoholic beverages are served or sold on the leased premises, Liquor Liability coverage in the amount of not less than One Million Dollars (\$1,000,000) shall be obtained.

(2) Fire and Extended Coverage, including water damage and debris cleanup provisions in an amount not less than ninety percent (90%) of full replacement value of all improvements located within the leased premises. The fire and extended coverage policies shall be endorsed to state that any insurance proceeds in excess of Twenty-Five Thousand Dollars (\$25,000) resulting from a loss under said policies shall be payable jointly to Lessor and Lessee in order that said proceeds will be reinvested in rebuilding and/or repairing the damaged portions of the leased premises; provided, however, that within the period during which there is in existence a mortgage or deed of trust upon the leasehold given by Lessee with the prior consent of Lessor, then and for that period all fire and extended coverage policies shall be made payable jointly to the mortgagee or beneficiary and Lessee, and any proceeds collected therefrom

shall be held by said mortgagee or beneficiary for the following purposes:

- (i) As a trust fund to pay for the reconstruction, repair, or replacement of the damaged or destroyed improvements in kind and scope in progress payments as the work is performed with any excess remaining after completion of said work to be retained by said mortgagee or beneficiary and applied to reduction of the debt secured by such mortgage or deed of trust and with any excess remaining after full payment of said debt to be paid over to Lessee; or
- (ii) In the event that this Lease is terminated with consent of both Lessor and mortgagee or beneficiary and said improvements are not reconstructed, repaired, or replaced, the insurance proceeds shall be retained by said mortgagee or beneficiary to the extent necessary to fully discharge the debt secured by said mortgage or deed of trust and said mortgagee or beneficiary shall hold the balance thereof without liability to restore the premises to a neat and clean condition and then for Lessor and Lessee as their interests may appear.

(3) Pollution Liability for Underground Storage Tanks

Due to operation of underground storage tanks, Lessee is required to comply with Subpart H of 40 CFR (Code of Federal Regulations) and maintain a Certification of Financial Responsibility detailing financial assurance mechanisms. At the time Lessee is required to comply with Subpart H of 40 CFR, Lessee shall provide Lessor with a certified copy of its Certification of Financial Responsibility. If Lessee's program for financial responsibility includes insurance, then Lessee's policy(ies) shall name Lessor, its officers, officials and employees as additional insureds, and, all other terms of Section (b), below, shall apply. Any time Lessee changes its financial assurance mechanisms, Lessee shall provide Lessor with a certified copy of its revised Certification of Financial Responsibility.

(4) Blanket Contractual Coverage

(b) General Requirements

(1) All required insurance shall be in force the first day of the term of this Lease. The cost of all required insurance shall be borne by Lessee. Certificates in a form acceptable to Lessor evidencing the existence of the necessary insurance policies, and original endorsements effecting coverage required by this clause, shall be kept on file with Lessor during the entire term of this Lease. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The Lessor reserves the right to

require complete, certified copies of all required policies at any time.

(2) All liability insurance policies will name, or be endorsed to name, Lessor, its officers, officials and employees as additional insureds and protect Lessor, its officers, officials and employees against any legal costs in defending claims. All fire and extended insurance policies will name, or be endorsed to name, Lessor as an additional insured. All insurance policies will be endorsed to state that coverage will not be suspended, voided, cancelled, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested has been given to the Lessor. All insurance policies will be endorsed to state that Lessee's insurance is primary and not excess or contributory to any insurance issued in the name of Lessor. And, all insurance companies must be satisfactory to Lessor.

(3) Any deductibles or self-insured retentions must be declared and acceptable to the Lessor. At the option of the Lessor, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the Lessor, its officers, officials, and employees; or, the Lessee shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

(4) Lessor shall retain the right at any time to review the coverage, form, and amount of the insurance required hereby. If, in the opinion of Lessor, the insurance provisions in this Lease do not provide adequate protection for Lessor and/or for members of the public using the leased premises, Lessor may require Lessee to obtain an insurance sufficient in coverage, form and amount to provide adequate protection. Lessor's requirements shall be reasonable but shall be designed to assure protection from and against the kind and extent of risk which exist at the time a change in insurance is required.

(5) Lessor shall notify Lessee in writing of changes in the insurance requirements. With respect to changes in insurance requirements that are available from Lessee's then existing insurance carrier, Lessee shall deposit certificates evidencing acceptable insurance policies with Lessor, incorporating such changes within sixty (60) days of receipt of such notice. With respect to changes in insurance requirements that are not available from Lessee's then existing insurance carrier, Lessee shall deposit certificates evidencing acceptable insurance policies with Lessor, incorporating such changes within one hundred twenty (120) days of receipt of such notice. This Lease shall be in default without further notice to Lessee, and Lessor shall be entitled to all legal remedies, if the certificates

described in this Subparagraph 25(b)(5) are not submitted within the time periods specified.

(6) If Lessee fails or refuses to maintain insurance as required in this Lease, or fails to provide proof of insurance, Lessor has the right to declare this Lease in default without further notice to Lessee and Lessor shall be entitled to exercise all legal remedies.

(7) The procuring of such required policies of insurance shall not be construed to limit Lessee's liability hereunder, nor to fulfill the indemnification provisions and requirements of this Lease. Notwithstanding said policies of insurance, Lessee shall be obligated for the full and total amount of any damage, injury, or loss caused by negligence or neglect connected with this Lease or with the use or occupancy of the leased premises.

(8) Lessee further agrees not to keep on the premises or permit to be kept, used, or sold thereon, anything prohibited by commercially obtainable fire or other insurance policies covering the premises. Lessee shall, at its sole expense, comply with any and all requirements, in regard to premises, of its insurance company necessary for maintaining fire and other insurance coverage at reasonable cost.

26. POLICY OF LESSOR: It is the policy of the Lessor that prevailing wage rates shall be paid all persons who are employed by Lessee on the tidelands of Lessor.

27. WARRANTIES-GUARANTEES-COVENANTS: Lessor makes no warranty, guarantee, covenant, including but not limited to covenants of title and quiet enjoyment, or averment of any nature whatsoever concerning the condition of the leased premises, including the physical condition thereof, or any condition which may affect the leased premises, and it is agreed that Lessor will not be responsible for any loss, damage or costs which may be incurred by Lessee by reason of any such condition or conditions.

28. DAMAGE TO OR DESTRUCTION OF PREMISES: In the event of damage to or destruction by fire, the elements, acts of God, or any other cause, of Lessee-constructed improvements located within the demised premises or in the event Lessee-constructed improvements located within the demised premises are declared unsafe or unfit for use or occupancy by a public entity with the authority to make and enforce such declaration, Lessee shall, within ninety (90) days, commence and diligently pursue to completion the repair, replacement, or reconstruction of improvements necessary to permit full use and occupancy of the demised premises for the purposes required by this Lease. Repair, replacement or reconstruction of improvements within the demised premises shall be accomplished in a manner and according to plans approved by Lessor; provided, however, Lessee shall not be obligated to repair, reconstruct or replace the improvements

following their destruction in whole or substantial part except to the extent the loss is covered by insurance required to be carried by Lessee pursuant to Paragraph 25 of this Lease (or would be covered whether or not such required insurance is actually in effect). If Lessee elects not to restore, repair or reconstruct as herein provided, then the Lease shall terminate and Lessor shall have any rights to which it would be entitled under the provisions of Paragraph 6.

29. QUITCLAIM OF LESSEE'S INTEREST UPON TERMINATION: Upon termination of this Lease for any reason, including but not limited to termination because of default by Lessee, Lessee shall execute, acknowledge and deliver to Lessor within thirty (30) days after receipt of written demand therefor a good and sufficient deed whereby all right, title and interest of Lessee in the demised premises is quitclaimed to Lessor. Should Lessee fail or refuse to deliver the required deed to Lessor, Lessor may prepare and record a notice reciting the failure of Lessee to execute, acknowledge and deliver such deed and said notice shall be conclusive evidence of the termination of this Lease and of all right of Lessee or those claiming under Lessee in and to the demised premises.

30. PEACEABLE SURRENDER: Upon the expiration of this Lease or the earlier termination or cancellation thereof, as herein provided, Lessee will peaceably surrender said premises to Lessor in as good condition as said premises were at the date of this Lease, ordinary wear and tear excepted. If the Lessee fails to surrender the premises at the expiration of this Lease or the earlier termination or cancellation thereof, Lessee shall defend and indemnify Lessor from all liability and expense resulting from the delay or failure to surrender, including, without limitation, any succeeding Lessee's claims based on Lessee's failure to surrender.

31. WAIVER: Any waiver by Lessor of any breach by Lessee of any one or more of the covenants, conditions, or agreements of this Lease shall not be nor be construed to be a waiver of any subsequent or other breach of the same or any other covenant, condition or agreement of this Lease, nor shall any failure on the part of Lessor to require or exact full and complete compliance by Lessee with any of the covenants, conditions, or agreements of this Lease be construed as in any manner changing the terms hereof or to prevent Lessor from enforcing the full provisions hereof. The subsequent acceptance of rent hereunder by Lessor shall not be deemed to be a waiver of any preceding breach by Lessee of any term, covenant, or condition of this Lease, other than the failure of Lessee to pay the particular rental so accepted, regardless of Lessor's knowledge of such preceding breach at the time of acceptance of such rent.

32. HOLD OVER: This Lease shall terminate without further notice at expiration of the term. Any holding over by Lessee after either expiration or termination shall not constitute a renewal or extension or give Lessee any rights in or to the leased

premises. If Lessee, with Lessor's consent, remains in possession of the leased premises after expiration or termination of the term or after the date in any notice given by Lessor to Lessee terminating this Lease, such possession by Lessee shall be deemed to be a month-to-month tenancy terminable on thirty (30) days' notice given at any time by either party. During any such month-to-month tenancy, Lessee shall pay all rent required by this Lease, and if percentage rent is required by the Lease, it shall be paid monthly on or before the tenth (10th) day of each month.

All provisions of this Lease, except those pertaining to term, shall apply to the month-to-month tenancy.

33. SECTION HEADINGS: The Table of Contents and section headings contained herein are for convenience in reference and are not intended to define or limit the scope of any provision thereof.

34. ENTIRE UNDERSTANDING: This Lease contains the entire and only understanding and agreement of the parties, and Lessee, by accepting the same, acknowledges that there is no other written or oral understanding or agreement between the parties with respect to the demised premises and that this Lease supersedes all prior negotiations, discussions, obligations and rights of the parties hereto. No waiver, modification, amendment or alteration of this Lease shall be valid unless it is expressly in writing and signed by authorized persons of the parties hereto. Each of the parties to this Lease acknowledges that no other party, nor any agent or attorney of any other party, has made any promise, representations, waiver or warranty whatsoever, expressed or implied, which is not expressly contained in writing in this Lease, and, each party further acknowledges that it has not executed this Lease in reliance upon any collateral promise, representation, waiver or warranty, or in reliance upon any belief as to any fact not expressly recited in this Lease.

35. TIME IS OF THE ESSENCE: Time is of the essence of each and all of the terms and provisions of this Lease and this Lease shall inure to the benefit of and be binding upon the parties hereto and any successors of Lessee as fully and to the same extent as though specifically mentioned in each instance, and all covenants, stipulations and agreements in this Lease shall extend to and bind any assigns and sublessees of Lessee.

36. NOTICES: Notices given or to be given by Lessor or Lessee to the other may be personally served upon Lessor or Lessee or any person hereafter authorized by either in writing to receive such notice or may be served by certified letter addressed to the appropriate address hereinafter set forth or to such other address as Lessor and Lessee may hereafter designate by written notice. If served by certified mail, forty-eight (48) hours after deposit in the U.S. Mail, service will be considered completed and binding on the party served.

To Lessor

Port Director
San Diego Unified Port District
Post Office Box 488
San Diego, CA 92112

To Lessee

Vice President and
General Counsel
National Steel and
Shipbuilding Company
Post Office Box 85278
San Diego, CA 92186-5278

Said notices shall also be served by certified letter to the beneficiary of any deed of trust, mortgage, or other security instrument of record with Lessor and consented to by resolution of Lessor who has notified Lessor in writing of its desire to receive said notice.

37. REMOVAL OF MATERIALS: Lessee hereby agrees that upon the expiration of this Lease or the sooner termination as herein provided, it will remove within sixty (60) days all ships, vessels, barges, hulls, debris, surplus and salvage materials from the land and water area forming a part of or adjacent to the leased premises, so as to leave the same in as good condition as when first occupied by Lessee; provided, however, that if any said ships, vessels, barges, hulls, debris, surplus and salvage materials shall not be so removed within sixty (60) days by the Lessee, Lessor may remove, sell and destroy the same at the expense of Lessee and Lessee hereby agrees to pay to Lessor the reasonable cost of such removal, sale or destruction; or at the option of Lessor, the title to said ships, vessels, barges, hulls, debris, surplus and salvage materials not removed shall become the property of Lessor without cost to Lessor and without any payment to Lessee.

During any period of time employed by Lessee under this Paragraph to remove ships, vessels, barges, hulls, debris, surplus and salvage materials, Lessee shall continue to pay the full rental to Lessor in accordance with this Lease which said rental shall be prorated daily.

38. ACCEPTANCE OF PREMISES: By signing this Lease, Lessee represents and warrants that it has independently inspected the premises and made all tests, investigations and observations necessary to satisfy itself of the condition of the premises. Lessee agrees it is relying solely on such independent inspection, tests, investigations and observations in making this Lease. Lessee further acknowledges that the premises are in the condition called for by this Lease, that Lessor has performed all work with respect to premises and that Lessee does not hold Lessor responsible for any defects in the premises. Lessee furthermore accepts and shall be responsible for any risk of harm to any person and property, including without limitation employees of Lessee, from any latent defects in the premises.

39. ACCESS ROAD: Adjoining the westerly side of Parcel No. 1 of the leased premises, is a twenty- (20) foot-wide access road which is shown on attached Exhibit "B". Said road is not part of

the leased premises. Lessee may use said road for the limited nonexclusive, nonpreferential purpose of vehicular access to the leased premises and for no other uses or purposes whatsoever. Said road also provides access to the leased premises for emergency vehicles, including ambulances, police vehicles, and fire trucks. In consideration for Lessee not being charged rent for use of said access road, Lessee agrees that Lessor shall not be required at any time to maintain or make any improvements or repairs to said access road. Lessee may, at its own expense, maintain or make improvements or repairs to said access road; provided, however, no maintenance, improvements, or repairs thereto shall be made except in accordance with plans and specifications previously submitted to the Port Director of Lessor and approved in writing by him.

40. GENDER/SINGULAR/PLURAL: The neuter gender includes the feminine and masculine, the masculine includes the feminine and neuter, and the feminine includes the masculine and neuter, and each includes corporation, partnership, or other legal entity when the context so requires. The singular number includes the plural whenever the context so requires.

41. EQUAL EMPLOYMENT OPPORTUNITY: Lessee shall not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin and shall take affirmative action to assure applicants are employed and that employees are treated during employment without regard to race, color, religion, sex or national origin. Except during the time Lessee is exempt pursuant to written policy of Lessor, Lessee shall submit to Lessor for review and approval a written affirmative action program to attain improved employment for racial and ethnic minorities and women and during the term of this Lease shall further make available employment records to Lessor upon request. Lessee shall certify in writing to Lessor that Lessee is in compliance and throughout the term of this Lease will comply with Title VII of the Civil Rights Act of 1964, as amended, the California Fair Employment Practices Act, and any other applicable Federal, State, and local law, regulation and policy (including without limitation those adopted by Lessor) relating to equal employment opportunity and affirmative action programs, including any such law, regulation, and policy hereinafter enacted.

Compliance and performance by Lessee of the equal employment opportunity and affirmative action program provision of this Lease is an express condition hereof and any failure by Lessee to so comply and perform shall be a default as provided in said Lease and Lessor may exercise any right as provided therein and as otherwise provided by law.

42. ATTORNEY'S FEES: In the event any suit is commenced to enforce, protect or establish any right or remedy of any of the terms and conditions hereof, including without limitation a summary action commenced by Lessor under the laws of the State of California relating to the unlawful detention of property, the

prevailing party shall be entitled to have and recover from the losing party reasonable attorney's fees and costs of suit.

43. HAZARDOUS MATERIALS: Lessee shall comply with all laws regarding hazardous substances, materials or wastes, or petroleum products or fraction thereof (herein collectively referred to as "Contaminants") relative to occupancy and use of the leased premises. Lessee shall be liable and responsible for any Contaminants located on the leased premises and arising out of the occupancy or use of the leased premises by Lessee. Such liability and responsibility shall include, but not be limited to, (i) removal from the leased premises any such Contaminants; (ii) removal from any area outside the premises, including but not limited to surface and ground water, any such Contaminants generated as part of the operations on the leased premises; (iii) damages to persons, property and the leased premises; (iv) all claims resulting from those damages; (v) fines imposed by any governmental agency, and (vi) any other liability as provided by law. Lessee shall defend, indemnify and hold harmless the Lessor, its officials, officers, agents, and employees from any and all such responsibilities, damages, claims, fines, liabilities, including without limitation any costs, expenses and attorney's fees therefor.

All storage tanks storing Contaminants, including hydrocarbons, located on the leased premises or hereinafter placed on the leased premises by any party, shall be monitored by Lessee. Lessee shall maintain appropriate records, implement reporting procedures, and properly remove the storage tanks as required under any federal, state, or local laws.

If Lessee has in the past or continues to use, dispose, generate, or store Contaminants on the leased premises, Lessor, or its designated representatives, at Lessor's sole discretion, may at any time during the term of this Lease, enter upon the premises and make any inspections, tests or measurements Lessor deems necessary in order to determine if a release of Contaminants has occurred. Lessor shall give Lessee a minimum of 24 hours' notice in writing prior to conducting any inspections or tests, unless, in Lessor's sole judgment, circumstances require otherwise, and such tests shall be conducted in a manner so as to attempt to minimize any inconvenience and disruption to Lessee's operations. If such tests indicate a release of Contaminants, then Lessor, at Lessor's sole discretion, may require Lessee, at Lessee's sole expense, and at any time during the term of this Lease, to have tests for such Contaminants conducted by a qualified party or parties on the leased premises. If Lessor has reason to believe that any Contaminants that originated from a release on the leased premises have contaminated any area outside the premises, including but not limited to surface and ground water, then Lessor, at Lessor's sole discretion, may require Lessee, at Lessee's sole expense, and at any time during the term of this Lease, to have tests for such Contaminants conducted by a qualified party or parties on said area outside the leased premises.

The tests conducted by Lessee's qualified party shall include, but not be limited to, applicable comprehensive soil, emission, or ground water sampling test or other procedures to determine any actual or possible contamination. Lessee shall expeditiously, but no longer than 30 days after Lessor's request for such tests, furnish to Lessor the results of said tests, sampling plans, and analysis thereof identifying any Contaminants which exceed then applicable levels permitted by federal, state, or local laws. The Lessee shall report such contamination to the Lessor within 72 hours and shall diligently proceed to identify the extent of contamination, how it will be remediated, when it will be remediated, by whom, and the cost of such remediation.

44. ABSTRACT OF LEASE: This is the final paragraph and abstract of the Lease dated October 22, 1991, between SAN DIEGO UNIFIED PORT DISTRICT, Lessor, and NATIONAL STEEL & SHIPBUILDING COMPANY, Lessee, concerning the premises described in Exhibits "A" and "B," attached hereto and by this reference made a part hereof.

For good and adequate consideration, Lessor leases the premises to Lessee, and Lessee hires them from Lessor, for the term and on the provisions contained in the Lease, including without limitation provisions prohibiting assignment, subleasing, and encumbering said Lease without the express written consent of Lessor in each instance, all as more specifically set forth in said Lease, which said Lease is incorporated in this abstract by this reference.

The term is fifty (50) years, beginning January 1, 1991, and ending December 31, 2040.

This abstract is not a complete summary of the Lease. Provisions in the abstract shall not be used in interpreting the Lease provisions. In the event of conflict between the abstract and other parts of the Lease, the other parts shall control. Execution hereof constitutes execution of the Lease itself.

APPROVED as to form
and legality

SAN DIEGO UNIFIED PORT DISTRICT

Oct 23 1991

By 
ASSISTANT Port Director

Port Attorney

NATIONAL STEEL & SHIPBUILDING
COMPANY


JOSEPH O. PATELLO
Port Attorney

By 
R. H. Vortmann
President

(FOR USE BY SAN DIEGO UNIFIED PORT DISTRICT)

STATE OF CALIFORNIA)

ss.

