SAN DIEGO REGIONAL
WATER QUALITY
CONTROL BOARD

2011 MAY 26 P 1: 12

U.S. NAVY'S COMMENTS AND EVIDENTIARY SUBMISSION
Tentative Cleanup and Abatement Order No. R9-2011-0001
May 26, 2011

Designated party: U.S. Navy
Represented by: Nate Cushman
U.S. Navy Office of General Counsel
1220 Pacific Highway
San Diego, CA 92132
(619)532-2511
nate.cushman@navy.mil

I certify that this electronic submittal is a true and accurate copy of the submitted originals.

Nate Cushman

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U.S. Navy Comment No. 1

The RWQCB's allegation that significant contaminants from Naval Base San Diego migrated to the Shipyard Sediment Site, either through discharges to Chollas Creek, resuspension of sediments through propeller wash, or via tidal currents is unfounded.

The TCAO alleges that the U.S. Navy "caused or permitted the discharge of waste to the Shipyard Sediment Site resulting in the accumulation of waste in the marine Sediment" due to historical activities at specific Installation Restoration Program (IRP) sites at Naval Base San Diego that may have resulted in the discharge of contaminants to San Diego Bay, and through resuspension of contaminated sediments due to propeller wash during ship movements at Naval Base San Diego (NBSD), with subsequent transport to other parts of San Diego Bay, including the Shipyard Sediment Site, by tidal currents as well as through Navy discharges to Chollas Creek.

Citations: TCAO Paragraph 10, DTR Finding 10 (including but not limited to Findings 10.1, 10.3, 10.4.1, 10.5, 10.6, 10.7, 10.8, 10.9, 10.10.

The U.S. Navy maintains that these claims are based on the largely unsubstantiated assumptions that (1) Shipyard Sediment Site contaminants of concern (COCs) were released from specific IRP sites and transported to San Diego Bay, (2) sediments in San Diego Bay adjacent to the IRP sites were contaminated to levels sufficient to act as a potential source to the Shipyard Sediment Site, and (3) contaminated sediments in San Diego Bay adjacent to the IRP sites were subsequently resuspended by propeller wash associated with ship movements, transported by tidal currents to the Shipyard Sediment Site, and redeposited within the Shipyard Sediment Site. The analyses presented in this submission utilize the best available data and modeling capabilities to develop multiple lines of evidence to scientifically assess these claims. These lines of evidence were developed by evaluating historical information related to potential transport of COCs from the IRP sites to San Diego Bay, analyzing COC concentration data for bay sediments to determine whether chemical concentrations, PCB fingerprinting of sediments at the Shipyard Sediment Site is consistent with the presence of two distinct, localized sources of PCBs. If these PCBs were derived from activities at NBSD, the signatures would be similar. The spatial distribution of PCBs at the Shipyard Sediment Site is consistent with the presence of two different sources, with concentrations found at the north end of the site higher than those at the south end.

A modeling simulation was performed specifically to evaluate the claim that sediments adjacent to IRP sites may have been resuspended by propeller wash, transported to the Shipyard Sediment Site by tidal currents, and redeposited within the Shipyard Sediment Site. The modeling results indicate that net deposition to the Shipyard Sediment Site proposed remediation footprint due to resuspension and transport from areas adjacent to IRP sites at NBSD was between 0.17 percent and 0.37 percent of the total annual deposition, an amount that is negligible in the overall deposition of sediments at the Shipyard Sediment Site. Collectively, these lines of evidence indicate that the overall contribution of IRP sites to contamination at the Shipyard Sediment Site is negligible.

Likewise, the Navy's contribution to contaminant loading in Chollas Creek is negligible as demonstrated by the small relative portion of the Chollas Creek contaminant loading to the Bay that can be attributed to the Navy stormwater discharges, the portion of the solids loading from the Creek that is likely deposited at the shipyard sediment site, the observed spatial gradients of contamination in the area, and the relative chemical signatures of bottom sediments in the area.

U.S. Navy Comment No. 2

The RWQCB's allegation that historical Navy operations at the 28th Street Mole Pier contributed to the contamination at the Shipyard Sediment Site is unfounded, and the Navy's 2004 comment submission on this subject incorrectly assumed that shipyard operations were part of the Navy leasehold.

Citations: TCAO Paragraph 10, DTR Finding 10 (including but not limited to Findings10.4.2, 10.6, 10.10).

This comment provides a chronological history of activities at the property in the area of the 28th Street Mole Pier, located on the eastern shoreline of San Diego Bay in San Diego, California. The property is currently leased by the National Steel and Shipbuilding Company (NASSCO). No documentation was found to support the allegation of Navy industrial use of the area currently leased by NASSCO. Navy use in this area appears to have been limited to temporary housing in two areas during the 1940s and operation of small landings, first on the north side of the 28th Street Mole Pier (near its western terminus) and later on the south side near the base (eastern end) of the pier. A summary of the Navy's use of the 28th Street pier is given below, with a comprehensive review provided in Appendix A to this comment submission.

TEMPORARY HOUSING EAST OF 28TH STREET MOLE PIER
East of the 28th Street Mole Pier, in an area east of 28th Street and south of Belt Street, temporary officers quarters were used by the Navy on leased City of San Diego property from approximately 1941 through 1946, in the area known as Parcel 1. During approximately 1941 and 1942 a Temporary Defense Housing Camp occupied a parcel located southwest of the intersection of Belt Street and 28th Street. Industrial development in both these areas appears to have taken place after Navy use had ended.

28TH STREET SHORE BOAT LANDING FACILITY
The Navy operated a 28th Street Shore Boat Landing facility on the north side of the 28th Street Mole Pier from approximately 1939 through 1956. This facility, located near the western terminus of the 28th Street Mole Pier, consisted of a storage room, a waiting room, and a finger pier and floating docks used by ship launches to ferry sailors to and from Navy ships moored in San Diego Bay (Navy 2004). Non-Navy industrial activities on 28th Street Mole Pier during this time period included a shipbuilding and maintenance facility located partly on a wooden wharf extending along the north face of the 28th Street Mole Pier and partly on the shore north of the base (eastern end) of the pier. By 1946, Lynch Shipbuilding Company was operating the facility, and by 1956, National Marine Terminal Incorporated was operating it. Industrial operations shown for this facility include machine, woodworking, pattern, electric, and welding shops; a foundry; and a mold loft.

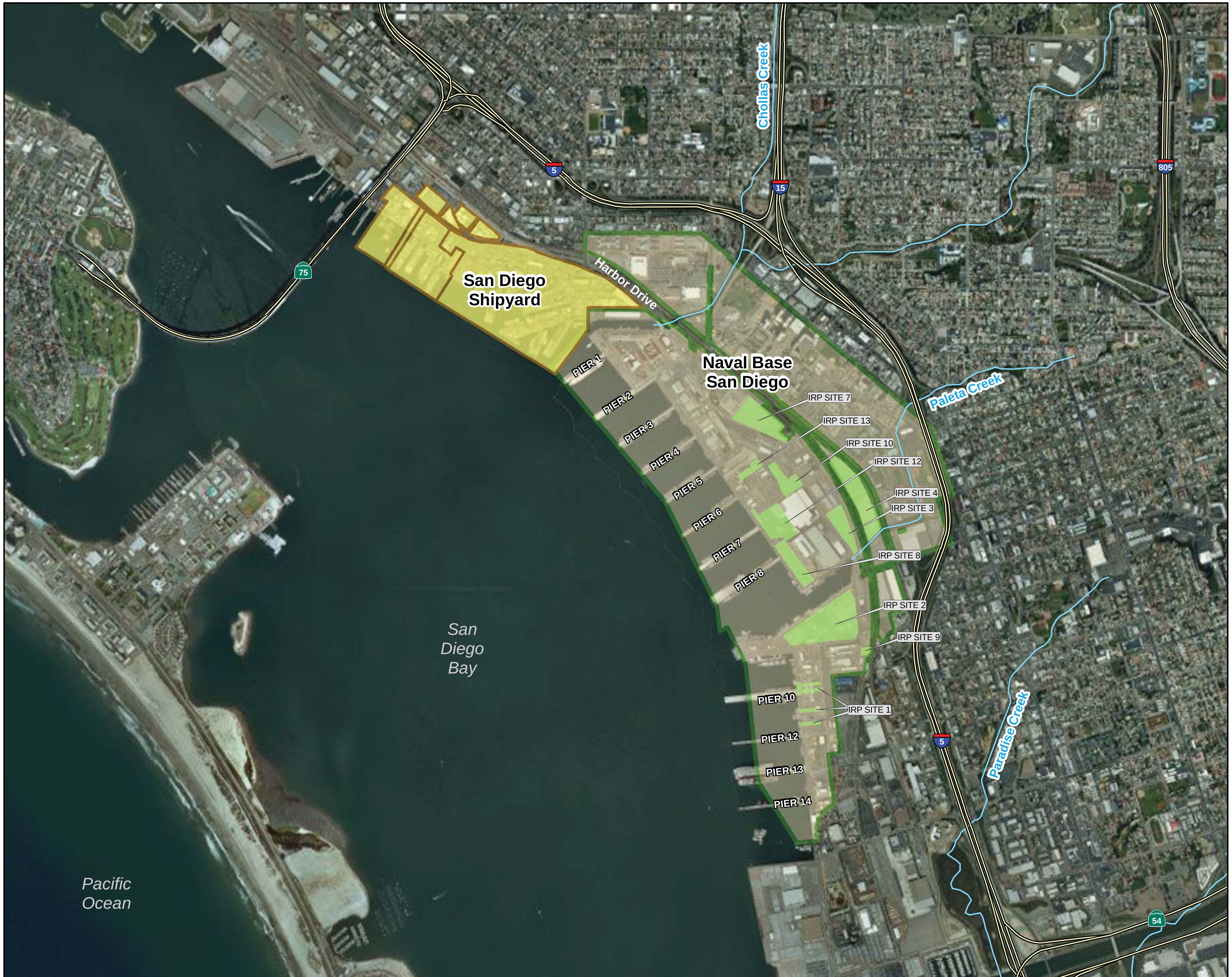
SMALL CRAFT LANDING, SOUTHERN END OF 28TH STREET
In 1956, a permit was granted to the Navy for use of a parcel located east of the 28th Street Mole Pier, at the southern end of 28th Street, apparently as a replacement for the loss of the Shore Boat Landing facility on the north side of the 28th Street Mole Pier. A small landing can be seen in this area in aerial photos from 1964, 1974, and 1978. No other Navy activities were seen in this parcel. Industrial development of the parcel appears to have occurred after Navy use had ended.

Acronyms and Abbreviations

Apportionment Report	*Summary Analysis of Potential Navy Source Contributions to the Shipyard Cleanup and Abatement Order Study Area for a Scientific Assessment of the Navy's Apportionment of Liability* (SPAWAR, 2010)
AST	aboveground storage tank
BAE	BAE Systems San Diego Ship Repair Inc.
BEI	Bechtel Environmental, Inc.
bgs	below ground surface
BNI	Bechtel National, Inc.
BOWTS	bilge and oily wastewater treatment system
CAO	Tentative Cleanup and Abatement Order No. R9-2011-0001
CCMMA	Coastal Contaminant Migration Monitoring Assessment
CDU	Consolidated Divers Unit
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	contaminant of concern
Cogen	Cogeneration
Complaint	City of San Diego Complaint for Environmental Cost Recovery and Contribution, Injunctive Relief, Declaratory Relief, and Damages
COPC	chemical of potential concern
CSM	conceptual site model
CST	collection, storage and transfer
DDDC	Defense Distribution Depot Center
DLA	Defense Logistics Agency
DPDO	Defense Property Disposal Office
DRMO	Defense Reutilization and Marketing Office
DTR	*Draft Technical Report for Tentative Cleanup and Abatement Order No. R9-2011-0001 for the Shipyard Sediment Site, San Diego Bay* (RWQCB, 2010b)

DTSC	California Environmental Protection Agency Department of Toxic Substances Control
ERI	Extended Remedial Investigation
FFSRA	Federal Facilities Site Remediation Agreement
FS	Feasibility Study
FWEC	Foster Wheeler Environmental Corporation
GIS	geographic information system
HAZMART	Hazardous Material Recycling Area
HPAH	high molecular weight polynuclear aromatic hydrocarbon
IAS	Initial Assessment Study
IRP	Installation Restoration Program
IT	International Technology Corporation
JEG	Jacobs Engineering Group
JP	jet propellant
µg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
MILCON	military construction
MLLW	mean lower low water
MPE	multiphase extraction
NAS	Naval Air Station
NASSCO	National Steel and Shipbuilding Company
NAVSTA	Naval Station
Navy	United States Department of the Navy
NEESA	Naval Energy and Environmental Support Activity
NEX	Navy Exchange
NSBD	Naval Base San Diego
NSC	Naval Supply Center
OHM	OHM Remediation Services Corp.
Pa	pascal
PAH	polynuclear aromatic hydrocarbon

PCB	polychlorinated biphenyl
POL	petroleum, oils, and lubricants
PRISM	pathway ranking for in place sediment management
PSII	Professional Services Industries, Inc.
PWC	Public Works Center
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
RWQCB	California Regional Water Quality Control Board, San Diego Region
SCCWRP	Southern California Coastal Water Research Project
SCS&T	Southern California Soil and Testing, Inc.
SPAWAR	Space and Naval Warfare Systems Center
SVOC	semivolatile organic compound
SWAC	surface-weighted average concentration
SWMU	solid waste management unit
TBT	tributyltin
TCRA	time critical removal action
TMDL	total maximum daily load
TPH	total petroleum hydrocarbon(s)
TRIM	tidal residual intertidal mudflat
USEPA	United States Environmental Protection Agency
USS	United States ship
UST	underground storage tank
VOC	volatile organic compound
VU	vessel unit



VICINITY MAP

LEGEND

- Naval Base San Diego
- Shipyard Leasehold Areas, 2004
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Freeways
- Watercourses

N

0 860 1,720
Feet

CH2MHILL

SPAWAR

TREVET

Systems Center
PACIFIC

FIGURE 1-1
Naval Base San Diego and Shipyard Sediment Site Location Map
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

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SECTION 2

Background

Background information regarding NBSD, San Diego Bay, and the IRP is provided below. The dredging history of San Diego Bay adjacent to NBSD and the Shipyard Sediment Site is also summarized.

2.1 Site Description

2.1.1 Naval Base San Diego

NBSD occupies approximately 1,029 acres of land and 326 acres of water along the eastern shore of San Diego Bay and straddles the boundary between the cities of San Diego and National City. In 1919, an initial parcel of property consisting of 77 acres of dry land and 21 acres of marshlands and tidal flats was obtained from the City of San Diego. In 1921, this parcel was established as a destroyer base for the upkeep and preservation of 39 decommissioned World War I destroyers. From the late 1930s to the late 1940s, the base was expanded through a succession of land-acquisition and facility-development programs. These included the Naval Supply Center, training and waterfront facilities, a boat shop, a dry dock, and fleet exchange and administrative facilities.

In 1943, the installation became the Naval Repair Base and was composed of four separate commands: the Fleet Training Center, Public Works Center (PWC), the Shore Intermediate Maintenance Activity, and the Defense Depot, reflecting the activity's growing industrial capacity. During World War II, more than 5,000 ships were serviced, including more than 2,100 that were dry-docked. The eastern portion of the base was largely developed during the 1940s and included housing quarters and torpedo storehouses that have since been demolished. By 1945, approximately 28,000 personnel were on duty at the Naval Repair Base. In 1946, the base was designated "Naval Station San Diego" with a primary mission to provide logistical support, including repair and dry-docking, to locally based units of the 19th Fleet. In 2006, the base was renamed "Naval Base San Diego" while maintaining its primary mission.

NBSD currently provides personnel and logistic support services to over 50 major tenant commands. Approximately 35,000 military personnel are assigned to the base. This population requires a variety of industrial facilities to support ship, ground-vehicle, and base maintenance operations. Most of NBSD's IRP sites were functionally involved in base operation or support activities.

2.1.2 San Diego Bay

San Diego Bay is a semi-enclosed, crescent-shaped water body that is aligned in a northwest-southeast direction. The bay is connected to the Pacific Ocean by a narrow channel at Point Loma. NBSD and the Shipyard Sediment Site are in the south part of the bay, which is relatively shallow (i.e., less than 15 feet deep) except in areas that have been dredged to maintain navigable depths. Currents in the bay are driven primarily by tides, with velocities in the range of 0.3 to 0.6 feet per second (10 to 20 cm/sec) in the southern portions of the bay (Wang et al., 1998). Hydrodynamic modeling in the vicinity of NBSD indicates that bottom shear stresses due to tidal circulation are below levels needed to cause erosion (Chadwick et al., 1999).

2.2 Installation Restoration Program

The NBSD IRP has implemented a number of multi-million-dollar cleanups since the mid-1990s. The California Environmental Protection Agency Department of Toxic Substances Control (DTSC), the RWQCB, and the Navy finalized a legally binding Federal Facilities Site Remediation Agreement (FFSRA) for NBSD on 30 June 2007. The FFSRA provides a framework and schedules for managing the investigations and cleanups performed at NBSD. The Navy has worked closely with its regulatory agency partners to investigate, clean up, and close sites, both prior to and following the signing of the FFSRA. To date, over $552 million has been spent on investigations and cleanups. The strong track record of Navy and regulatory agency cooperation demonstrates the progress that the Navy has made in remediating and closing IRP sites.

The 10 IRP sites that are specifically identified in the CAO as potential sources of contamination to the Shipyard Sediment Site are listed in Table 2-1 and shown on Figure 1-1. The Complaint cites nine of these IRP sites, but excludes IRP Site 7, the Former Sewage Treatment Plant that was owned and operated by the City of San Diego, and was never operated or managed by the Navy. The IRP sites identified in the CAO and Complaint are between 1.3 and 2.1 miles from the Shipyard Sediment Site (Figure 1-1). Five of the sites are in the remedial investigation/feasibility study (RI/FS) phase of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process. Five of the sites have been closed with no further action required and with DTSC and/or RWQCB concurrence. Closure documentation for these sites is provided in Appendix C. Each of the IRP sites is described in more detail in Section 3.

2.3 Dredging History

In south San Diego Bay, the main navigational channel is on the east side of the Bay (Figure 2-1). The main channel and the piers, berths, and approaches to NBSD and the Shipyard Sediment Site are periodically dredged to maintain navigable depths. Prior to 1950, the primary purpose of dredging at NBSD was to create deep water for ship operations. After 1950, the majority of dredging was performed to maintain, deepen, or widen channels, harbors, and berths (Navy, 2001). Operational depths adjacent to NBSD are -37 feet mean lower low water (MLLW) for the main channel, -30 to -50 feet MLLW for approach corridors and piers, and -20 feet MLLW for the Paleta and Chollas Creek channels. A map of the footprints for the dredging events is presented in Figure 2-1.

TABLE 2-1
Summary of IRP Sites Identified in the Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

IRP Site	CERCLA Phase	Regulatory Agency Concurrence
IRP Site 1—Former Ship Repair Basins	RI/FS	IRP Site 1 Draft FS for Basins 3 and 4 is currently under review by regulatory agencies. Basins 1 and 2 have received DTSC concurrence for no further action.
IRP Site 2—Mole Pier	RI/FS	N/A
IRP Site 3—Salvage Yard	RI/FS	N/A
IRP Site 4—Defense Property Disposal Office Storage Yard	RI/FS	N/A
IRP Site 7—Former (City of San Diego) Sewage Treatment Plant	Closed with ROD	RWQCB and DTSC
IRP Site 8—Firefighting Training Facility	Closed; non-CERCLA	RWQCB and DTSC
IRP Site 9—PCB Storage Facility	Closed	RWQCB and DTSC
IRP Site 10—Original Rice King Restaurant Site	RI/FS	N/A
IRP Site 12—Brinser Street Parking Area	Closed with ROD	RWQCB and DTSC
IRP Site 13—Dry Dock Sandblast Area	Closed in PA/SI Phase	RWQCB and DTSC

Notes:
CERCLA – Comprehensive Environmental Response, Compensation and Liability Act; DTSC – California Department of Toxic Substances and Control; IRP – Installation Restoration Program; FS – Feasibility Study; N/A – not applicable; PA/SI – Preliminary Assessment/Site Inspection; ROD – Record of Decision; RI – Remedial Investigation; RWQCB – California Regional Water Quality Control Board, San Diego Region.

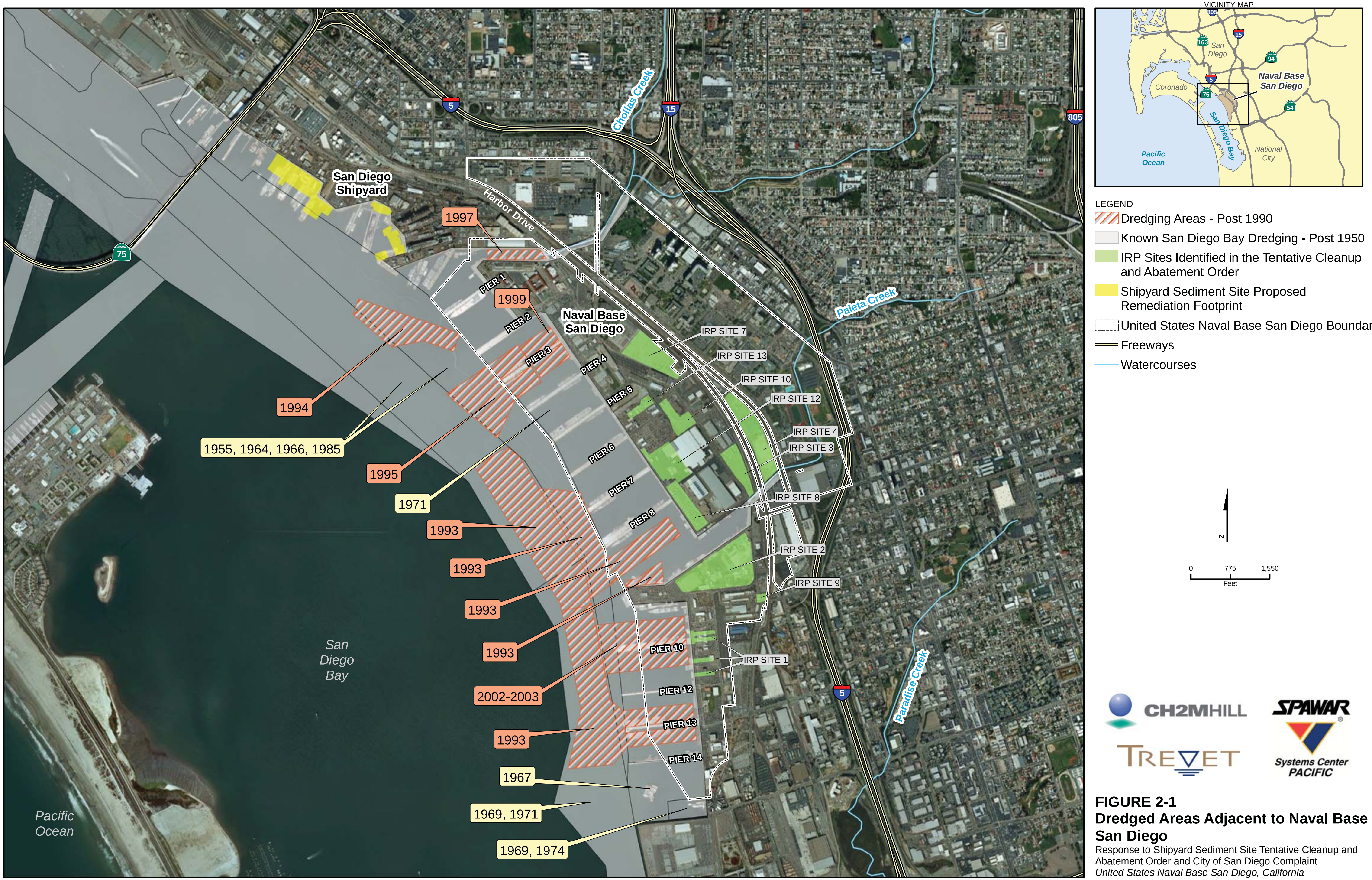

FIGURE 2-1
Dredged Areas Adjacent to Naval Base San Diego

Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint

United States Naval Base San Diego, California

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SECTION 3

Evaluation of Potential Releases from IRP Sites

In this section, the potential for the release of COCs from the IRP sites identified in the CAO and subsequent transport to San Diego Bay are evaluated. A generalized conceptual model for this transport pathway evaluation is 1. This diagram also indicates the report section in which each element of the model is discussed. Conceptually, COCs released at an IRP site as a consequence of historical site activities could be discharged directly to San Diego Bay or could cause soil or groundwater contamination within the site. Potential pathways for the transport of contaminated soil to the bay include surface runoff (conveyed either in overland flow or via a storm drain system) and windblown transport. Dissolved phase COCs could be transported to the bay via groundwater discharge. Each of these pathways is evaluated for each of the IRP sites identified in the CAO and the Complaint. Only the COCs identified for the Shipyard Sediment Site are considered in this evaluation.

Management actions such as improved environmental practices and site remediation have reduced or eliminated the release and transport of COCs over time. In addition, periodic dredging in San Diego Bay adjacent to the IRP sites would have reduced the likelihood of potential impacts from historical releases from IRP sites as well as the availability of COCs for potential resuspension and transport.

3.1 IRP Site 1, Former Ship Repair Basins

3.1.1 Description

IRP Site 1, the Former Ship Repair Basins, is located south of Paleta Creek, approximately 2.0 miles south of the Shipyard Sediment Site. The site consists of the following two subareas, as shown in Figure 3-2:

- Basins 1 and 2
- Basins 3 and 4

Basins 1 and 2 are bounded by Kidd Street on the east and a quay wall on the west, and between 10th Street to the north and 11th Street to the south. A 30 June 1946 base condition map indicates that these two basins were "discontinued" and not in use at that time. The depths of Basins 1 and 2 are approximately 28 feet below ground surface (bgs). Basins 1 and 2 formerly opened to San Diego Bay in the vicinity of Pier 10.

Basins 3 and 4 are located south of Basins 1 and 2 and are bounded by 11th Street to the north, Kidd Street to the east, 12th Street to the south, and a quay wall to the west that separates the basins from San Diego Bay. The walls of Basins 3 and 4 consist of steel sheet piling, and the quay wall consists of steel sheet pile and concrete. The basins are unlined at the bottom (NEESA, 1986). The depths of Basins 3 and 4 are also about 28 feet bgs. Basins 3 and 4 formerly discharged to San Diego Bay between Piers 10 and 12.

Basins 1 and 2 are currently paved with asphalt and concrete. A parking lot and Womble Street cover the western half of the basins, and a parking area covers the eastern third of the basins. The base bilge and oily wastewater treatment system (BOWTS) is located over the central portion of former Basins 1 and 2. Basins 3 and 4 are paved with asphalt, and two parking lots cover this area. Building 3149, the Fitting Out and Supply Support Assistance Center Warehouse, overlies the extreme eastern portion of former Basin 3. The parking lots include roadways, curbs, storm drains, lighting, and underground utilities. No surface expression of any of the four former ship repair basins is apparent.

3.1.2 Historical Operations

A timeline of activities at IRP Site 1 is shown in Figure 3-3. The basins were used to construct concrete barges from the early 1940s to the end of World War II. There is no evidence that the basins were ever used to repair ships (BEI, 2008a). Basins 1 and 2 were filled in by 1946 with material consistent with hydraulic fill dredged from San Diego Bay. As part of the IRP Site 1 RI, 14 borings were advanced within former Basins 1 and 2 (BEI, 2008a). Buried debris or waste was not encountered in any boring. The abandonment of Basins 1 and 2 in 1946 immediately following World War II and the results of soil and groundwater chemical analyses performed during the RI indicate that former Basins 1 and 2 were not used as waste disposal basins.

From 1945 to about 1972, Basins 3 and 4 were used as informal, unrestricted disposal sites for both hazardous and nonhazardous solid wastes (NEESA, 1986). Materials that were disposed of in Basins 3 and 4 included demolition debris and rubble, solid waste, scrap metals, lubricants, and oils from decommissioned ships as well as undocumented wastes from other facilities at NBSD. Records indicate Basins 3 and 4 (combined) received approximately 5,000 gallons of oils and sludges. Aerial photographs indicate that by 1972, the basins had been paved over for use as parking areas.

3.1.3 Chemicals Identified

The following chemicals have been reported in soil and/or groundwater at IRP Site 1 Basins 3 and 4 (BEI, 2008a):

- Semivolatile organic compounds (SVOCs), including polynuclear aromatic hydrocarbons (PAHs) (e.g., benzo[a]pyrene and dibenz[a,h]anthracene)
- Metals, including copper, mercury, arsenic, cadmium, lead, and zinc
- Polychlorinated biphenyls (PCBs)

These chemicals are associated with historical waste disposal activities in Basins 3 and 4 and not concrete barge construction activities performed in the 1940s.

3.1.4 Remedial Actions Taken

Between 29 April and 29 August 1997, OHM Remediation Services Corp. (OHM) performed a time critical removal action (TCRA) at Basin 4 based on the results of a screening-level human health risk assessment (HHRA) (OHM, 1998a). In accordance with an approved TCRA memorandum dated February 1997 (Navy, 1997), soil was removed to mitigate potential risks to human health and the environment. The excavation activity removed contaminated soil within Basin 4 to a depth of 10 feet bgs, approximately the depth of groundwater at the site. Approximately 16,000 tons of soil containing PAHs, PCBs, and metals at concentrations above state hazardous waste levels and 1,200 tons of nonhazardous contaminated soil were excavated from Basin 4 and transported offsite (OHM, 1998a).

3.1.5 Regulatory Status

The IRP Site 1 RI was conducted from 2003 through 2006. The Final RI recommended no further action for Basins 1 and 2, and development of an FS of remedial alternatives for Basins 3 and 4 (BEI, 2008a). DTSC concurred with the no further action recommendation for Basins 1 and 2. The IRP Site 1 Draft FS for Basins 3 and 4 (BEI, 2008b) is currently in review.

3.1.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 1 to San Diego Bay is provided in Figure 3-2. There are two potential transport pathways from Basins 3 and 4 to the bay: direct discharge during historical operations at the basins and groundwater discharge from the basins to the bay.

Direct discharge of seawater from the basins to the bay took place only during the operation of the basins from the early 1940s to about 1945 or 1946. During this time, water would have been discharged from the basins as part of dewatering during construction and when the completed barge was sent out into the bay. Any COCs associated with barge construction that may have been present in the basins would have been discharged with the water. This mechanism of discharge ceased in approximately 1945, with the end of barge construction, and prior to the use of the Basins 3 and 4 for disposal.

Groundwater transport is a potential pathway from Basins 3 and 4 to San Diego Bay. A groundwater study conducted as part of the RI identified three water-bearing zones underlying IRP Site 1, with intermediate-depth and deep water-bearing zones having the greatest degree of hydraulic communication with San Diego Bay. A net westerly groundwater gradient was identified toward the bay from the shallow, unconfined water-bearing zone and the intermediate-depth, semiconfined to confined water-bearing zone. Therefore, groundwater from these two upper units could discharge to San Diego Bay.

In 2005–2006, a coastal contaminant migration study was conducted offshore as part of the RI (BEI, 2008a). The objectives of the study were to determine whether the groundwater pathway from IRP Site 1 to San Diego Bay was complete, and if so, to delineate the nature and extent of any contaminated groundwater discharge. Sediment pore water samples were collected in potential zones of groundwater discharge identified in the study and analyzed for volatile organic compounds (VOCs). In particular, trihalomethanes had been reported in groundwater at IRP Site 1 within 100 feet of San Diego Bay. No trihalomethanes were detected in the offshore pore water samples collected during the study, demonstrating that VOC-impacted groundwater is not reaching San Diego Bay at concentrations above detection limits. Based on the results of the coastal contaminant migration study, groundwater transport of chemicals of concern was determined to be an incomplete pathway for the transport of contaminants from IRP Site 1 to the bay.

Based on this evaluation, direct discharge to San Diego Bay from Basins 1 through 4 when they were active in the 1940s is the pathway with the greatest potential for transport of contaminants to San Diego Bay. These contaminants would have been related to barge construction and not to subsequent disposal activities in Basins 3 and 4. Any contaminants discharged from the basins would have affected sediments in the vicinity of Piers 10 and 12.

3.1.7 Dredging History

Multiple dredging projects (1971 and 2002-2003, as shown on Figure 3-2) have removed sediment from the immediate vicinity of IRP Site 1 since the basins were closed off from the bay in the late 1940s. These dredging projects removed sediment that had accumulated over a period of decades.

3.2 IRP Site 2, Mole Pier

3.2.1 Description

IRP Site 2, the Mole Pier, is an approximately 23-acre triangular area bounded by 7th Street and San Diego Bay (Paleta Creek Channel) to the north, Mole Road to the south, and Cummings Road to the east (Figure 3-4). A quay wall separates the site from the bay. IRP Site 2 is approximately 1.8 miles south of the Shipyard Sediment Site. Ground surfaces at IRP Site 2 are generally flat with an elevation of approximately 10 to 14 feet MLLW. The site is currently used for industrial purposes and is primarily paved, with asphalt or concrete, although several areas are unpaved. Surface runoff from IRP Site 2 drains into San Diego Bay.

Because of its large size, complex history, and current activities, IRP Site 2 was divided into seven subsites, 2A through 2G (Figure 3-4). The western portion of the site, the majority of IRP Subsite 2A, is currently a parking lot surrounded by areas of landscaping. The remaining area of Subsite 2A is occupied by a welding yard, two office buildings, volleyball courts, and landscaping. IRP Subsite 2B was previously used by the Navy Hazardous Materials Recycling Area (HAZMART), which distributed paints, oil, and cleaning products used on ships. Subsite 2B is currently paved. Subsite 2C encompasses the area of the former east ball field. The surface of the western portion of Subsite 2C is gravel, while the surface of the eastern side is bare soil. The subsite is currently paved and fenced, and functions as an equipment storage area. Subsite 2D covers the northeast portion of Mole Pier and includes Building 3141 (Navy office space) and several parking lots. Subsite 2D is about 70 percent paved. Subsite 2E covers the northeast portion of IRP Site 2 and contains several parking lots and Building 3141, which is used as Navy office space. An active solid-waste recycling facility is operating on IRP Subsites 2E and 2F. Subsite 2F covers the southeast corner of IRP Site 2 and includes the recycling yard and a parking lot. Subsite 2G is composed of two major areas, the Wharf Builder's Yard and the former west ball field. The Wharf Builder's Yard is the northern portion of the subsite, located along Seventh Street. IRP Subsite 2G has been used as an equipment laydown area for buoys, anchor chain, beams, and similar material but has no current operations (BEI, 2008c). Subsite 2G is currently paved.

3.2.2 Historical Operations

A timeline of activities at IRP Site 2 is shown in Figure 3-5. IRP Site 2 is located on land that was created between 1941 and 1942 using hydraulically emplaced dredged fill material from San Diego Bay (NEESA, 1986). Past and present activities at each of the seven IRP Site 2 subsites are described below.

Subsite 2A

Subsite 2A extends east from the western border of IRP Site 2 about 750 feet and includes the former footprint of Solid Waste Management Unit (SWMU) 5, the former PWC Paint Shop (Building 3224); SWMU 6, the Paint Shop Sandblast Grit Area; and the former footprint of SWMU 11, the former Consolidated Divers Unit (CDU). In addition, SWMU 1, the former Hazardous Waste Collection, Storage and Transfer (CST) Facility (Building 3275), was located in the northeast corner of Subsite 2A. From approximately 1945 to 1972, Subsite 2A was used for the disposal and open burning of various types of demolition debris and hazardous materials, including pilings, asphalt, and lumber. Gasoline, motor oil, and diesel were used to burn the combustible refuse and debris. An estimated 540,000 gallons of petroleum-based materials were transported to the site for disposal (IT, 1992).

Subsite 2B

Subsite 2B housed the hazardous materials reutilization area until early 2006. Subsite 2B is within the area used in the late 1970s for the storage, scraping, and painting of brows (gangplanks) and platforms. The historical use of the eastern and southeastern portion of Mole Pier for storage, scraping, and painting of brows and platforms was reported in the Final RI (BEI, 2008c).

Subsite 2C

At Subsite 2C, heavy equipment being returned from Vietnam in the mid- to late-1970s was reported to have been decontaminated in the general area of the ball fields by being sprayed with diesel fuel prior to being rinsed in Paleta Creek. In addition, Subsite 2C is within the area formerly used for the storage, scraping, and painting of brows and platforms. Materials possibly used during these activities include paint, paint thinner, lacquer, red lead, and zinc chromate.