COUNTY OF SAN DIEGO)

On 24 October 1991 before me,
LORETTA CORY, personally
appeared DONALD E. WILLMAN

personally known to me (or proved to me on the basis of
satisfactory evidence) to be the person whose name is subscribed
to the within instrument and acknowledged to me that he/~~she~~
executed the same in his/~~her~~ authorized capacity, and that by
his/~~her~~ signature on the instrument the person, or the entity
upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature Loretta Cory



PARCEL NO. 1

Commencing at Harbor Line Station No. 472 on the U.S. Bulkhead Line, as said U.S. Bulkhead Line is now established for the Bay of San Diego, and delineated on map entitled "Harbor Lines, San Diego Bay, California, File No. (D.O. Series) 426," approved by the Secretary of the Army, April 29, 1963 and filed in the Office of the District Engineer, Los Angeles, California, said point also being on the westerly boundary of an area commonly known as the United States Naval Station, as said property is described in the grants to the United States of America by the City of San Diego by deeds dated December 1, 1930, recorded March 21, 1932, in Book 100, page 177 of Official Records, and dated July 17, 1940, recorded April 30, 1943, in Book 1499, page 12 O.R., and dated May 18, 1949, recorded October 7, 1949, in Book 3344, page 309 O.R., and filed in the Office of the County Recorder, San Diego County, California; thence along said U.S. Naval Station boundary south $89^{\circ} 29' 03''$ east a distance of 87.80 feet; thence north $0^{\circ} 30' 57''$ east a distance of 228.56 feet to the TRUE POINT OF BEGINNING of Parcel No. 1; thence leaving said U.S. Naval Station boundary north $89^{\circ} 29' 03''$ west a distance of 7.24 feet; thence south $60^{\circ} 37' 30''$ west a distance of 23.74 feet; thence north $85^{\circ} 32' 59''$ west a distance of 12.80 feet; thence north $56^{\circ} 35' 56''$ west a distance of 25.90 feet; thence north $89^{\circ} 30' 26''$ west a distance of 300.07 feet; thence south $71^{\circ} 16' 35''$ west a distance of 1317.71 feet to a point of intersection with the U.S. Pierhead Line, as said U.S. Pierhead Line is now established and delineated on the above described Harbor Lines Map; thence along said U.S. Pierhead Line north $56^{\circ} 20' 08''$ west a distance of 269.75 feet to a point hereinafter known and designated as Point "A"; thence leaving said U.S. Pierhead Line north $71^{\circ} 15' 38''$ east a distance of 209.49 feet; thence north $18^{\circ} 25' 23''$ west a distance of 29.34 feet; thence north $76^{\circ} 04' 11''$ east a distance of 409.07 feet; thence north $14^{\circ} 04' 19''$ west a distance of 176.96 feet; thence south $75^{\circ} 59' 06''$ west a distance of 50.70 feet; thence north $11^{\circ} 54' 59''$ west a distance of 33.16 feet; thence north $66^{\circ} 39' 00''$ east a distance of 357.83 feet; thence north $23^{\circ} 25' 07''$ west a distance of 114.70 feet; thence south $66^{\circ} 40' 40''$ west a distance of 347.70 feet; thence north $21^{\circ} 32' 06''$ west a distance of 35.09 feet; thence north $66^{\circ} 50' 04''$ east a distance of 39.30 feet; thence north $23^{\circ} 17' 35''$ west a distance of 117.05 feet; thence south $65^{\circ} 35' 50''$ west a distance of 135.67 feet; thence north $23^{\circ} 26' 05''$ west a distance of 34.97 feet; thence north $66^{\circ} 27' 25''$ east a distance of 40.85 feet; thence north $23^{\circ} 18' 37''$ west a distance of 117.31 feet; thence south $66^{\circ} 34' 17''$ west a distance of 38.40 feet; thence north $52^{\circ} 41' 02''$ west a distance of 99.58 feet; thence north $36^{\circ} 38' 30''$ east a distance of 280.78 feet; thence north $58^{\circ} 06' 09''$ west a distance of 235.80 feet; thence north $23^{\circ} 07' 04''$ east a distance of 44.65 feet; thence north $65^{\circ} 55' 29''$ west a distance of 216.37 feet; thence south $23^{\circ} 42' 13''$ west a

Sheet 1 of 5

REVISED:

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|----------------------------|
| OWN <u>RWJ:kh</u> |
| CHECKED <u>BOURKE</u> |
| REVIEWED <u>M. J. WOOD</u> |
| APPROVED |
| <u>John E. B. Weber</u> |
| CHIEF ENGINEER |

SAN DIEGO UNIFIED PORT DISTRICT
Tideland Lease
Within Corporate Limits of San Diego
NATIONAL STEEL AND SHIPBUILDING COMPANY

DATE 10 June 1983
SCALE _____
REF. _____

DRAWING NO.
2516-B

EXHIBIT MAP

distance of 44.70 feet; thence south 70° 48' 21" west a distance of 44.40 feet; thence south 20° 32' 27" west a distance of 62.22 feet; thence north 84° 44' 54" west a distance of 122.40 feet; thence south 71° 25' 54" west a distance of 471.27 feet to the beginning of a tangent curve concave to the north having a radius of 100.00 feet; thence westerly along the arc of said curve through a central angle of 52° 13' 58" an arc distance of 91.16 feet to a point which bears south 33° 39' 52" west from the center of said 100.00 foot radius curve; thence north 56° 20' 08" west a distance of 257.01 feet; thence north 33° 39' 52" east a distance of 325.00 feet to the beginning of a tangent curve concave to the west having a radius of 48.00 feet; thence northerly along the arc of said curve through a central angle of 35° 20' 04" an arc distance of 29.60 feet to a point of reverse curve the common radial of which bears north 88° 19' 48" east from the center of said 48.00 foot radius curve; thence northerly along the arc of a 28.00 foot radius curve concave to the east through a central angle of 35° 20' 04" an arc distance of 17.27 feet to a point which bears north 56° 20' 08" west from the center of said 28.00 foot radius curve; thence north 33° 39' 52" east a distance of 116.65 feet to the beginning of a tangent curve concave to the west having a radius of 48.00 feet; thence northerly along the arc of said curve through a central angle of 90° 00' 00" an arc distance of 75.40 feet to a point which bears north 33° 39' 52" east from the center of said 48.00 foot radius curve; thence north 56° 20' 08" west a distance of 111.06 feet to the beginning of a tangent curve concave to the east having a radius of 28.00 feet; thence northerly along the arc of said curve through a central angle of 91° 17' 20" an arc distance of 44.61 feet to a point which bears north 55° 02' 48" west from the center of said 28.00 foot radius curve; thence north 34° 57' 12" east a distance of 173.29 feet to a point of intersection with the southerly right of way line of Belt Street; thence north 49° 42' 27" east a distance of 78.69 feet, said point being on the southerly line of a 100.00 foot wide Atchison, Topeka & Santa Fe Railway Company railroad right of way, said point also being a point on a curve concave to the north having a radius of 1960.08 feet the center of which bears north 22° 00' 00" east; thence easterly along said 1960.08 foot radius curve and southerly railroad right of way line through a central angle of 12° 54' 40" an arc distance of 441.69 feet to a point which bears south 9° 05' 20" west from the center of said 1960.08 foot radius curve; thence south 80° 54' 40" east a distance of 375.13 feet to a point of intersection with the southerly right of way line of Harbor Drive, as said tideland portions of Harbor Drive are now established as and for a public street by the Documents of Conveyance on file in the Office of the District Clerk as Document No. 71; thence leaving said southerly railroad right of way line and along the southerly right of way line of Harbor Drive south 66° 47' 43" east a distance of 63.75 feet; thence south 65° 37' 25" east a distance of 375.85 feet; thence south 80° 56' 13" east a distance of 243.49 feet to the beginning of a tangent

Sheet 2 of 5

REVISED:

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| DRAWN <u>P.M.L.vh</u> CHECKED <u>BOURKE</u> REVIEWED <u>M. J. Howard</u> |
| APPROVED <u>John E. B. Wilkins</u> CHIEF ENGINEER |

SAN DIEGO UNIFIED PORT DISTRICT
 Tideland Lease
 Within Corporate Limits of San Diego
NATIONAL STEEL AND SHIPBUILDING COMPANY

DATE 10 June 1983
 SCALE _____
 REF. _____

DRAWING NO.
2516-B

curve concave to the southwest having a radius of 1734.75 feet; thence leaving said southerly right of way line of Harbor Drive southeasterly along the arc of said 1734.75 foot radius curve through a central angle of 16° 10' 19" an arc distance of 459.36 feet to a point of compound curve the common radial of which bears north 24° 14' 06" east; thence southeasterly along the arc of a curve concave to the southwest having a radius of 82.35 feet, through a central angle of 49° 40' 01" an arc distance of 71.39 feet to a point of cusp, said point bears north 73° 54' 07" east from the center of said 82.35 foot radius curve; thence north 0° 02' 10" west a distance of 62.77 feet to a point on a curve concave to the southwest having a radius of 2600.00 feet the center of which bears south 20° 05' 06" west, said point also lying on the said southerly right of way line of Harbor Drive; thence southeasterly along said 2600.00 foot radius curve and along the southerly right of way line of Harbor Drive through a central angle of 17° 57' 44" an arc distance of 815.10 feet; thence south 51° 57' 10" east a distance of 112.54 feet; thence south 51° 23' 57" east a distance of 30.28 feet to a point of intersection with the Ordinary High Water Mark for the Bay of San Diego, as said Ordinary High Water Mark is shown on map entitled "Map of the Lands Transferred to the San Diego Unified Port District Pursuant to Chapter 67, Statutes of 1962, 1st E.S., Vicinity of San Diego Bay, San Diego County, California", filed in the Office of the San Diego County Recorder May 28, 1976, as Miscellaneous Map No. 564, File No. 76-164686; thence leaving said southerly right of way line of Harbor Drive and along said Ordinary High Water Mark south 50° 56' 42" east a distance of 72.56 feet; thence south 52° 36' 48" east a distance of 27.15 feet to a point of intersection with the said southerly right of way line of Harbor Drive; thence leaving said Ordinary High Water Mark and along said southerly right of way line of Harbor Drive south 51° 23' 57" east a distance of 67.18 feet; thence south 50° 11' 52" east a distance of 381.94 feet; thence leaving said southerly right of way line of Harbor Drive south 24° 21' 56" west a distance of 61.53 feet to a point of intersection with a line that is parallel to and distant 8.60 feet northerly from the boundary of the above described U.S. Naval Station; thence along said 8.60 foot parallel line north 89° 29' 03" west a distance of 1103.19 feet to point of intersection with the northerly prolongation of the above described westerly boundary of the U.S. Naval Station; thence leaving said 8.60 foot parallel line and along the said northerly prolongation and the westerly boundary of the U.S. Naval Station south 0° 30' 57" west a distance of 210.54 feet to the TRUE POINT OF BEGINNING of Parcel No. 1, containing 3,446,322 square feet or 79.12 acres of tideland area.

Sheet 3 of 5

REVISED:

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|---|--|---|
| AWM <u>RMJ:kh</u> CHECKED <u>BOURKE</u> REVIEWED <u>M. J. Leonard</u> | <p align="center">SAN DIEGO UNIFIED PORT DISTRICT</p> <p align="center">Tideland Lease</p> <p align="center">Within Corporate Limits of San Diego</p> <p align="center">NATIONAL STEEL AND SHIPBUILDING COMPANY</p> | DATE <u>10 June 1983</u> SCALE _____ REF. _____ |
| APPROVED <u>John E. S. Wiesbur</u> CHIEF ENGINEER | | DRAWING NO. 2516-B |

PARCEL NO. 2

Beginning at the above described Point "A", said Point "A" lying on the above described U.S. Pierhead Line north 56° 20' 08" west and distant 1288.48 feet from Harbor Line Station No. 479, said Point "A" also being the TRUE POINT OF BEGINNING of Parcel No. 2; thence north 56° 20' 08" west along said U.S. Pierhead Line a distance of 200.00 feet to a point hereinafter known and designated as Point "B"; thence leaving said U.S. Pierhead Line north 71° 15' 38" east a distance of 441.73 feet; thence north 56° 20' 08" west a distance of 500.00 feet; thence south 71° 15' 38" west a distance of 441.73 feet to a point of intersection with said U.S. Pierhead Line; thence along said U.S. Pierhead Line north 56° 20' 08" west a distance of 756.65 feet to a point of intersection with the easterly property line of an area now under lease to National Pump & Injector Sales & Services, Inc.; thence leaving said U.S. Pierhead Line and along said easterly property line north 33° 39' 52" east a distance of 427.42 feet to a point of intersection with the above described Parcel No. 1; thence leaving said property line of National Pump & Injector leasehold along said Parcel No. 1 south 56° 20' 08" east a distance of 229.51 feet to the beginning of a tangent curve concave to the north having a radius of 100.00 feet; thence easterly along the arc of said curve through a central angle of 52° 13' 58" an arc distance of 91.16 feet; thence north 71° 25' 54" east a distance of 471.27 feet; thence south 84° 44' 54" east a distance of 122.40 feet; thence north 20° 32' 27" east a distance of 62.22 feet; thence north 70° 48' 21" east a distance of 44.40 feet; thence north 23° 42' 13" east a distance of 44.70 feet; thence south 65° 55' 29" east a distance of 216.37 feet; thence south 23° 07' 04" west a distance of 44.65 feet; thence south 58° 06' 09" east a distance of 235.80 feet; thence south 36° 38' 30" west a distance of 280.78 feet; thence south 52° 41' 02" east a distance of 99.58 feet; thence north 66° 34' 17" east a distance of 38.40 feet; thence south 23° 13' 37" east a distance of 117.31 feet; thence south 66° 27' 25" west a distance of 40.85 feet; thence south 23° 26' 05" east a distance of 34.97 feet; thence north 66° 35' 50" east a distance of 135.67 feet; thence south 23° 17' 35" east a distance of 117.05 feet; thence south 66° 50' 04" west a distance of 39.30 feet; thence south 21° 32' 06" east a distance of 35.09 feet; thence north 66° 40' 40" east a distance of 347.70 feet; thence south 23° 25' 07" east a distance of 117.40 feet; thence south 66° 39' 00" west a distance of 357.83 feet; thence south 11° 54' 59" east a distance of 33.16 feet; thence north 75° 59' 06" east a distance of 50.70 feet; thence south 14° 04' 19" east a distance of 176.96 feet; thence south 76° 04' 11" west a distance of 409.07 feet; thence south 18° 25' 23" east a distance of 29.34 feet; thence south 71° 15' 38" west a distance of 209.49 feet to the TRUE POINT OF BEGINNING of Parcel No. 2, containing 1,112,046 square feet or 25.53 acres of water covered area.

Sheet 4 of 5

REVISED:

DRAWN RW:kh
 CHECKED BOURKE
 REVIEWED M. J. [Signature]

APPROVED
John E. D. Wiebur
 CHIEF ENGINEER

SAN DIEGO UNIFIED PORT DISTRICT
 Tideland Lease
 Within Corporate Limits of San Diego
NATIONAL STEEL AND SHIPBUILDING COMPANY

DATE 10 June 1983
 SCALE _____
 REF. _____

DRAWING NO.
 2516-B

PARCEL NO. 3

Beginning at the True Point of Beginning of the above described Parcel No. 1, said point also being the TRUE POINT OF BEGINNING of Parcel No. 3 and lying on the above described westerly boundary of the U.S. Naval Station; thence along said U.S. Naval Station boundary south 0° 30' 57" west a distance of 228.56 feet; thence north 89° 29' 03" west a distance of 87.80 feet to Harbor Line Station No. 472 on the above described U.S. Bulkhead Line; thence continuing along said U.S. Naval Station boundary south 41° 44' 47" west a distance of 1010.16 feet to Harbor Line Station No. 479 on the above described U.S. Pierhead Line; thence leaving said U.S. Naval Station boundary and along said U.S. Pierhead Line north 56° 20' 08" west a distance of 1018.74 feet to a point of intersection with the most southerly line of the above described Parcel No. 1; thence leaving said U.S. Pierhead Line and along said southerly line of said Parcel No. 1 north 71° 16' 35" east a distance of 1317.71 feet; thence south 89° 30' 26" east a distance of 300.07 feet; thence south 56° 35' 56" east a distance of 25.90 feet; thence south 85° 32' 59" east a distance of 12.80 feet; thence north 60° 37' 30" east a distance of 23.74 feet; thence south 89° 29' 03" east a distance of 7.24 feet to the TRUE POINT OF BEGINNING of Parcel No. 3, containing 764,703 square feet or 17.56 acres of water covered area.

PARCEL NO. 4

Beginning at Point "B" as described in the above Parcel No. 2, said Point "B" lying on the above described U.S. Pierhead Line north 56° 20' 08" west and distant 1488.48 feet from Harbor Line Station No. 479, said Point "B" also being the TRUE POINT OF BEGINNING of Parcel No. 4; thence along the above described U.S. Pierhead Line north 56° 20' 08" west a distance of 500.00 feet to a point of intersection with said Parcel No. 2; thence leaving said U.S. Pierhead Line and along said Parcel No. 2 north 71° 15' 38" east a distance of 441.73 feet; thence south 56° 20' 08" east a distance of 500.00 feet; thence south 71° 15' 38" west a distance of 441.73 feet to the TRUE POINT OF BEGINNING of Parcel No. 4, containing 175,000 square feet or 4.02 acres of water covered area.

The above described areas are those delineated on Drawing No. 2516-B, Sheets 1, 2, and 3, dated 10 June 1983, as revised, and made a part of this agreement.

Sheet 5 of 5

REVISED:

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|-----------------------------|
| AWN <u>RWJ:kh</u> |
| HECKED <u>BOURKE</u> |
| REVIEWED <u>M. J. Adams</u> |
| APPROVED |
| <u>John E. B. Wiebur</u> |
| CHIEF ENGINEER |

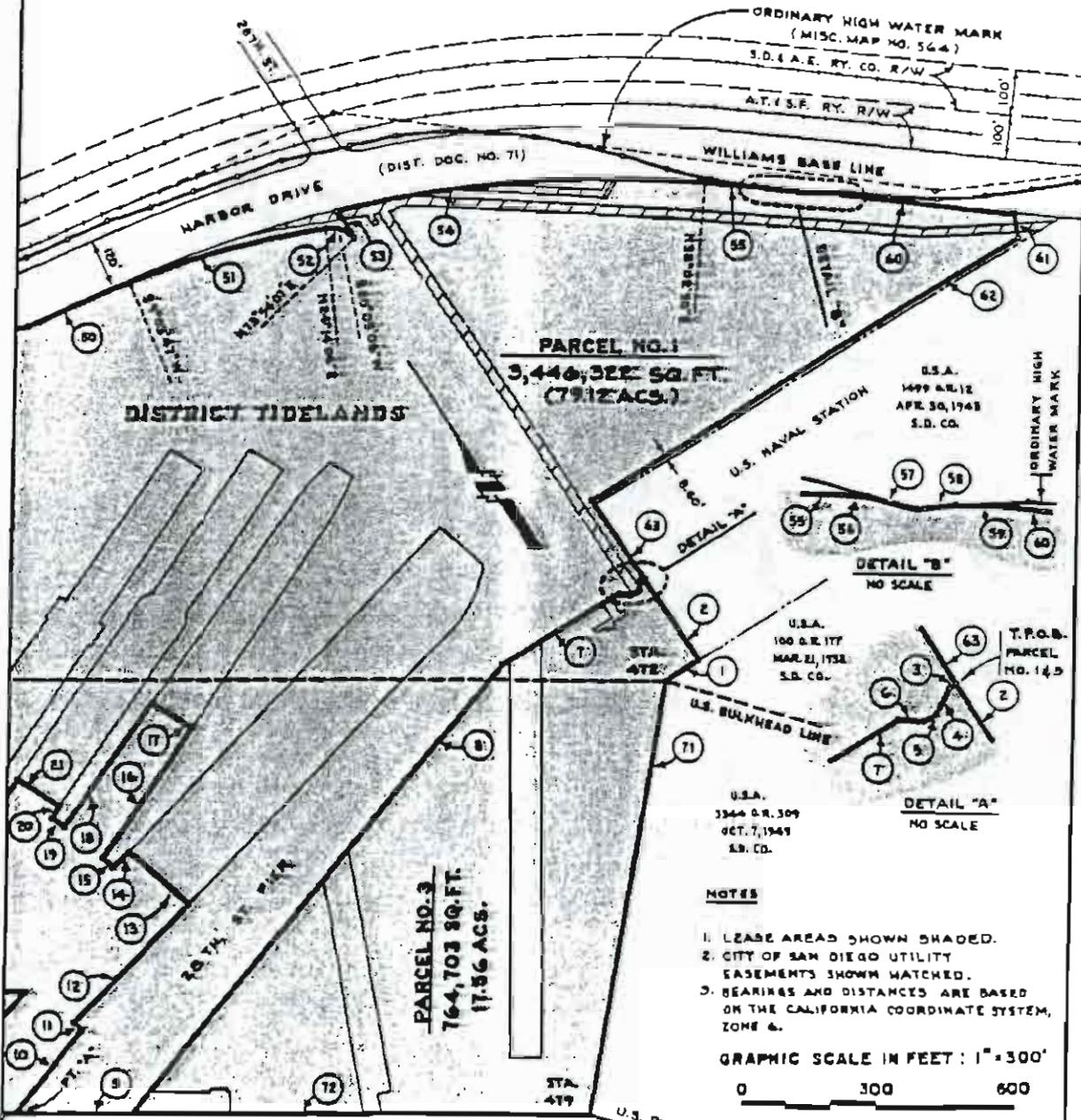
SAN DIEGO UNIFIED PORT DISTRICT
Tideland Lease
Within Corporate Limits of San Diego
NATIONAL STEEL AND SHIPBUILDING COMPANY

DATE 10 June 1983
SCALE _____
REF. _____

DRAWING NO.
2516-B

MATCH POINT
SHT. 2 | SHT. 1

| | | |
|---------------------------|----------------------------|----------------------------|
| 1. S83°23'03"E - 87.80' | 10. N71°15'38"E - 209.49' | 19. N 21°32'06"W - 35.09' |
| 2. N 0°30'57"E - 228.56' | 11. N10°25'23"W - 29.34' | 20. N 66°50'04"E - 39.30' |
| 3. N89°23'03"W - 7.24' | 12. N76°04'11"E - 409.07' | 21. N 23°17'35"W - 117.09' |
| 4. S 60°37'30"W - 23.74' | 13. N14°04'19"W - 176.96' | 22. S 66°35'50"W - 139.67' |
| 5. N85°32'59"W - 12.80' | 14. S75°59'04"W - 50.70' | 23. N 23°26'05"W - 34.97' |
| 6. N56°35'56"W - 29.90' | 15. N11°54'59"W - 33.16' | 24. N 66°27'29"E - 40.85' |
| 7. N87°30'26"W - 300.07' | 16. N 66°39'00"E - 357.85' | 25. N 23°18'37"W - 117.31' |
| 8. S71°16'55"W - 1317.71' | 17. N 23°25'07"W - 114.70' | 26. S 66°34'17"W - 38.40' |
| 9. N56°20'08"W - 269.75' | 18. S 66°40'40"W - 347.70' | 27. N 52°41'02"W - 99.58' |



MATCH POINT
SHT. 2 | SHT. 1

TO POINT "A" N56°20'08"W - 1288.48'
TO POINT "B" N56°20'08"W - 1468.45'

- NOTES**
- LEASE AREA SHOWN SHADED.
 - CITY OF SAN DIEGO UTILITY EASEMENTS SHOWN WATCHED.
 - BEARINGS AND DISTANCES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 6.

GRAPHIC SCALE IN FEET: 1" = 300'
0 300 600

REVISED: FROM 1921-B, 10 JUNE 1965, BY RJ; APPROVED BY CHIEF ENGINEER, *John E. B. Wickham*

DRAWN ANORECHT
CHECKED P.D.B. / S.D.
REVIEWED Stetson

APPROVED
J. E. Lieberman
CHIEF ENGINEER

SAN DIEGO UNIFIED PORT DISTRICT
TIDELAND LEASE
WITHIN CORPORATE LIMITS OF SAN DIEGO

NATIONAL STEEL AND SHIPBUILDING COMPANY

DATE 31 OCT. 1977
SCALE 1" = 300'
REF. 1165-B; 1592-B; 1500-B;
1504-B; FB184, 305, 325 (28-29)

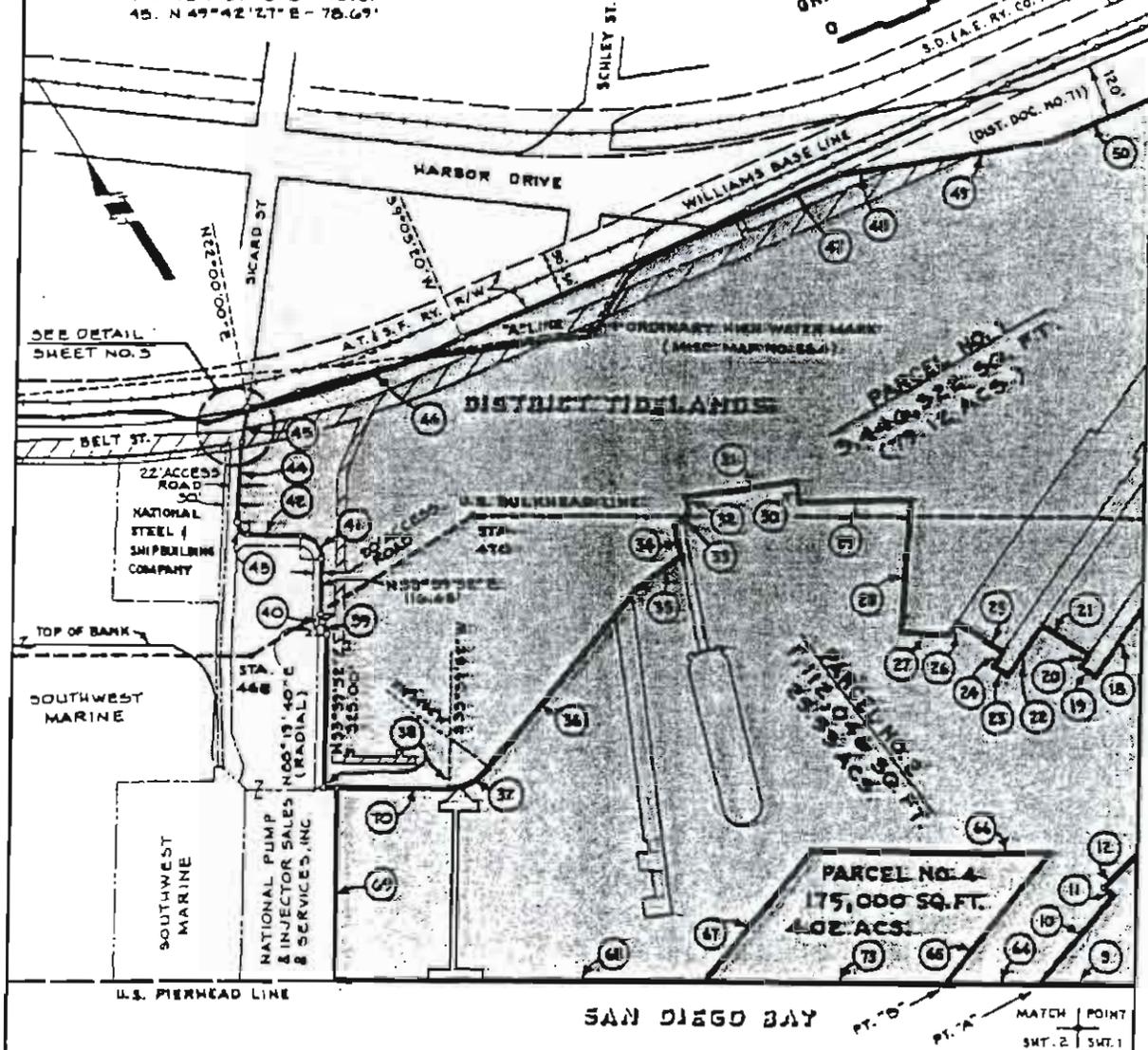
DRAWING NO.
2516-B
SHT. 1 OF 3 SHTS.

MATCH POINT
SHT. 2 | SHT. 1

- | | | |
|-------------------------------|--------------------------------|-----------------------------|
| 28. N 36°36'30"E - 280.75' | 46. Δ = 12°54'40" R = 1960.00' | 62. N 69°25'03"W - 1103.15' |
| 29. N 58°06'09"W - 235.80' | T = 221.70' L = 441.69' | 63. S 0°30'57"W - 210.54' |
| 30. N 23°07'04"E - 44.65' | 47. S 60°54'40"E - 875.13' | 64. N 56°20'08"W - 200.00' |
| 31. N 65°55'29"W - 216.37' | 48. S 66°47'43"E - 65.75' | 65. N 71°15'38"E - 441.73' |
| 32. S 25°42'13"W - 44.70' | 49. S 65°37'25"E - 375.85' | 66. N 56°20'08"W - 500.00' |
| 33. S 70°48'21"W - 44.40' | 50. S 80°56'15"E - 243.49' | 67. S 71°15'38"W - 441.73' |
| 34. S 20°32'27"W - 62.22' | 51. Δ = 15°10'15" R = 1154.75' | 68. N 56°20'08"W - 756.69' |
| 35. N 84°44'54"W - 122.40' | T = 231.03' L = 459.36' | 69. N 33°39'52"E - 427.42' |
| 36. S 71°21'54"W - 471.27' | 52. Δ = 49°40'01" R = 82.33' | 70. S 56°20'08"E - 229.51' |
| 37. Δ = 52°13'58" R = 100.00' | T = 38.11' L = 71.39' | 71. S 41°44'47"W - 1010.16' |
| T = 49.02' L = 91.16' | 53. N 0°02'10" W - 62.77' | 72. N 56°20'08"W - 1018.74' |
| 38. N 86°20'08"W - 257.01' | 54. Δ = 17°57'44" R = 2600.00' | 73. N 56°20'08"W - 500.00' |
| 39. Δ = 59°20'04" R = 46.00' | T = 410.92' L = 818.10' | |
| T = 15.29' L = 29.60' | 55. S 51°57'10"E - 112.54' | |
| 40. Δ = 55°20'04" R = 25.00' | 56. S 51°23'57"E - 30.28' | |
| T = 6.92' L = 17.27' | 57. S 50°56'42"E - 72.56' | |
| 41. Δ = 90°00'00" R = 46.00' | 58. S 52°36'48"E - 27.15' | |
| T = 46.00' L = 75.40' | 59. S 51°23'57"E - 67.18' | |
| 42. N 56°20'08"W - 111.06' | 60. S 50°11'52"E - 381.94' | |
| 43. Δ = 91°17'20" R = 28.00' | 61. S 24°21'56"W - 61.53' | |
| T = 28.64' L = 44.61' | | |
| 44. N 54°57'12"E - 173.29' | | |
| 45. N 49°42'27"E - 78.69' | | |

GRAPHIC SCALE IN FEET: 1" = 300'

0 300 600



REVISED FROM 1921-B, 10 JUNE 1965, BY RJ; APPROVED BY CHIEF ENGINEER *John E. B. Wieber*

DRAWN ANDRECHT
CHECKED *2.2.81 B.S.*
REVIEWED *St. H. 200*

SAN DIEGO UNIFIED PORT DISTRICT

TIDELAND LEASE

WITHIN CORPORATE LIMITS OF SAN DIEGO

NATIONAL STEEL AND SHIPBUILDING COMPANY

DATE 31 OCT. 1977
SCALE 1" = 300' ±
REF. 1165-B; 1572-B; 1600-B;
1704-B; FB18A; 305 325; 22-2127

DRAWING NO.
2516-B
SHT. 2 OF 3 SHTS.

APPROVED
J. E. B. Wieber
CHIEF ENGINEER

AGREEMENT FOR AMENDMENT OF LEASE
AMENDMENT NO. 1

THIS AGREEMENT, made and entered into this 6th day of DECEMBER, 1994, by and between the SAN DIEGO UNIFIED PORT DISTRICT, a public corporation, hereinafter called "Lessor," and NATIONAL STEEL AND SHIPBUILDING COMPANY, a Nevada corporation, hereinafter called "Lessee," WITNESSETH:

WHEREAS, Lessor and Lessee, heretofore on the 22nd day of October, 1991, entered into a Lease of certain tidelands in the city of San Diego, California, which Lease is on file in the Office of the Clerk of Lessor bearing Document No. 27624; and

WHEREAS, Lessor and Lessee are mutually desirous of amending said Lease;

NOW THEREFORE, for valuable consideration, said Lease is hereby amended in the following respects and no others, and, except as expressly amended, all terms, covenants, and conditions of said Lease shall remain in full force and effect:

A. The description of the premises contained in the preamble of said Lease is amended to read as follows:

Approximately 5,498,071 square feet of tideland area located on the south side of Harbor Drive at the foot of 28th Street, in the city of San Diego, California, more particularly described and delineated on the attached five-page legal description and three-page Drawing No. 021-022, dated April 21, 1994, attached hereto as Exhibits "A" and "B" and by this reference made a part hereof.

B. Said Lease also is hereby amended by deleting therefrom Paragraph 2, Subparagraphs 4(a), 4(b), and 4(d), Paragraphs 5, 9, 11, 15, 19, 25, 31, 37, 41, and 43 in their entirety and substituting in lieu thereof Paragraph 2, Subparagraphs 4(a), 4(b), and 4(d), Paragraphs 5, 9, 11, 15, 19, 25, 31, 37, 41, and 43 as follows:

2. RENTAL: Lessee agrees to pay to Lessor rent in accordance with the following schedules and procedures:

(a) The term of this Lease shall be divided into a series of rental periods. The first rental period shall commence on the

DUPLICATE-ORIGIN

10/1/93
- 9/20/03

commencement date of this Lease and shall end on March 31, 1991. The second rental period shall commence on April 1, 1991, and end on October 31, 1991. The third rental period shall commence on November 1, 1991, and end on September 30, 1993. Each successive rental period shall consist of one hundred twenty (120) months and shall commence at the expiration of the immediately preceding rental period. The last rental period shall be reduced in term in order to coincide with the expiration of this Lease.

- (b) The rental for the first rental period of this Lease shall be One Hundred Eighty-Two Thousand Seven Hundred Twenty-Four Dollars (\$182,724) per month. The rental for the second rental period shall be Two Hundred Eight Thousand Four Hundred Eighty-Eight Dollars (\$208,488) per month. The rental for the third rental period shall be One Hundred Ninety-Seven Thousand Eight Hundred Eighty Dollars (\$197,880) per month. The rental for Parcel Nos. 1, 2, and 3 for the fourth rental period shall be One Hundred Forty-Six Thousand Four Hundred Forty-One Dollars (\$146,441) per month, which is calculated on the basis of forty-five cents (45¢) per square foot per year for Parcel No. 1 and eleven cents (11¢) per square foot per year for Parcel Nos. 2 and 3. Said rental sums shall be payable in advance on or before the tenth (10th) day of each month. For the fifth and each successive rental period of this Lease and any extension thereof the rental shall be a sum agreed upon by Lessor and Lessee. During the fourth and each successive rental period, the rents shall be adjusted upward or downward after the expiration of the first sixty (60) months of each rental period (the adjustment date) according to the following computation: "The base figure for computing the adjustment is the arithmetic average of the thirty-six (36) monthly index figures for the fifth (5th) through fortieth (40th) months immediately preceding the existing rental period as shown in the Consumer Price Index for All Urban Consumers for Los Angeles/Anaheim/Riverside, CA/All Items based on the period 1982-84 = 100 as published by the United States Department of Labor's Bureau of Labor Statistics. The index figure for the adjustment date is the arithmetic average of the thirty-six (36) monthly index figures of said Consumer Price Index for All Urban Consumers for the fifth (5th) through fortieth (40th) months immediately preceding the adjustment date.

"The index for the adjustment date shall be computed as a percentage of the base figure. For example, assuming the base figure is 110 and the index figure for the adjustment date is 121, the percentage to be applied is $121/110 = 1.10 = 110\%$.

"That percentage of the base figure shall be applied to the initial rent in effect at the beginning of the then existing rental period and will continue for the remaining sixty (60) months of the rental period.

"In the event the Consumer Price Index for All Urban Consumers for Los Angeles/Anaheim/Riverside, CA/All Items is no longer published, the index for the adjustment date shall be the one reported in the U. S. Department of Labor's comprehensive official index most nearly answering the foregoing description of the index. If an index is calculated from a base different from the base period 1982-84 = 100, the base figure used for calculating the adjustment percentage shall first be converted under a formula supplied by the Bureau.

"If the above described Department of Labor indices are no longer published, another index generally recognized as authoritative shall be substituted by agreement of the parties. If they are unable to agree within sixty (60) days after demand by either party, a substitute index will be selected by the Chief Officer of the San Francisco Regional Office of the Bureau of Labor Statistics or its successor.

"Notwithstanding the publication dates of the index, the effective date of the rent adjustment is at the expiration of the first sixty (60) months of each rental period. Further, notwithstanding anything to the contrary contained here in this Paragraph 2(b), the rent adjustment shall not exceed seven (7) percent per annum or thirty-five percent (35%) per adjustment, nor shall the rental rate(s) resulting from the rent adjustment exceed the applicable rental rate(s) most recently adopted by the Board of Port Commissioners at the time of such rent adjustment. Until said rent adjustment can be reasonably determined by index publication, Lessee shall continue to make rental payments pursuant to this Lease at the same rent in effect at the then existing rental period. Because of this provision, overpayment of rents shall be credited to the Lessee's rental account and underpayments of rent shall be immediately paid to the Lessor."

- (c) In the event the parties cannot agree to the rent for a rental period, the controversy as to rent for said period shall be determined by three arbitrators. After notice by either party to the other requesting arbitration, one arbitrator shall be appointed by each party. Notice of the appointment shall be given by each party to the other when made. The two arbitrators shall immediately choose a third arbitrator to act with them. If they fail to select a third arbitrator, on application by either party, the third arbitrator shall be promptly appointed by the then presiding judge of the Superior Court of the state of California, county of San Diego, acting in his individual capacity. The party making the application shall give the other party notice of his application. All of the arbitrators shall be qualified real estate appraisers. Each party shall bear the expense of its own appointed arbitrator and shall bear other expenses pursuant to Section 1284.2 of the Code of Civil Procedure of California. Hearings shall be held in the city of San Diego, California. The award shall be the decision of not less than two of the arbitrators. Said award shall be the rent

which Lessor would derive from Lessor's property if it was vacant land, without any improvements thereon, and made available on the open market for new leasing purposes at the commencement of the rental period under arbitration. For the purpose of this arbitration procedure, the arbitrators shall assume that the Lessor has a fee simple absolute estate unburdened by any existing Lease. In determining what rent Lessor could derive from said property if it were made available on the open market for new leasing purposes, the arbitrators shall consider the benefits and burdens of all the provisions of this Lease to determine whether or not this Lease is more or less restrictive than private sector or other governmental leases; provided, however, no diminution in value shall be taken as a result of any existing Contaminants or improvements, or lack of improvements, on the subject property, and the property shall be considered as if it were available to be leased for maritime-related industrial uses. Said uses shall not be confined to those permitted Lessee herein nor to Lessee's actual use of the leased premises. In determining the rates, returns, rents and/or percentage rentals for said use and/or uses, the arbitrators shall use and analyze only the market data that is found in the open marketplace, such as is demanded and received by other Lessors for the same or similar uses as those referenced above. In all cases, the award shall be based upon recognized real estate appraisal principles and methods. The award determined by the arbitrators shall be effective and retroactive to the first day of the rental period under arbitration. The award shall be in writing in the form of a report that is in accordance with the powers of the arbitrators herein, supported by facts and analysis and in accordance with law. The arbitrators shall make copies of their report available to any ethical practice committee of any recognized professional real estate organization. The arbitration shall be conducted under and subject to Sections 1280 through 1294.2 of the Code of Civil Procedure of California.

- (d) In addition to the rentals provided in Paragraphs 2(b) and (c), Lessee shall pay the sum of Two Hundred Dollars (\$200) per month as rent for the use of the Lessor-owned building as described in Paragraph 6. Said sum shall not be subject to adjustment nor shall it be considered in establishing the rental amounts under this Lease.
- (e) Notwithstanding Paragraph 2 of this Lease, no rent shall be charged to Lessee during the term of this Lease or any extension thereof for Parcel No. 4, shown on attached Exhibits "A" and "B" unless and until such time as Lessor determines rent shall be paid for said Parcel No. 4. Said rent shall be effective thirty (30) days after delivery of a written notice to Lessee from Lessor that Lessor elects to charge rent for said Parcel No. 4. If Lessor makes the election to charge rent, the additional rent for said Parcel No. 4 shall be based upon the square foot water rent for Parcel Nos. 2 and 3 in effect at the time Lessor makes said determination and subsequent adjustments in rent for said

Parcel No. 4 shall be made concurrent with and in accordance with the provisions of Paragraphs 2(a), (b), and (c) of this Lease.