Subsite 2D

Historically, storage, scraping, and painting of brows and platforms might have been conducted within Subsite 2D. Materials possibly used during these activities include paint, paint thinner, lacquer, red lead, and zinc chromate (BEI, 2008c).

Subsite 2E

Subsite 2E is within the area used in the late 1970s for the storage, scraping, and painting of brows and platforms. Materials possibly used during these activities include paint, paint thinner, lacquer, red lead, and zinc chromate (BEI, 2008c).

Subsite 2F

Subsite 2F is the principal area identified as having been used for storing, scraping, and painting of brows and platforms in the late 1970s. Materials possibly used during these activities include paint, paint thinner, lacquer, red lead, and zinc chromate (BEI, 2008c).

Subsite 2G

Pretreated wooden piles were stored directly on the ground within the Wharf Builder's Yard at Subsite 2G until about 1994, when the piles were moved onto a slab. Preservatives potentially used on the piles include copper arsenate and creosote. It is possible that paint thinner or solvents were used at this location to remove the creosote from saws and equipment (BEI, 2008c).

3.2.3 Chemicals Identified

The following chemicals have been reported in soil and/or groundwater at IRP Site 2 (BEI, 2008c):

- Metals, including copper, mercury, arsenic, cadmium, lead, and zinc (although copper, arsenic, and lead were not identified as chemicals of potential concern [COPC] in the sitewide human health risk assessment [BEI, 2008c])
- SVOCs, including PAHs (e.g., benzo[a]pyrene)
- PCBs

3.2.4 Remedial Actions Taken

Four of the seven IRP Site 2 subsites (2A, 2B, 2C, and 2G) have undergone soil removal actions. Soil within Subsite 2G, the former Wharf Builder's Yard, was the subject of a non-CERCLA cleanup action performed under Petroleum Exclusion Regulations (FWEC, 1998). Soil within this area was excavated to approximately 10 feet bgs, treated using low-temperature thermal desorption technology, and backfilled in the excavation. About 2,000 cubic yards of hydraulic-fluid-impacted soil from Building 132 (the automotive maintenance facility) was also thermally treated and placed at this subsite. Approximately 4,000 cubic yards of the thermally treated soil also was spread over the surface of Subsites 2C and 2G.

Subsite 2A underwent a soil removal action performed by Foster Wheeler Environmental Corporation (FWEC) and the Navy PWC between 2000 and 2003 with excavation depths from 10 to 15 feet bgs (FWEC, 2003). The excavation limits exceeded 70 percent of the subsite. A total of 123,470 tons of soil was removed. Of the total soil removed, 106,594 tons was disposed as California hazardous waste, 14,190 tons as nonhazardous waste, 1,418 tons as Resource Conservation and Recovery Act (RCRA) waste, and 1,268 tons as low-level radiation waste.

A TCRA was conducted in 2007 and 2008 at Subsites 2B, 2C and 2G in which the upper 3 to 4 feet of soil was removed, and clean fill material imported to bring the subsites back to their original grade (TTEC, 2008). Over 45,000 cubic yards of soil were excavated and disposed of. The excavated area was backfilled with clean soil and repaved.

3.2.5 Regulatory Status

The RI for Site 2 was completed in 2008 (BEI, 2008c). The RI recommended an FS to evaluate remedial alternatives for IRP Site 2.

3.2.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 2 to San Diego Bay is provided in Figure 3-4. There are three mechanisms by which contaminants from IRP Site 2 could have reached San Diego Bay: direct discharges, transport of particulates from unpaved areas of Site 2, and discharge of contaminants in groundwater from the site to the bay. These mechanisms may have been active historically, but they are largely precluded by current site conditions.

Direct releases to the bay were likely limited, as site history does not indicate significant maritime activities at IRP Site 2. In the middle to late 1970s, heavy equipment returning from Vietnam was reported to have been decontaminated in the general area of the ball fields (Subsites 2C and 2G) by being sprayed with diesel fuel prior to being rinsed in Paleta Creek (NEESA, 1986). This activity would have resulted in direct releases of contaminants to the bay.

Historical discharge of particulates from unpaved areas of the site via surface runoff and windblown transport may have occurred, but has likely been gradually reduced as the site has been increasingly paved. The site is now almost completely paved, with the few remaining unpaved areas mostly covered with other materials such as gravel that inhibit the movement of particulates.

The historical discharge of groundwater from IRP Site 2 to the bay was possible. Until retrofitted in 2003, the quay wall at the boundary of the site with Paleta Creek Channel was designed to be hydraulically leaky, allowing communication between the bay and shallow site groundwater through a series of grout holes. This communication with shallow groundwater was cut off in 2003 when interlocked welded sheet piles were driven outboard of the existing concrete pile, and a cementitious fill poured into the resulting void.

The current potential for discharge of groundwater to the bay is low. Based on the tidal influence study described in the IRP Site 2 Final RI Report (BEI, 2008c), shallow groundwater is not currently in hydraulic communication with the Paleta Creek Channel. The deeper groundwater does appear to be in communication with the bay and Paleta Creek Channel, although the net mean gradient appears to be onshore. The average direction of groundwater flow, when calculated over multiple tidal cycles, is from San Diego Bay toward land, in a southeasterly direction. This results in the net transport of water from San Diego Bay to deeper groundwater at IRP Site 2, rather than the net transport of deeper groundwater to San Diego Bay. Analytical data for samples from six deep wells, including four located adjacent to the quay wall, indicate minimal contamination of deeper groundwater. Therefore, the current potential for contaminated groundwater to discharge to the bay is negligible.

3.2.7 Dredging History

Substantial sediment offshore of IRP Site 2 in the Paleta Creek Channel was dredged in 1971, as shown on Figure 3-4. Additional material near the mouth of Paleta Creek was removed by dredging in 1993. Multiple dredging events were also performed in the main navigational channel and approaches to the piers between 1955 and 1985.

3.3 IRP Site 3, Salvage Yard

3.3.1 Description

IRP Site 3 is located in the south-central portion of NBSD and measures approximately 1,050 feet by 300 feet (Figure 3-6). Paleta Creek, which is walled with concrete in this area, borders the site to the south-southeast. PWC maintenance and repair shops are located northwest of IRP Site 3. Harbor Drive and Cummings Road border the site to the northeast and southwest, respectively. IRP Site 4, the Defense Property Disposal Office (DPDO) Storage Yard, is located east and southeast of IRP Site 3 on the other side of Harbor Drive. IRP Site 3 is approximately 2.0 miles from the Shipyard Sediment Site.

Both the northern and the southern portions of IRP Site 3 are currently used as parking lots that are covered with asphalt pavement. The two portions of the site are divided by a fence. The northern portion of IRP Site 3 is used as the PWC security parking lot. Several natural gas dispenser islands are present west of and within the PWC security parking lot. The southern area provides long-term parking for the Forces Afloat and short-term parking for Defense Distribution San Diego personnel.

3.3.2 Historical Operations

A timeline of activities at IRP Site 3 is shown in Figure 3-7. The Salvage Yard, operated by the Defense Reutilization and Marketing Office (DRMO), received and disposed of a variety of waste material from 1943 to 1975 (NEESA, 1986). After 1975, the site received only relatively clean or waste-free metal for conversion to scrap (IT, 1988). DRMO was tasked with receiving, selling, donating, and disposing of excess Navy materials. Excess materials from other San Diego naval installations, including the Point Loma Complex and the former Naval Air Station (NAS) Miramar, were also transported to the Salvage Yard for incineration, sale to outside bidders, and reuse by other Department of Defense organizations.

Historical information indicates that items and materials handled by the salvage operation included transformers containing PCBs, mercury, electrolytes from old batteries, drummed petroleum wastes, solvents and thinners, refuse, demolition debris, infectious wastes from the medical and dental clinics, and spoiled food items from incoming Navy vessels. An estimated 100 to 200 drums per month of waste lubricating oil, lubricants, solvents, and acid/alkaline solutions were brought to the site for handling (NEESA, 1986).

Drummed waste material was reportedly placed in an unpaved area near the dual incinerators in the southern portion of the site. Liquid waste was incinerated or drained onto the ground, and the drums were auctioned off along with drums filled with liquid waste that could be recycled (e.g., waste motor oil) (NEESA, 1986).

Material that could not be sold, reused, or donated by DRMO was designated for burning in one of the two dual incinerators located in the north-central portion of IRP Site 3. A third unit, a classified-document incinerator, was located north of the fence line at the northern end of IRP Site 3. Ash residues from the incinerators were taken off the base for disposal by PWC (NEESA, 1986). All equipment, including incinerators previously located onsite, has been removed.

3.3.3 Chemicals Identified

The following chemicals have been reported in soil and/or groundwater at IRP Site 3 (BEI, 2008d):

- Metals, including copper, mercury, arsenic, cadmium, lead, and zinc (although copper in soil was not reported at a concentration above the background level for NBSD [BNI, 1996])
- PCBs
- SVOCs, including PAHs

3.3.4 Remedial Actions Taken

After the salvage yard operation at IRP Site 3 was discontinued in 1975, several investigations were conducted that identified COCs in soil. In response, four soil removal actions, three non-CERCLA (initiated during construction activities) and one CERCLA, were conducted at IRP Site 3 as follows:

- During decommissioning activities in 1976, the top 8 inches of PCB-contaminated soil was removed in an area approximately 200 by 150 feet in the vicinity of the former dual incinerators.
- In 1993, approximately 180 cubic yards of soil was excavated as part of underground storage tank (UST) removal activities in the northern area of the site.
- In 1997, approximately 21,000 cubic yards of soil containing PCBs and lead in the southern portion of IRP Site 3 was excavated as part of a TCRA under CERCLA (OHM, 1998b). Confirmation sampling was performed across the northern and southern areas of the site after the TCRA.
- In 2000, a localized area (approximately 10 feet by 10 feet) of soil was removed as part of construction activities in the southern area.

3.3.5 Regulatory Status

An extended RI (ERI) for IRP Site 3 was completed in 2008 (BEI, 2008d). The ERI recommended an FS to address localized soil contaminants located under asphalt paving. The Draft FS (BEI, 2008e) recommended hot-spot soil removal at nine locations to complete remedial efforts at the site.

3.3.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 3 to San Diego Bay is provided in Figure 3-6. There are two mechanisms by which contaminants from the site could have reached the bay: discharge of particulates from unpaved areas of Site 3 via surface runoff and windblown transport, and discharge of contaminants in groundwater from the site to the bay. The first mechanism may have been active historically but is precluded by current site conditions. Discharge of particulate contaminants to the bay may have occurred from 1943, when site operations began, until 1997, when the surface of IRP Site 3 was repaved with asphalt. This paving has since remained in relatively good condition. The protective asphalt cover minimizes surface water infiltration and windblown transport of fugitive dust.

The potential for discharge of contaminated groundwater from IRP Site 3 to the bay is low. Results of a 72-hour tidal influence study performed as part of the ERI indicated that the confined to semiconfined groundwater underlying IRP Site 3 is in hydraulic communication with San Diego Bay (BEI, 2008d). The study also revealed that Paleta Creek is a losing stream, losing water to the shallow water-bearing zone. Net groundwater flow in both the shallow and deeper water-bearing zones is away from the creek. In addition, IRP Site 3 groundwater is not reported to be impacted by organic contaminants above aquatic screening criteria.

3.3.7 Dredging History

Substantial sediment offshore of IRP Site 3 in the Paleta Creek Channel was removed in 1971, as shown on Figure 3-6. Additional material near the mouth of Paleta Creek was removed by dredging in 1993. Multiple dredging events were also performed in the main navigational channel and approaches to the piers between 1955 and 1985.

3.4 IRP Site 4, DPDO Storage Yard

3.4.1 Description

IRP Site 4 is a roughly rectangular parcel that lies east of Harbor Drive and north of Paleta Creek (Figure 3-8). The site is bounded by Atchison, Topeka, and Santa Fe Railroad tracks and Harbor Drive on the west, the San Diego Trolley line on the east, a City of San Diego sewage pump station on the north, and Paleta Creek on the south. The northern portion of the site is a materials-recycling area paved with either concrete or asphalt. Three warehouses were located on the northern area of IRP Site 4. The largest warehouse, still present, stores nonhazardous materials associated with recycling activities. Two additional warehouses, which have been removed from the site, were formerly located in an unpaved area near the center of the site and were used to store batteries (Warehouse 250) and high-value scrap such as brass and copper (Warehouse 249). The former warehouses and materials-recycling areas are enclosed by a fence. The southern portion of the site, which is occupied by the Defense Logistics Agency (DLA), is unpaved and fenced and used for boat storage.

3.4.2 Historical Operations

A timeline of activities at IRP Site 4 is shown in Figure 3-9. The site was a Naval Supply Center (NSC) storage yard from 1943 to 1975; from 1975 to 1981, the site served as a DPDO storage yard. Since 1981, the southern subarea has been used mainly to store landing craft. In 1975, the northern area of the site was almost completely paved. Before then, the surface was reported to have been oiled regularly as a dust-control measure. The Initial Assessment Study (IAS) Report noted that an estimated 35,000 to 75,000 gallons of oil was spread on the site (NEESA, 1986). This oil consisted of various waste petroleum, oils, and lubricants (POLs). In addition, containers of electrical insulating oils were stored at the site during the 1970s. Some of the containers reportedly leaked, but no estimated quantities are available. The IAS Report also noted that some of the material that leaked from containers used for insulating oils may have been mixed with the POLs. Drummed material containing paints, lubrication oils, and PD-680 solvent was stored at the site.

3.4.3 Chemicals Identified

The following chemicals have been reported in soil and/or groundwater at IRP Site 4 (BEI, 2008f):

- Metals, including copper, mercury, arsenic, cadmium, lead, and zinc (although copper in soil was not identified as a COPC in the human health risk assessment [BEI, 2008f])
- SVOCs, including PAHs (e.g., benzo[a]pyrene)
- PCBs

3.4.4 Remedial Actions Taken

No remedial actions have been performed at IRP Site 4.

3.4.5 Regulatory Status

The final RI report for IRP Site 4 was issued in 2008 (BEI, 2008f). The RI recommended no further action for this site.

3.4.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 4 to San Diego Bay is provided in Figure 3-8. There are two mechanisms by which contaminants from the site could have reached the bay: (1) discharge of particulates from unpaved areas of IRP Site 4, and (2) discharge of contaminants in groundwater from the site to the bay. The first mechanism may have occurred historically and is still feasible in the unpaved southern portion of IRP Site 4. The southern area is almost entirely unpaved, and particulate contaminants from surface soil in this area have the potential to reach the bay due to windblown transport or overland runoff into Paleta Creek during storm events. The current potential for discharge of particulate contamination to San Diego Bay is low in the northern area of the site, which is nearly entirely paved, and has been since at least 1975. This paving precludes migration of particulates from this area.

The potential for the transport of contaminants to San Diego Bay from IRP Site 4 via groundwater transport is low. Surface water in Paleta Creek is not in direct hydraulic communication with the groundwater underlying IRP Site 4, eliminating the groundwater-to-surface-water pathway (BEI, 2008f).

Space and Naval Warfare Systems Center San Diego (SPAWAR) conducted the Coastal Contaminant Migration Monitoring Assessment (CCMMA), which consisted of the installation of multiple Trident Probe monitoring points to collect conductivity and temperature data in the bed of Paleta Creek and the drainage ditch adjacent to and west of IRP Site 4 (BEI, 2008f). The objectives of the CCMMA were to (1) delineate groundwater discharge locations, if any, to the creek bed; (2) quantify rates of advective flow between surface water and groundwater in Paleta Creek and the drainage ditch; (3) evaluate tidal response in shallow groundwater, deeper groundwater, and the creek and ditch; and (4) characterize vertical and horizontal hydraulic gradients at the site.

The CCMMA concluded that the shallow water-bearing zone is hydraulically separate from the deep water-bearing zone at IRP Site 4; both surface water features (Paleta Creek and the drainage ditch west of the site) are losing water to shallow groundwater at IRP Site 4, and therefore any IRP Site 4-related chemicals that may be present in groundwater are not discharging to Paleta Creek.

3.4.7 Dredging History

Substantial sediment offshore of IRP Site 4 was removed in 1971 in the dredging of Paleta Creek Channel, as shown in Figure 3-8. Additional material near the mouth of Paleta Creek was removed by dredging in 1993. Multiple dredging events were also performed in the main navigational channel and approaches to the piers between 1955 and 1985.

3.5 IRP Site 7, Former Sewage Treatment Plant

3.5.1 Description

IRP Site 7 is an irregularly shaped parcel bounded on the north by PWC facilities, on the south by Vesta Street, on the east by Harbor Drive, and on the west by Knowlton Williams Road (Figure 3-10). The site is approximately 1,250 feet long and 600 feet wide at the widest point, tapering to about 250 feet wide along the south end. The area of the site encompasses approximately 10.5 acres and does not include the San Diego Gas and Electric substation near the southeast corner of the site. The site is approximately 850 feet east of San Diego Bay and 1.2 miles south of the Shipyard Sediment Site.

3.5.2 Historical Operations

A timeline of activities at IRP Site 7 is shown in Figure 3-11. The site was originally developed as a municipal sewage treatment plant (Harbor Drive Sewer Plant). The facility was constructed between 1948 and 1951 and was owned and operated by the City of San Diego from 1951 through 1963. Available drawings indicate that the sewage treatment plant consisted of maintenance and administrative buildings, digesters, clarifiers, elutriation tanks (used to "wash" undesired substances from sludge that interfered with the subsequent chemical conditioning or filtration of the sludge), sludge storage buildings, a detritor building, and other associated facilities. Effluent from the plant was discharged into San Diego Bay near Pier 5 (Figure 3-10). The plant was decommissioned in 1963, when the Point Loma sewage treatment facility became operational, and demolished in 1977.

Aerial photographs indicate that the electrical substation near the southeast corner of the site was constructed between 1963 and 1972. The substation is currently operated by San Diego Gas and Electric and is not under Navy jurisdiction. The treatment plant was demolished in 1978, and the site remained vacant, with the exception of a small building temporarily located east of Building 118 and the substation until 1983, when the southern portion of the site was graded.

The Navy acquired IRP Site 7 in 1984. By 1985, the entire site had been graded for parking. The parking area was paved with asphalt in November 1994.

3.5.3 Chemicals Identified

The following chemicals have been reported in soil and/or groundwater at IRP Site 7 (BEI, 2002):

- Metals, including copper, mercury, arsenic, cadmium, lead, and zinc (although copper in soil was not reported above the background level at NBSD [BNI, 1996], and arsenic in soil was not identified as a COPC in the human health risk assessment [BEI, 2002])
- SVOCs, including PAHs (e.g., benzo[a]pyrene)
- PCBs

3.5.4 Remedial Actions Taken

No remedial actions have been performed at IRP Site 7.

3.5.5 Regulatory Status

In December 2004, the Remedial Action Plan/Record of Decision (RAP/ROD) for IRP Site 7 was issued (Navy, 2004a). Regulatory agency concurrence with the decision to close the site with no further action under CERCLA was formalized with the signing of the RAP/ROD. The RWQCB's concurrence with no further action at IRP Site 7 is documented in Appendix C.

3.5.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 7 to San Diego Bay is provided in Figure 3-10. There are three mechanisms by which contaminants from the site may have reached the bay: direct discharge to the bay, discharge of particulates from unpaved areas of Site 7 via surface runoff and windblown transport, and discharge of contaminants in groundwater from the site to the bay.

Historical direct discharge of waste from IRP Site 7 to the bay is well documented. The City of San Diego intentionally discharged untreated sewage to San Diego Bay near the current terminus of Pier 5 from at least 1935 to 1951 (prior to plant construction), and primary treated sewage from 1951 to 1963 at the same location. Documentation in the Administrative Record indicates the City of San Diego discharged contaminants from IRP Site 7 through two discharge pipes to San Diego Bay near the terminus of NBSD Pier 5. Further, from at least 1935 until 1951, those same discharge pipes were used to discharge City of San Diego raw sewage to San Diego Bay near the current terminus of Pier 5. The direct discharge of waste to the bay ceased in 1963 when the plant was decommissioned, and City of San Diego sewage treatment shifted to the Point Loma sewage treatment facility.

There are no known analytical data for the untreated or primary treated sewage from the City of San Diego Sewage Treatment Plant. However, a recent report from the USEPA indicates that arsenic, copper, lead, mercury, zinc, and cadmium were reported in 100 percent of surveyed sewage sludge samples, and that the high molecular weight polynuclear aromatic hydrocarbon (HPAH), benzo(a)pyrene, was reported in 77.1 percent of the samples (USEPA, 2009).

The historical potential for discharge of particulate contamination to San Diego Bay sediments via surface runoff and windblown transport from the site is low. Although the site was not completely paved until 1994, it is at its closest over 850 feet east of the shoreline, reducing the likelihood of significant discharge from windblown or overland transport.

The potential for discharge of contaminated groundwater from IRP Site 7 to the bay is low, as the transport pathways for groundwater between IRP Site 7 and San Diego Bay were determined to be incomplete (BEI, 2002).

3.5.7 Dredging History

Substantial sediment between IRP Site 7 and the Shipyard Sediment Site was removed in 1971 in dredging of the midpier area, as shown in Figure 3-10. Additional material farther out into the channel offshore of NBSD was removed in multiple dredging events conducted between 1955 and 1993. These dredging projects have removed sediment that accumulated over decades, including material likely discharged from the plant prior to 1963.

3.6 IRP Site 8, Firefighting Training Facility

3.6.1 Description

IRP Site 8 is in the western portion of NBSD near Pier 8, approximately 1.5 miles south of the Shipyard Sediment Site (Figure 3-12). The site is bounded by the Brinser Street Parking Area (IRP Site 12) to the north, Siefert Place to the east, and Southall Street to the south. To the west, the site is bounded by Brinser Street and San Diego Bay. The site extends approximately 1,000 feet northwest to southeast and is approximately 250 feet wide. The site is currently used as a parking lot and contains the electrical switch station "J" (Building 3485). IRP Site 8 is relatively flat and completely paved.

3.6.2 Historical Operations

A timeline of activities at IRP Site 8 is shown in Figure 3-13. The site was used for firefighting-training exercises between the late 1940s and 1996. Before 1972, training fires were set in the open on two concrete pads (flight decks). From 1972 to 1996, all training fires were set in enclosed structures equipped with pollution-control equipment to reduce air emissions. The aboveground structures, tanks, and USTs at IRP Site 8 were demolished and removed in 1996.

Petroleum-hydrocarbon materials used at the firefighting-training facility included jet propellant grade 5 (JP-5) fuel and gasoline for setting the training fires. The JP-5 and gasoline were stored in a 28,000-gallon vaulted aboveground storage tank (AST) (former AST 13, also known as "Tank FFS-15") located at the northern end of the site. The JP-5 was transferred from former AST 13 to the flight deck in Building 3196 at the south end of the site through an underground pipeline that extended the length of the site. The northern portion of the underground pipeline associated with former AST 13 leaked and was repaired on two occasions, most recently in 1987. Quench water generated from each firefighting exercise was directed into a series of underground concrete tanks in the southwest portion of the site where oil–water separation, removal of particulates, and reclamation took place.

3.6.3 Chemicals Identified

Fuel-related petroleum products (i.e., JP-5, gasoline, and diesel fuel) have been reported in soil and/or groundwater at IRP Site 8. Fuel-related constituents are not COCs for the Shipyard Sediment Site.

3.6.4 Remedial Actions Taken

Two free-product plumes were identified at IRP Site 8. In 1993, Jacobs Engineering Group (JEG) was directed to initiate emergency free-product recovery in the northern portion of the site after an 8-inch layer of product seeped into a 9-foot-deep construction excavation. JEG constructed three intercept trenches and installed product-recovery skimmers in two of the trenches. Product-recovery rates of 20 to 82 gallons per day were obtained in July 1993 (JEG, 1994). Approximately 3,000 gallons of free product were recovered during the system's 2 years of operation. The JEG product-recovery system was subsequently removed from IRP Site 8, and no surface expression of the system remains.

Free product was also found on the water table at the southwest corner of the site. In 1997, FWEC began operating a multiphase extraction (MPE) system comprising 31 extraction wells at IRP Site 8. Remediation was conducted on both the northern and southern plumes. The extraction wells were completed at depths of approximately 20 feet bgs. Free-phase petroleum product, contaminated groundwater, and vapor-phase hydrocarbons extracted by applying vacuum to the extraction wells were transferred by underground piping to the aboveground MPE system.

The MPE system at IRP Site 8 was operated and maintained by FWEC from November 1997 to early 2000, at which time PWC took over. PWC operated and maintained the MPE system until May 2001, when the Sanitation District discharge permit expired and the system was shut down. During operation, the MPE system recovered approximately 15,000 gallons of free product and extracted and treated approximately 2,400,000 gallons of contaminated groundwater from both plumes at the site (PWC, 2001a).

In January and February of 2002, PWC excavated a portion of the southern plume. Soil, capillary fringe material, water, and free product were removed from the site. The excavation has been backfilled and paved.

3.6.5 Regulatory Status

In March 2004, IRP Site 8 was closed with concurrence from the RWQCB that no further action was required. The RWQCB concurrence letter is provided in Appendix C.

3.6.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 8 to San Diego Bay is provided in Figure 3-12. There are three mechanisms by which contaminants from the site may have reached the bay: direct discharge to the bay, discharge of particulates from unpaved areas of Site 8, and discharge of contaminants in groundwater from the site to the bay.

Historical direct discharge to the bay during fire training was possible, but it has not been reported. A system of underground tanks existed to capture quench water generated during training, thus reducing the chance for accidental discharge to the bay.

Historical discharge of particulate contaminants to the bay from unpaved areas of the site is unlikely. Review of Station Condition Maps of Destroyer Base San Diego show the area of IRP Site 8 as almost entirely paved as early as 1943, the date of the first map on which the "fire fighting school" appears (PWC, 1943; Drawing No. 9494). The current potential for discharge of particulate contamination to San Diego Bay sediments is low because the site is completely paved.

Historical discharge to the bay of fuel-related contaminants in site groundwater is possible, but has not been reported. The potential for discharge of contaminated site groundwater to the bay is considered low following the removal actions described below.

3.6.7 Dredging History

Substantial sediment immediately offshore of IRP Site 8 was removed in 1971 and again in 1993, as shown in Figure 3-12. These two dredging activities likely removed sediment that may have been influenced by IRP Site 8 activities prior to 1971. Additional material farther out into the channel offshore of NBSD was removed in multiple dredging events conducted between 1955 and 1993.

3.7 IRP Site 9, PCB Storage Facility

3.7.1 Description

IRP Site 9 is located approximately 1,200 feet southeast of Paleta Creek, approximately 1,000 feet east of San Diego Bay and 2.0 miles south of the Shipyard Sediment Site (Figure 3-14). The site (also known as SWMU 2) is an irregularly shaped parcel bounded on the north by the ship-to-shore storage yard, on the south by Civic Center Drive, on the east by Atchison, Topeka, and Santa Fe Railroad tracks, and on the west by the high-voltage electrical shop. The site is approximately 1.1 acres, measuring approximately 250 feet long and 180 feet wide at the west side, tapering to about 140 feet wide along the east side. The site has been paved and is used for parking and equipment storage.

3.7.2 Historical Operations

A timeline of activities at IRP Site 9 is shown in Figure 3-15. The facility is reported to have been in continuous use for approximately 30 years. It was used primarily for maintenance of electrical equipment, including draining of transformer fluids and storage of fluids containing PCBs. Transformers historically have been transported, repaired, and stored on soil, gravel, asphalt, and concrete surfaces at various locations throughout the yard. Until the late 1980s, no attempt was made to contain fluids or to segregate PCB-containing fluids from other fluids used in the yard.

The facility was operated by PWC as a hazardous waste storage facility under the authority of a RCRA permit issued jointly by the U.S. Environmental Protection Agency (USEPA) Region 9 and DTSC. The Part B Permit Application Closure Plan (Closure Plan), submitted in April 1991 and approved by DTSC on 30 June 1993, defined the objectives for closing the facility and the specific actions to be executed for closure.

3.7.3 Chemicals Identified

The following class of chemical has been reported at IRP Site 9:

- PCBs

3.7.4 Remedial Actions Taken

A removal action was completed in 1994 to clean PCB-contaminated structures and soils at IRP Site 9. As part of the removal, three structures at the north end of the site (Building A and two concrete pads) were decontaminated and demolished. In addition, asphalt/concrete that covers approximately one third of the surface area of the site was deemed contaminated and handled as hazardous waste. After the asphalt/concrete was removed, PCB-contaminated soils were excavated. The excavations extended outside the boundaries of IRP Site 9 and in some places to a depth of 4 feet. In addition, PCB-contaminated sediment was removed from the storm drain inlet in the southeast corner of the site (IT, 1995). This storm drain was cleaned using a Hydroblaster and pneumatic pumps. The water generated during this cleanup was transported to the industrial waste treatment plant located at NAS North Island. Solids and sludge removed were temporarily stored on plastic sheeting, dewatered, and incorporated with the containerized soils in roll-off bins.

3.7.5 Regulatory Status

IRP Site 9 is closed. Upon review of the Closure Certification Report (IT, 1995), DTSC's Facility Permitting Branch issued a letter of acceptance for the SWMU 2 Closure Reports in 1995. On 14 November 1997, DTSC's Office of Military Facilities issued a no further action concurrence letter to the Navy, certifying that the site had been closed in accordance with the DTSC-approved Closure Plan (DTSC, 1997). A copy of the closure letter is presented in Appendix C.

3.7.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 9 to San Diego Bay is provided in Figure 3-14. Because of the long distance from IRP Site 9 to the bay (approximately 1,200 feet southeast of Paleta Creek and approximately 1,000 feet east of San Diego Bay), historical discharge of contaminated soil particles to Paleta Creek from storm drain outfalls prior to installation of pavement is likely the only potential mechanism for the transport of site contaminants to the bay. IRP Site 9 is currently paved with asphalt and used as a parking lot and contractor staging area, and there are no current transport pathways from the site to Paleta Creek or San Diego Bay.

3.7.7 Dredging History

Substantial sediment west of IRP Site 9 was removed in 1971, as shown in Figure 3-14. Additional material near the mouth of Paleta Creek was removed by dredging in 1993. Multiple dredging events were also performed in the main navigational channel and approaches to the piers between 1955 and 1985.

3.8 IRP Site 10, Original Rice King Restaurant Site

3.8.1 Description

IRP Site 10 is located in the midpier area, approximately 400 feet east of San Diego Bay and 1.4 miles south of the Shipyard Sediment Site (Figure 3-16). The site is an L-shaped area of approximately 5 acres bounded by Vesta Street to the north, Cummings Road to the east, Woden Street to the south, and Ward Road to the west. To the northeast, the site is bounded by the Navy Exchange (NEX) and several restaurants (all in Building 3301). Building 321, formerly located in the southeast portion of the site, was demolished in 1997. Building 3239 (a racquetball court recreation facility), the only structure within the site boundary, is located in the northwest portion of the site. Site topography is relatively flat with a maximum elevation of about 12 feet MLLW. Currently, most of the site is used as a vehicle parking lot, with the exception of the enclosed racquetball court, and is covered with asphalt pavement.

3.8.2 Historical Operations

A timeline of activities at IRP Site 10 is shown in Figure 3-17. Aerial photographs, historical information, and several environmental investigations indicate that the site was used as an unpaved storage yard for metal finishing, preservation, and packaging at Building 321 before the mid-1970s. Operations conducted in this area from 1955 until 1994 included use of solvents and corrosives for cleaning metal materials. In 1994, PWC removed two machinery bays, one 500-gallon concrete sump, two floor drains, and two storm drain flow diverters from the area of Building 321 (PWC, 1995). All were discovered during a UST investigation designed to locate a UST rumored to be present at the site. Previous investigations uncovered construction debris (SCS&T, 1989) and debris containing asbestos (PSII, 1992).

3.8.3 Chemicals Identified

The following chemicals have been reported in soil and/or groundwater at IRP Site 10 (BEI, 2008g):

- Metals, including copper, mercury, arsenic, cadmium, lead, zinc, and TBT
- SVOCs, including PAHs
- PCBs

3.8.4 Remedial Actions Taken

No remedial actions have been taken at IRP Site 10.

3.8.5 Regulatory Status

IRP Site 10 is presently at the RI stage of the CERCLA process. The Draft RI was completed in 2008 (BEI, 2008g).

3.8.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 10 to San Diego Bay is provided in Figure 3-16. Because the site is located over 400 feet from the San Diego Bay, direct discharge to the bay and migration of contaminated groundwater to the bay are both considered unlikely.

There is a potential for historical releases to the bay from particulate transport by surface water via the storm drain system. The potential for historical discharge from the then-unpaved site by this mechanism is mitigated by the distance from the site to the bay. The site has been paved since the mid 1970s.

The current potential for discharge is low. The site's paved asphalt and concrete surface acts as an effective barrier to migration of contaminated soil, making surface water runoff and fugitive dust emissions unlikely.

3.8.7 Dredging History

Substantial sediment in San Diego Bay west of IRP Site 10 was removed in 1971 as shown on Figure 3-16. Additional material farther out into the channel offshore of NBSD was removed in multiple dredging events conducted between 1955 and 1993.

3.9 IRP Site 12, Brinser Street Parking Area

3.9.1 Description

IRP Site 12 is located on the western portion of NBSD, near Pier 7, and extends approximately 750 feet in a north-south direction and 550 feet in an east-west direction (Figure 3-18). The site is adjacent to San Diego Bay and approximately 1.4 miles south of the Shipyard Sediment Site. It is bounded to the north by Woden Street and a paved parking lot. The Firefighting Training Facility (IRP Site 8) borders the site to the south, and Building 3304 borders the site to the east. To the west, the site is bounded by Brinser Street and San Diego Bay (BNI, 1998).

IRP Site 12 is completely paved with asphalt. A chain-link fence divides the site into eastern and western portions. The western portion is used for parking and equipment staging; the eastern portion serves as a shipping and receiving area for the Defense Distribution Depot Center (DDDC) warehouse (BNI, 1998).

3.9.2 Historical Operations

A timeline of activities at IRP Site 12 is shown in Figure 3-19. The site was part of an area used for construction of floating dry docks and barges during World War II. Early site history is documented in a series of site photographs taken during 1942 and 1943 (BNI, 1998). These historical photographs indicate the presence of two shallow creosote dip ponds for treating lumber at two locations on the site. The area of IRP Site 12 has been used as a staging area for military equipment, automobile parking, and shipping and receiving since 1966 (BNI, 1998).

3.9.3 Chemicals Identified

The following chemicals have been reported in soil and/or groundwater at IRP Site 12 (Navy, 1996):

- Metals, including copper, mercury, arsenic, cadmium, lead, and zinc (although copper, lead, and arsenic in soil were detected at concentrations below NBSD background concentrations [BNI, 1996])
- SVOCs including PAHs

3.9.4 Remedial Actions Taken

During previous investigations at IRP Site 12, principally to assess soil conditions before proposed military construction (MILCON) projects, elevated concentrations of PAHs possibly associated with creosote were discovered. A TCRA Memorandum/Removal Action Work Plan was prepared to document the Navy's decision to perform a removal action (Navy, 1996). The removal action was performed by OHM between 03 June and 31 July 1996. Approximately 2,828 cubic yards (5,090 tons) of PAH-impacted soil was excavated to an average depth of 4 feet bgs and a maximum depth of 9.5 feet bgs. This soil was transported offsite (OHM, 1997), and both excavations were backfilled with clean fill. After the removal action, no further action was recommended for IRP Site 12.

3.9.5 Regulatory Status

The site is closed, and no further action under CERCLA is required. The Navy documented the IRP Site 12 closure in a RAP/ROD, which was issued in December 2004 (Navy, 2004a). Regulatory agency concurrence with this decision was formalized with the signing of the RAP/ROD (Appendix C).

3.9.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 12 to San Diego Bay is provided in Figure 3-18. There are three mechanisms by which contaminants from the site may have reached the bay: direct discharge to the bay, discharge of particulates from unpaved areas of Site 12, and discharge of contaminants in groundwater from the site to the bay.

Historical direct discharge to the bay was possible, particularly between 1942 and 1944, but has not been reported. The tarry creosote in the dip ponds would have been heavier than water, and as product, would have tended to remain in the depressed pond areas, reducing the chance for accidental discharge of significant product to the bay. The potential for direct discharge to the bay ended with the cessation of lumber treatment n the 1940s.