- (f) In the event Lessee is delinquent in rendering to Lessor an accounting of rent due or in remitting the rent due in accordance with the rental provisions of this Lease, then the rent not paid when due shall bear interest at the rate of ten percent (10%) per annum from the date due until paid; provided, however, that the Port Director of Lessor shall have the right to waive for good cause any interest payment upon written application of Lessee for any such delinquency period.
- (g) Rentals shall be delivered to the Treasurer of the San Diego Unified Port District at Post Office Box 488, San Diego, California 92112. The designated place of payment may be changed at any time by Lessor upon ten (10) days' written notice to Lessee. Lessee assumes all risk of loss if payments are made by mail.

4. CONSTRUCTION OF IMPROVEMENTS:

- (a) On or before December 31, 1993, Lessee shall commence the construction and diligently proceed to completion of real property improvements related to the permitted uses described in Paragraph 3. The improvements shall be of the nature described on the EXAMPLES OF REAL PROPERTY IMPROVEMENTS, which is marked Exhibit "C" and is attached hereto and by this reference made a part hereof. Lessee shall make an investment for the improvements to be constructed as described in this Paragraph in an amount which shall equal or exceed Sixty-Seven Million Six Hundred Fifty Thousand Dollars (\$67,650,000) hereinafter referred to as "minimum investment." Such minimum investment is consideration for the term of this Lease, and is not a portion of the rental obligations contained in Paragraph 2 of this Lease, and neither such investment or improvements nor any other Lessee investment or improvement shall be considered by the parties or any arbitrator (in the event of arbitration) in determining any rent during the term of this Lease. In the event Lessee fails to invest the entire minimum investment by no later than December 31, 2015, the term of this Lease shall be reduced. The reduction in term shall be one year for every One Million Three Hundred Fifty-Three Thousand Dollars (\$1,353,000), prorated monthly, that Lessee's actual investment in improvements to be constructed as described in this Paragraph is less than the minimum investment.

The construction of certain improvements contemplated by this Lease may be subject to the California Environmental Quality Act and other laws which may be in effect in the future. If Lessor determines any proposed improvements are within the scope of any then applicable environmental quality act and laws, it may then be necessary for Lessor either to approve or disapprove (and thereby prohibit) the construction of such improvements in

accordance with any such act or laws and other applicable provisions of this Lease. In the event there is such a disapproval, the cost of such a proposed improvement shall not be credited toward the cost of any improvement nor shall the time for completion of any improvements be extended, waived, or suspended.

- (b) No construction of any significant improvement upon the leased premises shall commence without the prior approval of the Port Director of Lessor, as evidenced in writing, and all such construction shall be in accordance with all applicable laws, regulations, ordinances and codes and in accordance with plans and specifications which must be submitted to and approved by the Port Director in writing prior to the commencement of any such construction. For purposes of Paragraphs 4 and 5, the term "significant improvements" means improvements that do any of the following: (i) make a change in the silhouette or exterior appearance of the premises visible from any street adjoining the leased premises; (ii) have an estimated cost at least equal to the minimum amount that requires approval by the Board of Port Commissioners under any policies of Lessor then in effect; or (iii) diminish the value of the premises.
- (d) By no later than March 31 of each year, beginning with March 31, 1992, and ending with March 31, 2016, Lessee shall furnish Lessor an itemized statement of the actual construction cost of any improvements required by the terms of this paragraph, which were completed during the preceding calendar year. The statement of cost shall be sworn to and signed by Lessee or his responsible agent under penalty of perjury.

5. IMPROVEMENTS:

- (a) Lessee may, at its own expense, make any alterations or changes in the leased premises or cause to be built, made or installed thereon any structures, machines, appliances, utilities, signs or other improvements necessary or desirable for the use of said premises and may alter and repair any such structures, machines or other improvements; provided, however, that no significant improvements, as defined in Paragraph 4(b), or repairs meeting any of the criteria for significant improvements, shall be made, built or installed, and no major repairs thereto shall be made except in accordance with plans and specifications previously submitted to and approved in writing by the Port Director of Lessor. Notwithstanding the foregoing, Lessee shall have the right within the interior of any enclosed building structure to install and/or remove machines, equipment, appliances and trade fixtures to/from the leased premises without the prior consent of the Port Director of Lessor.

Lessee further agrees that no banners, pennants, flags, eye-catching spinners or other advertising devices, nor any

temporary signs shall be permitted to be flown, installed, placed, or erected on the premises without written consent of the Port Director of Lessor.

- (b) Lessee shall notify Lessor prior to making applications for any development or construction permit or license from any governmental regulatory agency pertaining to the leased premises. Lessee shall provide Lessor with a copy of said application within five (5) days of making said application, along with all plans submitted as part of said application. Lessee shall provide Lessor with a copy of any permit, license or other authorization subsequently issued within ten (10) days of receipt by Lessee.

9. ASSIGNMENT - SUBLEASE: Lessee shall not assign or transfer the whole or any part of this Lease or any interest therein, nor sublease the whole or any part of the leased premises, nor contract for the management or operation of the whole or any part of the leased premises, nor permit the occupancy of any part thereof by any other person, nor permit transfer of the Lease or possession of the leased premises by merger, consolidation or dissolution, nor permit hypothecation, pledge, encumbrance or sale of a controlling interest in the voting stock in said corporation without the consent of Lessor, evidenced by resolution, first had and obtained in each instance. It is mutually agreed that the personal qualifications of the parties controlling the corporation named herein as Lessee are a part of the consideration for the granting of this Lease and said parties do hereby agree to maintain active control and supervision of the operations conducted on the leased premises. No assignment or transfer, hypothecation, pledge, encumbrance or sale, voluntary or involuntary, in whole or in part of said corporation or the Lease or any interest therein, and no sublease of the whole or any part of the leased premises, and no contract for the management or operation of the whole or any part of the leased premises, and no permission to any person to occupy the whole or any part of the leased premises, shall be valid or effective without the consent of Lessor, first had and obtained in each instance; provided, however, that nothing herein contained shall be construed to prevent the occupancy of said premises by any employee or business invitee of Lessee.

In the event any consent of Lessor is given for any Lease assignment or transfer, the following shall apply in each instance: (i) the Lessor shall be paid additional rent, which may be percentage rate or rates, to equal the full fair market rent, commencing on the effective date of such proposed assignment or transfer, unless on that date the rent being paid under this Lease is equal to the full fair market rent; (ii) the Assignee hereby agrees and assumes each and every obligation under the Lease, and (iii) other conditions and qualifications determined by the Board of Port Commissioners of Lessor. Notwithstanding, items (i) and (iii) shall not apply in the event of: (a) a Lease assignment or transfer to a third party from a consented-to lender which acquired title to the Lease by foreclosure or deed in lieu of foreclosure or a new Lease pursuant to the provisions of Paragraph 10 or (b) assignment or transfer of the Lease

to a consented-to lender by deed in lieu of foreclosure, or to a consented-to lender or a third party as the successful bidder at a foreclosure sale. The rent under this Lease and any change resulting therein effective upon any Lease assignment or transfer as provided in this Paragraph shall be for the remainder of the rental period during which it occurs, and any said rent shall thereafter be subject to rental review at the commencement of subsequent and succeeding rental periods in accordance with the provisions of Paragraph 2 of this Lease. Notwithstanding the foregoing, if a change in rent is made which becomes effective upon any Lease assignment or transfer, the rent shall be subject to any adjustment applicable during the remainder of said rental period during which the Lease assignment or transfer occurred based on the change in the Consumer Price Index if such adjustment is provided for in Paragraph 2 of this Lease; provided, however, the "base figure for computing the adjustment" shall be the arithmetic average of the thirty-six (36) monthly index figures for the fifth (5th) and fortieth (40th) months immediately preceding the effective date of such proposed assignment or transfer for which the Assignee pays additional rent to Lessor to equal the full fair market rent and the "index figure for the adjustment date" shall be the arithmetic average of the thirty-six (36) monthly index figures of said Consumer Price Index for the fifth (5th) through fortieth (40th) months immediately preceding the date such adjustment is effective.

In the event any consent of Lessor is given to sublease, the following shall apply in each instance: (i) the Lessor shall be paid additional rent, which may be percentage rate or rates, to equal the full fair market rent for the sublease area, commencing on the effective date of such proposed sublease and continuing for a specified period of time which shall not extend beyond the remainder of the master Lease rental period during which it occurs or until the termination of the sublease, whichever occurs first, unless on that date the rent being paid under this Lease for said area is equal to the full fair market rent, and (ii) other conditions and qualifications determined by the Board of Port Commissioners of Lessor. As long as said sublease is in effect, said rent for the sublease area shall thereafter be subject to rental review at the commencement of subsequent and succeeding master Lease rental periods, in accordance with the provisions of Paragraph 2 of this Lease.

In the event the parties cannot agree to an amount that is equal to the full fair market rent described in this Paragraph, the full fair market rent shall be determined by the arbitration procedure described in Paragraph 2 of this Lease, except that the arbitration award shall be for a limited period of time commencing and ending as provided in this Paragraph and not for a "rental period" as specified in said Paragraph 2. Until said full fair market rent is determined pursuant to said Paragraph 2, the Lessee shall continue to make rental payments as required by this Lease at the same rate or rates in effect on the effective date of the Lease assignment or sublease. Because of this provision, underpayment of rent, if any, shall be

paid to Lessor within ten (10) days of the date that the full fair market rent is determined by said arbitration procedure.

11. BANKRUPTCY: In the event Lessee becomes insolvent, makes an assignment for the benefit of creditors, becomes the subject of a bankruptcy proceeding, reorganization, arrangement, insolvency, receivership, liquidation, or dissolution proceedings, or in the event of any judicial sale of Lessee's interest under this Lease, Lessor shall have the right to declare this Lease in default.

The conditions of this Paragraph shall not be applicable or binding on Lessee or the beneficiary in any deed of trust, mortgage, or other security instrument on the leased premises which is of record with Lessor and has been consented to by resolution of Lessor, or to said beneficiary's successors in interest consented to by resolution of Lessor, as long as there remains any monies to be paid by Lessee to such beneficiary under the terms of such deed of trust; provided that such beneficiary or its successors in interest, continuously pay to the Lessor all rent due or coming due under the provisions of this Lease and the premises are continuously and actively used in accordance with Paragraph 14 of this Lease.

15. MAINTENANCE AND REPAIR: As part of the consideration for the leasing thereof, Lessee agrees to assume full responsibility for the operation, maintenance, including painting, and repair of the premises, throughout the term and without expense to the Lessor. Lessee will perform all maintenance, repairs and replacements necessary to maintain and preserve the premises in a good, safe, healthy and sanitary condition satisfactory to Lessor and in compliance with all applicable laws. Lessee further agrees to provide approved containers for trash and garbage and to keep premises free and clear of rubbish and litter, or any other fire hazards. Lessee waives all right to make repairs at the expense of Lessor as provided in Section 1942 of the California Civil Code and all rights provided by Section 1941 of said Code.

For the purpose of keeping the premises in a good, safe, healthy and sanitary condition, Lessor shall always have the right but not the duty, to enter, view, inspect, determine the condition of and protect its interests in, the premises; provided, however, that such entry is conducted in a manner to cause the least inconvenience and disruption to Lessee's operation as practicable, and provided further that Lessor or its representatives comply with all safety and security requirements of Lessee. It is not intended that Lessee's safety and security requirements be used to bar Lessor's right of inspection, and Lessee shall assure Lessor reasonable access to the leased premises for such purpose. If inspection discloses that the premises are not in the condition described, Lessee must commence the necessary maintenance work within ten (10) days after written notice from Lessor and diligently pursue the same to completion. Further, if at any time Lessor determines that the premises are not in the condition described, Lessor may require Lessee to file and pay for a faithful performance bond, to assure prompt correction without additional notice. The amount of this bond shall be adequate, in

Lessor's opinion, to correct the unsatisfactory condition. Notwithstanding, Lessor shall not be required at any time to maintain or to make any improvements or repairs whatsoever on or for the benefit of the leased premises. The rights reserved in this section shall not create any obligations or increase any obligations for Lessor elsewhere in this Lease.

19. NONDISCRIMINATION: Lessee agrees at all times to fully comply with all laws prohibiting discrimination against any person or class of persons by reason of sex, color, race, religion, handicap or national origin. If the use provided for in this Lease allows the Lessee to offer accommodations or services to the public, such accommodations or services shall be offered by the Lessee to the public on fair and reasonable terms. In complying with all such laws, including, without limitation, the Americans With Disabilities Act of 1990, Lessee shall be solely responsible for such compliance and required programs and there shall be no allocation of any such responsibility between Lessor and Lessee.

25. INSURANCE: Lessee shall maintain insurance acceptable to Lessor in full force and effect throughout the term of this Lease. The policies for said insurance shall, as a minimum, provide the following:

(a) Forms of Coverage

(1) "OCCURRENCE" form Commercial General Liability covering premises, operations and contractual liability assumed by Lessee in this Lease in the amount of not less than Two Million Dollars (\$2,000,000) combined single limit per occurrence for bodily injury, personal injury and property damage. Either the general aggregate limit shall apply separately to this location or the general aggregate limit shall be twice the required occurrence limit.

If alcoholic beverages are served or sold on the leased premises, Liquor Liability coverage in the amount of not less than One Million Dollars (\$1,000,000) shall be obtained.

(2) Fire and Extended Coverage, including water damage and debris cleanup provisions in an amount not less than ninety percent (90%) of full replacement value of all improvements located within the leased premises. The fire and extended coverage policies shall be endorsed to state that any insurance proceeds in excess of Twenty-Five Thousand Dollars (\$25,000) resulting from a loss under said policies shall be payable jointly to Lessor and Lessee in order that said proceeds will be reinvested in rebuilding and/or repairing the damaged portions of the leased premises; provided, however, that within the period during which there is in existence a mortgage or deed of trust upon the leasehold given by Lessee with the prior consent of Lessor, then and for that period all fire and extended coverage policies shall be made payable jointly to the mortgagee or beneficiary and Lessee, and any proceeds collected therefrom

shall be held by said mortgagee or beneficiary for the following purposes:

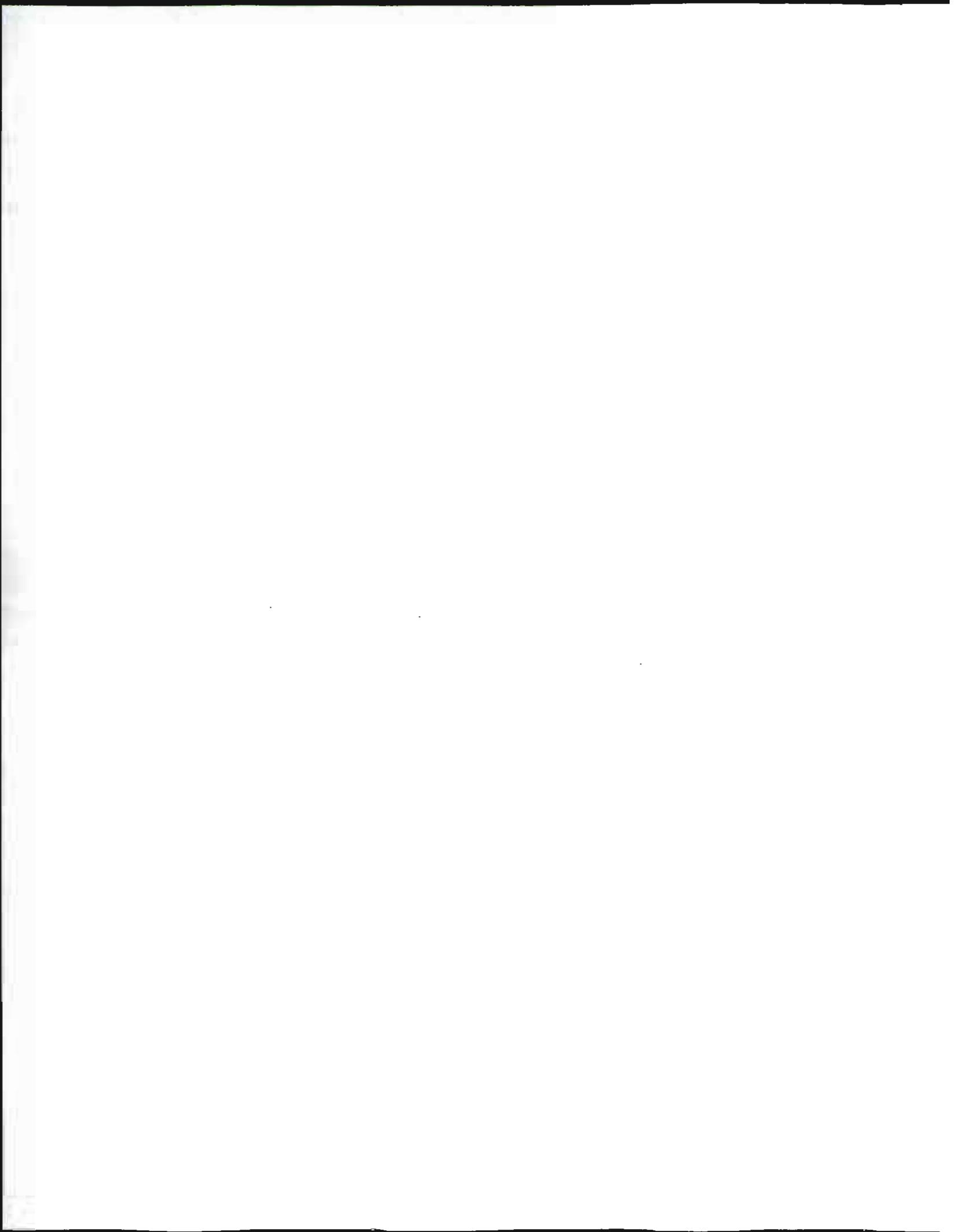
- (i) As a trust fund to pay for the reconstruction, repair, or replacement of the damaged or destroyed improvements in kind and scope in progress payments as the work is performed with any excess remaining after completion of said work to be retained by said mortgagee or beneficiary and applied to reduction of the debt secured by such mortgage or deed of trust and with any excess remaining after full payment of said debt to be paid over to Lessee; or
- (ii) In the event that this Lease is terminated with consent of both Lessor and mortgagee or beneficiary and said improvements are not reconstructed, repaired, or replaced, the insurance proceeds shall be retained by said mortgagee or beneficiary to the extent necessary to fully discharge the debt secured by said mortgage or deed of trust and said mortgagee or beneficiary shall hold the balance thereof without liability to restore the premises to a neat and clean condition and then for Lessor and Lessee as their interests may appear.

(3) **Pollution Liability for Underground Storage Tanks**

Due to operation of underground storage tanks, Lessee is required to comply with Subpart H of 40 CFR (Code of Federal Regulations) or Title 23, Division 3, Chapter 18 of California Code of Regulations (collectively, "applicable UST law"). At the time Lessee is required to comply with any provisions of applicable UST law requiring financial assurance mechanisms, Lessee shall provide Lessor with a certified copy of its Certification of Financial Responsibility. If Lessee's program for financial responsibility includes insurance, then Lessee's policy(ies) shall name Lessor, its officers, officials and employees as additional insureds, and, all other terms of Section (b), below, shall apply. Any time Lessee changes its financial assurance mechanisms, Lessee shall provide Lessor with a certified copy of its revised Certification of Financial Responsibility.

(b) **General Requirements**

(1) All required insurance shall be in force the first day of the term of this Lease. The cost of all required insurance shall be borne by Lessee. Certificates in a form acceptable to Lessor evidencing the existence of the necessary insurance policies, and original endorsements effecting coverage required by this clause, shall be kept on file with Lessor during the entire term of this Lease. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The



Lessor reserves the right to require complete, certified copies of all required policies at any time.

(2) All liability insurance policies will name, or be endorsed to name, Lessor, its officers, officials and employees as additional insureds and protect Lessor, its officers, officials and employees against any legal costs in defending claims. All insurance policies will be endorsed to state that coverage will not be suspended, voided, cancelled, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested has been given to the Lessor. All insurance policies will be endorsed to state that Lessee's insurance is primary and not excess or contributory to any insurance issued in the name of Lessor. And, all insurance companies must be satisfactory to Lessor.