Historical discharge of contaminated particulates to the bay from unpaved areas of the site is also possible. Review of Station Condition Maps of Destroyer Base San Diego show the area of IRP Site 12 as partially paved in 1944 and entirely paved in 1945 (PWC, 1945; Drawing No. 9491, Part 2). The site's paved asphalt and concrete surface acts as an effective barrier to migration of contaminated soil, making surface water runoff and fugitive dust emissions unlikely.

Historical discharge of site groundwater to the bay is possible, based on the proximity of the site to the bay; however, the low mobility of the creosote, and high molecular weight of the PAHs in general, mitigates the risk of significant discharge by this mechanism. In addition the presence of the NBSD quay wall between the land and the bay has effectively removed the groundwater–bay pathway.

3.9.7 Dredging History

Substantial sediment offshore of IRP Site 12 was removed in 1971 as shown on Figure 3-18. Additional material farther out into the channel offshore of NBSD was removed in multiple dredging events conducted between 1955 and 1993.

3.10 IRP Site 13, Dry Dock Sandblast Grit Area

3.10.1 Description

IRP Site 13 is located in the western-central portion of NBSD, immediately east of Piers 5 and 6 and approximately 1.3 miles south of the Shipyard Sediment Site (Figure 3-20). The site is south and southeast of the dry dock, within the PWC ship maintenance/repair yard and the Sithe Energies/San Diego Gas and Electric Cogeneration (cogen) Plant. The site is bounded on the north by Building 84 (restrooms) and the dry dock and concrete apron, on the south by an alley and parking lot, on the east by Surface Navy Road, and on the west by a parking lot beyond Building 408 (storage shed).

The majority of the perimeter of the PWC ship maintenance/repair yard and the cogen plant is bounded by either a brick wall or chain-link fence. IRP Site 13 includes much of the PWC ship maintenance/repair yard and all of the steam and electricity cogen plant. On the basis of a review of maps and aerial photographs, much of the site appears to have been paved from the early 1940s until construction of the eastern (or older) portion of the cogen plant in 1973. The condition of the asphalt appeared to range from good to worn in the reviewed photographs (PWC, 1999).

The cogen plant currently occupies much of the site. Open areas west and southwest of the cogen plant continue to be used for contractor equipment laydown during ship maintenance activities. Tented sandblasting and related ship maintenance activities currently occur in the dry dock, located northwest of the site.

3.10.2 Historical Operations

A timeline of activities at IRP Site 13 is shown in Figure 3-21. The Navy’s PWC ship maintenance/repair yard is (and has historically been) used for the overhaul and maintenance of ships, repair of ship components, and contractor equipment storage. Operations inside the yard are industrial and include sandblasting and painting of ship components. The cogen plant generates steam and electricity. The steam is used exclusively on NBSD, and electricity is routed off NBSD. Structures inside the facility’s boundaries include boilers, turbines, ASTs, generators, and other features associated with the generation of steam and electricity.

Sandblasting operations at IRP Site 13 were probably initiated in 1942 with the completion of the ship dry dock (located north of the site). Copper abrasive-blast material (grit) was used in the dry dock to remove paint from hulls of Navy vessels. Ship repair/maintenance operations at the dry dock were conducted by government contractors from 1942 until 1983, when PWC assumed operations. According to cogen plant personnel, sandblast operations in the dry dock emitted windborne dust that traveled southeasterly (the prevailing wind direction) from the dry dock and settled on the concrete apron adjacent to the dock on portions of the cogen plant (PWC, 1999). Sandblasting of small ship parts also occurred on the ground in the vicinity of the railcar shelter and silo. Used grit was reportedly accumulated and collected for recycling.

By 1985 to 1986, PWC used curtains near the eastern end of the dry dock to limit spreading of grit south and southeast of the dock. Untented sandblasting operations reportedly took place at the dock until 1993. At this time, sandblasting operations within the dry dock were conducted under completely tented conditions to eliminate the dispersion of sandblast grit.

3.10.3 Chemicals Identified

The following class of chemical has been reported at IRP Site 13 (BEI, 2006):

- Metals, including copper, mercury, arsenic, cadmium, lead, zinc, and TBT (although arsenic in soil was not identified as a COPC in the human health risk assessment [BEI, 2006])

3.10.4 Remedial Actions Taken

In early October 1992, PWC removed visible surface contamination consisting of overlying dark gray grit and dust to approximately 4 inches below grade in the northeastern portion of the cogen plant property. The exact limits of the excavation are not known. Eighty-nine 5-gallon containers of mixed gravel, soil, and blast media were generated during removal activities (PWC, 1999). In addition, a non-CERCLA cleanout of the sandblast grit vault was conducted by PWC, described in the Tank Closure Report for Underground Vault at IRP Site 13 (PWC, 2005).

3.10.5 Regulatory Status

IRP Site 13 is closed. In March 2007, DTSC concurred with the Navy’s recommendation of closure with no further action. A copy of the DTSC concurrence letter is provided in Appendix C.

3.10.6 Potential for Release to San Diego Bay

A CSM of the potential contaminant transport pathways from IRP Site 13 to San Diego Bay is provided in Figure 3-20. Surface water runoff to the bay is the most likely historical transport pathway. Releases of used sandblast grit may have occurred to surface soil, and surface water runoff and windblown transport are probably the most likely mechanisms of discharge to the bay.

Significant discharge to the bay of site contaminants groundwater is considered unlikely, both at present and historically. The reinforced steel and concrete quay wall between IRP Site 13 and San Diego Bay acts as a barrier to groundwater flow to the bay.

The current potential for discharge from IRP Site 13 to the bay is low. Most of the site is paved or covered with equipment. Unpaved areas have been adequately characterized. Two excavations were conducted to reduce metals concentrations in unpaved areas of the site. Ongoing sediment sampling related to National Pollutant Discharge Elimination System (NPDES) permitting for operation of the Navy dry dock located adjacent to IRP Site 13 provides data that indicate that activities in the vicinity of IRP Site 13 are not discharging metals to bay sediment.

3.10.7 Dredging History

Substantial sediment immediately offshore of IRP Site 13 was removed in 1971 as shown on Figure 3-20. Additional material farther out into the channel offshore of NBSD was removed in multiple dredging events conducted between 1955 and 1993.

3.11 IRP Site Summary

A summary of the evaluation of the potential transport of COCs from IRP sites to San Diego Bay is presented in Table 3-1. This evaluation indicates that historical and current COC transport pathways from IRP sites 8, 9, 10, and 12 to San Diego Bay were insignificant. Historical transport pathways to the bay from six of the IRP sites were possible. Direct discharges from IRP Site 1 to San Diego Bay may have occurred when the basins were used to construct concrete ships in the 1940s. Historical transport of particulates via surface runoff and windblown transport from IRP Sites 2, 3, and 4 to San Diego Bay may have occurred. COCs in untreated and treated sewage were discharged from IRP Site 7 to San Diego Bay via two outfalls near Pier 5 from 1935 to 1963, when the former sewage treatment plant was operated by the City of San Diego. Sandblast grit from IRP Site 13 may have been transported to San Diego Bay via surface runoff and wind before sandblasting operations were tented in 1993. COC transport pathways to the bay from these sites have been reduced or eliminated over time due to cessation or modification of site activities, improved environmental practices, and remedial actions. An analysis of the dredging history adjacent to the IRP sites indicates that sediments were periodically removed from the pier areas and main channel between NBSD and the Shipyard Sediment Site, reducing the likelihood of potential impacts from historical releases and the availability of COCs for potential resuspension and transport.

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TABLE 3-1
Summary of Evaluation of Potential Releases from IRP Sites and Transport to San Diego Bay
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

IRP Site	Shipyard Sediment Site COCs Present at Site	Site Remediated or Closed	Potential Pathways to San Diego Bay for COCs	Adjacent Sediments Dredged
IRP Site 1—Former Ship Repair Basins	Cu, Hg, As, Cd, Pb, Zn, PAHs, PCBs	Basins 1 and 2 closed Removal action at Basin 4	Historical direct discharge[a]	1971, 2002–2003
IRP Site 2—Mole Pier	Cu, Hg, As, Cd, Pb, Zn, PAHs, PCBs	Soil removal actions	Historical direct discharge, historical and current particulate transport, historical groundwater discharge	1971; 1993 in mouth of Paleta Creek
IRP Site 3—Salvage Yard	Cu, Hg, As, Cd, Pb, Zn, PAHs, PCBs	Soil removal actions	Historical particulate transport	1971; 1993 in mouth of Paleta Creek
IRP Site 4—DPDO Storage Yard	Cu, Hg, As, Cd, Pb, Zn, PAHs, PCBs	No remedial actions No further action recommended	Historical and current particulate transport	1971; 1993 in mouth of Paleta Creek
IRP Site 7—Former Sewage Treatment Plant	Cu, Hg, As, Cd, Pb, Zn, PAHs, PCBs	Closed	Historical direct discharge	1971; additional dredging to west, 1955–1993
IRP Site 8—Former Firefighting Training Facility	None (fuel-related constituents only)	Soil and product removal actions Closed	Historical direct discharge and groundwater discharge	1971, 1993
IRP Site 9—PCB Storage Facility	PCBs	Removal action Closed	Historical particulate transport	1971; 1993 in mouth of Paleta Creek
IRP Site 10—Original Rice King Restaurant Site	Cu, Hg, As, Cd, Pb, Zn, TBT, PAHs, PCBs	None RI in progress	Negligible historical particulate transport	1971; additional dredging to west, 1955–1993
IRP Site 12—Brinser Street Parking Area	Cu, Hg, As, Cd, Pb, Zn, PAHs	Removal action Closed	Historical direct discharge and particulate transport	1971; additional dredging to west, 1955–1993
IRP Site 13—Dry Dock Sandblast Grit Area	Cu, Hg, As, Cd, Pb, Zn, TBT	Grit removal actions Closed	Historical particulate discharge	1971; additional dredging to west, 1955–1993

Notes:
COC – contaminant of concern; Cu – copper; Hg – mercury; Cd – cadmium; Pb – lead; Zn – zinc; TBT – tributyltin; PAH – polynuclear aromatic hydrocarbon; PCB – polychlorinated biphenyl; RI – remedial investigation.

[a]COCs from ship repair basin discharges in the 1940s would be associated with concrete barge construction and not disposal activities that occurred later in Basins 3 and 4.

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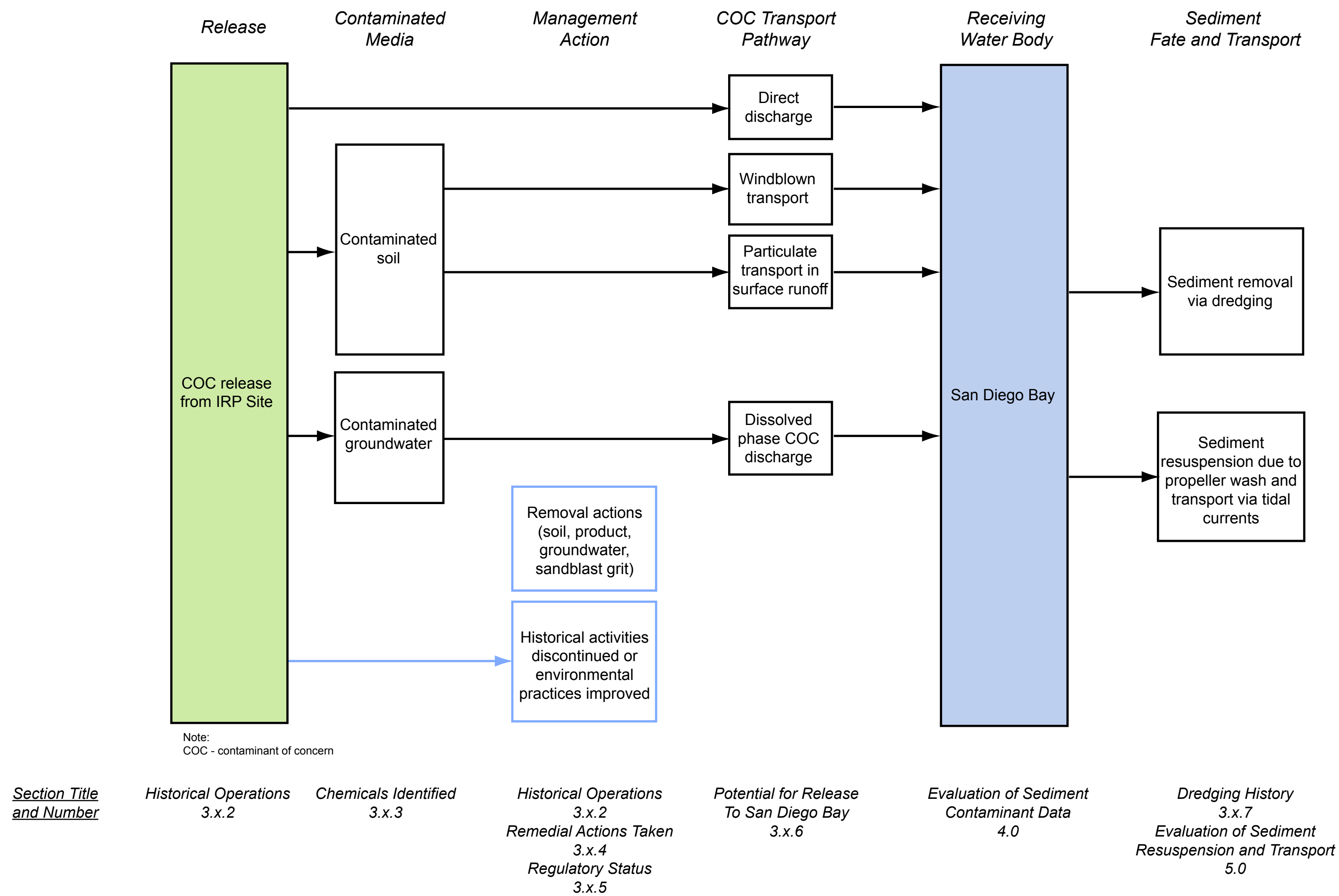

FIGURE 3-1
Conceptual Model for Evaluating Potential Releases from IRP Sites
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 1
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

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FIGURE 3-2
Conceptual Site Model of IRP Site 1
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

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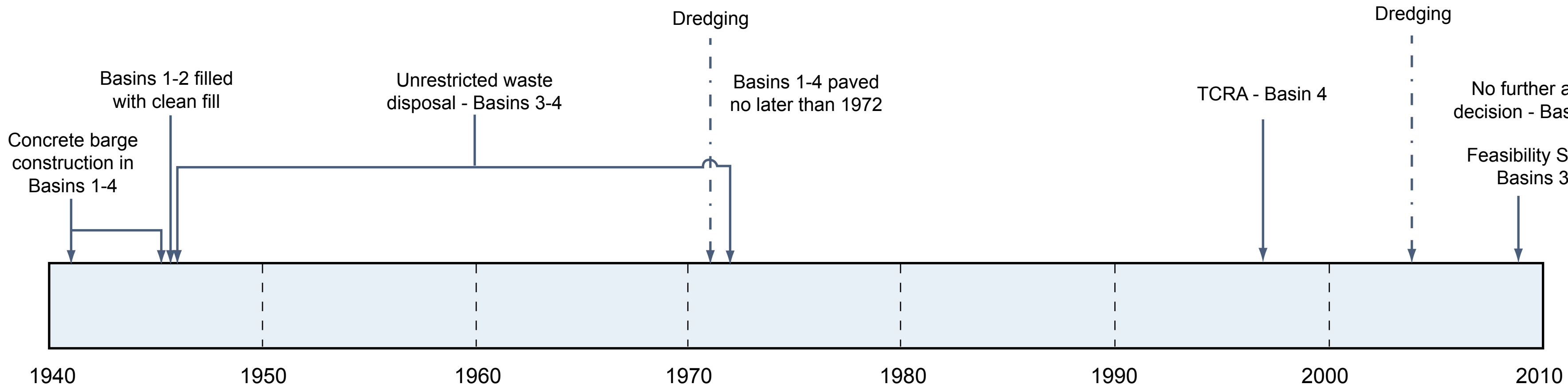
IRP Site 1, Former Ship Repair Basins
Timeline



TCRA - Time Critical Removal Action

FIGURE 3-3
Timeline for IRP Site 1
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

ES052010221453ATL

LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 2
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

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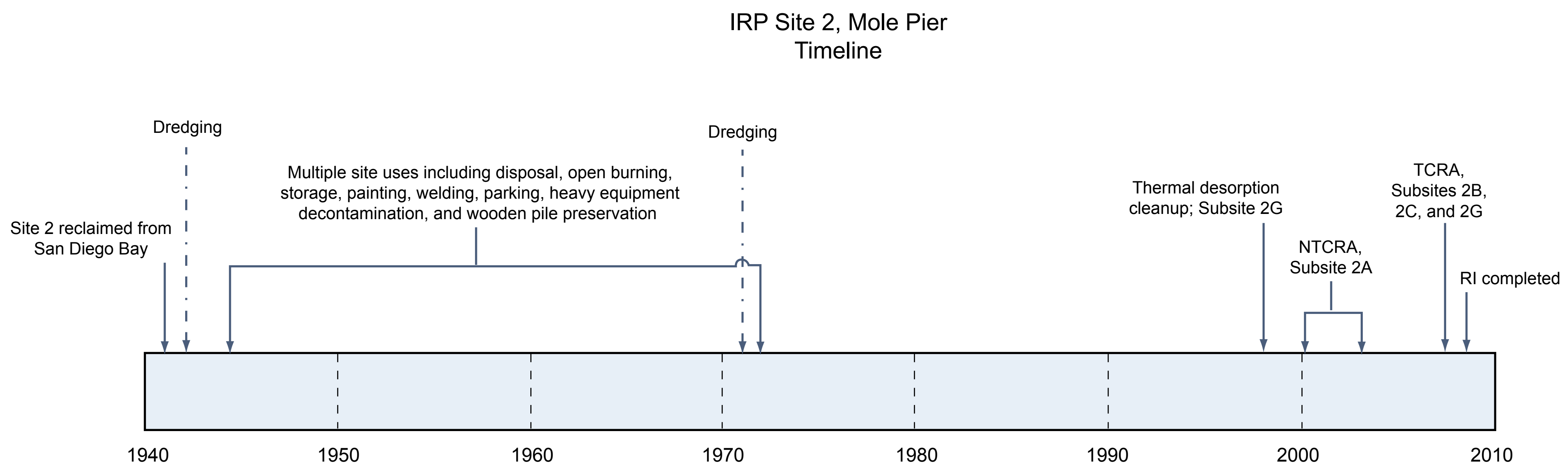
FIGURE 3-4
Conceptual Site Model of IRP Site 2
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



TCRA - Time Critical Removal Action
NTCRA - Non-time Critical Removal Action
RI - Remedial Investigation

FIGURE 3-5
Timeline for IRP Site 2
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 3
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

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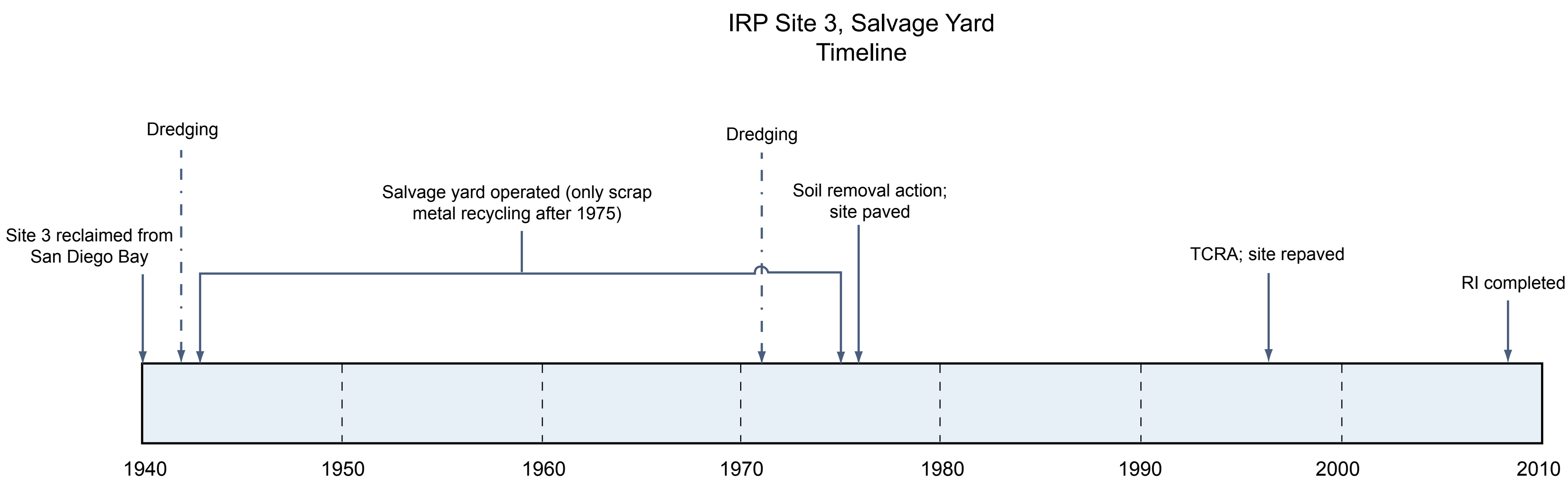
FIGURE 3-6
Conceptual Site Model of IRP Site 3
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



TCRA - Time Critical Removal Action
RI - Remedial Investigation

FIGURE 3-7
Timeline for IRP Site 3
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 4
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

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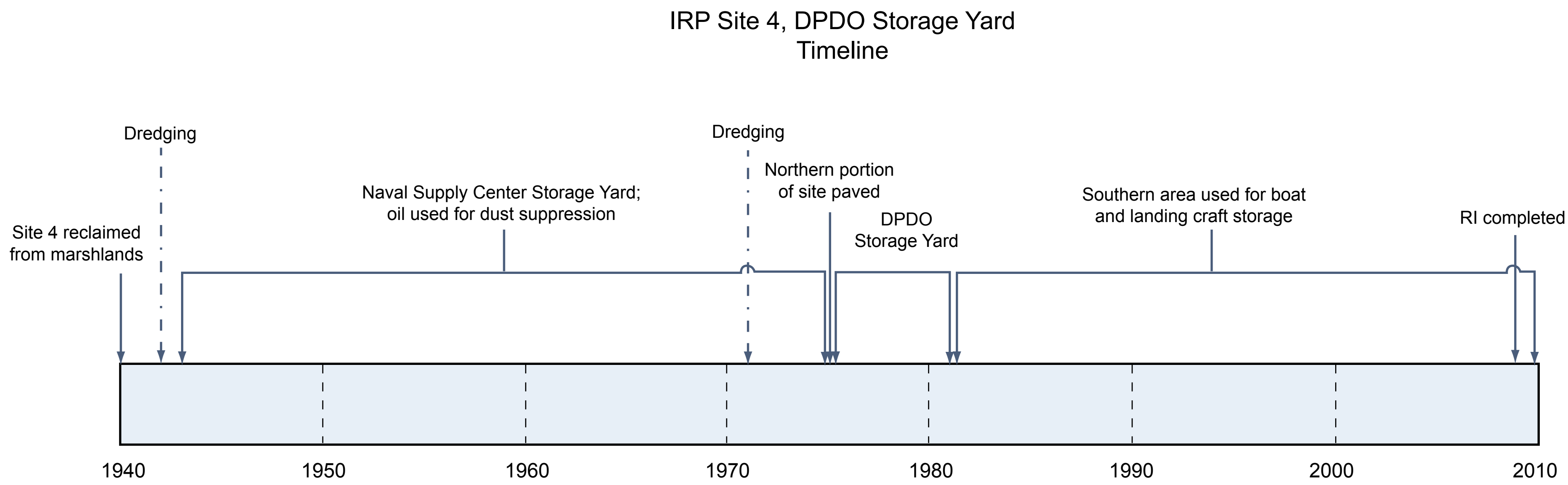
FIGURE 3-8
Conceptual Site Model of IRP Site 4
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



DPDO - Defense Property Disposal Office
RI - Remedial Investigation

FIGURE 3-9
Timeline for IRP Site 4
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 7
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

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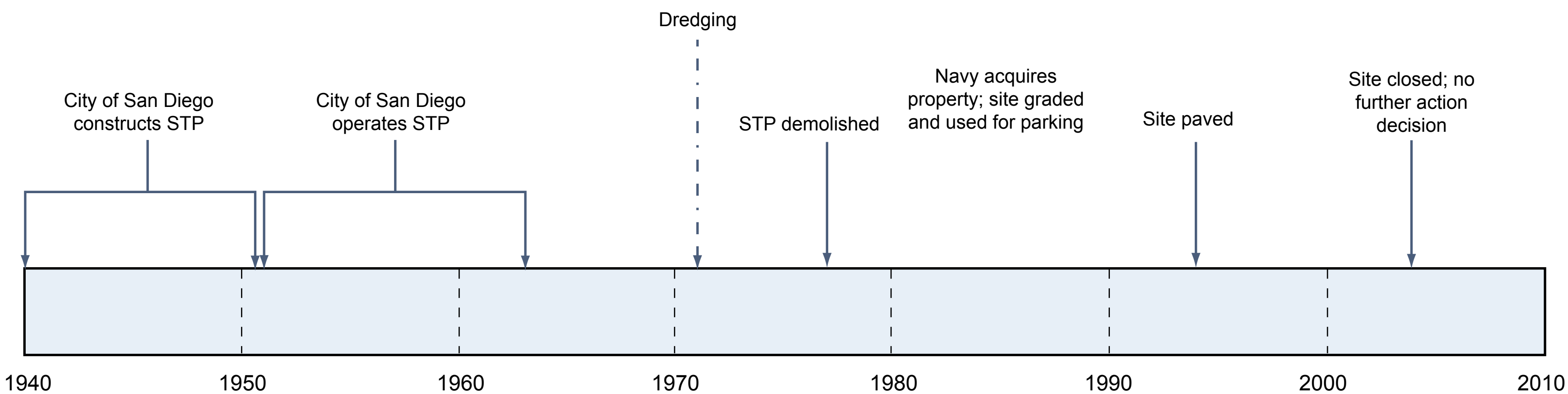
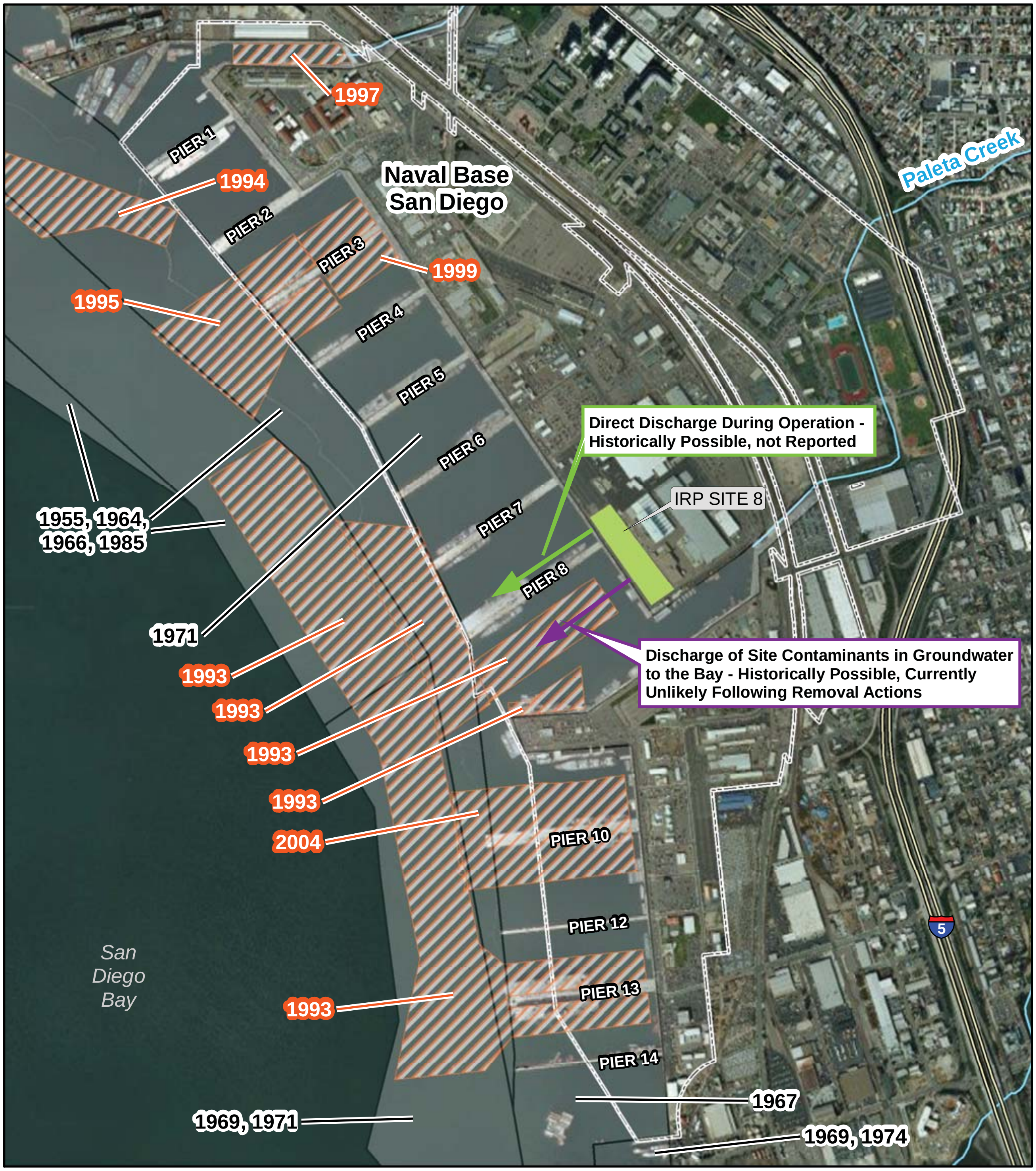
FIGURE 3-10
Conceptual Site Model of IRP Site 7
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

IRP Site 7, Former Sewer Treatment Plant
Timeline



STP - Sewage Treatment Plant

FIGURE 3-11
Timeline for IRP Site 7
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 8
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

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FIGURE 3-12
Conceptual Site Model of IRP Site 8
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

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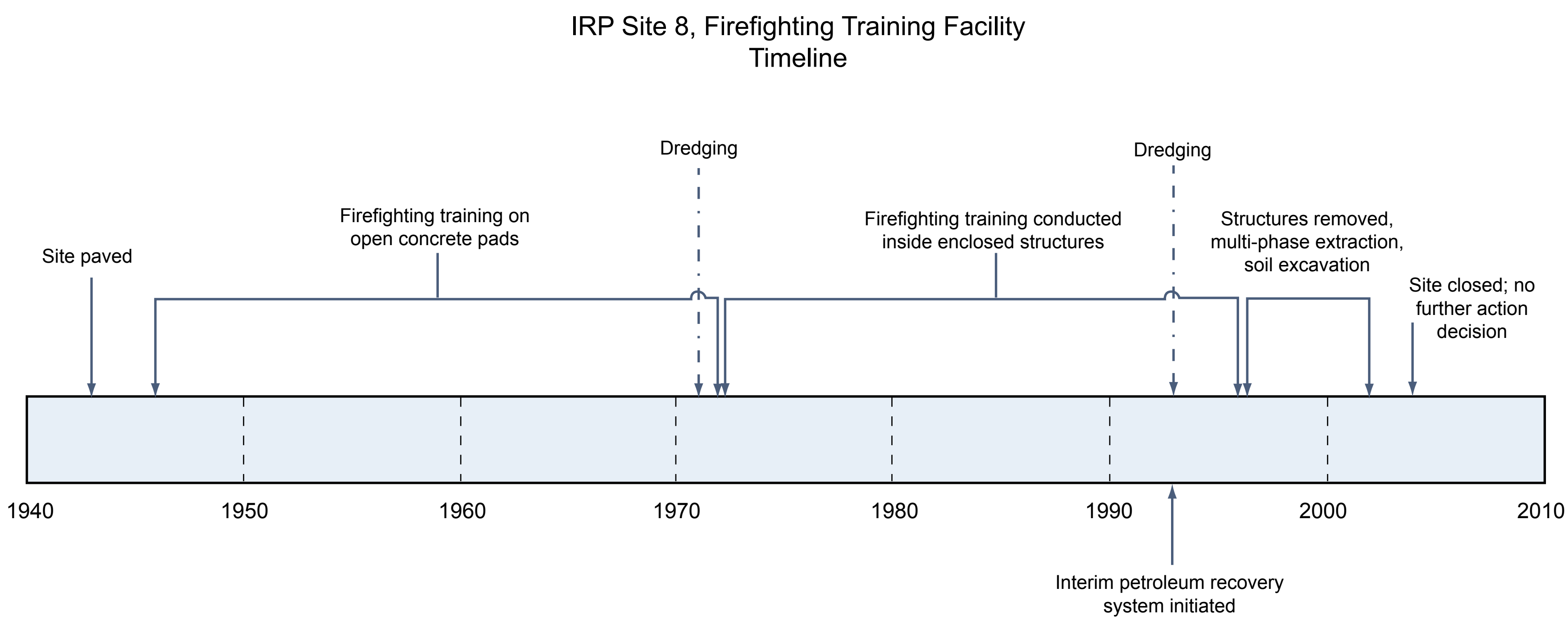

FIGURE 3-13
Timeline for IRP Site 8
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 9
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

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SPAWAR Systems Center PACIFIC

FIGURE 3-14
Conceptual Site Model of IRP Site 9
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

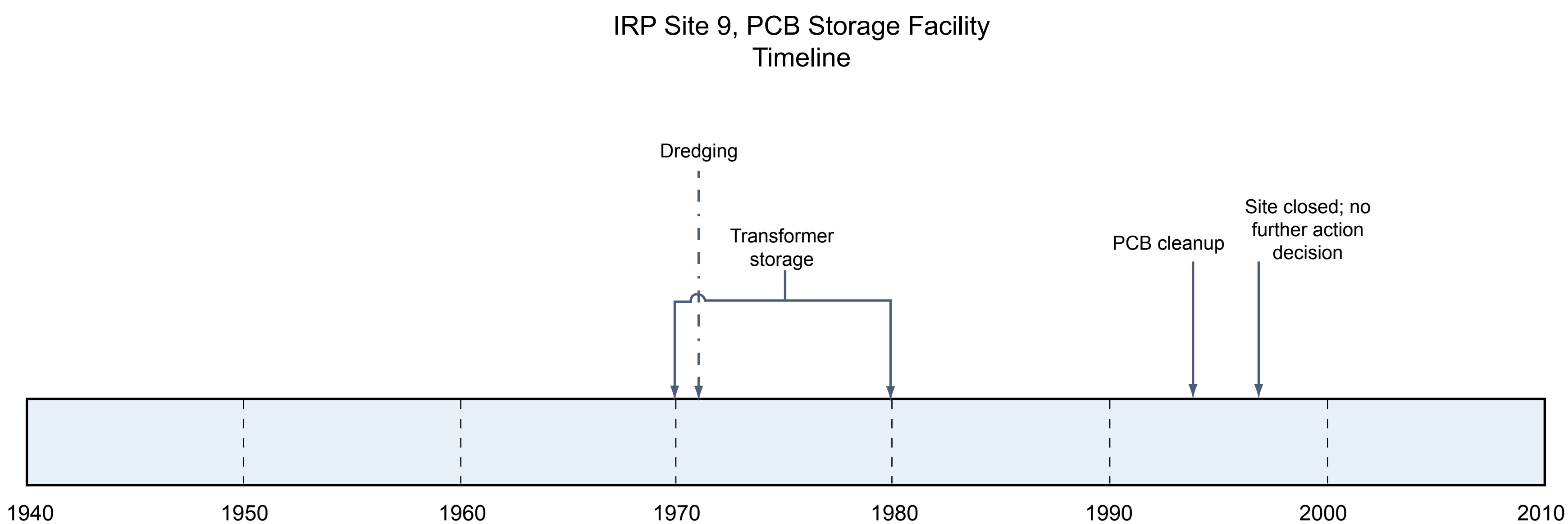
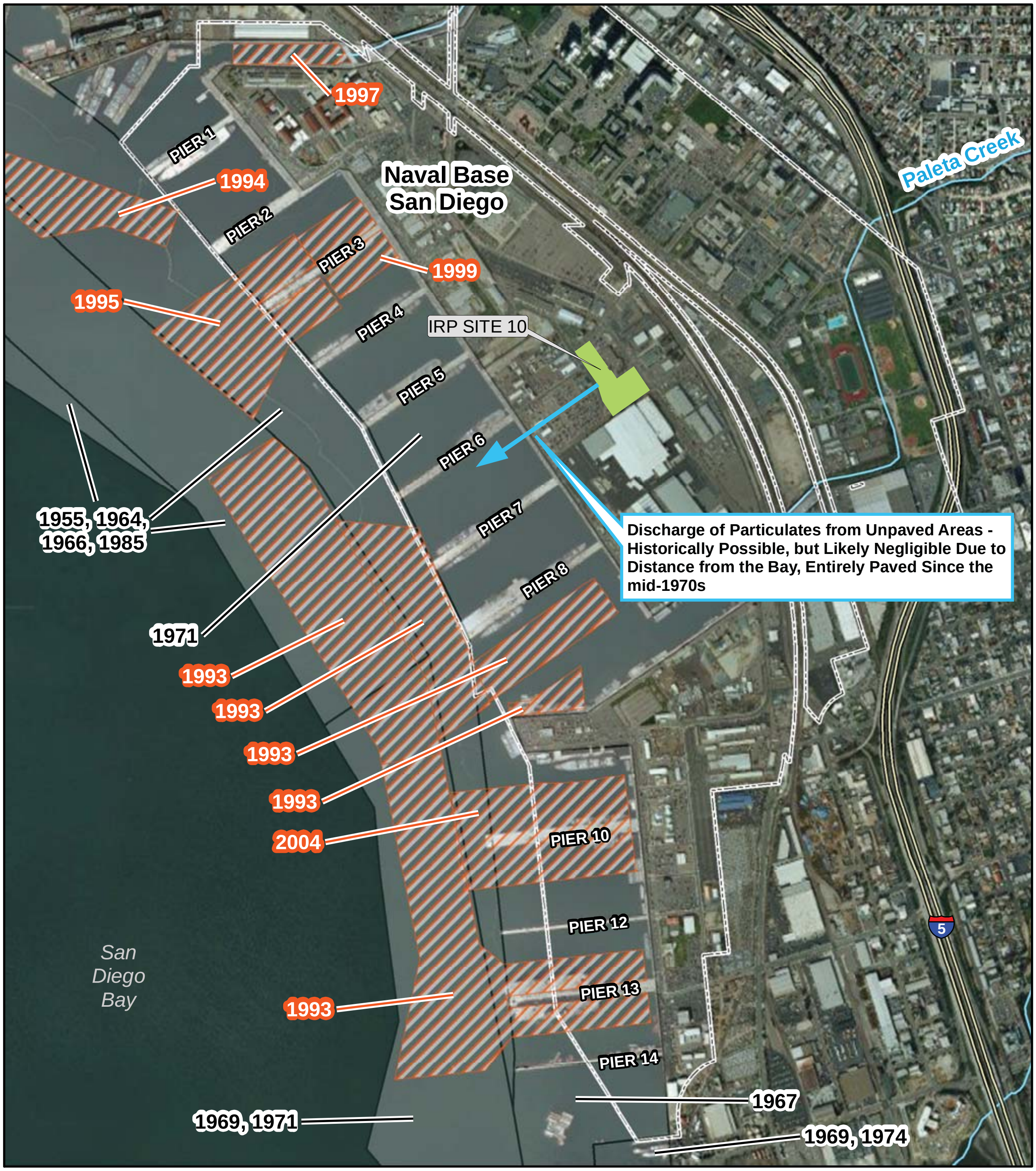


FIGURE 3-15
Timeline for IRP Site 9
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 10
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

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FIGURE 3-16
Conceptual Site Model of IRP Site 10
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

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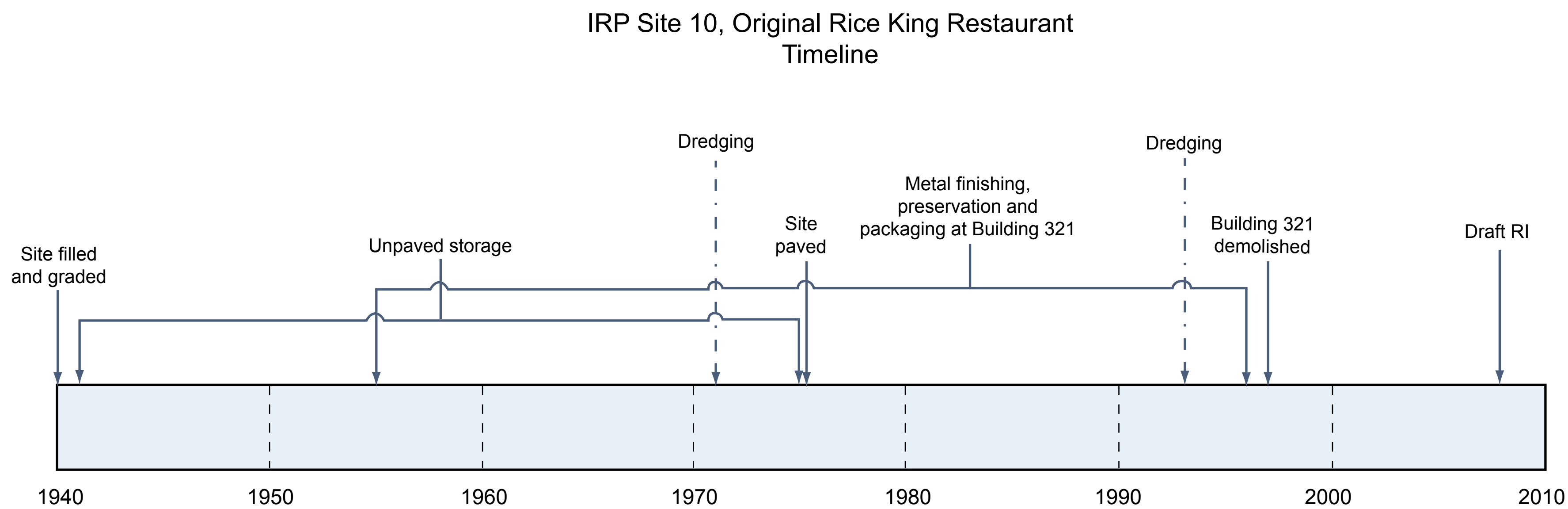
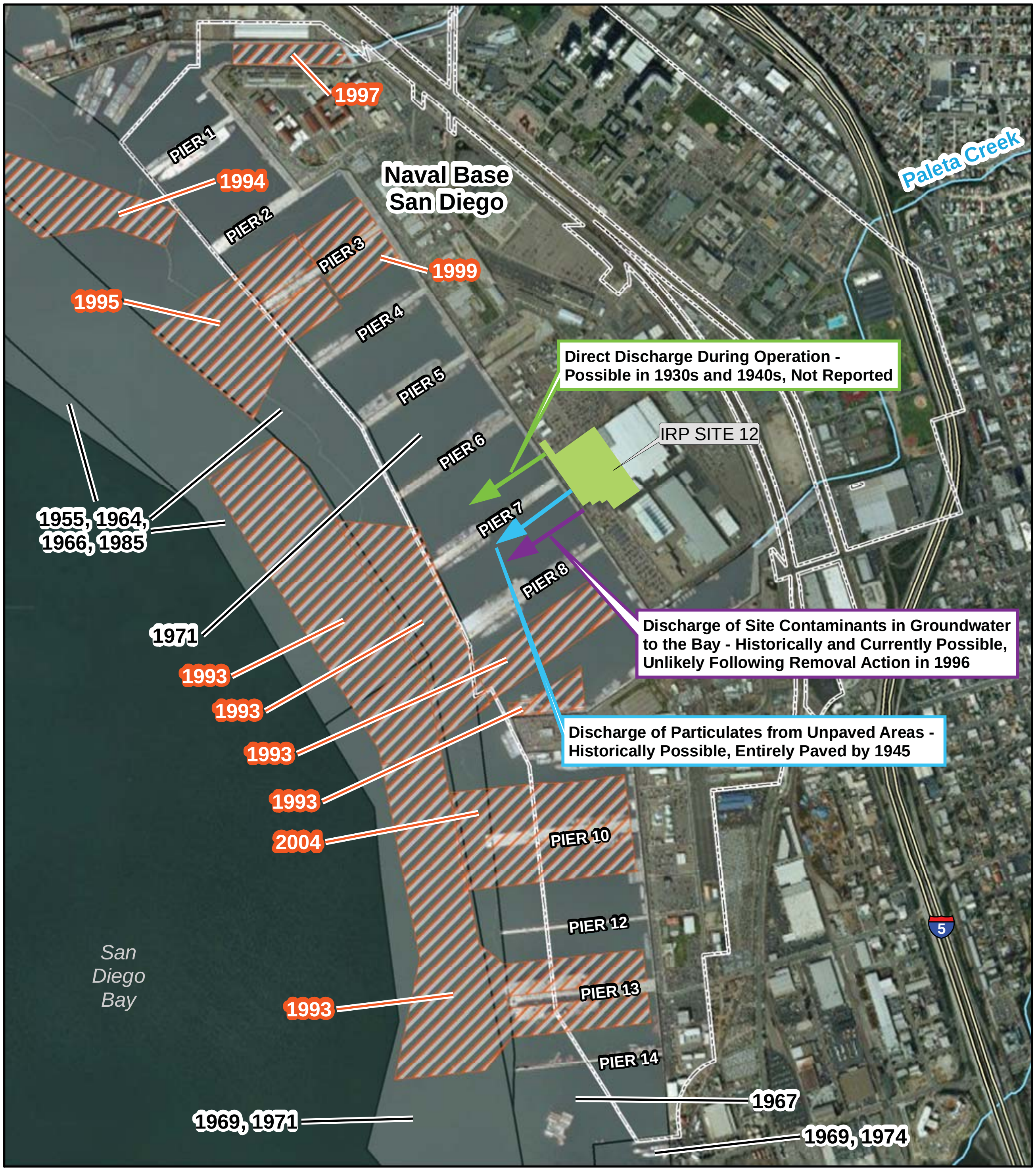


RI - Remedial Investigation

FIGURE 3-17
Timeline for IRP Site 10
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 12
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

N

CH2MHILL
TREVET
SPAWAR Systems Center PACIFIC

FIGURE 3-18
Conceptual Site Model of IRP Site 12
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

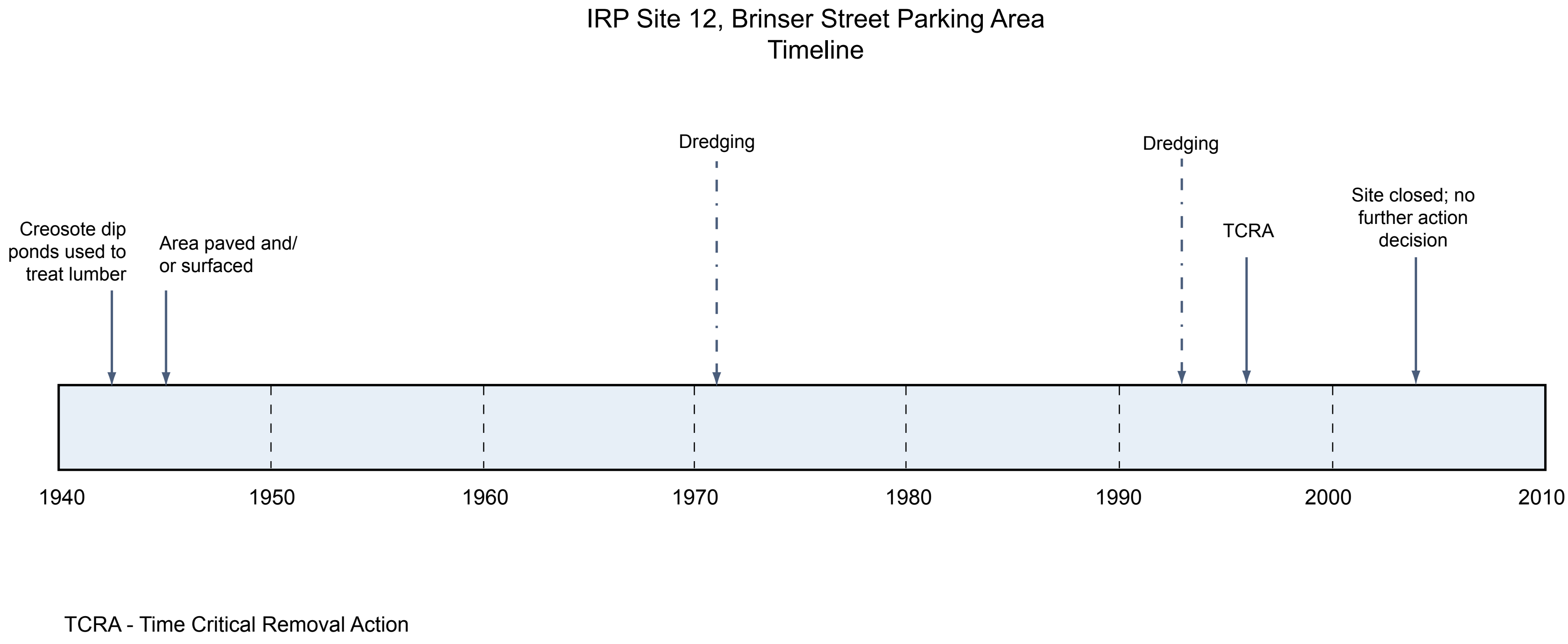


FIGURE 3-19
Timeline for IRP Site 12
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

LEGEND

- Direct Discharge Transport Pathway
- Particulate Transport Pathway (Surface Runoff and Windblown Transport
- Groundwater Discharge Transport Pathway
- IRP Site 13
- Known San Diego Bay Dredging - Post 1990
- Known San Diego Bay Dredging - Post 1950
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

0 675 1,350
Feet

N

CH2MHILL

TREVET

SPAWAR Systems Center PACIFIC

FIGURE 3-20
Conceptual Site Model of IRP Site 13
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

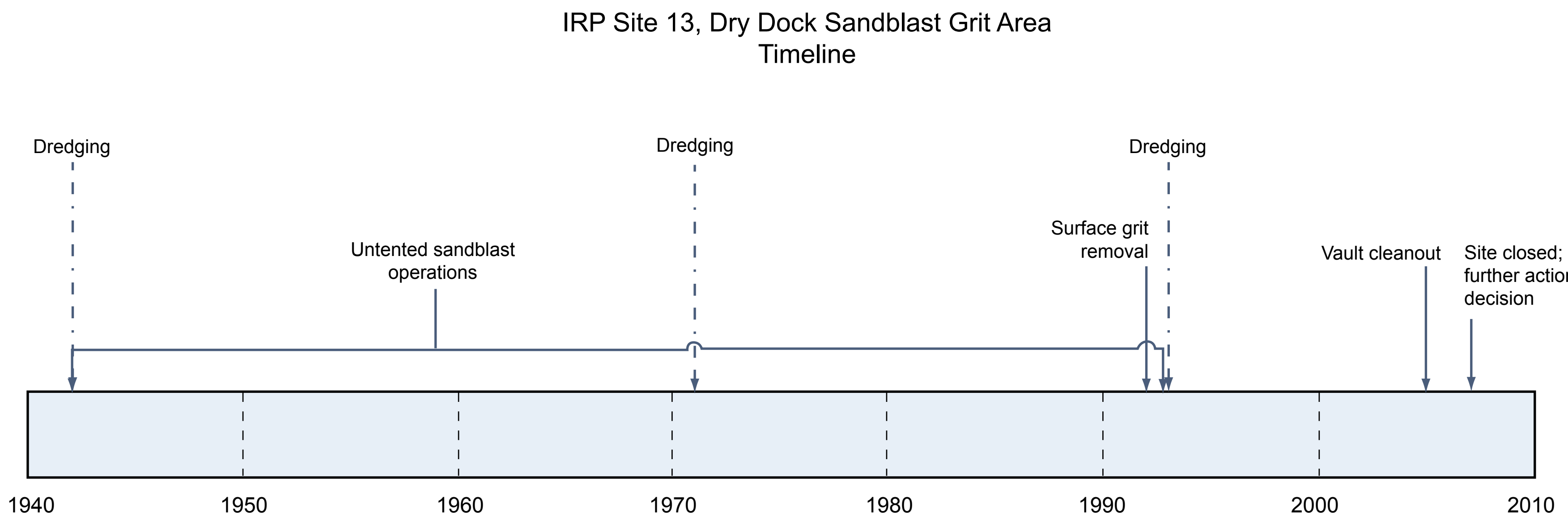


FIGURE 3-21
Timeline for IRP Site 13
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

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SECTION 4

Evaluation of Sediment Contaminant Data

Based on the IRP site evaluation presented in Section 3, three areas of San Diego Bay adjacent to NBSD have been identified where a COC transport pathway may have existed from an IRP site to the bay:

- Paleta Creek Channel and Mouth—based on historical pathways to this area from IRP Sites 2, 3, and 4.
- Vicinity of Piers 10 and 12, south of Paleta Creek—this area may have received direct discharges from IRP Site 1, the former ship repair basins, when they were active in the 1940s.
- Graving dock area in the vicinity of Piers 5 and 6—this area received direct discharges from IRP Site 7, the former sewage treatment plant, and a historical pathway from IRP Site 13 to this area may have existed.

Analytical data for sediment samples collected from San Diego Bay adjacent to NBSD and the Shipyard Sediment Site were compiled and reviewed to assess potential influences from the IRP sites to the three areas identified above and to determine whether the COC concentrations and distribution patterns in sediment are consistent with potential transport from NBSD to the Shipyard Sediment Site.

The sediment contaminant data evaluation focused on the primary and secondary COCs for the Shipyard Sediment Site that were identified in the DTR (RWQCB, 2010b). Alternative cleanup levels were developed for the following primary COCs: copper, mercury, HPAHs, total PCB congeners, and tributyltin (TBT). The secondary COCs are arsenic, cadmium, lead, and zinc. All of these COCs tend to adsorb to fine-grained sediment particles and organic matter that accumulate in relatively low-energy areas of a water body and tend to persist in the aquatic environment for a long period of time. In low-energy hydrodynamic environments such as the nearshore areas at NBSD and the Shipyard Sediment Site, COC concentrations in sediment tend to be highest closest to the source. Sediments may be periodically resuspended and gradually dispersed, resulting in a contaminant concentration gradient away from the source. As noted in Section 2.1.2, the low tidal-current velocities adjacent to NBSD are insufficient to erode the sediment bed, and ship movements are believed to be the primary mechanism for resuspending sediment.

Conceptual diagrams of chemical concentration gradients in sediment are shown in Figure 4-1. If a single source area is present (i.e., Figures 4-1a and 4-1b), then chemical concentrations in sediment will decrease with increasing distance from the source area. If two source areas are present at adjacent sites (i.e., Figure 4-1c), then chemical concentrations will decrease with increasing distance from each site, and an area of relatively lower concentrations will be present between the sites. COC concentration gradients at NBSD and the Shipyard Sediment Site were compared to these generalized models.

Because contamination that can be attributed to historical releases from IRP sites is difficult to differentiate from contamination from other potential sources, overall COC distribution patterns in sediments in the three areas adjacent to the IRP sites were evaluated without regard to a specific source. For this evaluation, sediment chemistry data from multiple studies performed from the late 1980s through 2009 were compiled. The data sets included in the evaluation are listed in Table 4-1, and the sample locations are shown in Figure 4-2. The analytical data used in the evaluation are provided in Appendix D. Because of a paucity of subsurface sediment core data for areas adjacent to IRP sites, the evaluation focused on surface sediment samples representing depth intervals ranging from 2 cm to 10 cm. COC distribution maps in surface sediment were prepared for each of the primary and secondary COCs. In addition, SWACs for each COC in the three areas adjacent to IRP sites and in the proposed remediation footprint defined in the CAO for the Shipyard Sediment Site were calculated and compared. Thiessen polygons were constructed for each of the nine primary and secondary COC data sets using a geographic information system (GIS). Thiessen polygons are polygons whose boundaries define the area closest to each point relative to all other points. The boundaries of the three areas adjacent to IRP sites (Paleta Creek channel and mouth, Piers 10 and 12, and Piers 5 and 6) and the proposed remediation footprint at the Shipyard Sediment Site were superimposed on the polygons, and the corresponding area and COC concentration of each polygon or partial polygon within the area was determined. The SWAC for each area was then calculated using the following equation:

$$\text{SWAC} = \sum A_i / A_t \times C_i$$

Where

A_i = area of the polygon or partial polygon
A_t = total area
C_i = COC concentration of the sample within the polygon

A map showing the Thiessen polygons and areas for which SWACs were calculated for one COC (copper) is shown in Figure 4-3. Additional maps of the Thiessen polygons constructed for the remaining COCs are provided in Appendix E.

Because of the lack of detailed sediment core data for NBSD, surface sediment chemistry data were also compared to data collected for dredged material characterization studies in the three areas adjacent to IRP sites to assess whether COC concentrations at depth appear to be substantially different than surface concentrations. For dredging characterization studies, composite sediment samples representing the volume of sediment proposed for dredging are tested to help determine suitable disposal options. In some cases, a composite sample is collected from a single location, from the sediment surface to the specified dredge depth. In other cases, sediments from multiple cores collected to the specified dredge depth are combined to form a composite that represents an area targeted for dredging. The data sets used for this comparison are identified in Table 4-1, and the composite sediment sample locations are shown in Figure 4-4. The composite sediment data used in this evaluation are provided in Appendix F.

In addition to COC distribution mapping and calculation of SWACs, additional lines of evidence that are presented in the Apportionment Report (Appendix B) to evaluate the potential for transport of COCs from NBSD to the Shipyard Sediment Site are also summarized in this section.

4.1 Surface Sediment Adjacent to IRP Sites

The distributions and concentrations of the primary and secondary COCs identified for the Shipyard Sediment Site in each of the three areas adjacent to IRP sites at NBSD are described below.

4.1.1 Copper

Figure 4-5 depicts the concentrations of copper in surface sediment samples collected between 1992 and 2009 in the vicinity of NBSD and the Shipyard Sediment Site. Copper concentrations do not show a discernable gradient in the Paleta Creek channel and mouth area. Copper concentrations between Piers 10 and 12 and Piers 5 and 6 are higher near the shoreline (generally between 251 and 500 mg/kg) and decrease with increasing distance from the shoreline (less than 250 mg/kg), indicative of an onshore or nearshore source of copper. Overall, copper concentrations decrease with increasing distance from the shoreline at both NBSD and the Shipyard Sediment Site and are lower between the two sites, which is consistent with the two-source area pattern shown in Figure 4-1c.

Table 4-2 is a comparison of SWACs within each of the three areas adjacent to IRP sites at NBSD, within the entire Shipyard Sediment Site (i.e., the preremedy SWACs), and within the Shipyard Sediment Site proposed remediation footprint. Background levels for San Diego Bay as defined in the DTR are also shown. For copper, the SWACs within the three areas adjacent to IRP sites are similar to or higher than the overall (preremedy) copper SWAC for the Shipyard Sediment Site, but lower than the SWAC for the proposed remediation footprint. The relatively high SWAC in the proposed remediation footprint compared to the SWACs in the areas adjacent to IRP sites , in conjunction with the observed concentration gradients, indicate that the elevated copper concentrations within the proposed remediation footprint are derived from local sources (i.e., industrial activities immediately adjacent to the Shipyard Sediment Site).

4.1.2 Mercury

Figure 4-6 depicts the concentrations of mercury in surface sediment samples collected between 1992 and 2008 in the vicinity of NBSD and the San Diego Shipyard Sediment Site. Mercury concentrations in the Paleta Creek channel and mouth area are generally less than 0.71 mg/kg, and no concentration gradients are apparent. Mercury concentrations are generally higher (between 0.71 and 1 mg/kg) between Piers 10 and 12 and Piers 5 and 6 than in the Paleta Creek channel and mouth area. Concentrations are variable, and discernable gradients are not present within the three areas adjacent to IRP sites, although overall concentrations are lower (less than 0.71 mg/kg) in the main channel to the west relative to the pier areas. Mercury concentrations decrease with increasing distance from the shoreline at the Shipyard Sediment Site, and concentrations are lower between NBSD and the Shipyard Sediment Site, which is consistent with the two-source area pattern shown in Figure 4-1c.

The SWAC for the Paleta Creek channel and mouth area is lower than the SWAC for the entire Shipyard Sediment Site, whereas the SWACs for Piers 5 and 6 and Piers 10 and 12 are similar to or higher than the Shipyard Sediment Site SWAC (Table 4-2). The SWACS within all three areas adjacent to the IRP sites at NBSD are lower than the SWAC for the Shipyard Sediment Site proposed remediation footprint. These SWACs, in conjunction with the lack of an overall concentration gradient from NBSD to the Shipyard Sediment Site, indicate that the elevated mercury concentrations within the Shipyard Sediment Site proposed remediation footprint are derived from localized sources.

4.1.3 Tributyltin

The distribution of TBT in surface sediments adjacent to NBSD and the Shipyard Sediment Site is shown in Figure 4-7. This map shows that TBT concentrations overall are substantially lower adjacent to NBSD compared to the Shipyard Sediment Site. This distribution pattern is consistent with the single-source area model shown in Figure 4-1a. TBT was historically released to San Diego Bay sediment as a result of (1) passive leaching of TBT-containing antifouling paints; (2) discharge from shipyards and boatyards performing hull maintenance activities, including paint removal; and (3) in-water hull-cleaning activities of vessels throughout San Diego Bay. TBT was introduced into the marine environment in the 1960s as a biocide in marine paints. By the 1980s, TBT was in use on approximately 90 percent of commercial, ocean-going vessels in the U.S., including San Diego Bay. However, the Navy painted less than 5 percent of its fleet with TBT-containing paint (Navy and USEPA, 1997). Only two vessels with TBT-containing paint, the United States Ship (USS) *Meyerkord* and the USS *Marvin Shields*, were home ported in San Diego (R. Fransham, personal communication, 18 March 2010). As such, only limited TBT release from Navy vessels occurred at NBSD.

Because the paint was not applied at NBSD and was used only on wetted hull surfaces, its use and/or disposal did not routinely occur at the IRP sites. This has been confirmed by significant sampling at IRP Sites 1, 2, 4, 10, and 13. Soil sampling and analysis of 71 soil samples at IRP Site 1 during the IRP Site 1 RI indicated that all 71 samples contained nondetectable concentrations of TBT (BEI, 2008a). Soil sampling and analysis of 233 soil samples at IRP Site 2 during the IRP Site 2 RI indicated that only 5 of 233 samples contained detectable concentrations of TBT, with a maximum concentration of 5.5 µg/kg (BEI, 2008c). Soil sampling and analysis at IRP Site 4 during the IRP Site 4 RI indicated that TBT was not detected in any of the 28 soil samples analyzed for TBT (BEI, 2008f). TBT was detected in 7 of 72 IRP Site 10 soil samples with a maximum concentration of 1.7 µg/kg (BEI, 2008g), and in 18 of 84 soil samples from IRP Site 13 (BEI, 2006). These soil sample results indicate that the IRP sites are not significant source areas for TBT.

The SWACs for TBT presented in Table 4-2 indicate that concentrations in sediment adjacent to the Shipyard Sediment Site are substantially higher than those measured in the three areas adjacent to IRP sites at NBSD. The minimal use of TBT-containing paints by the Navy and the relatively low concentrations of TBT in sediments adjacent to NBSD compared to the Shipyard Sediment Site indicate that NBSD is not a source of TBT to the Shipyard Sediment Site.

4.1.4 High Molecular Weight PAHs

Figure 4-8 depicts the concentrations of HPAHs in surface sediment samples collected between 1995 and 2009 in the vicinity of NBSD and the Shipyard Sediment Site. HPAH concentrations in the Paleta Creek channel and mouth area are variable, and no concentration gradient that would indicate a specific source of PAHs is apparent. Between Piers 5 and 6 and Piers 10 and 12, HPAH concentrations appear to decrease with increasing distance from the shoreline, although few samples have been collected between Piers 5 and 6.

The distribution of HPAHs at the Shipyard Sediment Site appears significantly different between the southern (NASSCO leasehold) portion of the site and the northern (BAE leasehold) portion of the site. All sediment samples containing in excess of 6,000 µg/kg HPAH within the proposed remediation footprint are located in the northern portion of the footprint, indicating that the HPAHs are associated with a localized source to the north.

Overall, HPAH concentrations are relatively higher closer the shorelines of NBSD and the Shipyard Sediment Site, and are relatively lower (i.e., less than 2,000 µg/kg) between the two sites, which is consistent with the two-source area model shown in Figure 4-1c.

The SWACs presented in Table 4-2 indicate that concentrations in the Paleta Creek channel and mouth area and between Piers 10 and 12 are generally similar to those at the Shipyard Sediment Site overall, but are lower than the SWAC in the Shipyard Sediment Site proposed remediation footprint. The SWAC between Piers 5 and 6 is higher, although it is based on multiple samples collected within the same area near the shoreline.

The lack of an HPAH concentration gradient from NBSD to the Shipyard Sediment Site and the relatively lower HPAH concentrations in sediment in two of the three areas adjacent to IRP sites at NBSD relative to those in the Shipyard Sediment Site proposed remediation footprint indicate that the IRP sites are not a source of HPAH to the Shipyard Sediment Site.

4.1.5 Total PCB Congeners

Figure 4-9 depicts the concentrations of total PCB congeners in surface sediment samples collected between 1992 and 2008 in the vicinity of NBSD and the Shipyard Sediment Site. As with the other COCs, PCB concentrations within the Paleta Creek channel and mouth area are variable and do not show a concentration gradient indicative of a specific PCB source. PCB concentrations between Piers 10 and 12 decrease with increasing distance from the shoreline. PCB concentrations between Piers 5 and 6 also are variable, with no well-defined concentration gradient. As with HPAHs, PCB concentrations within the northern portion of the Shipyard Sediment Site proposed remediation footprint are substantially higher than those in the southern portion of the footprint, suggesting a localized source of PCBs.

Overall, total PCB congener concentrations are relatively higher closer the shorelines of NBSD and the Shipyard Sediment Site, and relatively lower (i.e., less than 200 µg/kg) between the two sites, which is consistent with the two-source area model shown in Figure 4-1c.

The SWACs for PCBs in each of the three areas adjacent to the IRP sites are lower than both the overall SWAC for the Shipyard Sediment Site and the SWAC for the proposed remediation footprint. The lower overall concentrations in areas adjacent to the IRP sites compared to the Shipyard Sediment Site as well as the absence of a concentration gradient from north to south indicate that the IRP sites are not the source of PCBs to the Shipyard Sediment Site.

4.1.6 Secondary Contaminants of Concern

Figures 4-10 through 4-13 show the distributions of arsenic, cadmium, lead, and zinc, respectively, in surface sediment samples collected between 1992 and 2009 adjacent to NBSD and the Shipyard Sediment Site. The same general distribution patterns are apparent for all of these COCs. In the areas adjacent to the IRP sites (Piers 5 and 6, Paleta Creek channel and mouth, and Piers 10 and 12), concentrations are generally higher within the channel or pier heads than in the main channel to the west, but no strong concentration gradients that would suggest a specific source are apparent within the areas. Overall, concentrations decrease with increasing distance from the shoreline at both NBSD and the Shipyard Sediment Site, and relatively lower concentrations are found between the two sites, which is consistent with the two-source area model shown in Figure 4-1c. The SWACs for arsenic, lead, and zinc in the areas adjacent to the IRP sites are all lower than the SWACs for the Shipyard Sediment Site proposed remediation footprint (Table 4-2). The SWAC for cadmium in the Paleta Creek channel and mouth area is lower than the SWAC for the proposed remediation footprint at the Shipyard Sediment Site, but the SWACs for Piers 5 and 6 and Piers 10 and 12 are slightly higher.

Based on the absence of concentration gradients from NBSD to the Shipyard Sediment Site and the relatively lower concentrations of arsenic, lead, and zinc in sediments adjacent to the IRP sites relative to those in the Shipyard Sediment Site, the IRP sites are unlikely to be the source of these COCs at the Shipyard Sediment Site.

4.2 Composite Sediment Data

The SWAC for each COC in the three areas adjacent to IRP sites was also compared to the average COC concentration in composite sediment samples collected in the same area to provide a general indication of whether historical contamination levels were substantially higher than recent levels. The average concentrations in surface and composite sediment samples from the same area are presented in Table 4-3. Minimal data were available for the Piers 5 and 6 area and for total PCB congener concentrations at depth. Nevertheless, the available data provide a general indication of historical COC concentrations relative to surface concentrations over the past 20 years.

For the Piers 5 and 6 area, only mercury data were available. The average mercury concentration in sediments at depth is similar to the surface concentration. In the Paleta Creek area, subsurface concentrations are slightly higher (i.e., by less than a factor of 1.5) for copper, mercury, HPAH, and zinc and approximately the same for arsenic. The average concentrations of cadmium and lead are more than two times higher at depth. In the Piers 10 and 12 area, average COC concentrations at depth appear to be lower than average concentrations at the surface. Based on these results, there is no evidence that substantially higher COC concentrations were historically present in the three areas adjacent to IRP sites.

4.3 Other Comparisons of Sediment Data from NBSD and the Shipyard Sediment Site

In the Apportionment Report (Appendix B), the Navy evaluated several lines of evidence based on sediment chemistry data to assess the potential transport of contaminants from NBSD to the Shipyard Sediment Site (i.e., Pathway 3; releases directly from operations within NBSD into San Diego Bay, with subsequent transport to and dispersion to other parts of the bay, including the Shipyard Sediment Site). These lines of evidence indicate the following:

- Spatial patterns and gradients of TBT, PCBs, copper, and mercury in sediment are not consistent with transport from the NBSD area to the Shipyard Sediment Site area. Concentrations in sediments at both NBSD and the Shipyard Sediment Site decrease with increasing distance from the shoreline, with lower concentrations present in the main channel relative to the nearshore areas. These observations are consistent with the analysis presented in Section 4.1 of this report, which is based on a larger data set.
- TBT concentrations are at least an order of magnitude higher at the Shipyard Sediment Site than at NBSD. This observation is also corroborated by the information presented in Section 4.1 of this report.
- Chemical fingerprints in sediment samples indicate clear differences in signatures in sediments adjacent to NBSD and those adjacent to the Shipyard Sediment Site, as follows:
  - Arsenic, cadmium, copper, lead, zinc, and PCBs are significantly correlated with TBT in sediments at the Shipyard Sediment Site. This co-occurrence suggests that these contaminants are derived from the same source. TBT is a Shipyard Sediment Site-specific contaminant, and concentrations are an order of magnitude lower at NBSD.
  - Principal component analysis of PCB congener data differentiated two different sources of PCBs at the Shipyard Sediment Site, one at the northern end and one at the southern end. This difference in signature is consistent with the spatial distribution of PCBs at the Shipyard Sediment Site (i.e., substantially higher PCB concentrations at the northern end of the site, consistent with a localized source) (Figure 4-9).

These lines of evidence are presented in detail in Appendix B.