(3) Any deductibles or self-insured retentions must be declared and acceptable to the Lessor. If the deductibles or self-insured retentions are unacceptable to the Lessor, the Lessee shall have the option of either: reducing or eliminating such deductibles or self-insured retentions as respects the Lessor, its officers, officials, and employees; or, procuring a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

(4) Lessor shall retain the right at any time to review the coverage, form, and amount of the insurance required hereby. If, in the opinion of Lessor, the insurance provisions in this Lease do not provide adequate protection for Lessor and/or for members of the public using the leased premises, Lessor may require Lessee to obtain insurance sufficient in coverage, form and amount to provide adequate protection. Lessor's requirements shall be reasonable but shall be designed to assure protection from and against the kind and extent of risk which exist at the time a change in insurance is required.

(5) Lessor shall notify Lessee in writing of changes in the insurance requirements. With respect to changes in insurance requirements that are available from Lessee's then existing insurance carrier, Lessee shall deposit certificates evidencing acceptable insurance policies with Lessor incorporating such changes within sixty (60) days of receipt of such notice. With respect to changes in insurance requirements that are not available from Lessee's then existing insurance carrier, Lessee shall deposit certificates evidencing acceptable insurance policies with Lessor, incorporating such changes within one hundred twenty (120) days of receipt of such notice. In the event Lessee fails to deposit insurance certificates as required herein, this Lease shall be in default without further notice to Lessee, and Lessor shall be entitled to all legal remedies.

(6) If Lessee fails or refuses to maintain insurance as required in this Lease, or fails to provide proof of insurance, Lessor has the right to declare this Lease in default without

further notice to Lessee and Lessor shall be entitled to exercise all legal remedies.

(7) The procuring of such required policies of insurance shall not be construed to limit Lessee's liability hereunder, nor to fulfill the indemnification provisions and requirements of this Lease. Notwithstanding said policies of insurance, Lessee shall be obligated for the full and total amount of any damage, injury, or loss caused by negligence or neglect connected with this Lease or with the use or occupancy of the leased premises.

(8) Lessee agrees not to use the premises in any manner, even if use is for purposes stated herein, that will result in the cancellation of any insurance Lessor may have on the premises or on adjacent premises, or that will cause cancellation of any other insurance coverage for the premises or adjoining premises. Lessee further agrees not to keep on the premises or permit to be kept, used, or sold thereon, anything prohibited by any fire or other insurance policy covering the premises. Lessee shall, at its sole expense, comply with any and all requirements, in regard to premises, of any insurance organization necessary for maintaining fire and other insurance coverage at reasonable cost.

31. WAIVER: Any waiver by either party of any breach by the other party of any one or more of the covenants, conditions, or agreements of this Lease shall not be nor be construed to be a waiver of any subsequent or other breach of the same or any other covenant, condition or agreement of this Lease, nor shall any failure on the part of either party to require or exact full and complete compliance by the other party with any of the covenants, conditions, or agreements of this Lease be construed as in any manner changing the terms hereof or preventing the enforcement in full of the provisions hereof. The subsequent acceptance of rent hereunder by Lessor shall not be deemed to be a waiver of any preceding breach by Lessee of any term, covenant, or condition of this Lease, other than the failure of Lessee to pay the particular rental so accepted, regardless of Lessor's knowledge of such preceding breach at the time of acceptance of such rent.

37. REMOVAL OF MATERIALS: Lessee hereby agrees that upon the expiration of this Lease or the sooner termination as herein provided, it will remove within sixty (60) days all ships, vessels, barges, hulls, debris, surplus and salvage materials from the land and water area forming a part of or adjacent to the leased premises, so as to leave the same in as good condition as when first occupied by Lessee, subject to reasonable wear and tear; provided, however, that if any said ships, vessels, barges, hulls, debris, surplus and salvage materials shall not be so removed within sixty (60) days by the Lessee, Lessor may remove, sell and destroy the same at the expense of Lessee and Lessee hereby agrees to pay to Lessor the reasonable cost of such removal, sale or destruction; or at the option of Lessor, the title to said ships, vessels, barges, hulls,

debris, surplus and salvage materials not removed shall become the property of Lessor without cost to Lessor and without any payment to Lessee.

During any period of time employed by Lessee under this Paragraph to remove ships, vessels, barges, hulls, debris, surplus and salvage materials, or to test for and/or remediate Contaminants as required in this Lease, Lessee shall continue to pay the full rental to Lessor in accordance with this Lease which said rental shall be prorated daily.

41. EQUAL EMPLOYMENT OPPORTUNITY: Lessee agrees at all times to fully comply with all applicable laws prohibiting discrimination against any person or class of persons for employment because of race, color, religion, sex, handicap or national origin and, shall take affirmative action to assure applicants are employed and that employees are treated during employment without regard to race, color, religion, sex, handicap or national origin. Except during the time Lessee is exempt pursuant to written policy of Lessor, Lessee shall submit to Lessor for review and approval a written affirmative action program to attain improved employment for racial and ethnic minorities and women and during the term of this Lease shall further make available employment records to Lessor upon request. Lessee shall certify in writing to Lessor that Lessee is in compliance and throughout the term of this Lease will comply with Title VII of the Civil Rights Act of 1964, as amended, the California Fair Housing Act, and any other applicable federal, state, and local law, regulation and policy (including without limitation those adopted by Lessor) relating to equal employment opportunity and affirmative action programs, including any such law, regulation, and policy hereinafter enacted.

Compliance and performance by Lessee of the equal employment opportunity and affirmative action program provision of this Lease is an express condition hereof and any failure by Lessee to so comply and perform shall be a default as provided in said Lease and Lessor may exercise any right as provided therein and as otherwise provided by law.

43. HAZARDOUS MATERIALS: Lessee shall comply with all laws regarding hazardous substances, materials or wastes, or petroleum products or fraction thereof (herein collectively referred to as "Contaminants") relative to occupancy and use of the leased premises. Lessee shall be liable and responsible for any Contaminants arising out of the occupancy or use of the leased premises by Lessee. Such liability and responsibility shall include, but not be limited to, (i) removal from the leased premises any such Contaminants; (ii) removal from any area outside the premises, including but not limited to surface and groundwater, any such Contaminants generated as part of the operations on the leased premises; (iii) damages to persons, property and the leased premises; (iv) all claims resulting from those damages; (v) fines imposed by any governmental agency, and (vi) any other liability as provided by law. Lessee shall defend, indemnify and hold harmless the Lessor, its officials, officers, agents, and

employees from any and all such responsibilities, damages, claims, fines, liabilities, including without limitation any costs, expenses and attorney's fees therefor. Lessor shall have a direct right of action against Lessee even if no third party has asserted a claim. Furthermore, Lessor shall have the right to assign said indemnity.

If Lessee has in the past or continues to use, dispose, generate, or store Contaminants on the leased premises, Lessor, or its designated representatives, at Lessor's sole discretion, may at any time during the term of this Lease, enter upon the premises and make any inspections, tests or measurements Lessor deems necessary in order to determine if a release of Contaminants has occurred. Lessor shall give Lessee a minimum of twenty-four (24) hours' notice in writing prior to conducting any inspections or tests, unless, in Lessor's sole judgment, circumstances require otherwise, and such tests shall be conducted in a manner so as to attempt to minimize any inconvenience and disruption to Lessee's operations. If such tests indicate a release of Contaminants, then Lessor, at Lessor's sole discretion, may require Lessee, at Lessee's sole expense, and at any time during the term of this Lease, to have tests for such Contaminants conducted by a qualified party or parties on the leased premises. If Lessor has reason to believe that any Contaminants that originated from a release on the leased premises have contaminated any area outside the premises, including but not limited to surface and groundwater, then Lessor, at Lessor's sole discretion, may require Lessee, at Lessee's sole expense, and at any time during the term of this Lease, to have tests for such Contaminants conducted by a qualified party or parties on said area outside the leased premises.

The tests conducted by Lessee's qualified party shall include, but not be limited to, applicable comprehensive soil, emission, or groundwater sampling test or other procedures to determine any actual or possible contamination. Lessee shall expeditiously, but no longer than thirty (30) days after Lessor's request for such tests, furnish to Lessor the results of said tests, sampling plans, and analysis thereof identifying any Contaminants which exceed then applicable levels permitted by federal, state, or local laws. Lessee shall report such contamination to the Lessor within seventy-two (72) hours and shall diligently proceed to identify the extent of contamination, how it will be remediated, when it will be remediated, by whom, and the cost of such remediation.

ABSTRACT OF LEASE AMENDMENT

C. ABSTRACT OF LEASE AMENDMENT NO. 1: This is the final paragraph and abstract of Lease Amendment No. 1, dated DECEMBER 6TH, 1994, between SAN DIEGO UNIFIED PORT DISTRICT, Lessor, and NATIONAL STEEL AND SHIPBUILDING COMPANY, Lessee, concerning the premises described in Exhibits "A" and "B", attached hereto and by this reference made a part hereof.

For good and adequate consideration, Lessor leases the premises to Lessee, and Lessee hires them from Lessor, for the term and on the provisions contained in Lease dated October 22, 1991, recorded by the San Diego County Recorder's Office as No. 77-538163, and this Lease Amendment No. 1, including, without limitation, provisions prohibiting assignment, subleasing, and encumbering the leasehold without the express written consent of Lessor in each instance, all as more specifically set forth in said Lease and said Amendment, which are incorporated in this abstract by this reference.

The term is fifty (50) years beginning January 1, 1991, and ending on December 31, 2040. This Lease Amendment No. 1 shall become effective as of December 1, 1994.

This abstract is not a complete summary of the Lease Amendment. Provisions in the abstract shall not be used in interpreting the Lease Amendment provisions. In the event of conflict between the abstract and other parts of the Lease Amendment, the other parts shall control. Execution hereof constitutes execution of the Lease Amendment itself.

APPROVED as to form
and legality

DEC 8, 1994

Port Attorney



JOSEPH D. PATELLO
Port Attorney

SAN DIEGO UNIFIED PORT DISTRICT

BY



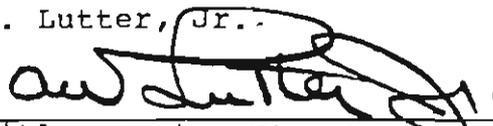
ASSISTANT Port Director

DONALD E. HILLMAN, JR

NATIONAL STEEL AND SHIPBUILDING COMPANY

A. W. Lutter, JR..

BY



Title: Senior Vice President, Marketing
and Business Affairs

**AGREEMENT FOR AMENDMENT OF LEASE
AMENDMENT NO. 2**

THIS AGREEMENT, made and entered into this 10th day of July, 2007, by and between the SAN DIEGO UNIFIED PORT DISTRICT, a public corporation, hereinafter called "Lessor," and NATIONAL STEEL AND SHIPBUILDING COMPANY, a Nevada Corporation, hereinafter called "Lessee," WITNESSETH:

WHEREAS, Lessor and Lessee, on the 22nd day of October, 1991, entered into a Lease of certain tidelands in the city of San Diego, California, which Lease is on file in the Office of the Clerk of Lessor bearing Document No. 27624; and

WHEREAS, Lessor and Lessee, on the 6th day of December, 1994, entered into an Agreement for Amendment of Lease, Amendment No. 1, which Amendment is on file in the Office of the Clerk of Lessor bearing Document No. 32187 and

WHEREAS, Lessor and Lessee are mutually desirous of amending said Lease;

NOW THEREFORE, for valuable consideration, said Lease is hereby amended in the following respects and no others, and except as expressly amended, all terms, covenants, and conditions of said Lease shall remain in full force and effect:

- A. Said Lease is hereby amended by Paragraph 2(b) and Paragraph 2(c) are amended to read as follows:

2 (b) RENT:

The rental for the first rental period of this Lease shall be One Hundred Eighty-Two Thousand Seven Hundred Twenty-Four Dollars (\$182,724) per month. The rental for the second rental period shall be Two Hundred Eight Thousand Four Hundred Eighty-Eight Dollars (\$208,488) per month. The rental for the third rental period shall be One Hundred Ninety-Seven Thousand Eight Hundred Eighty Dollars (\$197,880) per month. The rental for Parcel Nos. 1, 2, and 3 for the fourth rental period shall be One Hundred Forty-Six Thousand Four Hundred Forty-One Dollars (\$146,441) per month, which is calculated on the basis of forty-five cents (45¢) per square foot per year for Parcel No. 1 and eleven cents (11¢) per square foot per year for Parcel Nos. 2 and 3. Notwithstanding any other provisions in this Lease, for the fifth rental period, the rent shall be as set forth as follows:

RENT FOR FIFTH RENTAL PERIOD

| PERIOD | MONTHLY RENT |
|---------------------------------------|---|
| October 1, 2003 to September 30, 2006 | \$208,333 per month |
| October 1, 2006 to September 30, 2008 | \$225,000 per month |
| October 1, 2008 to September 30, 2009 | Monthly rent adjusted upward from the prior period by the increase in the Consumer Price Index for All Urban consumers for Los Angeles/ Anaheim/Riverside, CA/All Items for the period from February 1, 2007 to January 31, 2008 |
| October 1, 2009 to September 30, 2010 | Monthly rent adjusted upward from the prior period by the increase in the Consumer Price Index for All Urban consumers for Los Angeles/ Anaheim/Riverside, CA/All Items for the period from February 1, 2008 to January 31, 2009 |
| October 1, 2010 to September 30, 2011 | Monthly rent adjusted upward from the prior period by the increase in the Consumer Price Index for All Urban consumers for Los Angeles/ Anaheim/Riverside, CA/ All Items for the period from February 1, 2009 to January 31, 2010 |
| October 1, 2011 to September 30, 2012 | Monthly rent adjusted upward from the prior period by the increase in the Consumer Price Index for All Urban consumers for Los Angeles/ Anaheim/Riverside, CA/All Items for the period from February 1, 2010 to January 31, 2011 |
| October 1, 2012 to September 30, 2013 | Monthly rent adjusted upward from the prior period by the increase in the Consumer Price Index for All Urban consumers for Los Angeles/ Anaheim/Riverside, CA/All Items for the period from February 1, 2011 to January 31, 2012 |

Notwithstanding anything in this Lease to the contrary, during this fifth rental period only, the Consumer Price Index adjustment will occur on an annual basis for the periods from October 1, 2008 to September 30, 2013.

DM
Initial

F.H.
Initial

Said rental sums shall be payable in advance on or before the tenth (10th) day of each month. For the sixth (6th) and each successive rental period of this Lease and any extension thereof the rental shall be a sum agreed upon by Lessor and Lessee. During the sixth and each successive rental period, the rents shall be adjusted upward or downward after the expiration of the first sixty (60) months of each rental period (the adjustment date) according to the following computation: "The base figure for computing the adjustment is the arithmetic average of the thirty-six (36) monthly index figures for the fifth (5th) through fortieth (40th) months immediately preceding the existing rental period as shown in the Consumer Price Index (CPI) for All Urban Consumers for Los Angeles/Anaheim/Riverside, CA/All Items based on the period 1982-84 = 100 as published by the United States Department of Labor's Bureau of Labor Statistics. The index figure for the adjustment date is the arithmetic average of the thirty-six (36) monthly index figures of said Consumer Price Index for All Urban Consumers for the fifth (5th) through fortieth (40th) months immediately preceding the adjustment date.

"The index for the adjustment date shall be computed as a percentage of the base figure. For example, assuming the base figure is 110 and the index figure for the adjustment date is 121, the percentage to be applied is $121/110 = 1.10 = 110\%$.

"That percentage of the base figure shall be applied to the initial rent in effect at the beginning of the then existing rental period and will continue for the remaining sixty (60) months of the rental period.

"In the event the Consumer Price Index for All Urban Consumers for Los Angeles/Anaheim/Riverside, CA/All Items is no longer published, the index for the adjustment date shall be the one reported in the U.S. Department of Labor's comprehensive official index most nearly answering the foregoing description of the index. If an index is calculated from a base different from the base period 1982-84 = 100, the base figure used for calculating the adjustment percentage shall first be converted under a formula supplied by the Bureau.

"If the above described Department of Labor indices are no longer published, another index generally recognized as authoritative shall be substituted by agreement of the parties. If they are unable to agree within sixty (60) days after demand by either party, a substitute index will be selected by the Chief Officer of the San Francisco Regional Office of the Bureau of Labor Statistics or its successor.

Notwithstanding the publication dates of the index, the effective date of the rent adjustment is at the expiration of the first sixty (60) months of each rental period. Further, notwithstanding anything to the contrary contained here in this Paragraph 2(b), the rent adjustment shall not exceed seven percent (7%) per annum or thirty-five percent (35%) per adjustment, nor shall the rental rate(s) resulting from the rent adjustment exceed the applicable rental rate(s) most recently adopted by the Board

of Port Commissioners at the time of such rent adjustment. Until such rent adjustment can be reasonably determined by index publication, Lessee shall continue to make rental payments pursuant to this Lease at the same rent in effect at the then existing rental period. Because of this provision, overpayment of rents shall be credited to the Lessee's rental account and underpayments of rent shall be immediately paid to the Lessor.

2 (c) **RENT REVIEW:**

- (i) Beginning with the Rental Period which commences October 1, 2013, and at the commencement of each Rental Period thereafter as described in Paragraph 2(a) herein, the rent shall be mutually agreed upon by Lessor and Lessee; provided, however, the rent shall be further adjusted in accordance with Paragraph 2 (b) herein.
- (ii) In the event the parties cannot agree to the rent for a Rental Period, the rent for said Rental Period shall be determined by three arbitrators in accordance with Sections 1280 through 1294.2 of the California Code of Civil Procedure.

The parties agree that, after notice by either party to the other requesting arbitration, each party shall appoint one arbitrator within sixty (60) days. Notice of the appointment shall be given by each party to the other party when made. Notwithstanding anything to the contrary in this paragraph 2 (c), should either party fail to appoint its arbitrator within said time period, then the arbitrator who was appointed shall become the sole party-appointed arbitrator. Should either party fail to appoint its arbitrator within said time period, then the party that has appointed its arbitrator may petition the Superior Court of the state of California, county of San Diego, to appoint the second arbitrator. The party making the application shall give the other party notice of its application. All costs, including attorney fees associated with the court's appointment of the second arbitrator, shall be borne by the party, which failed to appoint its arbitrator.

The two arbitrators shall immediately choose a third arbitrator to act with them. If they fail to select a third arbitrator within thirty (30) days following the appointment of the second arbitrator, on application by either party, the third arbitrator shall be promptly appointed by the then-presiding judge of the Superior Court of the state of California, county of San Diego, acting in his/her individual capacity. The party making the application shall give the other party notice of its application. All of the arbitrators shall be qualified real estate appraisers that are licensed to practice in the state of California.

By no later than thirty (30) days following the appointment of the third arbitrator, Lessor and Lessee shall each provide the other and each of the three arbitrators with (i) its rent proposal which shall consist of the Minimum

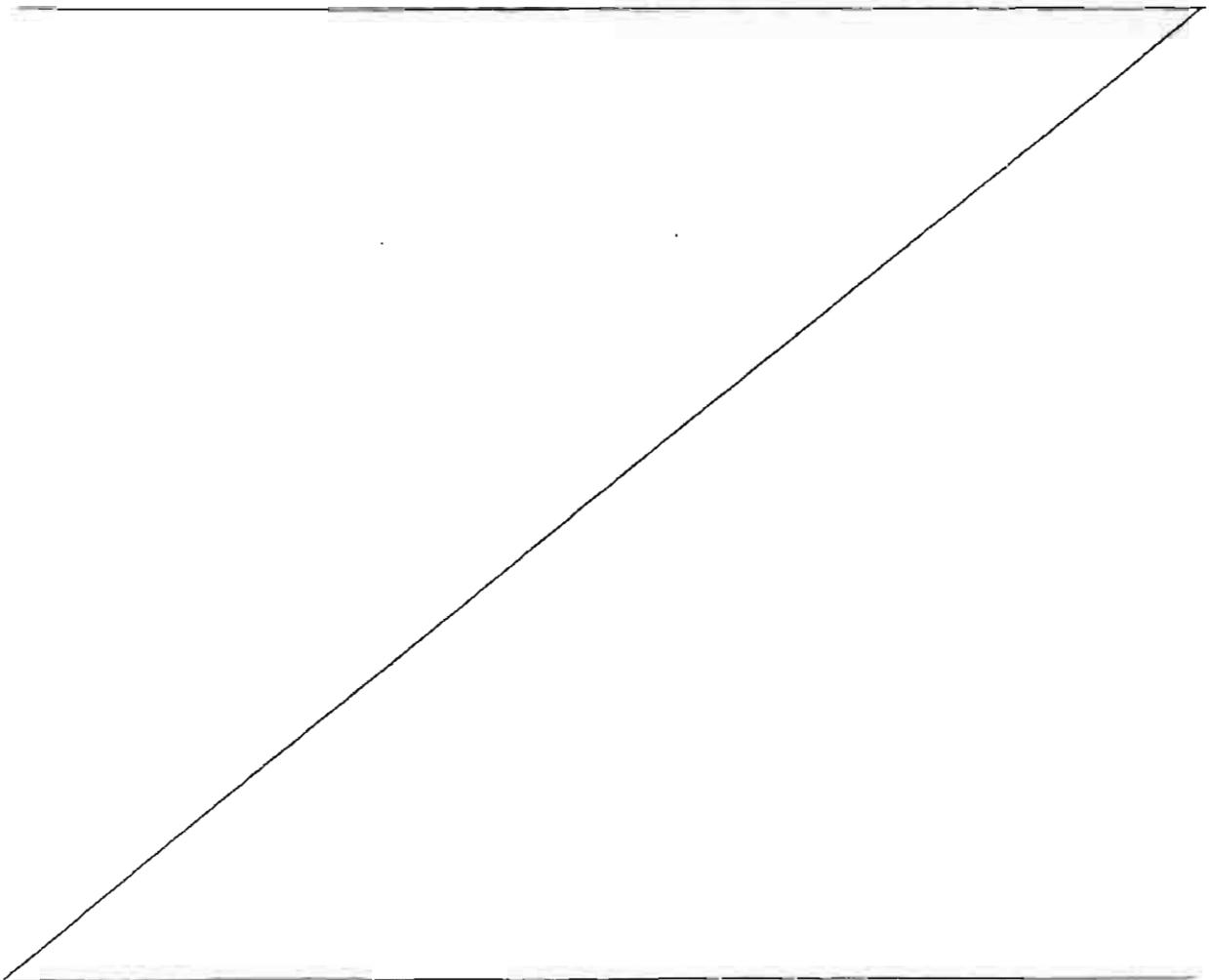
Annual Rent and the percentage rents (and/or gallonage and/or flat rents if applicable) for the pending Rental Period under arbitration (the "Rent Proposal") and (ii) its appraisal report prepared by a qualified real estate appraiser licensed to practice in the state of California. In the event, the Rent Proposal and the opinion of fair market rent expressed in the appraisal report differ, the Rent Proposal shall control. The appraisal reports shall consider: (1) the Leased Premises as if vacant of Lessee-owned improvements and available for new construction but with street access, utility services, and shoreline protection (if the Leased Premises are located on the waterfront) regardless of who paid for the installation of the street improvements, utility services and/or shoreline protection; (2) the Leased Premises as having all regulatory entitlements and development rights for the types of uses permitted in Paragraph 3 which includes, but is not restricted to, the design, construction and size of the existing improvements; (3) the highest and best use of the Leased Premises as if available for new leasing purposes under optimal development assumptions that are consistent with the uses provided in Paragraph 3 herein and to the other terms, conditions and restrictions of the Lease; (4) as if held by a private party in fee simple with all of the rights to sell, lease or transfer the owner's interest, and shall disregard any limitation resulting from public ownership; and (5) as if offered for lease in the open market. No diminution in value shall be taken as a result of any existing Contaminants, as herein described, or improvements, or lack of improvements, on the Leased Premises. The appraisers shall use and analyze only the market data that is found in the marketplace, such as is demanded and received by other lessors for the same or similar types of uses allowed on the Leased Premises. In all cases, the appraisal reports shall be based upon recognized real estate appraisal principles and methods.

Within thirty (30) days following the selection of the third arbitrator, the three arbitrators shall conduct an arbitration hearing in the city of San Diego, California. The three arbitrators shall hear and consider the testimony of the Lessor and Lessee and their appraisal witnesses and any additional written information furnished by Lessor or Lessee. The amount and kind of evidence allowed and the rules of discovery and testimony shall be decided solely by the third arbitrator after consultation with the arbitrators appointed by the Lessor and Lessee.

The award determined by the arbitrators shall be effective and retroactive to the first day of the Rental Period under arbitration. The award shall be in writing and shall be made no later than fifteen (15) days following the arbitration hearing. The award shall be either Lessor's Rent Proposal or Lessee's Rent Proposal. The arbitrators shall not possess any right or authority to propose a compromise between Lessor's Rent Proposal and Lessee's Rent Proposal or the modification of either Rent Proposal. The arbitrators shall select whichever of the two Rent Proposals sets forth the rent

that the majority of the arbitrators believe is closest to the market rent for the Leased Premises for the Rental Period under arbitration. A unanimous decision of the three arbitrators is not required. Within ten (10) days of the date the award is made, the underpayment of the rent, if any, shall be paid by Lessee to Lessor together with interest from the commencement of the rent period at the rate of ten percent (10%) per annum, calculated monthly on the outstanding balance from commencement of such Rental Period.

- (iii) Lessor and Lessee shall each pay for its own attorney's fees, transcriptions, and the cost of its appointed arbitrator. Lessor and Lessee shall equally share the third arbitrator's fee and expenses and the cost of the hearing including, but not limited to, cost for using the facilities at which the hearing is conducted and the cost of the recorder of the testimony.



Recording Requested by
And mail to:

District Clerk
San Diego Port District
P.O. Box 120488
San Diego, CA 92112-0488

No Document Fee
Recordation for benefit of District

Document No. 52211
Abstract of Lease Amendment No. 2
National Steel and Shipbuilding Company
Harbor Drive & 28th Street, San Diego

DUPLICATE ORIGINAL

ABSTRACT OF LEASE AMENDMENT NO. 2

B. ABSTRACT OF LEASE AMENDMENT NO. 2: This is the final Paragraph and Abstract of Lease Amendment No. 2, dated 10th July 2007, between SAN DIEGO UNIFIED PORT DISTRICT, Lessor, and NATIONAL STEEL AND SHIPBUILDING COMPANY, Lessee, concerning the Leased Premises described in Exhibits "A" and "B," attached hereto and by this reference made a part hereof.

For good and adequate consideration, Lessor leases the Leased Premises to Lessee, and Lessee hires them from Lessor, for the term and on the provisions contained in the Lease dated October 22, 1991, Abstract of Lease recorded by the San Diego County Recorder's Office as No. 77-538163, as amended by Lease Amendment No. 1 dated December 6, 1994, and this Lease Amendment No. 2, including without limitation provisions prohibiting assignment, subleasing, and encumbering said leasehold without the express written consent of Lessor in each instance, all as more specifically set forth in said Lease and said Lease and said Amendments, which are incorporated in this Abstract by this reference.

The term is fifty (50) years, beginning January 1, 1991, and ending on December 31, 2040. This Lease Amendment No. 2 shall become effective as of August 1, 2007.

This Abstract is not a complete summary of the Lease Amendment. Provisions in this Abstract shall not be used in interpreting the Lease Amendment provisions. In the event of conflict between this Abstract and other parts of the Lease Amendment, the other parts shall control. Execution hereof constitutes execution of the Lease Amendment itself.

DATED: July 26, 2007

Port Attorney

SAN DIEGO UNIFIED PORT DISTRICT

By 
DEPUTY PORT ATTORNEY

By 
Title: Dirk Mathiasen, Director

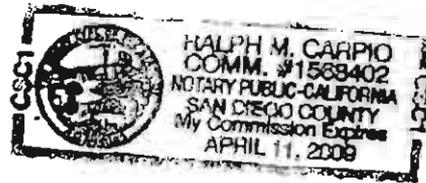
NATIONAL STEEL AND SHIPBUILDING
COMPANY

By 
Signature:
PRINT NAME: Frederick J. Harris
PRINT TITLE: President

(FOR USE BY SAN DIEGO UNIFIED PORT DISTRICT)

STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO) ss.

On July 30, 2007 before me, Ralph M. Carpio,
Notary Public, personally appeared Dirk Mathiasen,
personally known to me (~~or proved to me on the basis of satisfactory evidence~~) to be the
person(~~s~~) whose name(~~s~~) is/are subscribed to the within instrument and acknowledged to
me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by
his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which
the person(~~s~~) acted, executed the instrument.



WITNESS my hand and official seal.

Signature [Signature] (Seal)

OPTIONAL

Though the information below is not required by law, it may prove valuable to person relying on the document
and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document:

Agreement For Amendment of Lease Amendment No 2

Document Date: July 10, 2007

Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s) Capacity(ies) Claimed by Signer(s)

| | | | |
|---|--|---|--|
| Signer's Name _____ <input type="checkbox"/> Individual <input type="checkbox"/> Corporate Officer - Title(s): _____ <input type="checkbox"/> Partner - <input type="checkbox"/> Limited <input type="checkbox"/> General <input type="checkbox"/> Attorney in Fact <input type="checkbox"/> Trustee <input type="checkbox"/> Guardian or Conservator <input type="checkbox"/> Other: _____ Signer is Representing: _____ | RIGHT THUMBPRINT OF SIGNER Top of Thumb here | Signer's Name _____ <input type="checkbox"/> Individual <input type="checkbox"/> Corporate Officer - Title(s): _____ <input type="checkbox"/> Partner - <input type="checkbox"/> Limited <input type="checkbox"/> General <input type="checkbox"/> Attorney in Fact <input type="checkbox"/> Trustee <input type="checkbox"/> Guardian or Conservator <input type="checkbox"/> Other: _____ Signer is Representing: _____ | RIGHT THUMBPRINT OF SIGNER Top of Thumb here |
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(FOR USE BY NATIONAL STEEL AND SHIPBUILDING COMPANY)

STATE OF CALIFORNIA)

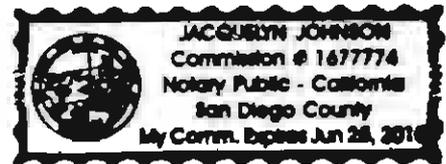
} ss.

COUNTY OF SAN DIEGO)

On 7-17-2007 before me, Jacquelyn Johnson, Notary Public, personally appeared Frederick J. Harris, personally known to me (or ~~proved to me on the basis of satisfactory evidence~~), to be the person ~~(s)~~ whose name ~~(s)~~ is ~~are~~ subscribed to the within instrument and acknowledged to me that he ~~she/they~~ executed the same in his ~~her/their~~ authorized capacity ~~(ies)~~, and that by his ~~her/their~~ signature ~~(s)~~ on the instrument the person ~~(s)~~, or the entity upon behalf of which the person ~~(s)~~ acted, executed the instrument.

WITNESS my hand and official seal.

Signature Jacquelyn Johnson (Seal)



OPTIONAL

Though the information below is not required by law, it may prove valuable to person relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document:

Agreement For Amendment of Lease Amendment No 2

Document Date: 7-17-2007 Number of Pages: 9

Signer(s) Other Than Named Above: None

Capacity(ies) Claimed by Signer(s) Capacity(ies) Claimed by Signer(s)

| | | | |
|--|--|--|--|
| Signer's Name <u>Frederick J. Harris</u> <input type="checkbox"/> Individual <input checked="" type="checkbox"/> Corporate Officer - Title(s): <u>President</u> <input type="checkbox"/> Partner - <input type="checkbox"/> Limited <input type="checkbox"/> General <input type="checkbox"/> Attorney in Fact <input type="checkbox"/> Trustee <input type="checkbox"/> Guardian or Conservator <input type="checkbox"/> Other: _____ Signer is Representing: _____ _____ _____ | RIGHT THUMBPRINT OF SIGNER Top of Thumb here | Signer's Name _____ <input type="checkbox"/> Individual <input type="checkbox"/> Corporate Officer - Title(s) _____ <input type="checkbox"/> Partner - <input type="checkbox"/> Limited <input type="checkbox"/> General <input type="checkbox"/> Attorney in Fact <input type="checkbox"/> Trustee <input type="checkbox"/> Guardian or Conservator <input type="checkbox"/> Other: _____ Signer is Representing: _____ _____ _____ | RIGHT THUMBPRINT OF SIGNER Top of Thumb here |
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PARCEL NO. 1

Commencing at Harbor Line Station No. 472 on the U.S. Bulkhead Line, as said U.S. Bulkhead Line is now established for the Bay of San Diego, and delineated on map entitled "Harbor Lines, San Diego Bay, California, File No. (D.O. Series) 426," approved by the Secretary of the Army, April 29, 1963 and filed in the Office of the District Engineer, Los Angeles, California, said point also being on the westerly boundary of an area commonly known as the United States Naval Station, as said property is described in the grants to the United States of America by the City of San Diego by deeds dated December 1, 1930, recorded March 21, 1932, in Book 100, page 177 of Official Records, and dated July 17, 1940, recorded April 30, 1943, in Book 1499, page 12 O.R., and dated May 18, 1949, recorded October 7, 1949, in Book 3344, page 309 O.R., and filed in the Office of the County Recorder, San Diego County, California; thence along said U.S. Naval Station boundary south $89^{\circ}29'03''$ east a distance of 87.80 feet; thence north $0^{\circ}30'57''$ east a distance of 228.56 feet to the TRUE POINT OF BEGINNING of Parcel No. 1; thence leaving said U.S. Naval Station boundary north $89^{\circ}29'03''$ west a distance of 7.24 feet; thence south $60^{\circ}37'30''$ west a distance of 23.74 feet; thence north $85^{\circ}32'59''$ west a distance of 12.80 feet; thence north $56^{\circ}35'56''$ west a distance of 25.90 feet; thence north $89^{\circ}30'26''$ west a distance of 300.07 feet; thence south $71^{\circ}16'35''$ west a distance of 1317.71 feet to a point of intersection with the U.S. Pierhead Line, as said U.S. Pierhead Line is now established and delineated on the above described Harbor Lines Map; thence along said U.S. Pierhead Line north $56^{\circ}20'08''$ west a distance of 269.75 feet to a point hereinafter known and designated as Point "A"; thence leaving said U.S. Pierhead Line north $71^{\circ}15'38''$ east a distance of 209.49 feet; thence north $18^{\circ}25'23''$ west a distance of 29.34 feet; thence north $76^{\circ}04'11''$ east a distance of 409.07 feet; thence north $14^{\circ}04'19''$ west a distance of 176.96 feet; thence south $75^{\circ}59'06''$ west a distance of 50.70 feet; thence north $11^{\circ}54'59''$ west a distance of 33.16 feet; thence north $66^{\circ}39'00''$ east a distance of 357.83 feet; thence north $23^{\circ}25'07''$ west a distance of 114.70 feet; thence south $66^{\circ}40'40''$ west a distance of 347.70 feet; thence north $21^{\circ}32'06''$ west a distance of 35.09 feet; thence north $66^{\circ}50'04''$ east a distance of 39.30 feet; thence north $23^{\circ}17'35''$ west a distance of 117.05 feet; thence south $66^{\circ}35'50''$ west a distance of 135.67 feet; thence north $23^{\circ}26'05''$ west a distance of 34.97 feet; thence north $66^{\circ}27'25''$ east a distance of 40.85 feet; thence north $23^{\circ}18'37''$ west a distance of 117.31 feet; thence south $65^{\circ}34'17''$ west a distance of 38.40 feet; thence north $52^{\circ}41'02''$ west a distance of 99.58 feet; thence north $36^{\circ}38'30''$ east a distance of 280.78 feet; thence north $58^{\circ}06'09''$ west a distance of 235.80 feet; thence north $23^{\circ}07'04''$ east a distance of 44.65 feet; thence north $65^{\circ}55'29''$ west a distance of 216.37 feet; thence south $23^{\circ}42'13''$ west a

PAGE 1 OF 5

REVISED:

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|-----------------------------|
| DRAWN <u>BB/mr</u> |
| CHECKED <u>BOURKE</u> |
| REVIEWED <u>MA</u> |
| APPROVED <u>[Signature]</u> |
| DIRECTOR OF ENGINEERING |

| |
|---|
| <p>SAN DIEGO UNIFIED PORT DISTRICT</p> <p>TIDELAND LEASE</p> <p>Within Corporate Limits of San Diego</p> <p>NATIONAL STEEL AND SHIPBUILDING COMPANY</p> |
|---|

| |
|----------------------------|
| DATE <u>21 April, 1924</u> |
| SCALE _____ |
| REF. <u>4590</u> |
| DRAWING NO. |
| 021-022 |

distance of 44.70 feet; thence south 70°48'21" west a distance of 44.40 feet; thence south 20°32'27" west a distance of 62.22 feet; thence north 84°44'54" west a distance of 122.40 feet; thence south 71°25'54" west a distance of 471.27 feet to the beginning of a tangent curve concave to the north having a radius of 100.00 feet; thence westerly along the arc of said curve through a central angle of 52°13'58" an arc distance of 91.16 feet to a point which bears south 33°39'52" west from the center of said 100.00 foot radius curve; thence north 56°20'08" west a distance of 257.01 feet; thence north 33°39'52" east a distance of 325.00 feet to the beginning of a tangent curve concave to the west having a radius of 48.00 feet; thence northerly along the arc of said curve through a central angle of 35°20'04" an arc distance of 29.60 feet to a point of reverse curve the common radial of which bears north 88°19'48" east from the center of said 48.00 foot radius curve; thence northerly along the arc of a 28.00 foot radius curve concave to the east through a central angle of 35°20'04" an arc distance of 17.27 feet to a point which bears north 56°20'08" west from the center of said 28.00 foot radius curve; thence north 33°39'52" east a distance of 116.65 feet to the beginning of a tangent curve concave to the west having a radius of 48.00 feet; thence northerly along the arc of said curve through a central angle of 90°00'00" an arc distance of 75.40 feet to a point which bears north 33°39'52" east from the center of said 48.00 foot radius curve; thence north 56°20'08" west a distance of 111.06 feet to the beginning of a tangent curve concave to the east having a radius of 28.00 feet; thence northerly along the arc of said curve through a central angle of 91°17'20" an arc distance of 44.61 feet to a point which bears north 55°02'49" west from the center of said 28.00 foot radius curve; thence north 34°57'12" east a distance of 173.29 feet to a point of intersection with the southerly right of way line of Beit Street; thence north 49°42'27" east a distance of 78.69 feet to a point on the southerly line of a 100.0 foot wide Atchison, Topeka & Santa Fe Railway Company railroad right of way, said point also being a point on a curve concave to the north having a radius of 1960.08 feet the center of which bears north 22°00'00" east; thence easterly along said 1960.08 foot radius curve and southerly railroad right of way line through a central angle of 12°54'40" an arc distance of 441.69 feet to a point which bears south 9°05'20" west from the center of said 1960.08 foot radius curve; thence south 80°54'40" east a distance of 375.13 feet to a point of intersection with the southerly right of way line of Harbor Drive, as said tideland portions of Harbor Drive are now established as and for a public street by the Documents of Conveyance on file in the Office of the District Clerk as Document No. 71; thence leaving said southerly railroad right of way line and along the southerly right of way line of Harbor Drive south 66°47'43" east a distance of 63.75 feet; thence south 65°37'25" east a distance of 375.85 feet; thence south 80°56'13" east a distance of 243.49 feet to the

PAGE 2 OF 5

REVISED:

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|-------------------------|--------------------|
| DRAWN | BB/mm |
| CHECKED | BOURKE |
| REVIEWED | <i>[Signature]</i> |
| APPROVED | <i>[Signature]</i> |
| DIRECTOR OF ENGINEERING | |

SAN DIEGO UNIFIED PORT DISTRICT
 TIDELAND LEASE
 Within Corporate Limits of San Diego
 NATIONAL STEEL AND SHIPBUILDING COMPANY

| | |
|-------------|---------------|
| DATE | 21 April 1994 |
| SCALE | |
| REF. | |
| DRAWING NO. | 021-022 |

beginning of a tangent curve concave to the southwest having a radius of 1734.75 feet; thence leaving said southerly right of way line of Harbor Drive southeasterly along the arc of said 1734.75 foot radius curve through a central angle of 15°10'19" an arc distance of 459.36 feet to a point of compound curve the common radial of which bears north 24°14'06" east; thence southeasterly along the arc of a curve concave to the southwest having a radius of 82.35 feet, through a central angle of 49°40'01" an arc distance of 71.39 feet to a point of cusp, said point bears north 73°54'07" east from the center of said 82.35 foot radius curve; thence north 0°02'10" west a distance of 62.77 feet to a point on a curve concave to the southwest having a radius of 2600.00 feet the center of which bears south 20°05'06" west, said point also lying on the said southerly right of way line of Harbor Drive; thence southeasterly along said 2600.00 foot radius curve and along the southerly right of way line of Harbor Drive through a central angle of 17°57'44" an arc distance of 815.10 feet; thence south 51°57'10" east a distance of 112.54 feet; thence south 51°23'57" east a distance of 30.28 feet to a point of intersection with the Ordinary High Water Mark for the Bay of San Diego, as said Ordinary High Water Mark is shown on map entitled "Map of the Lands Transferred to the San Diego Unified Port District Pursuant to Chapter 67, Statutes of 1962, 1st E.S., Vicinity of San Diego Bay, San Diego County, California", filed in the Office of the San Diego County Recorder May 28, 1976, as Miscellaneous Map No. 564, File No. 76-164686; thence leaving said southerly right of way line of Harbor Drive and along said Ordinary High Water Mark south 50°56'42" east a distance of 72.56 feet; thence south 52°36'48" east a distance of 27.15 feet to a point of intersection with the said southerly right of way line of Harbor Drive; thence leaving said Ordinary High Water Mark and along said southerly right of way line of Harbor Drive south 51°23'57" east a distance of 67.18 feet; thence south 50°11'52" east a distance of 381.94 feet; thence leaving said southerly right of way line of Harbor Drive south 24°21'56" west a distance of 61.53 feet to a point of intersection with a line that is parallel with and distant 8.60 feet northerly from the boundary of the above described U.S. Naval Station; thence along said 8.60 foot parallel line north 89°29'03" west a distance of 1103.19 feet to point of intersection with the northerly prolongation of the above described westerly boundary of the U.S. Naval Station; thence leaving said 8.60 foot parallel line and along the said northerly prolongation and the westerly boundary of the U.S. Naval Station south 0°30'57" west a distance of 210.54 feet to the TRUE POINT OF BEGINNING of Parcel No. 1, containing 3,446,322 square feet or 79.12 acres of tideland area.