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TABLE 4-1
Summary of Data Sets Used in Sediment Chemistry Data Evaluation
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

Project Name	Sample Collection Dates	Sample Depth Interval (cm)	Reference	Metals	HPAHs	PCB Aroclors	PCB Congeners	Butyltins
Surface Sediment Samples								
Bay Protection and Toxic Cleanup Program	1992–1996	0–2	CWRCB et al., 1996 and 1998	X	X	—	X	X
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement—U.S. Naval Station	1994	0–2	SAIC, 1995	X	NA[a]	NA[a]	—	—
Mouth of Chollas and Paleta Creeks	2001	0–2	SCCWRP and Navy, 2005	X	X	—	X	—
NAVSTA TMDL	2008	0–2	Report in progress	X	X	—	X	X
PRISM 2002	2002	0–2	SPAWAR, 2006a	X	X	—	—	—
PWC Graving Dock Naval Station NPDES Data	1993–2009	0–7	Provided by NAVFAC SW	X	X	X	—	X
Sediment Quality Characterization Naval Station San Diego	1995–1997	0–10	Chadwick et al., 1999	X	X	—	X	—
Shipyard Sediment Site	2001–2002	0–2	Exponent, 2003	X	X	X	X	X
Studies Supporting an Environmental Risk Assessment of San Diego Bay	1993	0–6	Anderson, 1994	X	X	X	—	—
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	1986–1992	0–2	MESO, 1995	—	—	—	—	X
Upstream Paleta Creek	2004	assume 0–2	SPAWAR, 2006b	X	X	—	X	—

TABLE 4-1
Summary of Data Sets Used in Sediment Chemistry Data Evaluation
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

Project Name	Sample Collection Dates	Sample Depth Interval (cm)	Reference	Metals	HPAHs	PCB Aroclors	PCB Congeners	Butyltins
Composite Sediment Samples [b]								
Sediment Chemistry Results for NAVSTA San Diego	1992	NA	Navy, 1994	X	X	X	—	X
Sediment Characterization Study Pier and Berthing Areas	1993	Variable; up to 277 cm	Navy, 1994	Hg only	—	—	—	—
2004 Paleta Creek Sediment Characterization Study	2004	Variable; up to 305 cm	Navy, 2004b	X	X	X	—	X
P-326 Preliminary Sediment Characterization Study	1997	Variable; up to 229 cm [c]	Navy, 2000	X	X	—	—	—
P-326 2000 Study	2000	Variable; up to 305 cm	Navy, 2000	X	X	X	—	X
P-327 Phase I Study	2005	Variable; up to 259 cm	Navy, 2005	X	X	X	—	X
P-327 Phase II Study	2005	Variable; up to 305 cm	Navy, 2006	X	X	X	—	X
P-327 Phase III Study	2008	Variable; up to 320 cm	Navy, 2009	X	X	X	X	X

Notes:
HPAH – high-molecular-weight polynuclear aromatic hydrocarbons; NA – not available; NAVFAC SW – Naval Facilities Engineering Command Southwest Division; NAVSTA – Naval Station; NPDES – National Pollutant Discharge Elimination System; PCB – polychlorinated biphenyl; PRISM – pathway ranking for in place sediment management; PWC – Public Works Center; TMDL – total maximum daily load.

[a] PAH and PCB Aroclor data provided in report but not in database; constituents were infrequently detected and no detection limit information is available.
[b] Only data for samples within the Pier 5-6, Paleta Creek mouth, and Pier 10-12 areas were included in the analysis.
[c] Based on core locations 30 through 42.

TABLE 4-2
Summary of Surface-Weighted Average Concentrations of Contaminants of Concern in Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

	Surface-Weighted Average Concentration					
Contaminant of Concern	**Piers 5–6**	**Paleta Creek**	**Piers 10–12**	**Shipyard Sediment Site Preremedy[a]**	**Shipyard Sediment Site Proposed Remediation Footprint**	**Background[a]**
Copper (mg/kg)	263	149	256	187	424	121
Mercury (mg/kg)	0.76	0.50	1.06	0.75	1.30	0.57
TBT (µg/kg)	13	95	51	162	545	22
HPAHs (µg/kg)	9,148	2,845	4,507	3,509	7,530	663
Total PCBs (µg/kg)	213	179	210	308	1,033	84
Arsenic (mg/kg)	12.1	8.1	8.3	9.4	16.7	7.5
Cadmium (mg/kg)	0.71	0.39	0.75	0.28	0.60	0.33
Lead (mg/kg)	86	62	70	73	122	53
Zinc (mg/kg)	315	242	301	252	556	192

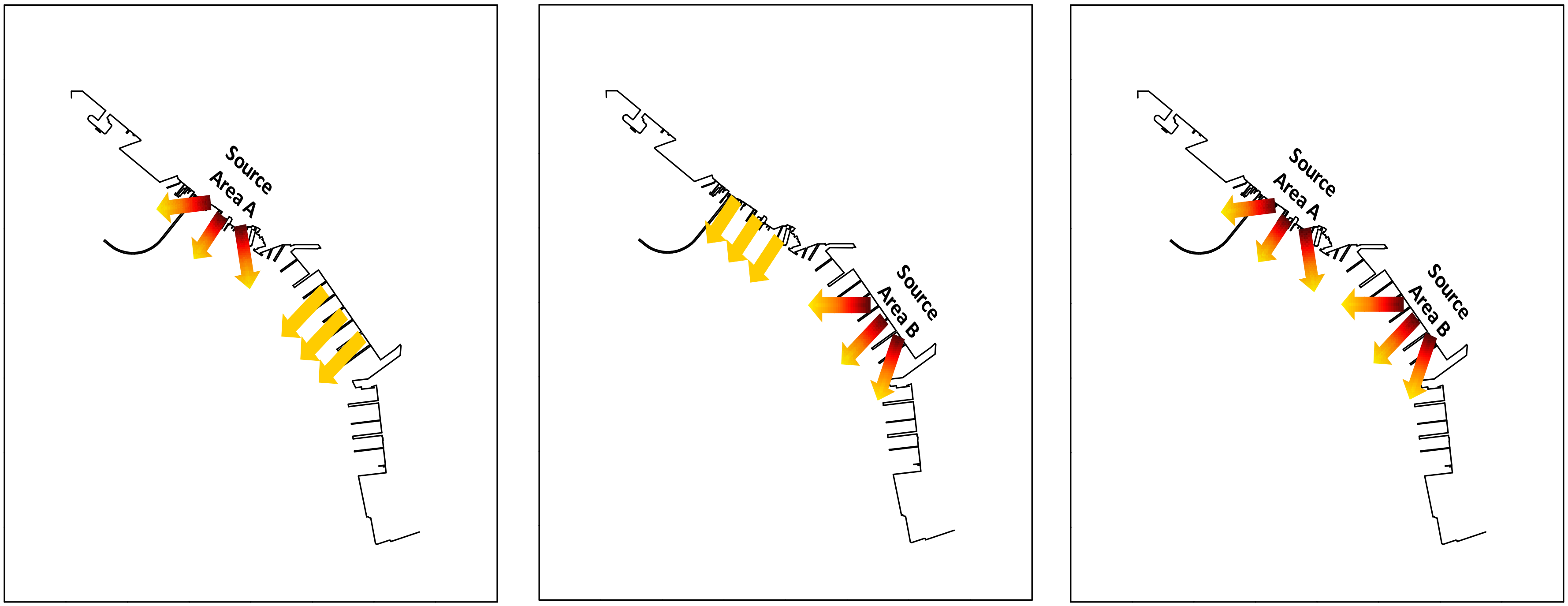
Note:
[a] Draft Technical Report (RWQCB, 2010b).

TABLE 4-3
Comparison of Contaminant Concentrations in Surface Sediment and Composite Sediment Samples
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

Contaminant of Concern	Piers 5–6		Paleta Creek		Piers 10–12	
	SWAC	**Composite Average**	**SWAC**	**Composite Average**	**SWAC**	**Composite Average**
Copper (mg/kg)	263	NA	149	168	256	73
Mercury (mg/kg)	0.76	0.69	0.50	0.64	1.06	0.40
TBT (µg/kg)	13	NA [a]	95	NA [b]	51	NA [c]
HPAHs (µg/kg)	9,148	NA [a]	2,845	3,686	4,507	482
Total PCBs (µg/kg)	213	NA [a]	179	NA	210	99 [d]
Arsenic (mg/kg)	12.1	NA [a]	8.1	7.4	8.3	4.0
Cadmium (mg/kg)	0.71	NA [a]	0.39	1.6	0.75	0.57
Lead (mg/kg)	86	NA [a]	62	132	70	24
Zinc (mg/kg)	315	NA [a]	242	352	301	147

Notes:
SWAC – surface weighted average concentration; NA – not available; TBT – tributyltin; HPAH – high-molecular-weight polynuclear aromatic hydrocarbon; PCB – polychlorinated biphenyl.

[a] No data available.
[b] Not calculated due to low frequency of detection (32 percent).
[c] Not calculated due to low frequency of detection (15 percent).
[d] Based on two composite samples; one PCB congener detected in one sample and seven PCB congeners detected in the other sample.



A. Chemical concentration gradient – Source Area A

B. Chemical concentration gradient – Source Area B

C. Chemical concentration gradients – Source Areas A and B

Explanation: Source areas are onshore or nearshore local sources of contamination. The color of the arrow represents the chemical concentration in sediment; red represents a relatively high concentration, orange a moderate concentration, and yellow a relatively low concentration. The direction of the arrow represents the direction of the chemical concentration gradient.

FIGURE 4-1
Conceptual Diagram of Chemical Concentration Gradients
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

VICINITY MAP

LEGEND

San Diego Bay Sample Locations

- Bay Protection and Toxic Cleanup Program
- Draft Final Survey Report, Support of Task A - Environmental Impact Statement; Naval Base San Diego
- NASSCO and Southwest Marine Detailed Sediment Investigation
- NAVSTA TMDL 2008
- PWC Graving Dock NPDES Permit
- Paleta Creek Sediment Investigation
- Pathway Ranking for In-place Sediment Management (PRISM)
- Sediment Assessment Study for the Mouths of Chollas and Paleta Creeks
- Sediment Quality Characterization; Naval Base San Diego
- Studies Supporting an Environmental Risk Assessment of San Diego Bay
- U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors
- Shipyard Leasehold Areas, 2004
- United States Naval Base San Diego
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Freeways
- Watercourses

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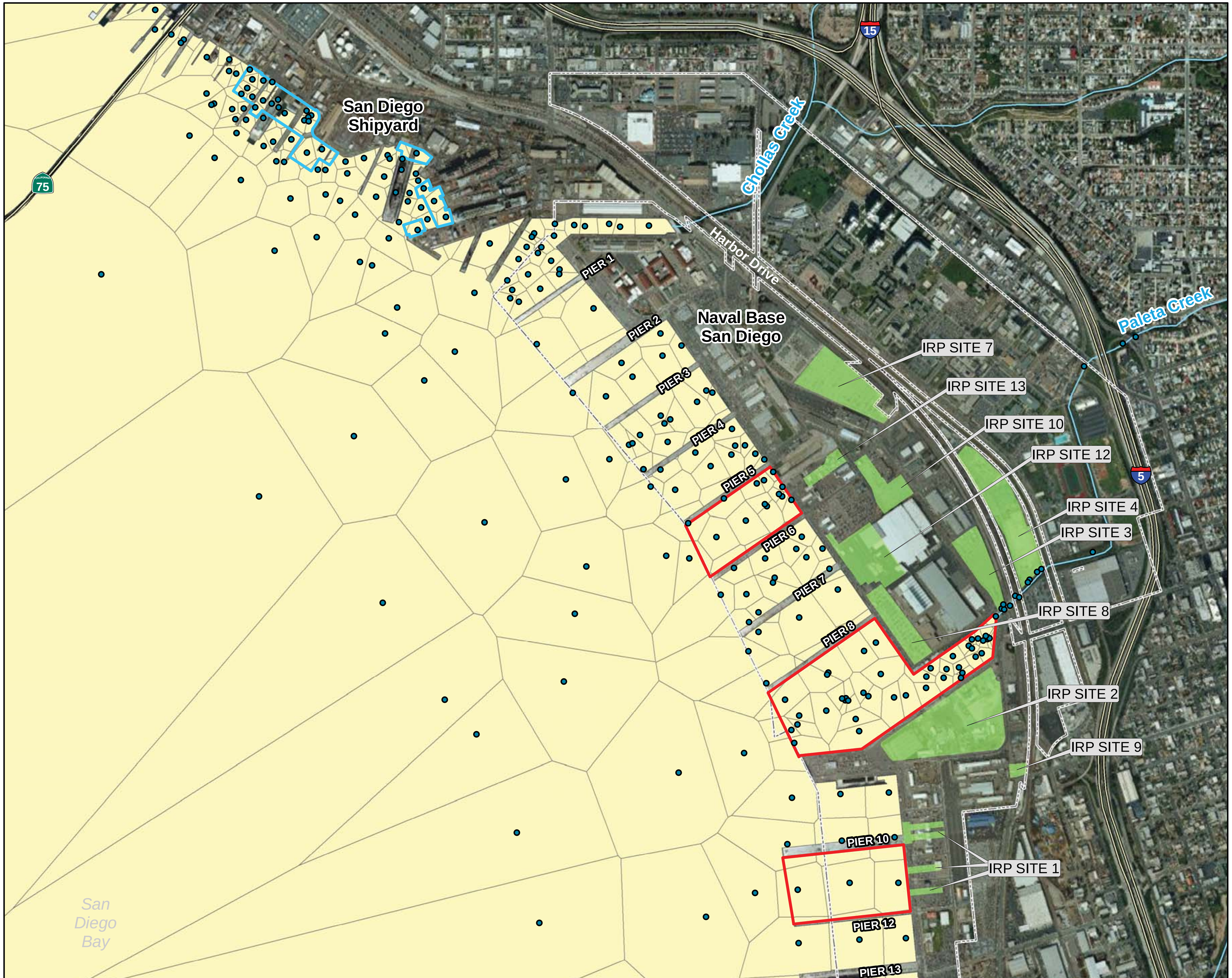
FIGURE 4-2
Sample Locations Included in Surface Sediment Contaminant Data Analysis
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

\\ICONIA\PROJECTS\US_NAVY\388185_NBSD\GIS\SHIPYARDSEDIMENTSITE\MAPFILES\NBSD_SD_RESPONSEREPORT_FIG4_2_SAMPLEPOINTS.MXD SWOLFSKI 6/22/2010 14:14:53



LEGEND
- Representative Sample Points
- Representative Thiessen Polygon Dataset
- Naval Base San Diego Areas of Interest Near IRP Sites
- Shipyard Sediment Site Proposed Remediation Footprint
- Freeways
- Watercourses

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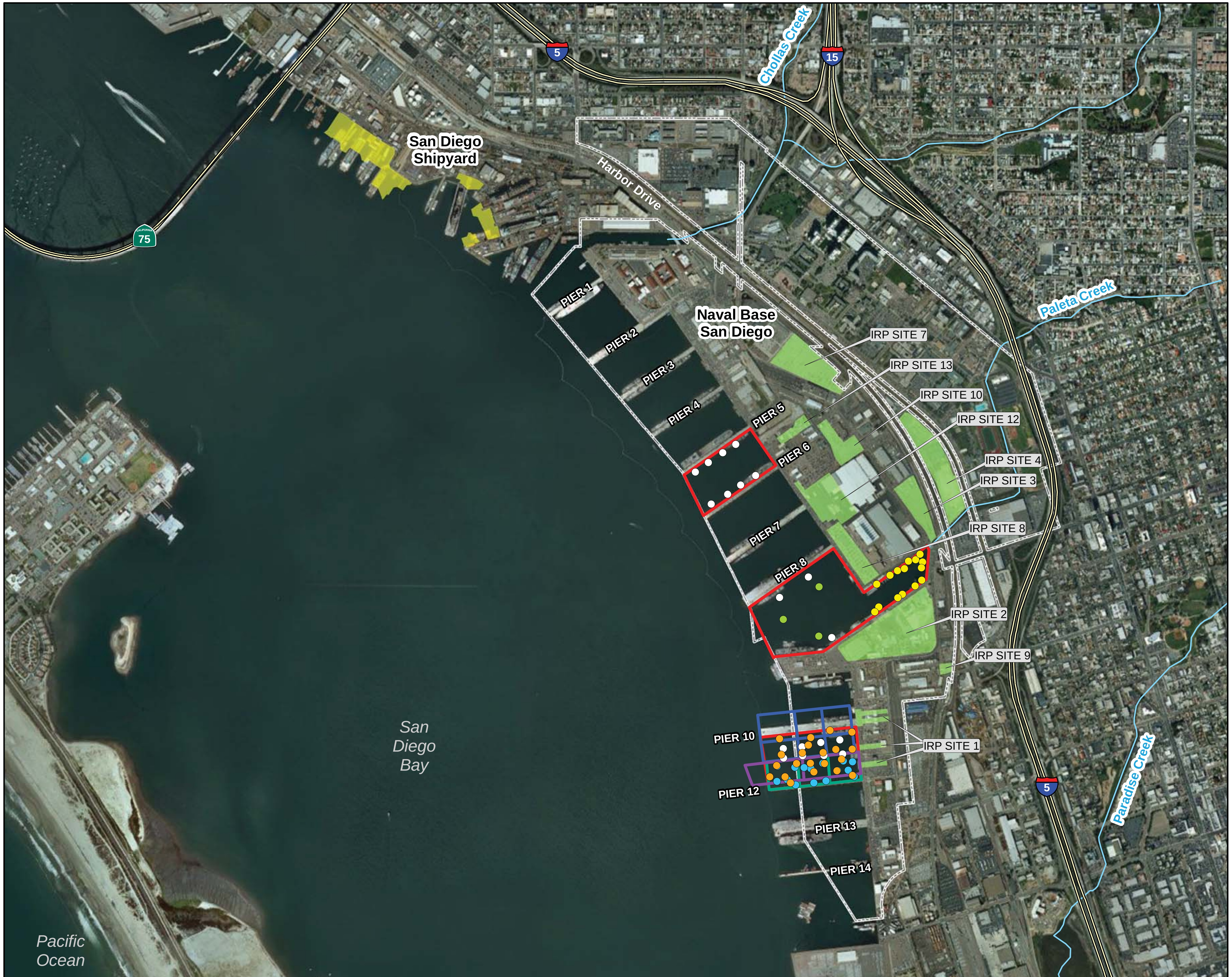
FIGURE 4-3
Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



VICINITY MAP

LEGEND

- 2004 Paleta Creek Sediment Characterization Study
- P-326 1997 Preliminary Sediment Characterization Study
- P-327 Pier 12 Phase I Study
- Sediment Characterization Study Pier and Berthing Areas
- Sediment Chemistry Results for Naval Base San Diego
- P-326 2000 Study Composite Area
- P-327 Pier 12 Phase I Study Composite Area
- P-327 Pier 12 Phase II and Phase III Study Composite Area
- Naval Base San Diego Areas of Interest Near IRP Sites
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Shipyard Sediment Site Proposed Remediation Footprint
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

N

0 700 1,400
Feet

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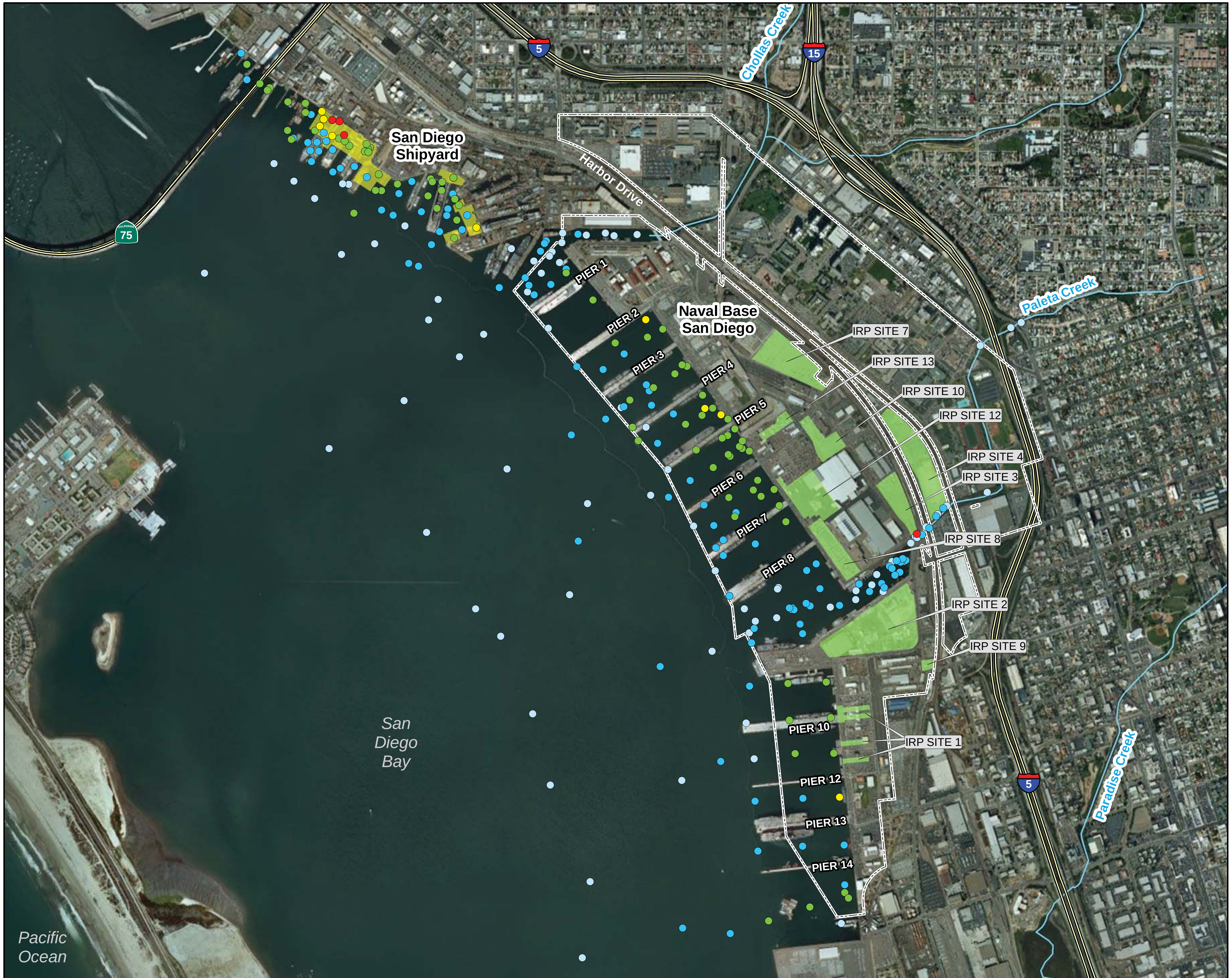
FIGURE 4-4
Sample Locations Included in Composite Sediment Contaminant Data Analysis
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

\\ICONIA\PROJECTS\US_NAVY\388185_NBSD\GIS\SHIPYARDSEDIMENTSITE\MAPFILES\NBSD_SD_RESPONSEREPORT_FIG4_4_COMPSAMP.MXD SWOLFSKI 6/23/2010 15:19:09



LEGEND

Copper Concentration (mg/kg dry weight)

- 0-125
- 126-250
- 251-500
- 501-750
- >750
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Shipyard Sediment Site Proposed Remediation Footprint
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

N

0 700 1,400
Feet

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FIGURE 4-5
Concentrations of Copper in Surface Sediment, 1992-2009
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

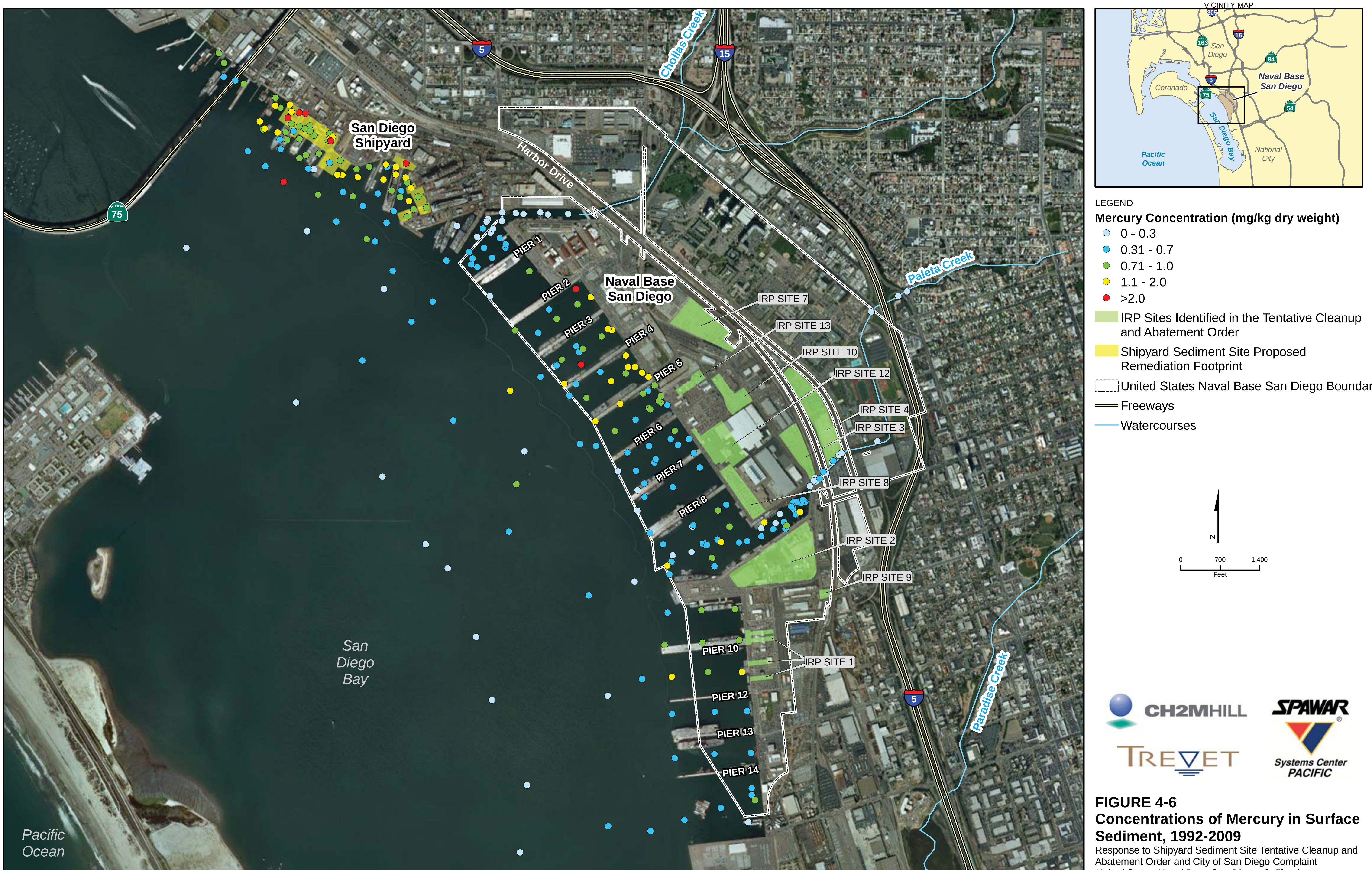
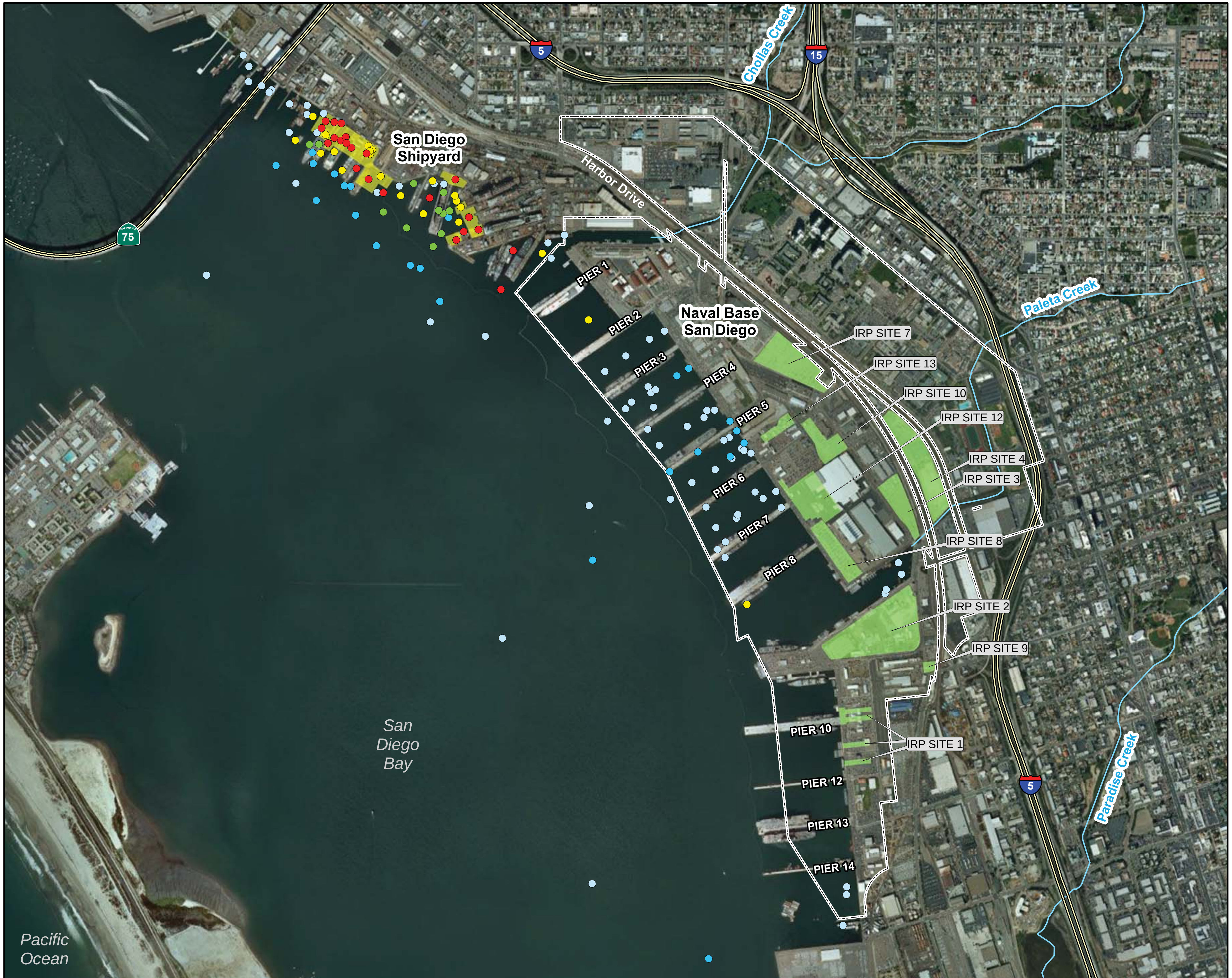


FIGURE 4-6
Concentrations of Mercury in Surface Sediment, 1992-2009
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

\\ICONIA\PROJECTS\US_NAVY\388185_NBSD\GIS\SHIPYARDSEDIMENTSITE\MAPFILES\NBSD_SD_RESPONSEREPORT_FIG4_6_MERCURY.MXD SWOLFSKI 6/22/2010 16:03:36



LEGEND

Tributyltin (TBT) Concentration (µg/kg dry weight)

- 0 - 20
- 21 - 50
- 51 - 100
- 101 - 200
- >200
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Shipyard Sediment Site Proposed Remediation Footprint
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

N

0 700 1,400

Feet

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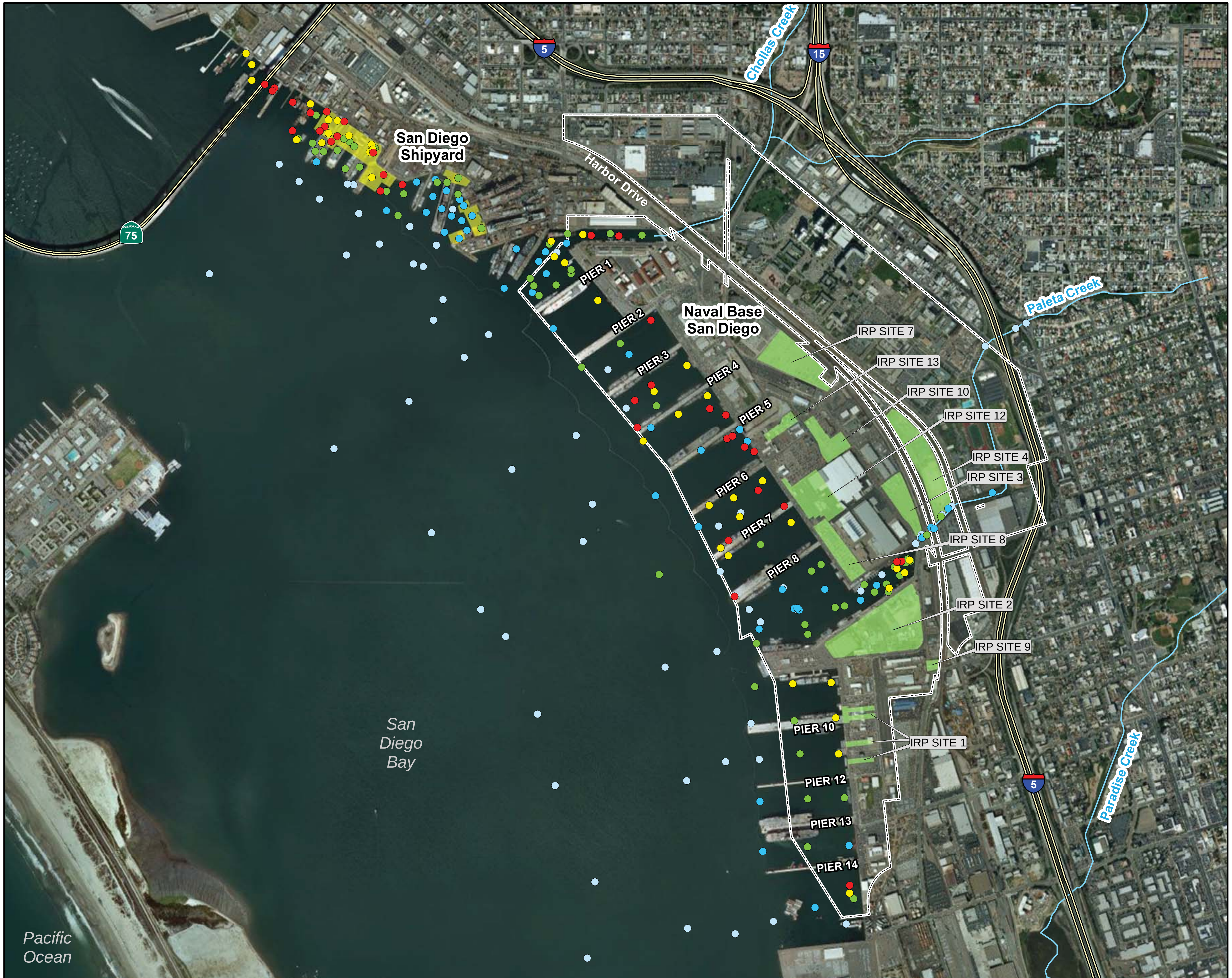
FIGURE 4-7
Concentrations of Tributyltin (TBT) in Surface Sediment, 1988-2009
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

HPAH Concentration (µg/kg dry weight)

- 0 - 1,000
- 1,001 - 2,000
- 2,001 - 6,000
- 6,001 - 10,000
- >10,000
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Shipyard Sediment Site Proposed Remediation Footprint
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

N

0 700 1,400
Feet

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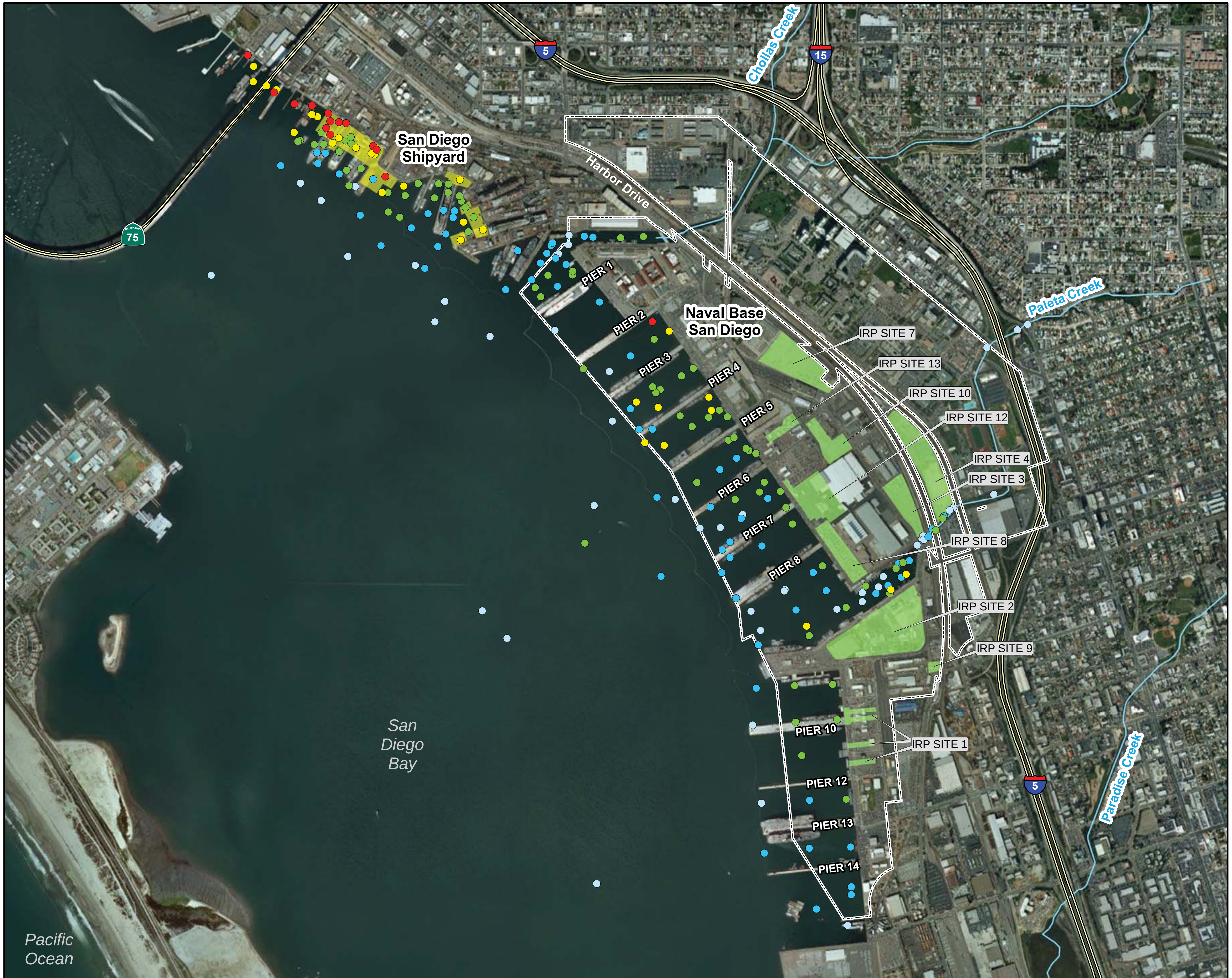
FIGURE 4-8
Concentrations of High Molecular Weight Polynuclear Aromatic Compounds (HPAH) in Surface Sediment, 1992-2009
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