PAGE 3 OF 5

REVISED:

DRAWN: BB/mn

CHECKED: *BOURCE*

REVIEWED: *[Signature]*

APPROVED: *[Signature]*

DIRECTOR OF ENGINEERING

SAN DIEGO UNIFIED PORT DISTRICT

TIDELAND LEASE

Within Corporate Limits of San Diego

NATIONAL STEEL AND SHIPBUILDING COMPANY

DATE: 21 April 1994

SCALE: 1"=50'

REF: 3590

DRAWING NO. 021-022

PARCEL NO. 2

Beginning at the above described Point "A", said Point "A" lying on the above described U.S. Pierhead Line north $56^{\circ}20'08''$ west and distant 1288.48 feet from Harbor Line Station No. 479, said Point "A" also being the TRUE POINT OF BEGINNING of Parcel No. 2; thence north $56^{\circ}20'08''$ west along said U.S. Pierhead Line a distance of 200.00 feet to a point hereinafter known and designated as Point "B"; thence leaving said U.S. Pierhead Line north $71^{\circ}15'38''$ east a distance of 441.73 feet; thence north $56^{\circ}20'08''$ west a distance of 500.00 feet; thence south $71^{\circ}15'38''$ west a distance of 441.73 feet to a point of intersection with said U.S. Pierhead Line; thence along said U.S. Pierhead Line north $56^{\circ}20'08''$ west a distance of 756.65 feet to a point of intersection with the easterly property line of an area now under lease to Southwest Marine, Inc.; thence leaving said U.S. Pierhead Line and along said easterly property line north $33^{\circ}39'52''$ east a distance of 427.42 feet to a point of intersection with the above described Parcel No. 1; thence leaving said property line of Southwest Marine, Inc. leasehold along said Parcel No. 1 south $56^{\circ}20'08''$ east a distance of 229.51 feet to the beginning of a tangent curve concave to the north having a radius of 100.00 feet; thence easterly along the arc of said curve through a central angle of $52^{\circ}13'58''$ an arc distance of 91.16 feet; thence north $71^{\circ}25'54''$ east a distance of 471.27 feet; thence south $84^{\circ}44'54''$ east a distance of 122.40 feet; thence north $20^{\circ}32'27''$ east a distance of 62.22 feet; thence north $70^{\circ}48'21''$ east a distance of 44.40 feet; thence north $23^{\circ}42'13''$ east a distance of 44.70 feet; thence south $65^{\circ}55'29''$ east a distance of 216.37 feet; thence south $23^{\circ}07'04''$ west a distance of 44.65 feet; thence south $58^{\circ}06'09''$ east a distance of 235.80 feet; thence south $36^{\circ}38'30''$ west a distance of 280.78 feet; thence south $52^{\circ}41'02''$ east a distance of 99.58 feet; thence north $66^{\circ}34'17''$ east a distance of 38.40 feet; thence south $23^{\circ}18'37''$ east a distance of 117.31 feet; thence south $66^{\circ}27'25''$ west a distance of 40.85 feet; thence south $23^{\circ}26'05''$ east a distance of 34.97 feet; thence north $66^{\circ}35'50''$ east a distance of 135.67 feet; thence south $23^{\circ}17'35''$ east a distance of 117.05 feet; thence south $66^{\circ}50'04''$ west a distance of 39.30 feet; thence south $21^{\circ}32'06''$ east a distance of 35.09 feet; thence north $66^{\circ}40'40''$ east a distance of 347.70 feet; thence south $23^{\circ}25'07''$ east a distance of 114.70 feet; thence south $66^{\circ}39'00''$ west a distance of 357.83 feet; thence south $11^{\circ}54'59''$ east a distance of 33.16 feet; thence north $75^{\circ}59'06''$ east a distance of 50.70 feet; thence south $14^{\circ}04'19''$ east a distance of 176.96 feet; thence south $76^{\circ}04'11''$ west a distance of 409.07 feet; thence south $18^{\circ}25'23''$ east a distance of 29.34 feet; thence south $71^{\circ}15'38''$ west a distance of 209.49 feet to the TRUE POINT OF BEGINNING of Parcel No. 2, containing 1,112,046 square feet or 25.53 acres of water covered area.

PAGE 4 OF 5

REVISED:

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| DRAWN <u>RB/ma</u> |
| CHECKED <u>BOURKE</u> |
| REVIEWED <u>WJ</u> |
| APPROVED <u>[Signature]</u> |
| DIRECTOR OF ENGINEERING |

SAN DIEGO UNIFIED PORT DISTRICT
 TIDELAND LEASE
 Within Corporate Limits of San Diego
 NATIONAL STEEL AND SHIPBUILDING COMPANY

| |
|-------------------------------|
| DATE <u>21 April 1994</u> |
| SCALE <u>4590</u> |
| REF. <u></u> |
| DRAWING NO. <u>021-022</u> |

PARCEL NO. 3

Beginning at the True Point of Beginning of the above described Parcel No. 1, said point also being the TRUE POINT OF BEGINNING of Parcel No. 3, and lying on the above described westerly boundary of the U.S. Naval Station; thence along said U.S. Naval Station boundary south $0^{\circ}30'57''$ west a distance of 228.56 feet; thence north $89^{\circ}29'03''$ west a distance of 87.80 feet to Harbor Line Station No. 472 on the above described U.S. Bulkhead Line; thence continuing along said U.S. Naval Station boundary south $41^{\circ}44'47''$ west a distance of 1010.16 feet to Harbor Line Station No. 479 on the above described U.S. Pierhead Line; thence leaving said U.S. Naval Station boundary and along said U.S. Pierhead Line north $56^{\circ}20'08''$ west a distance of 1018.74 feet to a point of intersection with the most southerly line of the above described Parcel No. 1; thence leaving said U.S. Pierhead Line and along said southerly line of said Parcel No. 1 north $71^{\circ}16'35''$ east a distance of 1317.71 feet; thence south $89^{\circ}30'26''$ east a distance of 300.07 feet; thence south $56^{\circ}35'56''$ east a distance of 25.90 feet; thence south $85^{\circ}32'59''$ east a distance of 12.80 feet; thence north $60^{\circ}37'30''$ east a distance of 23.74 feet; thence south $89^{\circ}29'03''$ east a distance of 7.24 feet to the TRUE POINT OF BEGINNING of Parcel No. 3, containing 764,703 square feet or 17.56 acres of water covered area.

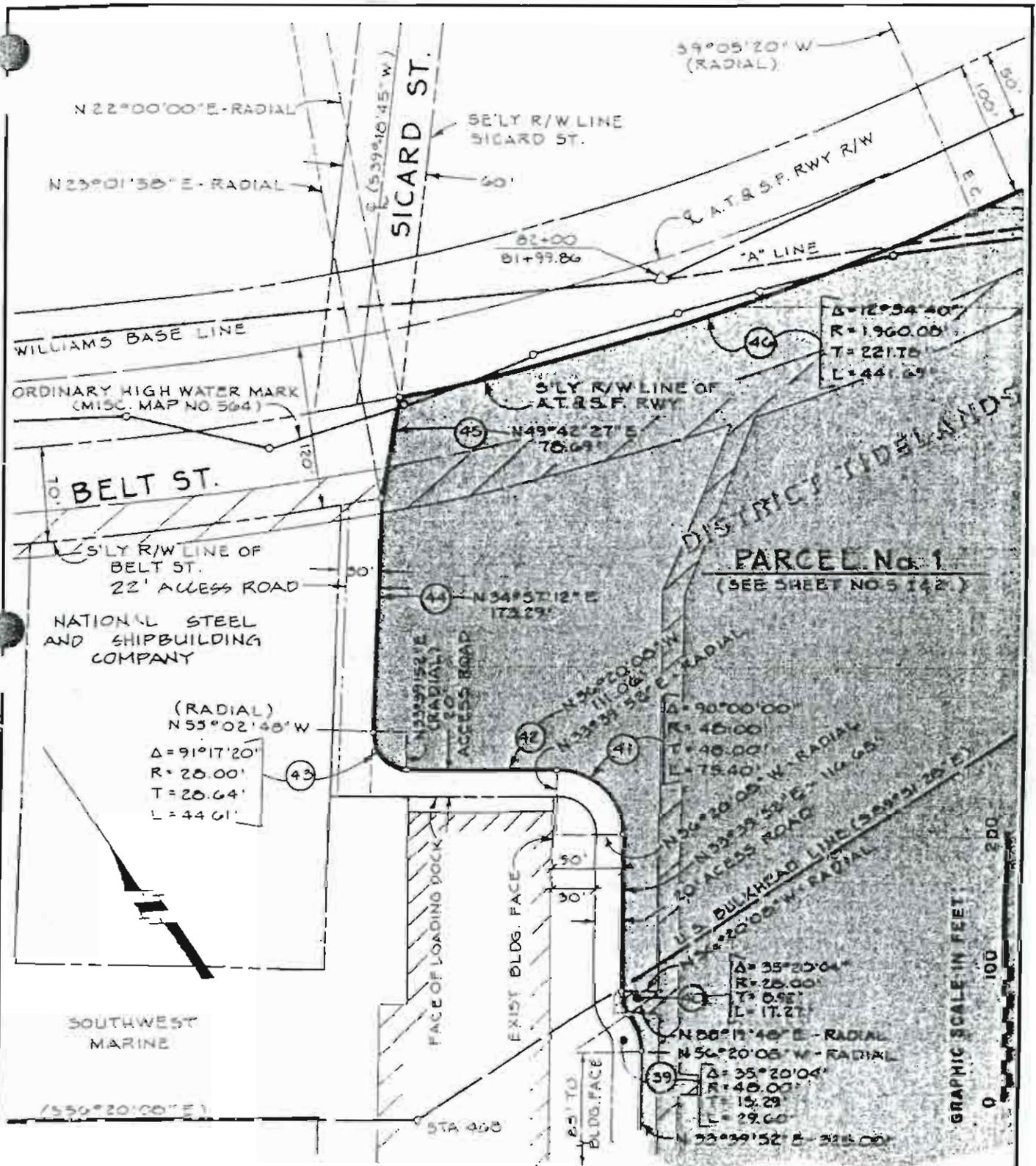
PARCEL NO. 4

Beginning at Point "B" as described in the above Parcel No. 2, said Point "B" lying on the above described U.S. Pierhead Line north $56^{\circ}20'08''$ west and distant 1488.48 feet from Harbor Line Station No. 479, said Point "B" also being the TRUE POINT OF BEGINNING of Parcel No. 4; thence along the said U.S. Pierhead Line north $56^{\circ}20'08''$ west a distance of 500.00 feet to a point of intersection with said Parcel No. 2, thence leaving said U.S. Pierhead Line and along said Parcel No. 2 north $71^{\circ}15'38''$ east a distance of 441.73 feet; thence south $56^{\circ}20'08''$ east a distance of 500.00 feet; thence south $71^{\circ}15'38''$ west a distance of 441.73 feet to the TRUE POINT OF BEGINNING of Parcel No. 4, containing 175,000 square feet or 4.02 acres of water covered area.

The above described areas are those delineated on Drawing No. 021-022, Sheets 1, 2, and 3, dated 21 April 1994, and made a part of this agreement.

PAGE 5 OF 5

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| REVISED: | | |
| DRAWN <u>BB/mn</u> | SAN DIEGO UNIFIED PORT DISTRICT TIDELAND LEASE Within Corporate Limits of San Diego NATIONAL STEEL AND SHIPBUILDING COMPANY | DATE <u>21 April 1994</u> |
| CHECKED <u>BOURKE</u> | | SCALE _____ |
| REVIEWED <u>[Signature]</u> | | REF. <u>4590</u> |
| APPROVED <u>[Signature]</u> | | DRAWING NO. |
| DIRECTOR OF ENGINEERING | | <u>021-022</u> |



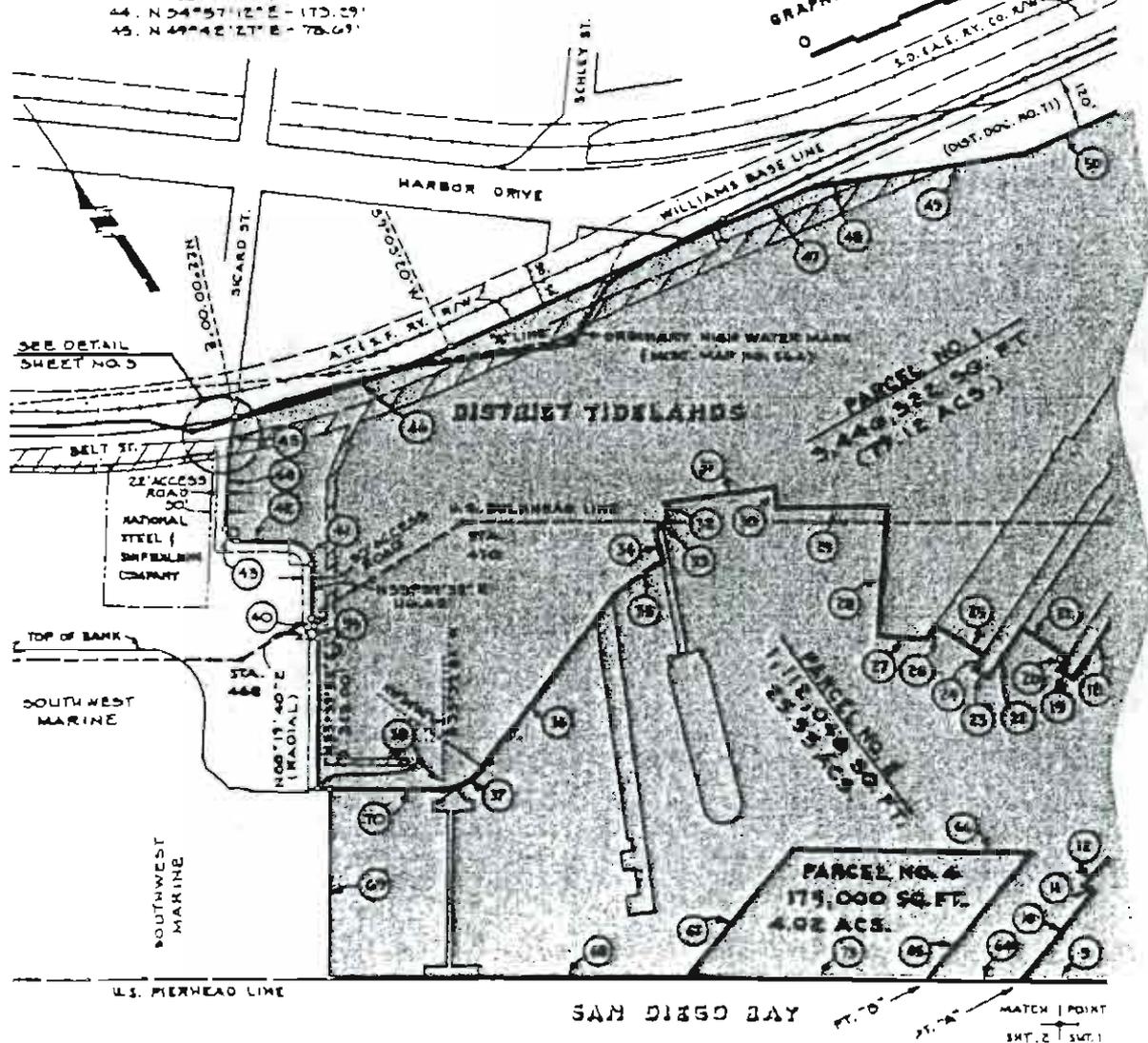
REVISED:

DRAWN K.A. (B.G.)
 CHECKED BOURKE
 REVIEWED [Signature]
 APPROVED [Signature]
 DIRECTOR OF ENGINEERING

SAN DIEGO UNIFIED PORT DISTRICT
 TIDELAND LEASE
 WITHIN CORPORATE LIMITS OF SAN DIEGO
 NATIONAL STEEL AND SHIPBUILDING
 COMPANY

DATE 21 APR. 1994
 SCALE AS SHOWN
 REF. 2516-B, 2E-21
 DRAWING NO.
021-022
 SHT. 3 OF 3

| | | |
|-------------------------------|--------------------------------|--------------------------------|
| 28. N 34° 58' 30" E - 280.78' | 44. S 12° 54' 40" R - 1960.00' | 62. N 69° 25' 03" W - 1103.15' |
| 29. N 58° 06' 09" W - 235.50' | T = 221.70' | L = 441.97' |
| 30. N 63° 07' 04" E - 44.45' | 47. S 00° 54' 40" E - 873.15' | 63. S 0° 30' 57" W - 210.54' |
| 31. N 63° 55' 29" W - 216.37' | 48. S 66° 47' 43" E - 63.75' | 64. N 56° 20' 06" W - 200.00' |
| 32. S 23° 42' 13" W - 43.70' | 49. S 25° 57' 23" E - 575.05' | 65. N 71° 15' 32" E - 441.73' |
| 33. S 70° 48' 21" W - 44.40' | 50. S 60° 56' 15" E - 243.49' | 66. N 54° 00' 00" W - 500.00' |
| 34. S 20° 32' 27" W - 62.22' | 51. S 15° 10' 15" R - 1734.13' | 67. S 71° 15' 38" W - 441.13' |
| 35. N 84° 44' 54" W - 122.40' | T = 231.03' | L = 433.36' |
| 36. S 71° 25' 54" W - 471.27' | 52. S 45° 40' 01" R - 82.35' | 68. N 56° 20' 06" W - 756.45' |
| 37. S 15° 15' 58" R - 100.00' | T = 38.11' | L = 11.35' |
| T = 45.02' | L = 51.16' | 53. N 04° 02' 10" W - 62.77' |
| 38. N 56° 20' 06" W - 257.01' | 54. S 17° 57' 44" R - 2600.00' | 54. S 51° 23' 57" E - 50.28' |
| 39. S 39° 20' 04" R - 40.00' | T = 410.92' | L = 818.10' |
| T = 15.29' | L = 23.60' | 55. S 31° 51' 10" E - 112.54' |
| 40. S 35° 20' 04" R - 25.00' | 56. S 51° 23' 57" E - 50.28' | 57. S 50° 56' 42" E - 72.56' |
| T = 0.92' | L = 17.27' | 58. S 52° 34' 48" E - 27.15' |
| 41. S 90° 00' 00" R - 40.00' | 59. S 51° 23' 57" E - 67.18' | 60. S 50° 11' 52" E - 384.54' |
| T = 40.00' | L = 15.40' | 61. S 24° 21' 56" W - 61.53' |
| 42. N 56° 20' 06" W - 111.06' | | |
| 43. S 71° 17' 20" R - 225.00' | | |
| T = 20.64' | L = 44.61' | |
| 44. N 54° 57' 12" E - 173.09' | | |
| 45. N 49° 42' 27" E - 78.63' | | |



REVISED:

DRAWN K.A.D.O.