PCB Concentration (µg/kg dry weight)

- 0 - 100
- 101 - 200
- 201 - 500
- 501 - 1,000
- >1,000
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Shipyard Sediment Site Proposed Remediation Footprint
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

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FIGURE 4-9
Concentrations of Total Polychlorinated Biphenyls (PCBs) in Surface Sediment, 1992-2008
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

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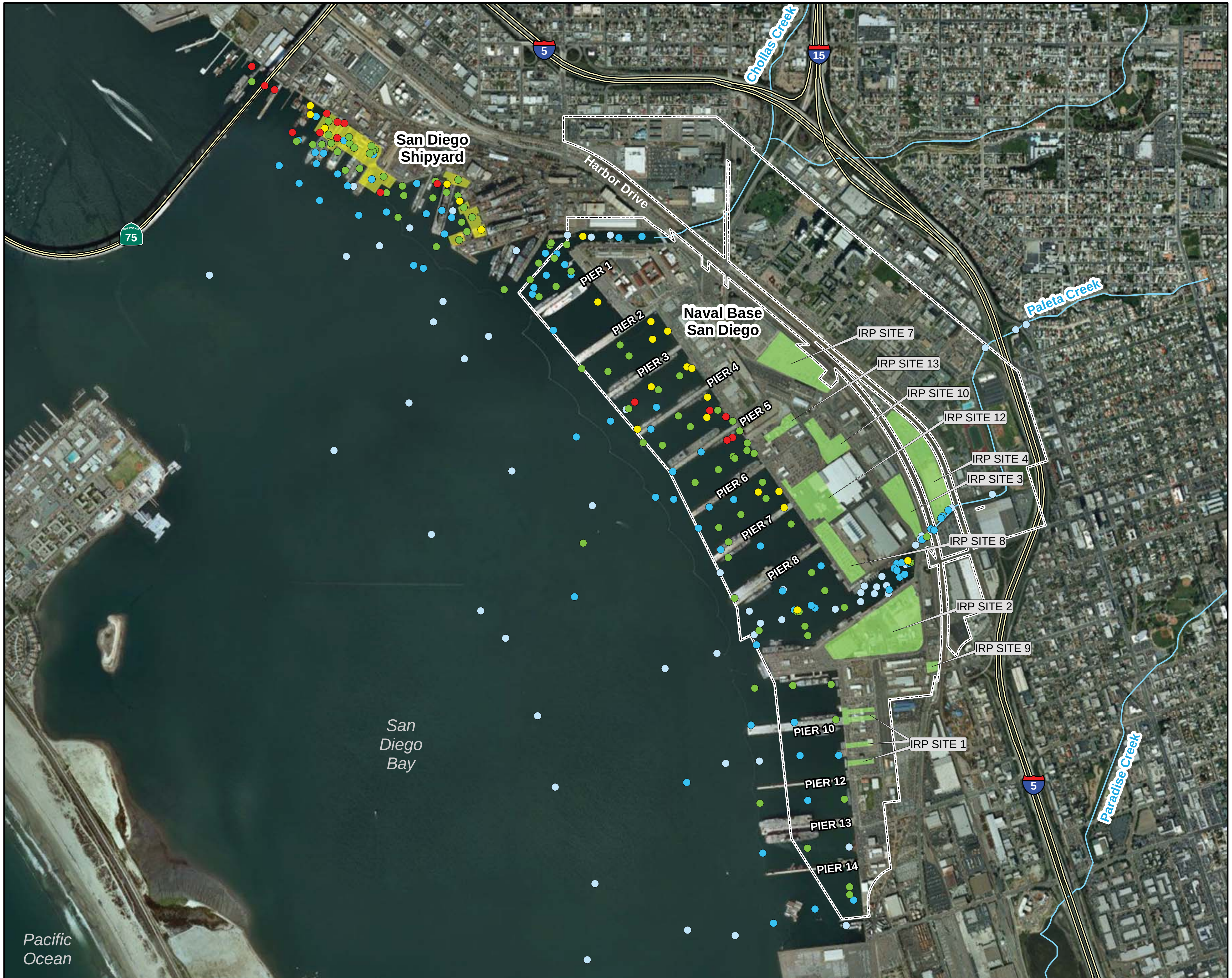

VICINITY MAP

LEGEND

Arsenic Concentration (mg/kg dry weight)

- 0 - 7
- 7.1 - 10
- 10.1 - 15
- 15.1 - 20
- >20
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Shipyard Sediment Site Proposed Remediation Footprint
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

N

0 710 1,420
Feet

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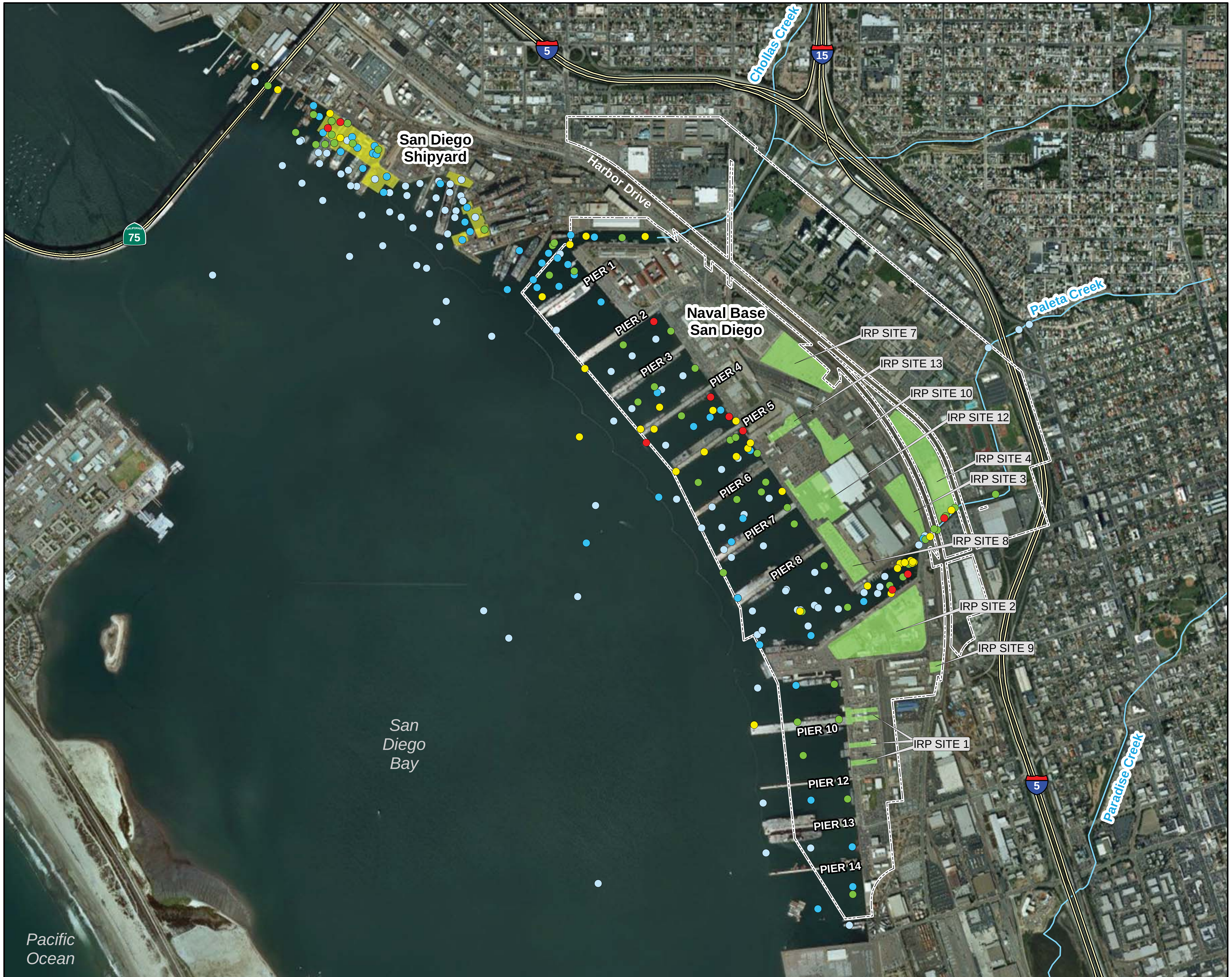
FIGURE 4-10
Concentrations of Arsenic in Surface Sediment, 1992-2009
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
Naval Base San Diego, California



LEGEND

Cadmium Concentration (mg/kg dry weight)

- 0 - 0.33
- 0.34 - 0.5
- 0.51 - 1.0
- 1.1 - 2.0
- >2.0
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Shipyard Sediment Site Proposed Remediation Footprint
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

N

0 700 1,400
Feet

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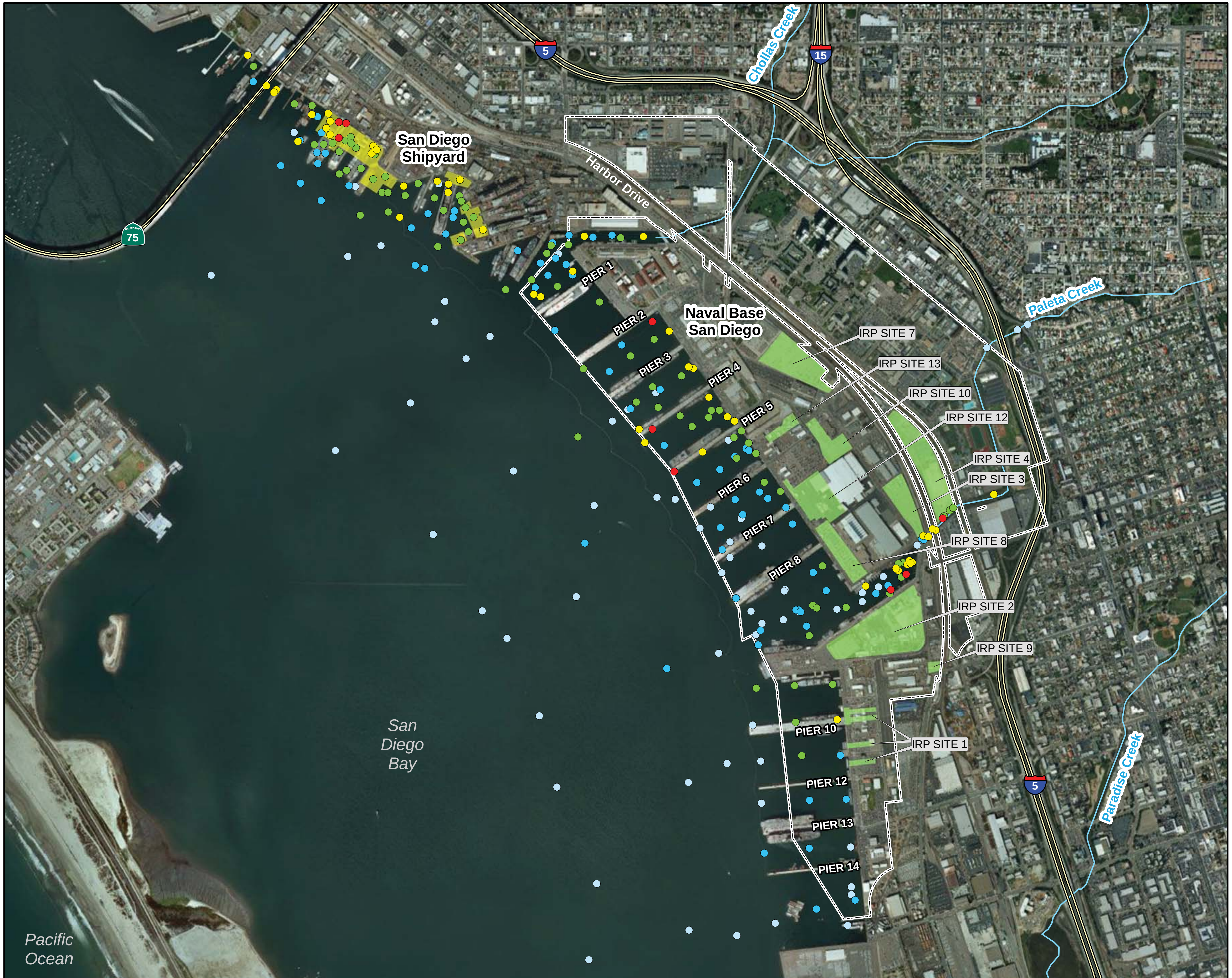
FIGURE 4-11
Concentrations of Cadmium in Surface Sediment, 1992-2009
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

Lead Concentration (mg/kg dry weight)

- 0 - 50
- 51 - 75
- 76 - 100
- 101 - 200
- >200
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Shipyard Sediment Site Proposed Remediation Footprint
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

N

0 700 1,400
Feet

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FIGURE 4-12
Concentrations of Lead in Surface Sediment, 1992-2009
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

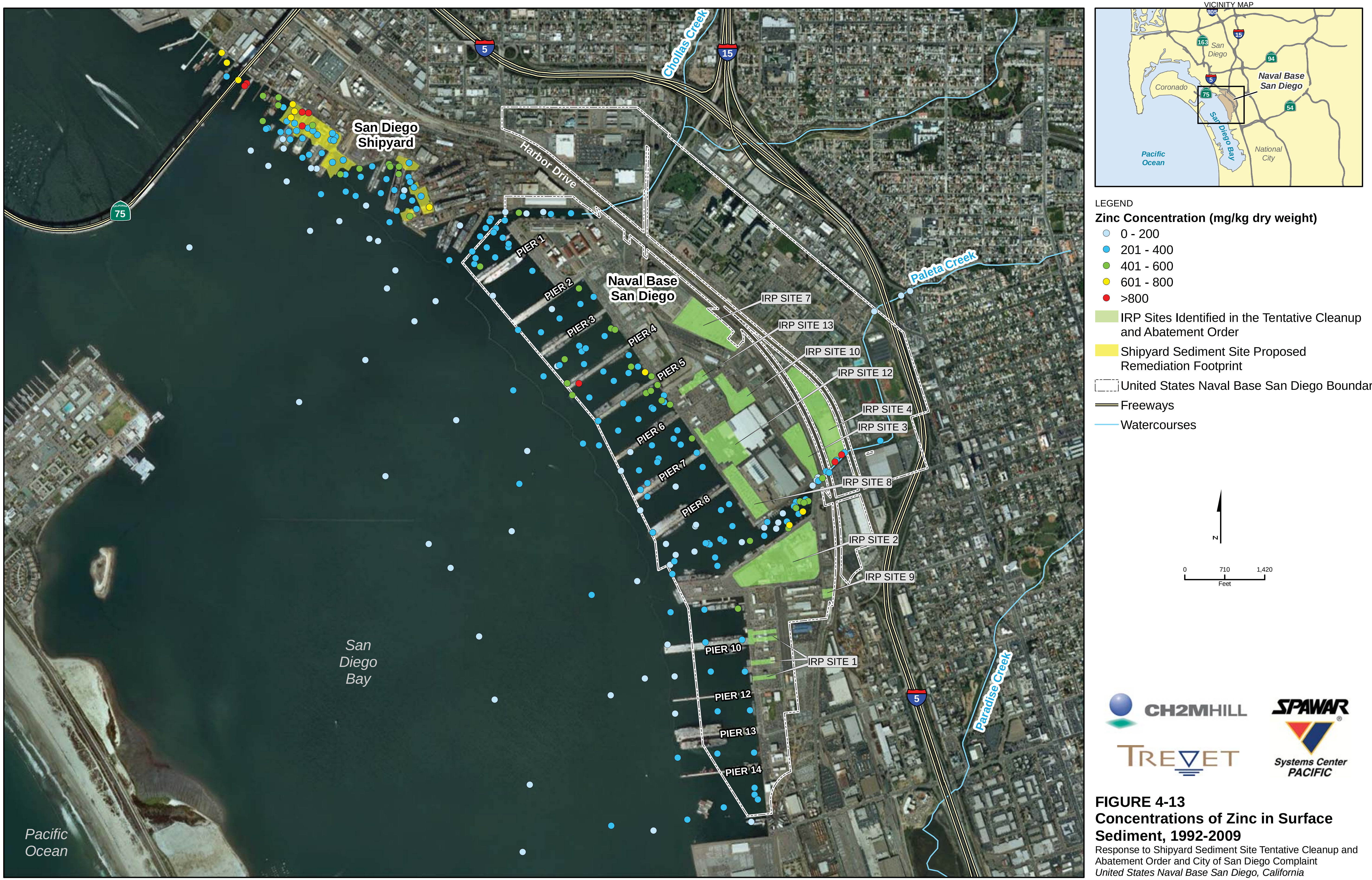

FIGURE 4-13
Concentrations of Zinc in Surface Sediment, 1992-2009
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

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SECTION 5

Evaluation of Sediment Resuspension and Transport

In this section, resuspension of sediments by propeller wash in areas potentially influenced by releases from IRP sites and transport by tidal currents to the Shipyard Sediment Site are evaluated. The conceptual model for the transport is that propeller scour events would occur in certain sediment regions adjacent to IRP sites during ship docking and un-docking events. Each of these events would resuspend a certain amount of sediment (the resuspension source term) due to movements of ships and tug boats. This resuspended sediment would then be subject to tidal transport and redeposition in other areas of the bay, including the Shipyard Sediment Site, based on the settling characteristics of the sediment.

A modeling simulation was performed to estimate the magnitude of sediment resuspension and transport from these specific areas at NBSD to the Shipyard Sediment Site. The modeling was conducted using the Navy's high resolution Tidal, Residual, Intertidal Mudflat (TRIM) hydrodynamic and sediment transport model. The same validated model (Lo et al., 1999) has been used for a number of fate and transport studies, including sewage spills near the entrance of the bay and the south bay, copper discharge from the Convention Center dewatering facility, migration of contaminated sediments resuspended by propeller wash (Wang et al., 2009) and copper concentrations in the bay (Chadwick et al., 2008). Key elements of the modeling effort include the following:

- Identifying potential source areas at NBSD based on potential transport pathways from IRP sites to San Diego Bay
- Characterizing sediment conditions (i.e., particle size, critical shear stress, density) in the potential source areas based on available measurements
- Estimating and verifying propeller wash resuspension loads based on direct measurements and propeller scour modeling
- Determining the frequency of resuspension events in the potential source areas
- Directly modeling the tidal transport from these potential source areas to the Shipyard Sediment Site

The outcome of the modeling quantified the transport and subsequent deposition at the Shipyard Sediment Site in terms of net deposition (kg yr^{-1}) and as a sediment accumulation rate (cm yr^{-1}). Analysis and modeling methods and results are described in detail below.

5.1 Resuspension Zones at NBSD

5.1.1 Areas of Resuspension

The IRP site evaluation in Section 3 identified three zones in San Diego Bay adjacent to NBSD that may have had a pathway of COC release from NBSD IRP sites. The three resuspension source zones include the pier area at the mouth of Paleta Creek, the pier area adjacent to the Graving Dock (between Piers 5 and 6), and the area between Piers 10 and 12 (Figure 5-1). Because the exact area of deposition of COCs from IRP sites is unknown, the entire area within the pier heads in each zone was identified as potentially subject to COC deposition and resuspension. A GIS analysis was used to calculate the relative areas of each resuspension source zone to the total NBSD pier area. The three source zones represent 30 percent of the total NBSD area within the pier heads as follows: Graving Dock zone (6 percent), the Paleta Creek mouth zone (16 percent), and the Pier 10–Pier 12 zone (8 percent) (Table 5-1).

5.1.2 Sediment Particle Size Distribution

The size of sediment particles is a critical characteristic in determining how far they are transported before they settle back to the seafloor following a resuspension event. Thus, it is important to characterize and model the resuspended sediment based on the general distribution of sediments in each zone. The particle size distribution characterizing each source zone was obtained from historical data sets. Grain size data were compiled for the Paleta Creek mouth source zone from the Chollas Creek and Paleta Creek TMDL study (SCCWRP and Navy, 2005), for the Graving Dock source zone from the NBSD TMDL study (in progress), and for the Pier 10-Pier 12 source zone from the Naval Station (NAVSTA) San Diego sediment quality characterization study (Chadwick et al., 1999). Grain size results in terms of percent gravel, sand, silt, and clay for all stations in each of the three zones were used to calculate an average particle size distribution (Table 5-2). Ranges for the size fractions in the three zones were 0–1.75 percent gravel, 23-45 percent sand, 25–50 percent silt, and 26–43 percent clay.

5.1.3 Sediment Bed Characteristics

Critical shear stress, erosion rate, bulk density, and bed roughness are important sediment characteristics for propeller scour modeling. Critical shear stress and bulk density of the sediments at NBSD were measured in the Paleta Creek mouth area during the Pathway Ranking for In-place Sediment Management (PRISM) study conducted in 2002 (SPAWAR, 2006a). The bulk density of the particles determined during the study was 0.4 g cm^{-3}, which is comparable to the average bulk density of sediments in the Shipyard Sediment Site proposed remediation footprint (Table 5-3). An in situ flume called the Sea Carousel developed by the Virginia Institute of Marine Science was used to measure surficial sediment critical shear stress at two sites in the Paleta Creek mouth area. Resuspension was evaluated under the application of increasing shear stress produced in the flume. The average critical shear stress for sediment erosion was determined to be 0.17 pascals (Pa).

Bed roughness for the target areas was estimated to be 230 µm, which is on the order of the D_{90} (the grain diameter at which 90 percent of the sample is finer) of the sediment bed. This value is recommended by Kamphuis (1974) and others as a good initial assumption of bed roughness. In addition, erosion rate analysis was conducted by SPAWAR on sediment cores obtained from two stations located in the Bremerton Naval Complex pier areas most likely impacted by propeller wash during ship operations (Blake et al., 2007). Although from a different region, these data provide guidance on erosion rates deeper into the sediment bed for similar silty Pacific Coast estuarine sediments that may be disturbed by shipping operations in comparable water depths (~ 10–12 m). Table 5-4 shows the average erosion rates for the cores collected at each location as a function of shear stress and depth. These sediment properties were used in a propeller scour model as a means of verifying field data for the propeller-wash resuspension source term.

5.2 Resuspension Source Term

5.2.1 Field Measurements

Sediment resuspension as a result of propeller-wash scour during ship movements was measured during four field surveys conducted in 1996 (Chadwick et al., 1999). Resuspension of sediment was measured during five tug-assisted ship docking/undocking events from piers at NBSD. Optical sensor data and discrete water samples analyzed for suspended solids were collected before, during, and after the ship undocking events to quantify the amount of material resuspended during each movement. Because multiple tugs are used to move ships to or from piers, docking events were normalized to a vessel unit (VU) so that calculations of daily or annual mass loading for all of NBSD could be calculated from historical vessel traffic information.

The results showed that total mass loading within the pier areas ranged from 2.1×10^3 kg to 9.0×10^3 kg per ship movement event, with an average of $5.5 \pm 2.6 \times 10^3$ kg (Table 5-5). The average mass of resuspended sediment during a single ship movement was $1.2 \pm 0.5 \times 10^3$ kg/VU. A total daily mass loading value for all of NBSD was calculated based on historical records showing an average of 17.6 tug-assisted ship movements per day within the facility during the January and February 1996 time frame (Chadwick et al., 1999). The total daily mass loading from ship resuspension within the pier areas of NBSD ranged from 9.2×10^3 kg to 31.6×10^3 kg, with an average of $20.5 \pm 8.8 \times 10^3$ kg (Table 5-5). Daily mass loading for each resuspension zone was calculated by multiplying the average daily mass loading for all of NBSD by the percent of NBSD area each zone represents (Table 5-1). The mass loading was 3.3×10^3, 1.2×10^3, and 1.6×10^3 kg d^{-1} for the Paleta Creek mouth, Graving Dock, and Pier 10–Pier 12 zones, respectively. The combined daily loading was 6.1×10^3 kg.

5.2.2 Source Term Verification

Verification of data from the field survey results were compared to results of a propeller-wash model (Maynord, 2000). The maximum propeller wash velocities predicted for a typical ship movement by the Maynord model were used in conjunction with flume erosion rate and critical shear stress data for sediments collected in the mouth of Paleta Creek near the piers. Additional erosion data from piers at Bremerton Naval Complex were used to supplement the limited data available for Paleta Creek and demonstrate that those sediment stability conditions are generally representative of pier areas at Navy facilities. Predictions of maximum velocities from propeller wash were used in conjunction with the sediment data to determine total resuspended sediment mass (i.e., the resuspension source term).

Results of the model were then compared to the direct measurements of resuspended sediment mass in the Paleta Creek region described above to validate the estimates developed from the field measurements. Variability in measured sediment erosion data from the mouth of Paleta Creek was also used to define upper and lower limits of sediment resuspension.

The bottom velocity due to propeller wash was estimated following the formulation outlined in Maynord (2000). Several physical parameters describing the ship, propeller, and operating environment are required for this analysis. Table 5-6 includes the specifications for a typical Pacific coast deepwater port commercial tug that were used for the parameters that were not readily available from the Navy. The tug is assumed to have a Kort nozzle propeller common in modern tugs. Figure 5-2 shows the modeled velocities at the sediment bed as a function of distance from the stern of the tug. The maximum velocities at the bed are approximately 0.7 m s^{-1}, and they drop to approximately half that within 100 m of the stern. The velocities decrease much faster in the cross-stream direction. The velocity calculations are used in the following sections to calculate sediment resuspension.

Available sediment bed characteristic data described in previous sections were used to model the resuspension source term using the propeller velocities calculated from the Maynord model. Using the predicted velocities, the bed shear stress, τ_b, exerted on the sediment bed during ship operations was calculated. These shear stresses were applied to the sediment bed using the erosion rates from Table 5-4 to determine the mass of sediment resuspended during tug operations. The procedure for calculating shear stresses and estimating bed roughness is covered in more detail in the *User's Guide for Assessing Sediment Transport at Navy Facilities* (Blake et al., 2007). It was assumed that a ship movement operation lasts for approximately 15 minutes, which is within the 10- to 30-minute range reported in previous studies (SPAWAR, 2006a).

The model predicted velocities and shear for the assumed event conditions. Figures 5-3 and 5-4 show the resulting shear stress and scour patterns resulting from the propeller scour model calculations. The maximum shear stress, coincident with the maximum velocity, is 0.85 Pa and results in a maximum scour of 1.0 cm of sediment. These values are within a reasonable range expected at the site based on observed mixed layers during the PRISM studies. Modeled resuspension for a single large tractor tug movement event was approximately 1,422 kg (Table 5-7). Analyzing the erosion coefficients presented in the PRISM report (SPAWAR, 2006a) yields a variability of 25 percent in erosion properties at the locations measured (Table 5-7). Because the resuspended mass and the depth of scour are directly proportional to the erosion coefficient, they can also be expected to fall within a range of about 25 percent variation (Table 5-7). Given an average of 4.6 VU for each resuspension event, this corresponds to a per-event loading of approximately 6,541 kg, which is consistent with the field average of 5,464 kg given the range of variability in the field results. The good correspondence between the field results and the modeling analysis indicate that the estimated source term for resuspension at NBSD is reliable.

5.3 Resuspended Sediment Transport Modeling

5.3.1 Transport Model

The two-dimensional vertically averaged hydrodynamic model TRIM, modified to include a sediment transport module (Cheng et al., 1993; Wang et al., 1998), was used to quantify the potential transport and subsequent deposition of resuspended sediments from each of the three NBSD zones to the proposed remediation footprint location within the Shipyard Sediment Site (Figure 5-5). TRIM model results have been validated against measurement data collected on multiple projects (Wang et al., 1998; Wang et al., 2009; Chadwick et al., 2008).

Near NBSD, tidal currents move predominantly back and forth (northwest and southeast) along the axis of the channel, although there are always asymmetries in the flows that will result in some level of residual (net) transport. The model results incorporate the full spatial and temporal variation of tidal flows throughout the region over the entire time period evaluated, and thus account for all tidally induced flow conditions and capture the relevant transport processes. Particles that are resuspended will travel with the current flow at the time they are resuspended. The model uses multiple time intervals during each day to ensure it captures a realistic long-term condition of ships moving under all tide stages.

5.3.2 Model Simulations

TRIM model runs were performed using the average daily mass loads calculated for resuspended sediments due to ship movements within each of the three source zones at NBSD (Table 5-5). The daily loads were divided into the four grain size classes (gravel, sand, silt, and clay) based on the average percentages measured in each zone (Table 5-2). Assuming that particles were spherical, sediment settling velocities were calculated following Stokes law for silt, fine sand, and coarse sand (Table 5-8). By Stokes law, the settling velocity for clay was estimated to be in the range of 10^{-2} to 10^{-3} mm s^{-1} if each particle is assumed to exist singly. For this study, a settling velocity of 0.15 mm s^{-1} was used for clay after Ziegler (1995).

Model simulations of the transport and deposition of the resuspended sediments from each of the three NBSD source zones were performed based on assumed releases under nine different tidal stages that represent the full tidal cycle (Figure 5-6). The initial resuspension was assumed to occur only within each source zone and continue for 15 minutes. The nine unique tidal stages account for the fact that ship movements can occur during any stage of the tide. The nine tidal stages in three source zones resulted in a total of 27 modeling scenarios. Only tidal currents were considered for sediment transport, as wind-induced currents and wind-waves are believed to be weak and relatively unimportant in the study area (Wang et al., 1998). The model spatial resolution was 50 × 50 m.

Transport was simulated for eight days, by which time the large majority (~90 percent for clay, ~100 percent for silt, fine sand and coarse sand) of the initially suspended solids had settled to the bottom. Specific 50 × 50 m model grid cells that correspond to the four Shipyard Sediment Site proposed remediation footprint locations (Figure 5-5) were identified to evaluate the net sediment deposition at the Shipyard Sediment Site. One model grid cell (2,500 m^2) was assigned to each of the Shipyard Sediment Site proposed remediation footprint areas, except for location 1, which had two grid cells to account for its larger area. Net deposition in kg d^{-1} was then modeled and computed for each grid cell and corrected for the actual area of the proposed remediation footprint location (e.g., Location 3 deposition was corrected by a factor 0.76 (1,897 m^2 actual/ 2,500 m^2 cell).

5.3.3 Modeling Results

The minimum, maximum, and total net deposition of resuspended sediments generated from the nine tidal stage scenarios from each of the three NBSD source zones to the four locations making up the Shipyard Sediment Site proposed remediation footprint were calculated and are shown in Table 5-9. Annual deposition for the proposed remediation footprint was estimated to be 112 kg yr^{-1}. As would be expected, the largest contribution came from the Graving Dock source zone, which is closest to the Shipyard Sediment Site. Relative contributions were 49, 36, and 15 percent, respectively, from the Graving Dock, Paleta Creek mouth, and Pier 10–Pier 12 source zones.

Annual accumulation rates (cm yr^{-1}) in the Shipyard Sediment Site proposed remediation footprint were computed from the annual deposition rates (kg yr^{-1}) using the bulk density value of 0.4 g cm^{-3} (SPAWAR, 2006a) as described above. These rates are shown in Table 5-10. Accumulation rates in the proposed remediation footprint area based on resuspension from the individual NBSD source zones ranged from 5.5×10^{-4} to 1.7×10^{-3} cm yr^{-1}. The sediment accumulation rate at the proposed remediation footprint based on total contributions from the three NBSD source zones was 3.4×10^{-3} cm yr^{-1}.

The accumulation rate due to sediment resuspension from NBSD was compared to the total annual sediment accumulation at the Shipyard Sediment Site. Total accumulation rates were estimated at 0.92 cm yr^{-1} (Peng et al., 2003) and 2.0 cm yr^{-1} (RWQCB, 2010b). Net deposition to the Shipyard Sediment Site proposed remediation footprint due to resuspension and transport from NBSD was therefore between 0.17 percent and 0.37 percent of the total annual deposition, an amount that is negligible in the overall deposition of sediments at the Shipyard Sediment Site.

TABLE 5-1
Area Estimates for Naval Base San Diego Resuspension Source Zones and Pier Area
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

Location	Area (m^2)	Percent of Total
Paleta Creek Mouth	222,572	16
Graving Dock	85,346	6
Pier 10–12	114,408	8
Total of Three Source Zones	422,326	30
NBSD Pier Area	1,428,722	—

TABLE 5-2
Grain Size Data, Average Particle Size Distributions, and Loadings for Naval Base San Diego Resuspension Zones
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

	Paleta Creek Mouth					Graving Dock Area					Pier 10–12 Area			
Station	**% Gravel**	**% Sand**	**% Silt**	**% Clay**	**Station**	**% Gravel**	**% Sand**	**% Silt**	**% Clay**	**Station**	**% Gravel**	**% Sand**	**% Silt**	**% Clay**
P01	9.91	58.35	15.70	16.04	NS21	0.03	27.43	27.67	44.87	NSB-R2-9S	0.00	35.15	41.48	23.37
P02	0.76	30.95	29.78	38.52	NS22	0.00	14.06	32.45	53.49	NSB-R2-10S	0.00	27.66	40.22	32.12
P03	0.95	60.65	15.63	22.77	NS23	0.18	33.82	25.50	40.50	NSB-R2-11S	0.00	43.96	34.42	21.63
P04	0.17	25.26	33.49	41.07	NS24	1.02	32.88	27.11	39.99	NSB-R2-13S	0.00	13.64	57.57	28.79
P05	0.00	21.25	34.69	44.06	NS25	1.66	42.37	21.90	34.07	NSB-R2-14S	0.00	18.10	57.40	24.50
P06	0.35	26.04	32.88	40.72						NSB-R2-15S	0.00	13.48	60.96	25.56
P07	0.00	20.85	37.03	42.11						NSB-R2-16S	0.00	8.62	61.03	30.34
P08	0.92	61.56	17.64	19.89										
P09	7.77	60.61	26.05	5.56										
P10	2.35	56.92	21.43	19.30										
P11	1.44	53.54	19.87	25.15										
P12	0.48	50.37	26.34	22.81										
P13	2.76	72.49	12.46	12.29										
P14	0.07	51.10	26.77	22.06										
P15	0.57	43.40	25.50	30.52										
P16	0.25	34.10	37.28	28.36										
P17	1.07	43.24	27.70	27.99										
Average	*1.75*	*45.33*	*25.90*	*27.01*		*0.58*	*30.11*	*26.93*	*42.58*		*0.00*	*22.94*	*50.44*	*26.62*
St. Dev.	*2.80*	*16.19*	*7.79*	*11.24*		*0.73*	*10.45*	*3.82*	*7.21*		*0.00*	*13.02*	*11.28*	*3.87*
Loading (kg/day)	56	1,446	826	861		7	368	329	521		0	376	827	436

TABLE 5-3
Bulk Density of Surface Sediments in the Shipyard Sediment Site Proposed Remediation Footprint
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

	Total Solids (%)					
Station	**Rep 1**	**Rep 2**	**Rep 3**	**Rep 4**	**Average**	**Bulk Density ($g\ cm^{-3}$)**
NA06	36.8	17.9	37.9	—	30.9	0.38
NA09	29.4	—	—	—	29.4	0.36
NA15	37.8	—	—	—	37.8	0.49
NA17	33.6	16.8	50.0	—	33.5	0.42
NA19	33.3	—	—	—	33.3	0.42
SW01	55.4	43.2	50.9	50.6	50.0	0.73
SW02	38.2	34.6	37.9	32.2	35.7	0.46
SW04	45.8	33.1	36.4	—	38.4	0.51
SW05	47.8	—	—	—	47.8	0.68
SW08	30.8	26.5	24.5	—	27.3	0.33
SW09	41.4	—	—	—	41.4	0.56
SW10	54.4	—	—	—	54.4	0.82
SW13	32.2	—	—	—	32.2	0.40
SW14	38.2	—	—	—	38.2	0.50
SW16	43.2	—	—	—	43.2	0.59
SW17	32.6	—	—	—	32.6	0.41
SW20	41.3	—	—	—	41.3	0.56
SW21	39.5	—	—	—	39.5	0.52
SW22	34.3	—	—	—	34.3	0.44
SW23	33.9	—	—	—	33.9	0.43
SW24	45.4	40.6	49.5	—	45.2	0.63
SW27	35.0	—	—	—	35.0	0.45
SW28	34.4	33.8	35.4	—	34.5	0.44
Average Bulk Density ($g\ cm^{-3}$)						*0.50*

TABLE 5-4
Average Erosion Rates as a Function of Shear Stress and Depth for Cores from the Bremerton Naval Complex
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

	Rate (cm/s)				
Interval (cm)	**0.2 Pa**	**0.4 Pa**	**0.8 Pa**	**1.6 Pa**	**3.2 Pa**
Core SI-03					
0–3.75	0.00E+00	7.92E-05	9.29E-04	5.51E-03	1.88E-02
3.75–	0.00E+00	0.00E+00	7.78E-04	2.61E-03	5.61E-03
Core SI-04					
0–6	1.38E-04	5.04E-04	1.42E-03	6.90E-03	2.99E-02
6–	0.00E+00	5.42E-05	4.54E-04	2.18E-03	1.13E-02

Source: Blake et al. (2007).

TABLE 5-5
Sediment Resuspension Mass Loading Values Measured During 1996 Field Surveys
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

Ship Movement Survey	Number of Tugs	Vessel Units for the Ship Movement (VU)	Total Mass Resuspended During Ship Movement (kg)	Total Mass Resuspended per VU (kg/VU)	Average VU per Day at NBSD (VU/day)	Total Daily Resuspension at NBSD (kg/day)	Paleta Creek Mouth Loading (kg/day)	Graving Dock Pier Area Loading (kg/day)	Pier 10-12 Area Loading (kg/day)
Wak 7	2	4	5,260	1,315	17.55	23,078	3,595	1,379	1,848
Wak 8	3	5	6,930	1,386	17.55	24,324	3,789	1,453	1,948
Wak 9	2	4	2,100	525	17.55	9,214	1,435	550	738
Wak 10a	3	5	9,000	1,800	17.55	31,590	4,921	1,887	2,530
Wak 10b	3	5	4,030	806	17.55	14,145	2,204	845	1,133
Average	*3*	*5*	*5,464*	*1,166*	—	*20,470*	*3,189*	*1,223*	*1,639*
St. Dev.	*1*	*1*	*2,649*	*503*	—	*8,832*	*1,376*	*528*	*707*

Notes:
From Chadwick, et al. (1999).
Loading values at Paleta Creek Mouth, Graving Dock, and Pier 10–12 source zones are based on a percentages of total daily resuspension at Naval Base San Diego using values in Table 5-1.

TABLE 5-6
Physical Parameters Required for Propeller Wash Model
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

Parameter	Description	Value
L_{tb}	Length of ship, m	30.48
d_s	Ship draft, m	3.75
L_{set}	Distance from stern to propeller, m	3.05
W_p	Distance between twin prop., m	4.57
D_p	Propeller diameter, m	3.05
δ_p	Propeller axis depth, m	2.44
Power	Total ship power, hp (kW)	2,000–3,000 (1,491–2,237)
H	Water depth, m	10.5
V_a	Ambient channel velocity, m/s	0
V_g	Ship speed relative to ground, m/s	0
ρ_w	Density of seawater, kg/m^3	1026
K_t	Propeller thrust coefficient	0.05

TABLE 5-7
Model Resuspension and Erosion Results for a Single Ship Movement
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

Parameter	Average Value	Lower Bound	Upper Bound
Resuspension (kg)	1,422	1,066	1,777
Maximum Scour (cm)	1.00	0.75	1.25

TABLE 5-8
Sediment Particle Sizes and Stokes Settling Velocities Used for TRIM Modeling
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

	Size		Stokes Settling Velocities (mm s^{-1})	Settling Velocity in TRIM (mm s^{-1})
	Phi	Diameter (µm)		
Clay	>10	<2	<0.5 x 10^{-3}	0.15
Silt	4–9	2–63	0.002–2.2	0.5
Fine sand	2–4	63–250	2.2–34.0	5.0
Coarse sand	0–2	250–1,000	>34.0	20

TABLE 5-9
Annual Net Deposition to the Shipyard Sediment Site Proposed Remediation Footprint from Each Naval Base San Diego Resuspension Source Zone
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

	Net Deposition (kg yr^{-1})			
	Source Zone 1 (Graving Dock)	Source Zone 2 (Paleta)	Source Zone 3 (Piers 10–12)	Total of NBSD Source Zones
Min.	5.5	4.5	2.0	—
Max.	14.3	10.6	4.8	—
Total	55.2	40.1	16.7	112

Note:
Minimum, maximum, and total deposition values were calculated for the four Shipyard Sediment Site proposed remediation footprint areas.

TABLE 5-10
Annual Sediment Accumulation Rates at the Shipyard Sediment Site Proposed Remediation Footprint from Each Naval Base San Diego Resuspension Source Zone
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

	SY Remediation Footprint Sediment Accumulation Rate (cm yr^{-1})				Fraction of Total Annual Deposition at SY Sediment Site (%)	
	Source Zone 1 (Graving Dock)	**Source Zone 2 (Paleta)**	**Source Zone 3 (Piers 10–12)**	**Contribution of All NBSD Source Zones**	**Based on 0.92 cm yr^{-1}**	**Based on 2.0 cm yr^{-1}**
Min.	1.6E-03	1.0E-03	3.5E-04	—	—	—
Max.	1.9E-03	1.5E-03	7.0E-04	—	—	—
Ave.	1.7E-03	1.3E-03	5.5E-04	3.4E-03	0.37	0.17

Notes:
Minimum, maximum, and average sedimentation rates were calculated for the four Shipyard Sediment Site proposed remediation footprint areas. Fractional deposition rates at the Shipyard Sediment Site are based on annual rates described by Peng et al. (2003) and RWQCB (2010b).

LEGEND

Naval Base San Diego Pier Areas

- Resuspension Source Zone
- Other Pier Area
- IRP Sites Identified in the Tentative Cleanup and Abatement Order
- Shipyard Sediment Site Proposed Remediation Footprint
- United States Naval Base San Diego Boundary
- Freeways
- Watercourses

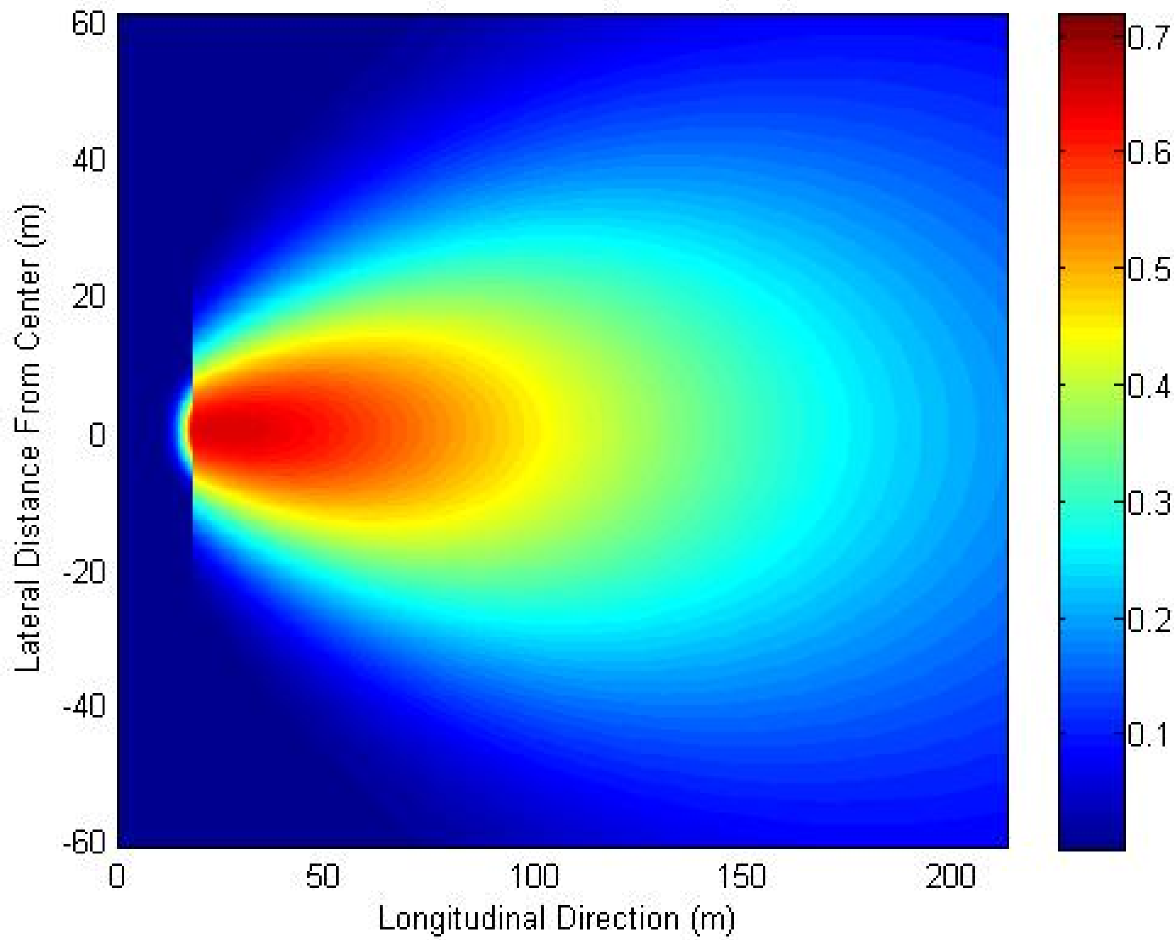
Note:
The NBSD Pier Areas show three resuspension source zones (green) based on potential transport pathways from IRP sites to San Diego Bay

N

0 700 1,400
Feet

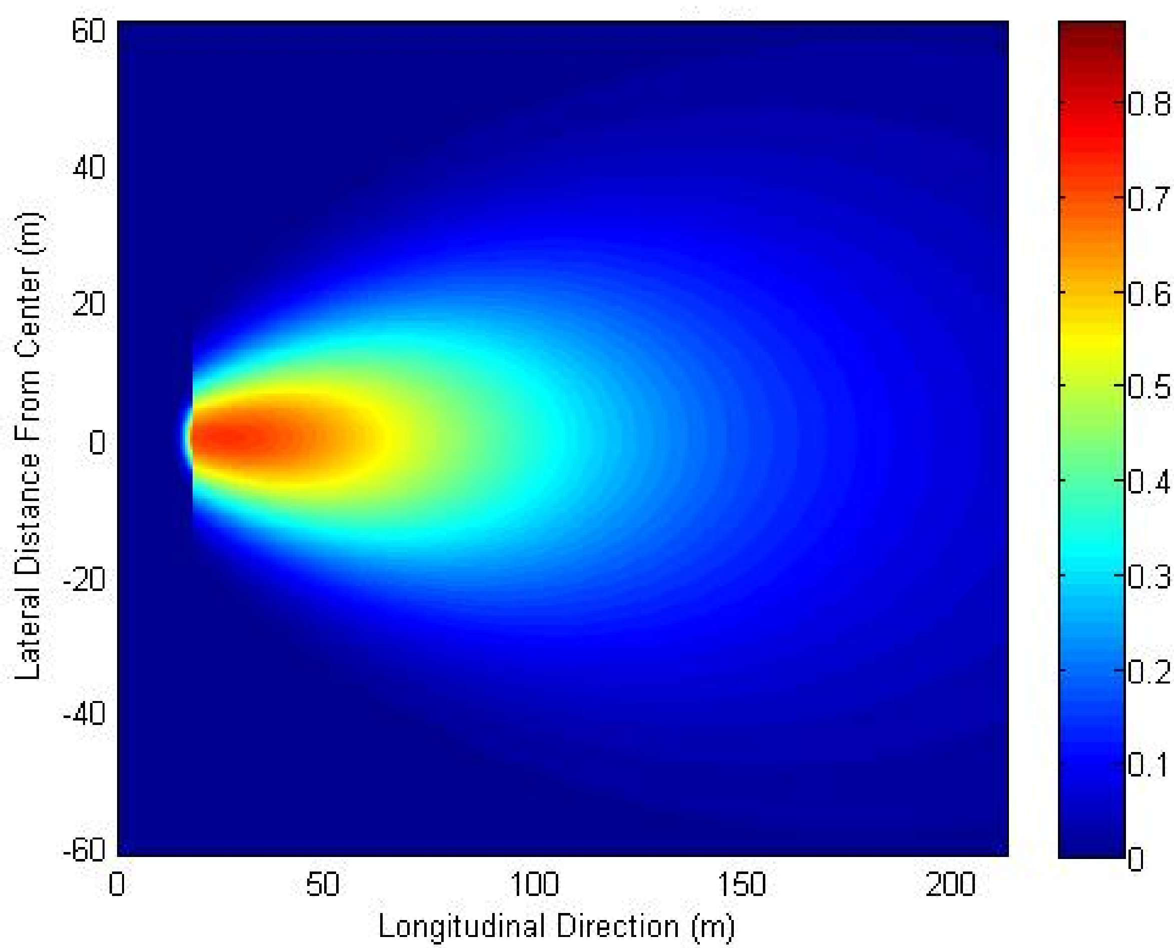
CH2MHILL SPAWAR Systems Center PACIFIC TREVET

FIGURE 5-1
Resuspension Source Zones at Naval Base San Diego
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



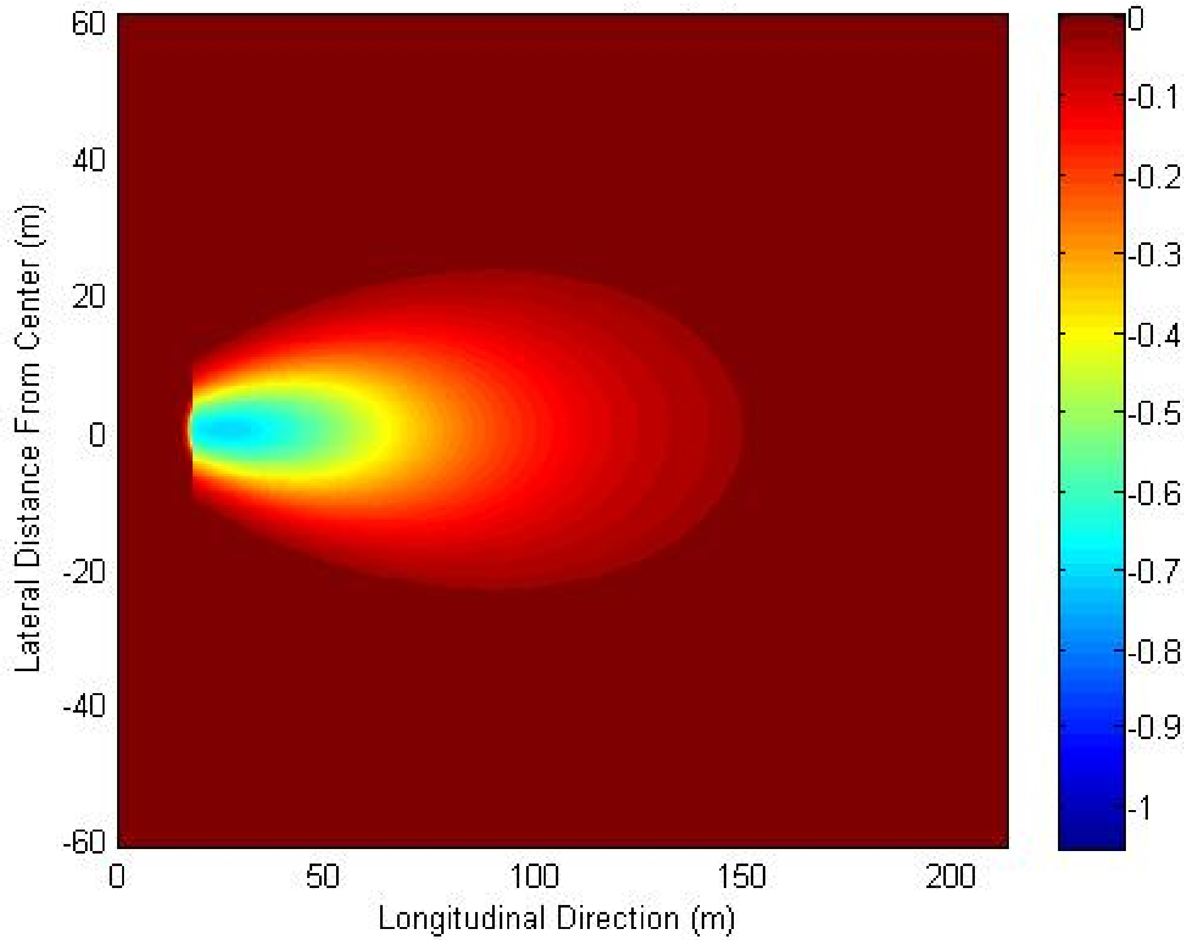
Note: Modeled contours of velocities at the sediment bed as a function of distance from the stern of the tug. Contour units are in meters per second (m/s).

FIGURE 5-2
Modeled Contours of Sediment Bed Velocities
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



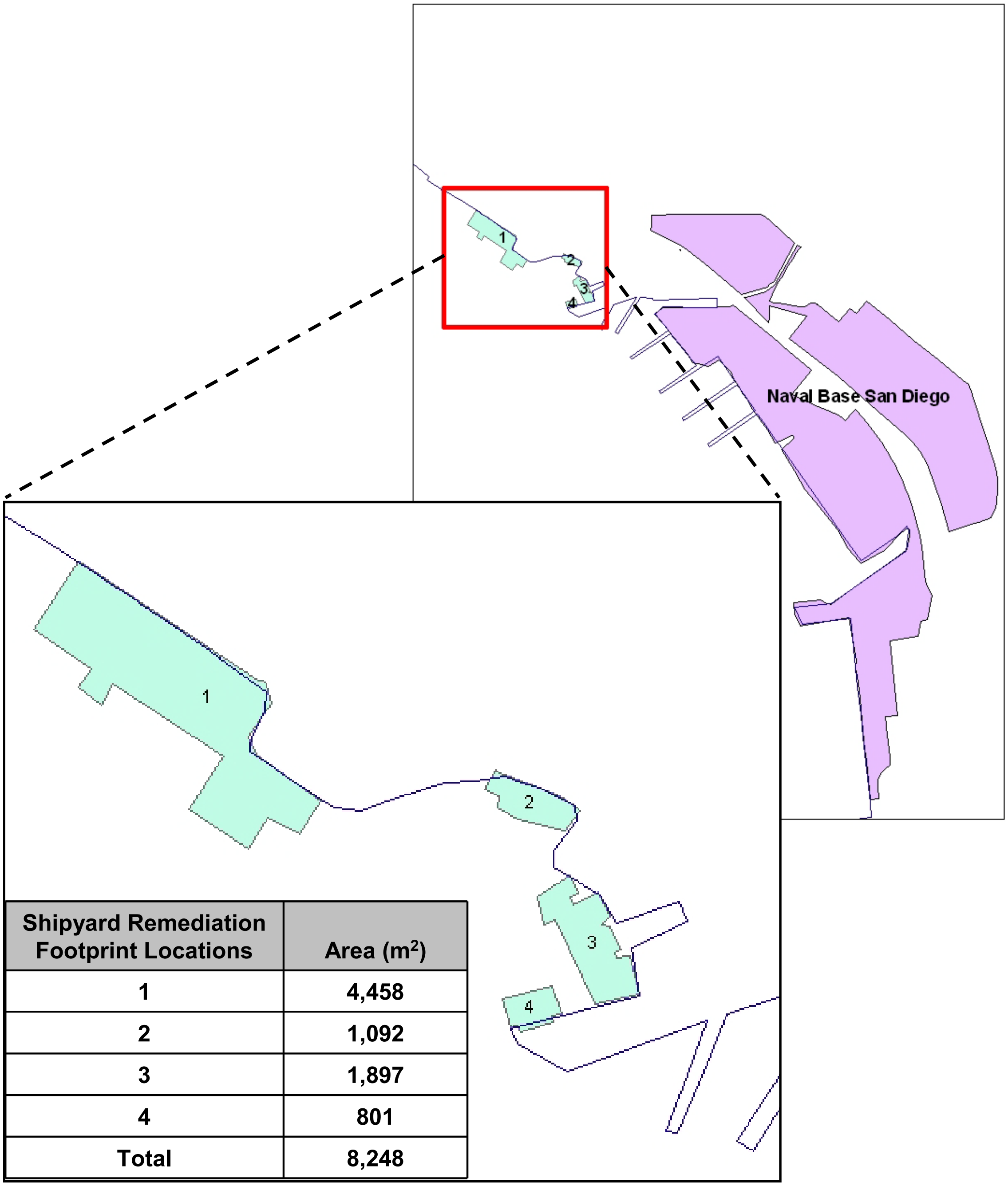
Note: Modeled contours of bottom shear stress as a function of distance from the stern of the tug. Contour units are in Pascals (Pa).

FIGURE 5-3
Modeled Contours of Bottom Shear Stress
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



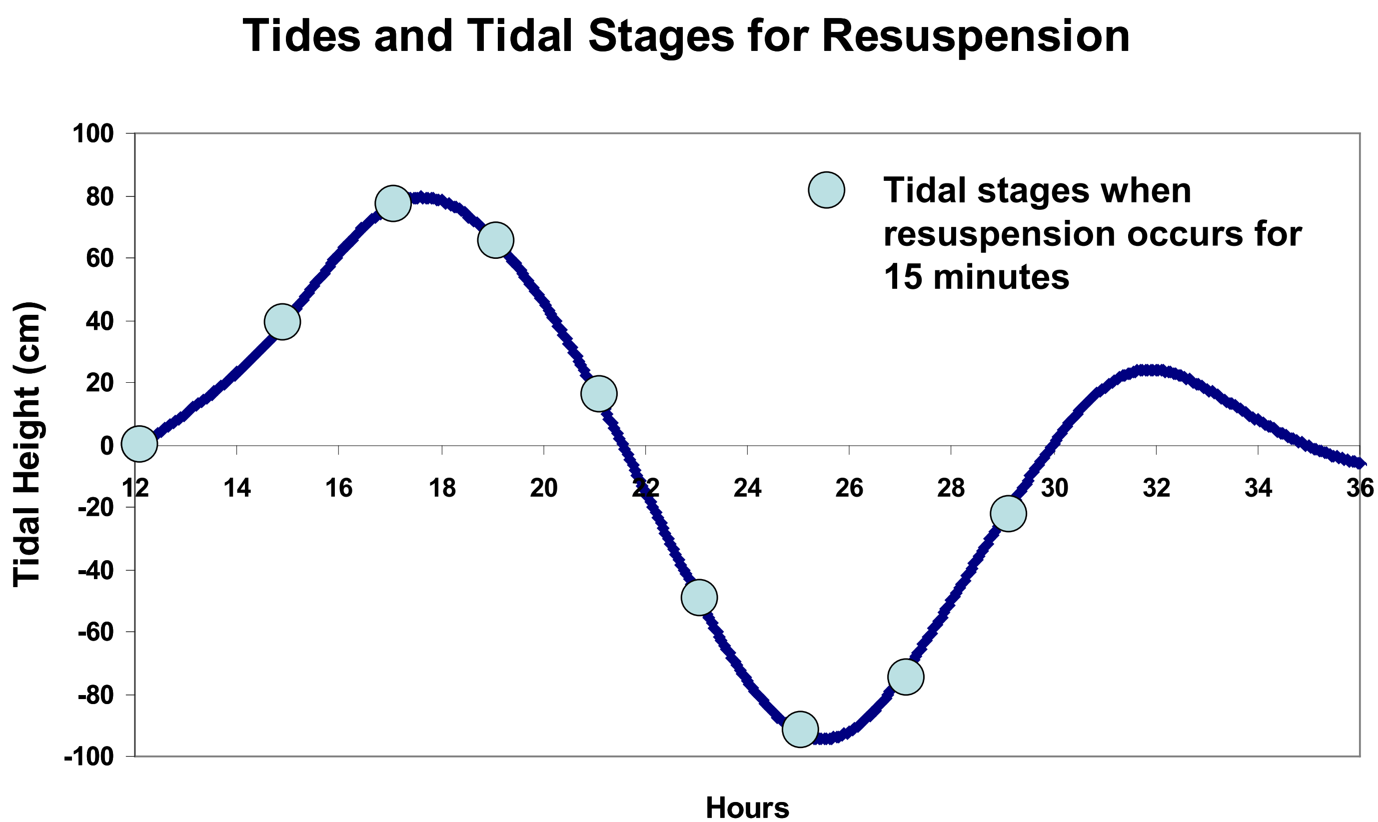
Note: Modeled contours of bottom scour depth as a function of distance from the stern of the tug. Contour interval is in cm.

FIGURE 5-4
Modeled Contours of Bottom Scour Depth
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



Shipyard Remediation Footprint Locations	Area (m^2)
1	**4,458**
2	**1,092**
3	**1,897**
4	**801**
Total	**8,248**

FIGURE 5-5
Spatial Relationship of Naval Base San Diego to Proposed Remediation Footprint
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



Note: Typical 24-hour tides showing the nine tidal stages when TRIM model runs were initiated.

FIGURE 5-6
Typical 24-hour Tides at Naval Base San Diego
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

SECTION 6

Summary and Conclusions

The CAO and Complaint claim that historical activities at specific IRP sites at NBSD resulted in the discharge of contaminants to San Diego Bay, and that these contaminants were subsequently resuspended by ship movements, transported by tidal currents, and redeposited at the Shipyard Sediment Site, resulting in "the accumulation of waste in the marine sediment" (RWQCB, 2010a). The scientific lines of evidence developed in this report to assess these claims indicate the following:

- Ten IRP sites were identified in the CAO; nine of these sites were also identified in the Complaint. The potential for historical releases from four of the sites (IRP Sites 8, 9, 10, and 12) to San Diego Bay is low, and it is unlikely that these sites ever had a detectable impact on bay sediments. Historical transport pathways from six of the sites (IRP Sites 1, 2, 3, 4, 7, and 13) did exist or may have existed, although there is little direct evidence in bay sediments that is indicative of releases from these sites. Discharges to the bay from these sites would have declined over time due to cessation of site activities, improved environmental practices, and completion of remedial actions. Five of the sites (IRP Sites 7, 8, 9, 12, and 13) have been closed with no further action, with regulatory agency concurrence.

- Multiple dredging events from the 1940s through 2003 have removed sediments that accumulated in three areas of San Diego Bay adjacent to the IRP sites and in the main navigational channel between NBSD and the Shipyard Sediment Site, reducing the likelihood of potential impacts of any historical releases from IRP sites as well as the availability of COCs for potential resuspension and transport.

- At NBSD, COC concentrations in surface sediment in the three areas adjacent to the IRP sites tend to be higher closer to shore and lower outside the pier heads and in the main channel. At the Shipyard Sediment Site, COC concentrations in surface sediment also decrease with increasing distance from the shoreline. These concentration gradient patterns are consistent with the presence of separate, localized source areas at NBSD and the Shipyard Sediment Site and are not consistent with the transport of COCs from NBSD to the Shipyard Sediment Site. There are no reasonable physical or chemical mechanisms that can scientifically explain these chemical gradient patterns other than the existence of localized source areas at each site.

- Average COC concentrations in the three areas of San Diego Bay adjacent to the IRP sites are lower than average concentrations within the proposed remediation footprint at the Shipyard Sediment Site. In addition, COC concentrations in subsurface sediments adjacent to the IRP sites do not appear to be substantially higher than those in surface sediments. Based on the existing data reviewed for the site, there are no reasonable physical or chemical mechanisms that can scientifically explain higher chemical concentrations at a distant site that exceed the original source concentration.

- Because of its prevalent use as an antifouling coating on commercial ships and its lack of use on Navy ships, TBT is a strong, site-specific indicator of Shipyard Sediment Site releases. TBT concentrations in sediments adjacent to NBSD are about an order of magnitude lower than concentrations found at the Shipyard Sediment Site. Other Shipyard Sediment Site COCs, including arsenic, cadmium, copper, lead, zinc, and PCBs, are significantly correlated with TBT in sediments at the Shipyard Sediment Site. This correlation is consistent with co-occurring sources within the Shipyard Sediment Site and inconsistent with a significant source from NBSD.
- PCB fingerprinting of sediments at the Shipyard Sediment Site is consistent with the presence of two distinct, localized sources of PCBs. If these PCBs were derived from activities at NBSD, the signatures would be similar. The spatial distribution of PCBs at the Shipyard Sediment Site is consistent with the presence of two different sources, with concentrations found at the north end of the site higher than those at the south end.
- A modeling simulation was performed specifically to evaluate the claim that sediments adjacent to IRP sites may have been resuspended by propeller wash, transported to the Shipyard Sediment Site by tidal currents, and redeposited within the Shipyard Sediment Site. The modeling results indicate that net deposition to the Shipyard Sediment Site proposed remediation footprint due to resuspension and transport from areas adjacent to IRP sites at NBSD was between 0.17 percent and 0.37 percent of the total annual deposition, an amount that is negligible in the overall deposition of sediments at the Shipyard Sediment Site.

Collectively, these lines of evidence indicate that the overall contribution of IRP sites to contamination at the Shipyard Sediment Site is negligible.

SECTION 7

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Appendix A

HISTORICAL DOCUMENT REVIEW

NASSCO PROPERTY
INCLUDING THE 28TH STREET SHORE BOAT LANDING
SAN DIEGO, CALIFORNIA

EXECUTIVE SUMMARY

This technical report provides a chronological history of activities at the property in the area of the 28th Street Mole Pier, located on the eastern shoreline of San Diego Bay in San Diego, California. The property is currently leased by the National Steel and Shipbuilding Company (NASSCO). The report focuses on Navy activities in this area, in particular any industrial activities that may have had potential impact to bay sediments.

Documents reviewed for this report include the following:

- Thirty-five Navy Public Works Station Condition and Master Development Plan maps from the years 1932 through 1951
- Twenty-one historical aerial photographs from the years 1936 through 2002
- Sanborn Fire Insurance maps from the years 1921, 1949, and 1956
- Available lease records
- United States Army Corps of Engineers reports, Port Series No. 13 for 1924, and Port Series No. 27 for years 1946, 1956, and 1978
- A 1969 U.S. Navy Real Estate Summary Map
- A 1939–1940 Harbor Commission Report map
- A 2004 Navy Technical Report on Historic Navy Activities at NASSCO Shipyard

Based on the review, Navy activities in this area took place at three locations: temporary housing on parcels east of the 28th Street Mole Pier, the 28th Street Shore Boat Landing facility, and a second small craft landing on a parcel at the southern end of 28th Street.

TEMPORARY HOUSING EAST OF 28TH STREET MOLE PIER

East of the 28th Street Mole Pier, in an area east of 28th Street and south of Belt Street, temporary officers quarters were used by the Navy on leased City of San Diego property from approximately 1941 through 1946, in the area known as Parcel 1. During approximately 1941 and 1942 a Temporary Defense Housing Camp occupied a parcel located southwest of the intersection of Belt Street and 28th Street. Industrial development in both these areas appears to have taken place after Navy use had ended.

28TH STREET SHORE BOAT LANDING FACILITY

The Navy operated a 28th Street Shore Boat Landing facility on the north side of the 28th Street Mole Pier from approximately 1939 through 1956. This facility, located near the western terminus of the 28th Street Mole Pier, consisted of a storage room, a waiting room, and a finger pier and floating docks used by ship launches to ferry sailors to and from Navy ships moored in San Diego Bay (Navy 2004). Non-Navy industrial activities on 28th Street Mole Pier during this time period included a shipbuilding and maintenance facility located partly on a wooden wharf extending along the north face of the 28th Street Mole Pier and partly on the shore north of the base (eastern end) of the pier. By 1946, Lynch Shipbuilding Company was operating the facility, and by 1956, National Marine Terminal Incorporated was operating it. Industrial operations shown for this facility include machine, woodworking, pattern, electric, and welding shops; a foundry; and a mold loft.

SMALL CRAFT LANDING, SOUTHERN END OF 28TH STREET

In 1956, a permit was granted to the Navy for use of a parcel located east of the 28th Street Mole Pier, at the southern end of 28th Street, apparently as a replacement for the loss of the Shore Boat Landing facility on the north side of the 28th Street Mole Pier. A small landing can be seen in this area in aerial photographs from 1964, 1974, and 1978. No other Navy activities were seen in this parcel. The industrial development of the parcel appears to have taken place after Navy use had ended.

CONCLUSION

No documentation was found during the review to support Navy industrial use of the area currently leased by NASSCO. Navy use in this area appears to have been limited to temporary housing in two areas during the 1940s and operation of small landings, first on the north side of the 28th Street Mole Pier (near its western terminus) and later on the south side near the base (eastern end) of the pier.

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APPENDICES

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ABBREVIATIONS AND ACRONYMS

ATSF	Atchison, Topeka and Santa Fe
NASSCO	National Steel and Shipbuilding Company
NBSD	Naval Base San Diego

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1.0 INTRODUCTION

This technical report provides a chronological history of activities at the property in the area of the 28^{th} Street Mole Pier, located on the eastern shoreline of San Diego Bay (Figure 1-1). The property is currently leased by the National Steel and Shipbuilding Company (NASSCO) in San Diego, California (Figure 1-2), including the former 28^{th} Street Shore Boat Landing area. This report was prepared by Tetra Tech EC, Inc., on behalf of the United States Department of the Navy, Naval Facilities Engineering Command Southwest, under Contract No. N62473-07-D-3211, Contract Task Order No. 0003.

1.1 PURPOSE AND OBJECTIVE

The purpose of this historical review was to identify operational activities that have occurred on the 28^{th} Street Mole Pier property since its construction in 1936 and subsequent operation, particularly industrial activities, if any, that may have had potential impact on bay sediments. This information will be used to support the Navy's evaluation of historical activities at the NASSCO 28^{th} Street Mole Pier property, particularly the Navy's use of the former 28^{th} Street Shore Boat Landing area on the north side of the 28^{th} Street Mole Pier from 1938 to 1956.

1.2 SCOPE OF SERVICES

The scope of services for this report included review of the following documents:

- Navy Public Works Station Condition and Master Development Plan maps for Naval Base San Diego (NBSD), formerly known as Naval Station San Diego
- Historical aerial photographs
- Sanborn Fire Insurance maps
- Lease records found for the area
- United States Army Corps of Engineers reports
- The 2004 Navy Technical Report on Historic Navy Activities at NASSCO Shipyard (Navy 2004)
- Other maps and records as available

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2.0 SITE DESCRIPTION

The 28th Street Mole Pier is located on the eastern shore of San Diego Bay, south of the Coronado Bay Bridge (Figure 1-2). Reclaimed from San Diego Bay in 1936 using hydraulically placed fill, the mole pier is currently owned by the San Diego Unified Port District, and occupied by NASSCO for the purpose of shipbuilding and repair. The NASSCO property encompasses approximately 127 acres, of which approximately 80 acres are land and 47 acres are offshore. The land portion is bounded to the south by Chollas Creek and to the east by Harbor Drive, and extends to the north to a line parallel to and approximately 50 feet north of Berth XII.

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3.0 CHRONOLOGY OF LAND USE AT THE 28TH STREET PIER AREA

The following sections present and discuss the history of land use in the 28th Street Mole Pier area currently occupied by the NASSCO shipyard.

3.1 BEFORE 1930

Prior to 1930, the 28th Street Mole Pier and the area currently occupied by NASSCO were submerged portions of San Diego Bay and had not yet been created by infill.