CHECKED BOURKE

REVIEWED [Signature]

APPROVED [Signature]
DIRECTOR OF ENGINEERING

SAN DIEGO UNIFIED PORT DISTRICT
TIDELAND LEASE
 WITHIN CORPORATE LIMITS OF SAN DIEGO
NATIONAL STEEL AND SHIPBUILDING COMPANY

DATE 21 APR. 1994

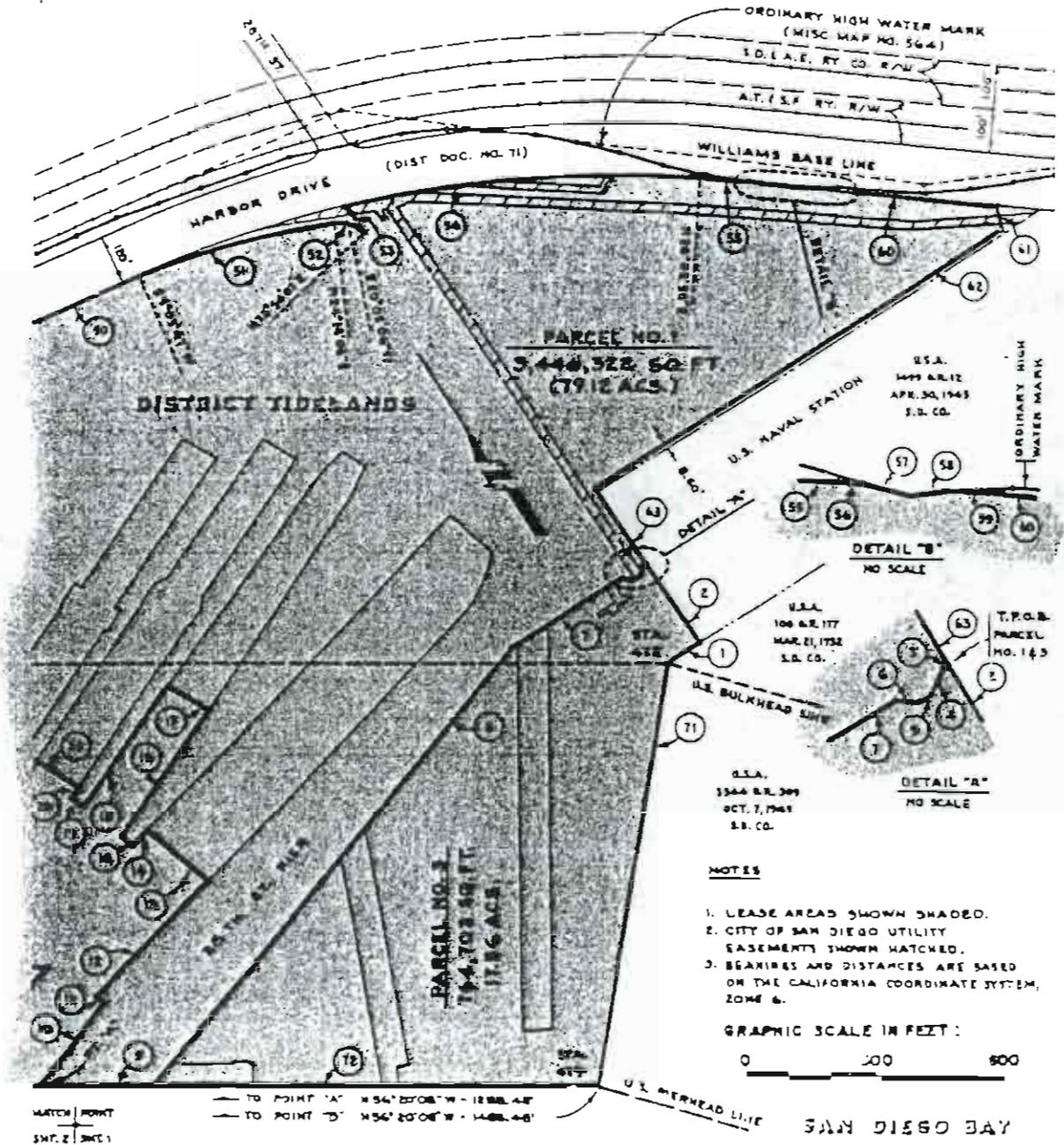
SCALE AS SHOWN

REF. 2516-D, 25-21

DRAWING NO.
021-022
SHT. 2 OF 2

MATCH POINT
SMT 2 | SMT 1

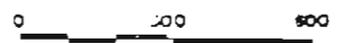
- | | | |
|-------------------------------|-------------------------------|-------------------------------|
| 1. S 89° 29' 03" E - 87.80' | 10. N 71° 15' 38" E - 209.49' | 19. N 21° 32' 06" W - 35.09' |
| 2. N 2° 30' 37" E - 228.54' | 11. N 18° 25' 23" W - 29.34' | 20. N 66° 50' 04" E - 39.30' |
| 3. N 89° 29' 03" W - 7.24' | 12. N 76° 04' 11" E - 409.07' | 21. N 23° 11' 35" W - 117.05' |
| 4. S 60° 37' 30" W - 23.74' | 13. N 14° 04' 19" W - 176.96' | 22. S 66° 35' 50" W - 135.67' |
| 5. N 85° 32' 59" W - 12.87' | 14. S 15° 59' 04" W - 50.70' | 23. N 23° 26' 05" W - 34.77' |
| 6. N 64° 35' 56" W - 25.90' | 15. N 11° 54' 59" W - 33.16' | 24. N 64° 27' 25" E - 40.85' |
| 7. N 89° 30' 24" W - 300.07' | 16. N 66° 39' 00" E - 357.89' | 25. N 23° 18' 37" W - 117.31' |
| 8. S 71° 16' 35" W - 1317.71' | 17. N 23° 25' 07" W - 114.70' | 26. S 66° 34' 17" W - 38.40' |
| 9. N 56° 20' 08" W - 269.75' | 18. S 66° 40' 40" W - 34.70' | 27. N 52° 41' 02" W - 99.58' |



NOTES

1. LEASE AREAS SHOWN SHADED.
2. CITY OF SAN DIEGO UTILITY EASEMENTS SHOWN HATCHED.
3. BEARINGS AND DISTANCES ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, ZONE 6.

GRAPHIC SCALE IN FEET:



SAN DIEGO BAY

MATCH POINT
SMT 2 | SMT 1

REVISED:

DRAWN K.A./B.B.
 CHECKED BOURKE
 REVIEWED [Signature]
 APPROVED [Signature]
 DIRECTOR OF ENGINEERING

SAN DIEGO UNIFIED PORT DISTRICT
TIDELAND LEASE
 WITHIN CORPORATE LIMITS OF SAN DIEGO
NATIONAL STEEL AND SHIPBUILDING
COMPANY

DATE 21 APR. 1994
 SCALE AS SHOWN
 REF. 2516-B, 25-21

DRAWING NO.
021-022
 SHT. 1 OF 3

REFERENCE
COPY

52211

SAN DIEGO UNIFIED PORT DISTRICT

ORDINANCE 2454

AN ORDINANCE AMENDING LEASE AGREEMENT
BETWEEN THE SAN DIEGO UNIFIED PORT DISTRICT
AND NATIONAL STEEL AND SHIPBUILDING COMPANY

The Board of Port Commissioners of the San Diego Unified Port District does ordain as follows:

Section 1. That lease agreement dated 22 October 1991 between the San Diego Unified Port District and National Steel and Shipbuilding Company, a Nevada corporation, is hereby amended in accordance with Agreement for Amendment of Lease, Amendment No. 2, on file in the office of the District Clerk.

Section 2. This ordinance shall take effect on the 31st day from its passage by the Board of Port Commissioners.

sw
7/10/07

SCANNED
RC

ATTACHMENT D

the sheetpile bulkhead on the east side. The east side of NA08 also supports the structure of the gate at Ways 4. Any dredging in this area would drastically undermine the slope as well as impacting the sheetpile bulkhead on the east side.

"The NA23 polygon is technically infeasible to dredge because dredging would affect Pier 12, the tug boat pier, the rip-rap shoreline, as well as undermining the sediment slope for the floating dry dock sump.

"The NA27 polygon is technically infeasible to dredge because the polygon is entirely within the footprint of the floating dry dock sump. Dredging would significantly undermine the slope."

These four polygons are all uniquely situated at the project site in that each of them is at, or adjacent to, a location with the following characteristics:

- Polygons NA07, NA08, and NA23 are directly adjacent to an existing bulkhead wall, pile-supported waterside structure, and/or armored shoreline.
- Polygons NA07, NA08, and NA23 encompass relatively steep slopes, inclined at up to approximately 3H:1V, which is near the estimated maximum natural angle of repose of the surficial sediments at this project site.² Polygon NA27 is situated at the bottom of such a slope, as it borders both NA07 and NA23.
- The steep slope areas at polygons NA07, NA08, and NA23 are relatively prolonged, covering 30 to 40 feet of vertical relief, making them among the highest in relief of any slopes at the shipyard site.
- The steep slopes at polygons NA07, NA08, and NA23 begin immediately adjacent to the bulkhead wall, pile-supported structures, and armored shorelines, leaving little to no room in which to establish a stabilizing offset distance. In this context, a stabilizing offset distance would constitute an area of undisturbed sediment between the dredged area and the bulkhead wall, pile-supported structures, and/or armored

² The designation 3H:1V indicates that for every 3 feet of horizontal travel, the slope declines 1 vertical foot. The term "angle of repose" indicates the steepest angle of descent a slope can be at relative to the horizontal plane without material on the slope face sliding down the slope.

shoreline, intended to prevent dredging from affecting the structural integrity of the bulkhead wall, pile-supported structures, and armored shoreline.

Refer to Figure 1 for a depiction of these polygon areas and the features that affect their feasibility for remediation.

Owing to these unique geometric aspects, the four polygons cited above are particularly problematic for remedial action. In order to maintain overall slope stability, dredging on any part of the steep slopes (at polygons NA07, NA08, and NA23) or at the bottom of such slopes (at polygon NA23) needs to be accompanied by dredging to a similar extent all the way up to the slope; otherwise, undredged areas above would quickly collapse into dredged areas below. This requires that the top of the slopes be dredged as well. Since the tops of the slopes are adjacent to structures and/or slopes, removal of material would lessen the stability of these features, which would require significant structural improvements to avoid catastrophic collapse of these features. Elsewhere on the project site, such a scenario can be mitigated by installing a rock buttress alongside the structure of slope, so that it will not be undermined or weakened (Moffat and Nichol 2002). At polygons NA07, NA08, and NA23, however, there is limited to no room in which to add such a feature, and situating one at the top of a dredged slope would likely be unstable due to the fact that there is insufficient room to maintain a stabilizing offset distance. Therefore, there is limited ability to counteract the destabilizing influence of dredging along the adjoining features at these polygons.

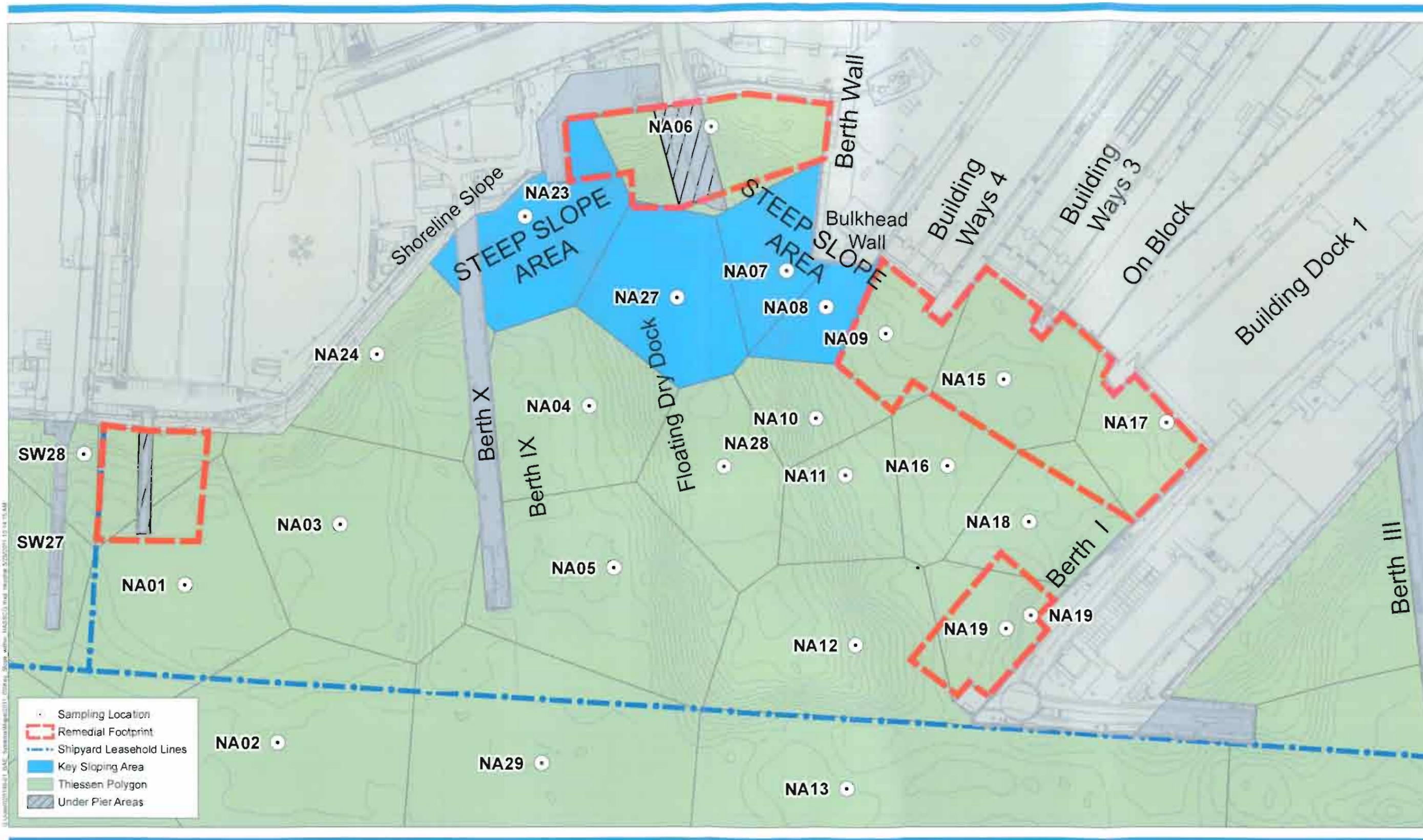
Furthermore, this issue applies to not just the slopes at polygons NA07, NA08, and NA23, but also to polygon NA27, which is immediately adjacent to the base of the slopes of NA07 and NA08. Consequently, dredging within polygon NA27 is subject to the same limitations as the dredging of polygons NA07 and NA08; namely, dredging the base of the slope destabilizes the stability of the adjacent slope areas, which in turn leads to concerns for structural stability at the top of these slopes. (Note that the remedial action in polygon NA06 is less of a concern, despite this being a sloping area, because there is sufficient room for an offset between the top of the dredging slope and the adjoining structures.)

As is stated in the DTR, the NA27 polygon has an additional limitation on dredging, due to the fact the NASSCO dry dock is permanently positioned over this polygon (and the adjoining NA28 polygon). These areas comprise the deepened sump that is necessary for dry dock operation and admittance of vessels. The dry dock structure is permanently situated over this sump area and, therefore, poses a direct obstruction to dredging operations beneath.

In conclusion, it is our reasoned opinion that dredging polygons NA07, NA08, NA23, and NA27 would be technically infeasible based on the considerations set forth above. The combination of steep slopes and immediately adjacent shoreline slopes and structures hinders the shipyard's ability to include protective offsets and stabilizing features for these elements.

REFERENCES

- Moffat and Nichol, 2002. Review of Impacts to Waterfront Structures Subjected to Variable Dredging Depths, NASSCO, San Diego, California. Final Report. Prepared for National Steel and Shipbuilding Company, August 2002.
- Regional Water Quality Control Boards (Water Boards), 2010. Draft Technical Report for Tentative Cleanup and Abatement Order No. R9-2011-0001 for the Shipyard Sediment Site, San Diego Bay, San Diego, California. September 15, 2010.



U:\Projects\110101\110101_BAE_SanDiegoShipyard\110101_Shipyard_Slope_within_NASSCO.mxd - workspace 3/20/2014 10:14:15 AM



Figure 1
Key Sloping Areas within NASSCO Facility
San Diego Shipyard Sediment Site
San Diego, California

1 **PROOF OF SERVICE**

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

5 On **May 26, 2011**, I served the following document described as:

- 6 **1. COMMENTS ON THE SAN DIEGO REGIONAL WATER QUALITY**
7 **CONTROL BOARD CLEANUP TEAM'S SEPTEMBER 15, 2010**
8 **TENTATIVE CLEANUP AND ABATEMENT ORDER NO. R9-2011-0001,**
9 **DRAFT TECHNICAL REPORT, AND SHIPYARD ADMINISTRATIVE**
10 **RECORD**

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

12 **BY ELECTRONIC MAIL**

13 Upon written agreement by the parties, the above-described document was transmitted via
14 electronic mail to the parties noted below on **May 26, 2011**.

| | |
|--|---|
| 15 Raymond Parra 16 Senior Counsel 17 BAE Systems Ship Repair Inc. 18 PO Box 13308 19 San Diego, CA 92170-3308 20 raymond.parra@baesystems.com 21 Telephone: (619) 238-1000+2030 22 Fax: (619) 239-1751 | 23 Michael McDonough 24 Counsel 25 Bingham McCutchen LLP 26 355 South Grand Avenue, Suite 4400 27 Los Angeles, CA 90071-3106 28 michael.mcdonough@bingham.com Telephone: (213) 680-6600 Fax: (213) 680-6499 |
| 17 Christopher McNevin 18 Attorney at Law 19 Pillsbury Winthrop Shaw Pittman LLP 20 725 South Figueroa Street, Suite 2800 21 Los Angeles, CA 90017-5406 22 chrismcnevin@pillsburylaw.com 23 Telephone: (213) 488-7507 24 Fax: (213) 629-1033 | 25 Brian Ledger 26 Kristin Reyna 27 Kara Persson 28 Attorney at Law Gordon & Rees LLP 101 West Broadway, Suite 1600 San Diego, CA 92101 bledger@gordonrees.com krevna@gordonrees.com kpersson@gordonrees.com Telephone: (619) 230-7729 Fax: (619) 696-7124 |
| 24 Christian Carrigan 25 Senior Staff Counsel 26 Office of Enforcement, State Water 27 Resources Control Board 28 P.O. Box 100 Sacramento, CA 95812-0100 ccarrigan@waterboards.ca.gov Telephone: (916) 322-3626 Fax: (916) 341-5896 | 29 Marco Gonzalez 30 Attorney at Law 31 Coast Law Group LLP 32 1140 South Coast Highway 101 33 Encinitas, CA 92024 34 marco@coastlawgroup.com 35 Telephone: (760) 942-8505 36 Fax: (760) 942-8515 |

| | | |
|----------------------------|---|--|
| 1 2 3 4 5 | James Handmacher Attorney at Law Morton McGoldrick, P.S. PO Box 1533 Tacoma, WA 98401 jvhandmacher@bvmm.com Telephone: (253) 627-8131 Fax: (253) 272-4338 | Jill Tracy Senior Environmental Counsel Sempra Energy 101 Ash Street San Diego, CA 92101 jtracy@semprautilities.com Telephone: (619) 699-5112 Fax: (619) 699-5189 |
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6 **BY ELECTRONIC MAIL**

7 Upon written agreement by the parties, the above-described document was transmitted via
8 electronic mail to the parties noted below on **May 26, 2011**.

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26 San Diego, CA 92123-4340
27 fmelbourn@waterboards.ca.gov
28 chagan@waterboards.ca.gov
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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 **May 26, 2011**, at San Diego, California.



Andrea Rasco

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Certification of Authenticity of Electronic Submittal

I, Kelly E. Richardson, declare:

I am a partner 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 San Diego Regional Water Quality Control Board Cleanup Team's September 15, 2010 Tentative Cleanup and Abatement Order No. R9-2011-0001, Draft Technical Report, and Shipyard Administrative Record, submitted to the "Water Board" and served on the Designated Parties by e-mail on May 26, 2011, is a true and accurate copy of the submitted signed original. Executed this 26th day of May 2011, in San Diego, California.



Kelly E. Richardson