3.1.1 1921 Map – Sanborn Fire Insurance Map

The 28th Street Mole Pier and associated land had not yet been created by infill. A pier is shown extending approximately 720 feet into the bay from the foot of 28th Street, near the present day intersection with Harbor Drive (Figure 3-1). There is a platform at the end of the pier with a building identified as the San Diego Yacht Club. Several smaller buildings are shown near the base of the pier including a carpenters shop and an ammunition storage area. The National City Branch of the Atchison, Topeka and Santa Fe (ATSF) Railway closely parallels the shoreline in the area of 28th Street.

3.1.2 1924 Report – War Department Corps of Engineers, U.S. Army – The Ports of Los Angeles, Long Beach, San Diego, and San Luis Obispo, California

The 28th Street Mole Pier and associated land had not yet been created by infill. The map shows a pier identified as California Naval Reserve Pier extending into the bay from the foot of 28th Street. The tabular inventory of piers, wharves, and docks (Figure 3-2) shows the California Naval Reserve Pier to be owned by the State of California and operated by the San Diego Yacht Club.

3.2 1930 TO 1939

The 28th Street Mole Pier and associated land were created using hydraulically placed fill during the period 1936 to 1937. By early 1937, Chollas Creek west of the railroad tracks had been straightened and channelized. In 1938 the Navy was granted a permit for the use of the 28th Street Shore Boat Landing, located on the northern side of the 28th Street Mole Pier, near its western terminus.

3.2.1 1932 Navy Station Condition Map – Map of Destroyer Base, Naval Operating Base, San Diego, CA, Revised Development Plan Dated 11-7-1932

Chollas Creek had not yet been channelized. The map shows a proposed exchange of a triangular Navy parcel located on the north side of Chollas Creek in the general area later used for Temporary Officers Quarters, for a triangular City of San Diego parcel on the south side of Chollas Creek, located west of the Navy parcel (Figure 3-3). The Navy parcel appeared to fall between the high water line and Chollas Creek. The parcel south of Chollas Creek appears to be the parcel shown on the 1969 U.S. Navy Real Estate Summary Map as discussed in Section 4.

3.2.2 Navy Station Condition Maps, 1933 through 1939

Fifteen station condition maps covering this time period were reviewed (Figures 3-4 through 3-18). Six of the maps are additionally marked as Revised Development Plan maps. The maps from 1933 through 1937 show Chollas Creek as not yet channelized, and the area that would later become 28th Street Mole Pier is not shown. The northern side of the government property boundary is shown about 100 feet south of Chollas Creek, and running from Station 300 along the U.S. Bulkhead Line in San Diego Bay eastward approximately 1,750 feet along the Chollas Creek drainage. This property line indicates that the Navy property boundary associated with Destroyer Base San Diego (now known as NBSD) was located south and east of the current location of the 28th Street Mole Pier. The 1936 station condition map shows several non-Navy parcels hatched in color. One of those parcels is located north of Chollas Creek, in the area later acquired in the 1940 Grant Deed from the City of San Diego; however, the parcel is not labeled and no explanation of the hatching is shown. This parcel is located adjacent to and east of the 28th Street Mole Pier.

The 1938 and 1939 Revised Development Plan maps show the quay wall and dredging of Chollas Creek to minus 20 feet as future developments. The area north of Chollas Creek that will become the 1940 Grant Deed parcel is shown as proposed government expansion, and in the 1939 map as "15.2 acres being deeded to Govt. by the City of San Diego." The area north and west of Chollas Creek is labeled as 28th Street Recreational Area and Municipal Tidelands. The area that will later become 28th Street Mole Pier is not shown.

The 1939 map of Suggested Additions to Destroyer Base Properties shows the proposed quay wall and dredging of Chollas Creek to minus 20 feet as future developments (Figure 3-18). The area north of Chollas Creek that will become the 1940 Grant Deed parcel is shown surrounded by proposed future property lines. The area north and west of Chollas Creek is labeled as 28th Street Recreational Area and Municipal Tidelands. The 28th Street Mole Pier is shown extending into San Diego Bay, rounded at the end, and labeled Recreational Pier. Structures that will later be known as 28th Street Shore Boat Landing are shown on the north side of the pier near its western terminus, and are labeled as U.S. Destroyer Stores Landing.

3.2.3 1936 Report – Corps of Engineers, U.S. Army – The Ports of San Diego and San Luis Obispo, California

The 28th Street Mole Pier and associated land is depicted as not yet having been created by infill (Figure 3-19). The pier at the foot of 28th Street shown in the 1924 report is not shown in this report.

3.2.4 1936 Photograph – Historical Aerial Photograph Dated 11-3-1936

The 1936 photograph is an oblique view facing north along San Diego Bay (Figure 3-20). Chollas Creek west of the ATSF railroad tracks appears to have been straightened and channelized. Fill material in the shape of the 28th Street Mole Pier can be seen extending into the bay, and a suction dredge and piping can be seen in the photograph placing hydraulic fill. A lagoon area in the process of infill can be seen north of Chollas Creek and east of the 28th Street Mole Pier within the area currently occupied by NASSCO. No structures or development are visible in the area of newly made land.

3.2.5 1937 Photograph – Historical Aerial Photograph Dated 3-28-1937

The 1937 photograph is a vertical view showing the area of the 28th Street Mole Pier (Figure 3-21). Chollas Creek west of the ATSF railroad tracks appears to have been straightened and channelized. The lagoon area seen in the 1936 photograph is no longer present, with a smaller darkened area possibly indicating vegetation or an area of tidal inundation. No structures or development are visible in the area of newly made land with the possible exception of a small building or trailer visible about halfway out the northern side of the newly created mole pier.

3.2.6 1939 Map – From a 1939 to 1940 Harbor Commission Report

This 1939 map shows proposed and ongoing dredge and fill projects in San Diego Bay for fiscal year July 1, 1938 to June 30, 1939 (Figure 3-22). The area of the 28th Street Mole Pier is shown as reclamation currently under construction, and the areas to the sides of the pier and outboard of the pier are shown as dredging currently under construction, with a dredging depth shown of minus 26 feet. The 28th Street Mole Pier itself is not named on the map, but the area of the pier is shown as the 28th Street Recreational Area.

3.3 1940 TO 1949

As early as 1940, the pier is tree-lined, and the 28th Street Shore Boat Landing facility can be seen on the northern side of the mole pier near its western terminus. By 1945 a wharf later identified as Lynch Shipyard Wharf No. 1 can be seen running along the north side of the 28th Street Mole Pier, from the base of the pier out almost to the 28th Street Shore Boat Landing facility. By 1946 the Lynch Shipbuilding Company is in operation with facilities for the construction and repair of wood and steel vessels. Shops and mills for this purpose can be seen both on Lynch Shipyard Wharf No. 1, and north of the base of the 28th Street Mole Pier.

During approximately 1941 and 1942, a Temporary Defense Housing Camp occupied a parcel located southwest of the intersection of Belt Street and 28th Street. East of 28th Street and south of Belt Street, temporary officers quarters were in use by the Navy on leased City of San Diego property from approximately 1941 through 1946.

3.3.1 1940 Photograph – Historical Aerial Photograph Dated 3-8-1940

The 1940 photograph is an oblique view facing north along San Diego Bay (Figure 3-23). The shoreline to the north and south of the area of the 28th Street Mole Pier appears to have been dredged and straightened. Most of the pier and the extension of 28th Street southwest of the ATSF railroad tracks are tree-lined. Buildings can be seen in the area of the 28th Street Shore Boat Landing on the northern side of the mole pier near its western terminus. A smaller pier on pilings can be seen extending out into the bay about 100 feet north of the mole pier. A building can be seen near the base of the smaller pier, just north of the extension of 28th Street. The triangular area east of the mole pier, south of 28th Street, west of the ATSF railroad, and north of Chollas Creek appears to be completely filled in. This area appears to be used for open staging and handling of goods, with no structures noted.

3.3.2 1941 Photographs – Historical Aerial Photographs Both Dated 1-12-1941

The 1941 photographs show oblique views along San Diego Bay, with one photograph facing north (Figure 3-24) and one facing south (Figure 3-25). As in the 1940 photograph, these photographs show the tree-lined pier and extension of 28th Street. The 28th Street Shore Boat Landing Facility can be seen. No buildings yet appear in the triangular area east of the pier, south of 28th Street, west of the railroad, and north of Chollas Creek.

3.3.3 1941 Navy Station Condition Maps

The 1941 station condition map shows the government property boundary now including the 1940 Grant Deed Parcel from the City of San Diego, east of the 28th Street Mole Pier and north of Chollas Creek (Figure 3-26). A building approximately 700 by 150 feet is shown on this parcel and identified as a Boat Storage Building; however, the building may at this time be a proposed rather than an existing structure.

The 1941 Master Development Plan (Figure 3-27) shows the 28th Street Mole Pier labeled as the City Recreational Pier (Temporary Parking). The 28th Street Shore Boat Landing buildings are shown on the north side of the pier near its terminus but are unlabeled. A proposed expansion of 28th Street Mole Pier to the south is shown. An area west of 28th Street and several hundred feet north of the pier is labeled as Temporary Defense Housing Camp.

Within the triangular area bounded by 28th Street, Belt Street, and Chollas Creek, the Boat Storage Building identified above can be seen, and north of that a number of proposed buildings are shown, labeled as Temporary Officers Quarters. As discussed later in Section 4, an April 1, 1941, tidelands lease agreement between the U.S. Department of Agriculture Farm Security Administration and the Harbor Department-City of San Diego shows the Temporary Officers Quarters described above as located primarily on Parcel 1, an M-shaped 4.898-acre parcel north of the 1940 Grant Deed parcel containing the Boat Storage Building. The Temporary Defense Housing Camp was located on Parcel 2 of the same lease, a 5.442-acre parcel located southwest of the intersection of Belt Street and 28th Street. The 1949 drawing of this lease, Lease 144-B-1, is discussed in Section 4 and provided in Appendix B. Based on these lease drawings, there are four parcels within the triangle of land bounded by 28th Street, Belt Street, and Chollas Creek:

- The 1940 Grant Deed parcel along Chollas Creek that remains Navy property
- An unlabeled parcel north of the Grant Deed parcel
- Parcel 1 north of the unlabeled parcel
- A smaller unlabeled parcel north of Parcel 1 near the intersection of 28th Street and Belt Street

The area shown for the planned development of the Temporary Officers Quarters appears to extend into the parcels north and south of Parcel 1.

3.3.4 Navy Station Condition Maps 1942 through 1946

Thirteen station condition maps covering this time period were reviewed (Figures 3-28 through 3-40). Eight of the maps are additionally marked as Master Development Plan maps. The maps from years 1942 through 1946 show the 28th Street Pier as variously labeled City Recreational Pier, 28th Street Municipal Recreational Pier, 28th Street Mole Pier, and 28th Street Municipal Mole Pier. The 28th Street Shore Boat Landing facility is typically shown, although it is unlabeled. A structure and several piers are typically shown near the base of the mole pier and north along the shore; some of the maps label this area as Lynch Shipbuilding Co. One of the 1942 Master Development Plan maps shows the area west of 28th Street and several hundred feet north of the pier as Temporary Defense Housing Camp, as also shown on the 1941 Master Development Plan map.

The ten housing units in the area of Parcel 1 east of the 28th Street Mole Pier are typically shown on the maps. The housing is variously labeled as Present Defense Housing Dormitories, Barracks, Temporary Officers Quarters, and Officers Dormitories. Some maps show a tennis court near the northern boundary of Parcel 1. Several of the maps from 1942 and 1943 show the government property boundary as encompassing the entire triangular area bounded by 28th Street, Belt Street, and Chollas Creek. The 28th Street Mole Pier is not shown as within the government property boundary. The 1946 map shows the housing area as Under Naval Cognizance. Maps from 1944 through 1946 show a fence along the south boundary of the housing area, delineating a parcel south of the housing area and north of the 1940 Grant Deed parcel. While this parcel is unlabeled, a 1944 Master Development Plan map showing proposed conditions as of December 1, 1944 (Figure 3-37), shows a planned paint shop and a propeller shop in the parcel with notations that these shops were part of planned Navy Public Works expenditures. Subsequent Navy maps do not show buildings in this area, and it is not known whether the buildings shown in this area in the 1945 aerial photograph are the planned paint and propeller shops (see Section 3.3.5).

3.3.5 1945 Photograph – Historical Aerial Photograph Dated April 1945

The 1945 photograph is a vertical view of the 28th Street Mole Pier (Figure 3-41). Most of the pier and the extension of 28th Street southwest of the ATSF railroad tracks are tree-lined. The 28th Street Shore Boat Landing is visible on the northern side of the mole pier near its western terminus. A wharf can be seen running along the north side of the 28th Street Mole Pier, from the base of the pier almost out to the 28th Street Shore Boat Landing facility. Industrial development can be seen at the base of the pier and to the north along the shoreline, with a number of buildings visible. Several of the smaller structures appear to be on the wharf itself.

The Temporary Officers Quarters buildings shown in the 1942 through 1946 Master Development Plan maps can be seen in the area of Parcel 1, north of the 1940 Grant Deed parcel containing the Boat Building. Several smaller rectangular buildings are also visible in the area between Parcel 1 and the 1940 Grant Deed parcel.

3.3.6 Navy Station Condition Maps 1947 Through 1949

Three station condition maps covering this time period were reviewed (Figures 3-42 through 3-44). The maps show the 28th Street Pier as rounded at its western terminus and labeled as 28th Street Municipal Mole Pier. The 28th Street Shore Boat Landing facility is shown but is unlabeled. A structure and several piers are shown near the base of the mole pier and north along the shore, and some of the maps label this area as Lynch Shipbuilding Co.

Within the triangular area bounded by 28th Street, Belt Street, and Chollas Creek, the maps show the parcels north of the 1940 Grant Deed parcel as empty, and apparently outside the government property line.

3.3.7 1946 Report – Corps of Engineers, United States Army –The Port of San Diego, California

The wharf along the north side of 28th Street Mole Pier is shown on the map (Figure 3-45). The tabular inventory of piers, wharves, and docks (Figure 3-46) identifies the wharf as Lynch Shipyard Wharf No. 1, owned and operated by the Lynch Shipbuilding Co. The wharf is described as a 30-foot-wide shore wharf of open timber piling with timber deck, extending 630 feet along the stone bulkhead of the 28th Street Mole Pier, with several small shop buildings along the wharf. The tabular inventory of marine repair plants (Figure 3-47) describes the Lynch Shipbuilding Co. as located along the north side of 28th Street, and including “machine, woodworking, pattern, electric, and welding shops; foundry; and mold loft.”

3.3.8 1949 Map – Sanborn Fire Insurance Map

The 28th Street Mole Pier is shown on page 112 of the map. An area labeled as U.S. Naval Landing Station is shown along the north side of the 28th Street Mole Pier, near its western terminus (Figure

3-48). Structures labeled as storage and waiting room appear to be part of this facility, as well as several floats.

The shops shown along the north side and at the base of the pier appear to be associated with the Lynch Shipbuilding Company (Figure 3-49). This assessment is based both on the size and orientation of labels on the Sanborn map, and on the facility description and the length of the wharf face described as owned and operated by Lynch Shipbuilding at this location in the 1946 U.S. Army Corps of Engineers Report. The electrical shop, pipe shop, and one of the welding areas are shown as located on Lynch Shipyard Wharf No. 1 itself, while the boat way, overhead crane, mold loft, welding building, battery shop, machine shop, planing mill, naval stores building, carpentry and mill work building, and other buildings and shops are shown in the Lynch Shipbuilding area near the base of the pier, north of the pier but south of the Peoples Fish Packing Corp. fish cannery.

3.3.9 1949 Photographs – Two Historical Aerial Photographs Dated 2-16-49

The 1949 photographs show vertical views of the 28th Street Mole Pier (Figure 3-50). The pier and the extension of 28th Street southwest of the ATSF railroad tracks continue to be tree-lined. The 28th Street Shore Boat Landing is visible on the northern side of the mole pier near its western terminus. No other buildings are visible on the 28th Street Mole Pier itself. Lynch Shipbuilding Wharf No. 1 can be seen running along the north side of the 28th Street Mole Pier, and the electrical shop building shown in the 1949 Sanborn map can be seen on the wharf. Other Lynch Shipbuilding structures shown in the 1949 Sanborn map can also be seen in the photograph, including the mold loft, planing mill, foundry, and fuel oil tanks, and the carpenters, battery, machine, and paint shops. Industrial development can be seen north of the base of the pier and to the north along the shoreline, with a number of buildings visible.

In the area of Parcel 1, east of the 28th Street Mole Pier, the Temporary Officers Quarters buildings seen in the 1945 aerial photograph appear to have been removed; however, disturbed soil and in some cases the outline of the buildings can be seen in their former locations. A rectangular building can be seen near the northern boundary of Parcel 1. No buildings appear to be present on the parcel between Parcel 1 and the 1940 Grant Deed parcel.

3.4 1950 TO 1959

In 1950 the western end of the 28th Street Mole Pier is extended and straightened, a project that appears to be complete by 1953. The 28th Street Shore Boat Landing appears to have been removed sometime between 1953 and 1956. By 1953 the parcels formerly used as temporary housing are being redeveloped as industrial property. By 1956 the Lynch Shipbuilding Company facility has become National Marine Terminal Ship Building, and the western terminus of the pier is in use by the City of San Diego Harbor Department for the receipt and shipping of cargo.

3.4.1 1950 Photographs – Two Historical Aerial Photographs Dated 10-29-50

The 1950 photographs show paired vertical views of the 28th Street Mole Pier (Figure 3-51). The pier and the extension of 28th Street southwest of the railroad tracks continue to be tree-lined. The 28th Street Shore Boat Landing is visible on the northern side of the mole pier near its western terminus. A large mound of what appears to be dredge spoils can be seen near the western terminus of the pier, and a suction dredge and piping can be seen in the photograph delivering hydraulic fill to extend and straighten the western terminus of the pier. The Lynch Shipbuilding structures and shops seen in the 1949 photographs can also be seen in the photograph, both on the wooden wharf on the north side of the 28th Street Mole Pier and along the shoreline north of the base of the pier.

In Parcel 1, the former area of the Temporary Officers Quarters buildings remains empty. A second rectangular building is now visible between the northern boundary of Parcel 1 and the intersection of Belt Street and 28th Street. Two rectangular buildings can now be seen in the area between Parcel 1 and the 1940 Grant Deed parcel.

3.4.2 Navy Station Condition Maps 1950 and 1951

Two station condition maps covering this time period were reviewed (Figures 3-52 and 3-53). The maps typically show conditions as described for Navy station condition maps from 1947 through 1949. The 28th Street Pier is rounded at its western terminus and labeled as 28th Street Municipal Mole Pier. The 28th Street Shore Boat Landing facility is shown but is unlabeled. A structure and several piers are typically shown near the base of the mole pier and north along the shore, and the area is labeled as Lynch Shipbuilding Co.

Within the triangular area bounded by 28th Street, Belt Street, and Chollas Creek, the maps show the parcels north of the 1940 Grant Deed parcel as empty and apparently outside the government property line.

3.4.3 1953 Photograph – Historical Aerial Photograph Dated 3-31-53

The 1953 photograph is a vertical view of the 28th Street Mole Pier (Figure 3-54). The trees are gone from the south and west sides of the pier. The 28th Street Shore Boat Landing is visible on the northern side of the mole pier near its western terminus. The extension and straightening of the western terminus of the pier appears to be complete. The 28th Street Mole Pier appears to be used for parking or staging equipment. The shipbuilding activities previously noted on the wooden wharf on the north side of the 28th Street Mole Pier, and along the shoreline north of the base of the pier, appear to be continuing.

Parcel 1 and the parcels north and south of it appear to be industrial, with vehicles, equipment, and several rectangular buildings not seen in the1950 photographs of this area. Within the triangular area bounded by the 1940 Grant Deed parcel, Belt Street, and 28th Street, the activities appear to be separated into rectangular yards rather than following the boundaries between Parcel 1 and adjacent parcels.

3.4.4 1956 Photograph – Historical Aerial Photograph

The 1956 photograph is an oblique view of San Diego Bay looking south (Figure 3-55). The 28th Street Shore Boat Landing is not visible on this photograph; however, that area of the photograph is indistinct. Activities in the shipbuilding and Parcel 1 areas are similar to those noted in the 1953 photograph.

3.4.5 1956 Map – Sanborn Fire Insurance Map

The base map appears to be the same base map as the 1949 Sanborn map above; however, the structures and labeling have been updated. The end of the pier is shown as rounded, and an area labeled as U.S. Naval Landing Station is shown along the north side of the 28th Street Mole Pier, near its western terminus (Figures 3-56, 3-57, and 3-58). The area shown as the Lynch Shipbuilding Co. on the 1949 Sanborn map is now labeled Ship Building, with a smaller label indicating National Marine Terminal Ship Building. The electrical and pipe shops shown by the 1949 Sanborn map on the wharf fronting the north side of the 28th Street Mole Pier are not shown on this 1956 map.

Along the shore area north of the pier, the mold loft, battery and machine shops, planing mill, carpenters and millworks shops, and several storage areas are shown as for the 1949 map; however, the pattern shop, foundry, welding building, paint building, and fuel oil tanks shown on the 1949 map are no longer shown as present. A building or area labeled "sand blast" is shown at the inside elbow of South 28th Street where it turns to meet the pier. The fish cannery shown on the 1949 map as the Peoples Fish Packing Corp. is now shown as the Westgate California Tuna Packing Corporation.

3.4.6 1956 Report – Corps of Engineers, United States Army – The Port of San Diego, California

The map was missing from the report copy reviewed at the City of San Diego Public Library. The tabular inventory of piers, wharves, and docks (Figure 3-59) identifies the wharf along the north side of the 28th Street Mole Pier as National Marine Terminal Pier No. 1, owned by the National Steel and Shipbuilding Corp., and operated by National Marine Terminal Inc. The wharf is described as 30 feet wide by 540 feet long and used for mooring vessels for outfitting and repair, and for fueling small craft. Metered pumps are noted as available on the wharf for fueling purposes. The tabular inventory of marine repair plants does not mention National Marine Terminal Inc.

The 28th Street Pier is entered in the table of piers, wharves, and docks as owned and operated by the City of San Diego Harbor Department for the receipt of lumber and steel, and the receipt and shipping of general cargo. The 28th Street Pier is described as 270 feet along the face, and located at the outer end of 28th Street Pier at the end of 28th Street.

A photograph in the report shows the 28th Street Pier (Figure 3-60). The western terminus of the pier has been extended and straightened as seen in the 1953 photograph. The U.S. Naval Landing Station facility appears to have been removed, and the area near the western terminus of the pier is being used for the staging and handling of goods.

3.4.7 1958 Photograph – Historical Aerial Photograph Dated 3-1-58

The 1958 photograph is a vertical view of the 28th Street Mole Pier (Figure 3-61). The western terminus of the 28th Street Mole Pier falls outside the photograph. Activities in the shipbuilding and Parcel 1 areas appear similar to those noted in the 1953 and 1956 photographs.

3.4.8 1959 Photograph – Historical Aerial Photograph Dated 11-6-59

The 1959 photograph is an oblique view of San Diego Bay looking northwest (Figure 3-62). A structure is visible in the area of the 28th Street Shore Boat Landing; however, a vessel is present and the shape of the structure cannot be discerned. Activities in the shipbuilding and Parcel 1 areas are similar to those noted in the 1953, 1956, and 1958 photographs.

3.5 1960 AND LATER

Navy activities in both the 28th Street Shore Boat Landing area and the Parcel 1 area appear to have ceased by this time, and both the 28th Street Mole Pier area and the triangular area associated with Parcel 1 are in industrial use. By 1974 a pier extension can be seen extending from the south side of the mole pier. By 1978 a second pier extension can be seen extending from the south side of the mole pier. Also by 1978, much of the area of the former Lynch Shipbuilding Company, both on the wharf on the north side of the pier, as well as the shore area just north of the pier, have been replaced by a graving dock. This configuration and industrial use appear to continue through the 2002 aerial photograph, the last document reviewed.

3.5.1 1960 Photograph – Historical Aerial Photograph Dated 9-3-60

The 1960 photograph is a vertical view of San Diego Bay showing the 28th Street Mole Pier (Figure 3-63). The shape of the pier appears unchanged from the previous photograph. Activities in the shipbuilding and Parcel 1 areas are similar to those in the previous photograph. In the area of the 1956 lease parcel at the south end of 28th Street, a landing similar in size and shape to the landing previously seen at the 28th Street Shore Boat Landing area can be seen extending south into the bay. A building and parking area can be seen adjacent to the landing.

3.5.2 1964 Photograph – Historical Aerial Photograph 1964

The 1964 photograph is a vertical view of San Diego Bay showing the 28th Street Mole Pier (Figure 3-64). The structures observed in the 1964 photograph appear similar to those observed in the 1960 photograph.

3.5.3 1974 Photograph – Historical Aerial Photograph 1974

The 1974 photograph is a vertical view of San Diego Bay showing the 28th Street Mole Pier (Figure 3-65). A pier extension projects from the south side of the mole pier. Activities in the shipbuilding and Parcel 1 areas are similar to those in the previous photograph, with increased industrial development seen in both areas. The small landing and building noted in the 1960 photograph are still present.

3.5.4 1978 Report – Corps of Engineers, United States Army – The Port of San Diego, California

In this report an aerial photograph was used rather than a map to identify the piers, wharves, and docks inventoried (Figure 3-66). A second pier extension is now seen projecting from the south side of the mole pier, to the east of the extension noted in the 1974 photograph. The 28th Street Mole Pier and the two pier extensions on the south side of the mole pier are identified as owned by the San Diego Unified Port District and operated by the National Steel and Shipbuilding Company Inc.

The area of a graving dock on the north side of the mole pier can be seen in the photograph, with the pier now noticeably narrower at its base than near its terminus. Based on an overlay of the 1953 aerial photograph and the later 2002 aerial photograph, the area of this graving dock appears to extend over the majority of the area of the shops previously operated by the Lynch Shipbuilding Company, and later National Marine Terminal Ship Building.

3.5.5 1981 Photograph – Historical Aerial Photograph Dated November 1981

The 1981 photograph is a vertical view of San Diego Bay showing the 28th Street Mole Pier (Figure 3-67). The graving dock and pier extensions seen in the photograph from the 1978 U.S. Army Corps of Engineers report can also be seen in this photograph. The shipbuilding and Parcel 1 areas appear to continue in industrial use. In the area of the 1956 Navy lease parcel, the moorings and landing noted in the 1964 and 1974 photographs are no longer seen.

3.5.6 1989 Photograph – Historical Aerial Photograph 1989

The 1989 photograph is a vertical view of San Diego Bay showing the 28th Street Mole Pier (Figure 3-68). The shipbuilding and Parcel 1 areas appear to continue in industrial use.

3.5.7 1999 Photograph – Historical Aerial Photograph December 1999

The 1999 photograph is a vertical view of San Diego Bay showing the 28th Street Mole Pier (Figure 3-69). The shipbuilding and Parcel 1 areas appear to continue in industrial use.

3.5.8 2002 Photograph – Historical Aerial Photograph 2002

The 2002 photograph is a vertical view of San Diego Bay showing the 28th Street Mole Pier (Figure 3-70). The shipbuilding and Parcel 1 areas appear to continue in industrial use.

4.0 REVIEW OF PROPERTY RECORDS FOR THE 28TH STREET PIER AREA

The following sections present and discuss the property records reviewed for the 28th Street Mole Pier area currently occupied by the NASSCO shipyard. Appendix B contains copies of property records and drawings reviewed, including those discussed below.

4.1 1938 PERMIT – CITY OF SAN DIEGO PERMIT FOR THE 28TH STREET SHORE BOAT LANDING DATED MAY 19, 1938 (BY REFERENCE FROM 2004 NAVY TECHNICAL REPORT)

The 2004 Navy Technical Report states that this permit is referenced in a February 27, 1956, letter from the Port of San Diego to the Honorable Mayor and City Council, and is for the use of the 28th Street Shore Boat Landing. Copies of the letter and permit were not reviewed during the preparation of this report.

4.2 1940 DRAWING – CITY OF SAN DIEGO HARBOR DEPARTMENT LEASE TO MARTINOLICH SHIPBUILDING, DRAWING 93B

This drawing shows a rectangular parcel adjacent to the north side of the 28th Street Mole Pier (labeled Recreational Pier) to be leased to the Martinolich Shipbuilding Company. The Parcel is shown as 318,750 square feet (7.3 acres). Two smaller piers north of the mole pier are shown as within the parcel, as well as a building adjacent to the north side of the base of the pier. By 1951 the approximate footprint of this lease is shown on City of San Diego Harbor Department Drawing 86-B-8 as National Marine Terminal Inc.

4.3 1941 DRAWING – CITY OF SAN DIEGO HARBOR DEPARTMENT LEASE TO THE U.S. DEPARTMENT OF AGRICULTURE FARM SECURITY ADMINISTRATION, DRAWING 144-B-1

This drawing dated April 1, 1941, shows two parcels for lease to the U.S. Department of Agriculture Farm Security Administration, labeled Parcel 1 and Parcel 2. Parcel 1 is an M-shaped 4.898-acre parcel located east of the extension of 28th Street, southwest of Belt Street, and north of the 1940 Grant Deed parcel that fronts the north side of Chollas Creek. Parcel 2 of the same lease is shown as a 5.442-acre parcel located southwest of the intersection of Belt Street and 28th Street. Based on the lease drawing there are four parcels within the triangle of land bounded by 28th Street, Belt Street, and Chollas Creek: the 1940 Grant Deed parcel along Chollas Creek, an unlabeled parcel north of the Grant Deed parcel, Parcel 1 north of the unlabeled parcel, and a smaller unlabeled parcel north of Parcel 1 near the intersection of 28th Street and Belt Street.

4.4 1942 DRAWING – CITY OF SAN DIEGO HARBOR DEPARTMENT LEASE TO THE U.S. DEPARTMENT OF AGRICULTURE FARM SECURITY ADMINISTRATION, DRAWING 144-B-5

This drawing, revised January 6, 1942, shows an additional parcel for lease to the U.S. Department of Agriculture Farm Security Administration, labeled Parcel 3. Parcel 3 is a 7.445-acre parcel located west of the extension of Parcel 2, and north and east of the 1940 Martinolich lease parcel.

4.5 1955 DRAWING – CITY OF SAN DIEGO HARBOR DEPARTMENT LEASE TO THE NATIONAL STEEL AND SHIPBUILDING CORP, DRAWING 434-B

This drawing shows a parcel for lease to the National Steel and Shipbuilding Corporation, shown as a parking lot. The parcel covers most of the area of the 28th Street Mole Pier, with the exception of a strip 50 feet wide by 1,493 feet long extending from the base of the pier westward along its north side. A structure is shown near the western end of the unlabeled strip, in the approximate location of the 28th Street Shore Boat Landing facility. The parcel north of the pier is shown as pertaining to National Marine Terminal Incorporated. Drawing 576-B is an August 28, 1958, revision of Drawing 434-B. The building shown on Drawing 434-B in the location of the 28th Street Shore Boat Facility is no longer shown in this drawing.

4.6 1956 DRAWING – CITY OF SAN DIEGO HARBOR DEPARTMENT, U.S. NAVY PERMIT, DECEMBER 19, 1956, DRAWING NO. 453-B

This drawing identifies a 24,653-square-foot (0.6-acre) permit area at the south end of the extension of 28th Street. Assumed to be 1956, the date of this drawing is indistinct and may instead be 1955. The permit area itself is shown in San Diego Bay, adjacent to the southern terminus of the extension of 28th Street. An expanded view is shown of Parcel No. 1, located onshore at the southern terminus of 28th Street, adjacent to the shaded permit area. A building is shown in Parcel 1 with restrooms, a café, and waiting rooms for officers and enlisted personnel. The 2004 Navy Technical Report states "based on a Harbor Department letter dated February 27, 1956, this 1956 lease appeared to be a replacement for a lease granted May 19, 1938, which was likely the lease for the 28th Street Shore Boat Landing." Based on the review of this document during preparation of this report, Drawing 453-B shows a Navy permit rather than a lease.

The large parcel on the 28th Street Mole Pier is shown as National Steel and Shipbuilding Incorporated, as in Drawing 434-B. The text is barely legible, but the narrow parcel along the north side of the pier appears to be labeled as National Marine Terminal, Inc.

4.7 1969 MAP – U.S. NAVY REAL ESTATE SUMMARY MAP, COMPILATION OF SAN DIEGO AND NATIONAL CITY PORTIONS, DATED 7-28-69

The rectangular parcel containing the Boat Storage Building (later Building 78) is shown as a 14.51 acre parcel acquired by Grant Deed from the City of San Diego on July 17, 1940, and recorded April 30, 1943, on page 12 of Book 1499 in the San Diego County Office of Records. The parcel is located adjacent to and east of the 28th Street Mole Pier, and north of Chollas Creek. Several small 0.02- to 0.14-acre parcels adjacent to the ATSF railroad easement on the eastern side of the 1940 Grant Deed parcel were also shown as acquired at later dates.

In addition, a 6.1-acre parcel located on the south side of Chollas Creek is shown as received as a Grant Deed from the City of San Diego on December 1, 1930, and recorded March 21, 1932. The acquisition is noted as an exchange rather than a donation or a judgment, and was likely exchanged for a Navy parcel in the area of Parcel 1, as shown proposed on the 1932 map.

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5.0 SUMMARY AND CONCLUSIONS

Based on this historical document review, Navy activities within the area currently occupied by NASSCO took place at three locations:

- Temporary housing on parcels east of the 28th Street Mole Pier
- The 28th Street Shore Boat Landing facility
- A second small boat landing on a parcel at the southern end of 28th Street

East of the 28th Street Mole Pier, in an area east of 28th Street and south of Belt Street, temporary officers quarters were used by the Navy on leased City of San Diego property from approximately 1941 through 1946, in the area known as Parcel 1. During approximately 1941 and 1942 a Temporary Defense Housing Camp occupied a parcel located southwest of the intersection of Belt Street and 28th Street. Industrial development in both these areas appears to have taken place after Navy use had ended.

The Navy operated a 28th Street Shore Boat Landing facility on the north side of the 28th Street Mole Pier from approximately 1939 through 1956. This facility consisted of a storage room, a waiting room, and a finger pier and floating docks used by ship launches to ferry sailors to and from Navy ships moored in San Diego Bay (Navy 2004). Non-Navy industrial activities on 28th Street Mole Pier during this time period included a shipbuilding and maintenance facility located partly on a wooden wharf extending along the north face of the 28th Street Mole Pier, and partly on the shore north of the base of the pier. By 1946, Lynch Shipbuilding Company was operating the facility, and by 1956, National Marine Terminal Incorporated was operating it. Industrial operations at this facility include machine, woodworking, pattern, electric, and welding shops; a foundry; and a mold loft. The 2004 Navy Technical Report (Navy 2004) had previously associated many of the activities in the shipbuilding area with the Navy operated 28th Street Shore Boat Landing facility. However, this review indicates that these facilities were operated by the Lynch Shipbuilding Company and later by National Marine Terminal Incorporated.

In 1956 a permit was issued to the Navy for a parcel east of the 28th Street Mole Pier, at the southern end of 28th Street, possibly intended as a replacement for the loss of the 28th Street Shore Boat Landing facility on the north side of the 28th Street Mole Pier. A small landing can be seen in this area in aerial photographs from 1964, 1974, and 1978. No other Navy activities were seen in this parcel. The industrial development of the parcel appears to have taken place after Navy use had ended.

The Navy real estate department shows no record of owning or leasing property in the area currently occupied by NASSCO (Thomas Phelps, personal communication 2008). This may be in part because the two parcels used for small boat landings were used under permits rather than leases, and the parcels used for temporary housing in the 1940s appear to have been leased by the U.S. Department of Agriculture Farm Security Administration rather than by the Navy.

No documentation was found during the review to support Navy industrial use of the area currently leased by NASSCO. Navy use in this area appears to have been limited to temporary housing in two areas during the 1940s, and operation of small landings first on the north side of the 28th Street Mole Pier and later on the south side near the base (eastern end) of the pier.

6.0 REFERENCES

Phelps, Thomas. 2008. Email from Thomas Phelps, NAVFAC Southwest Real Estate Department, to Darren Belton, NAVFAC Southwest. October 22.

U.S. Navy. 2004. Technical Report on Historic Navy Activities at NASSCO Shipyard.

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FIGURES

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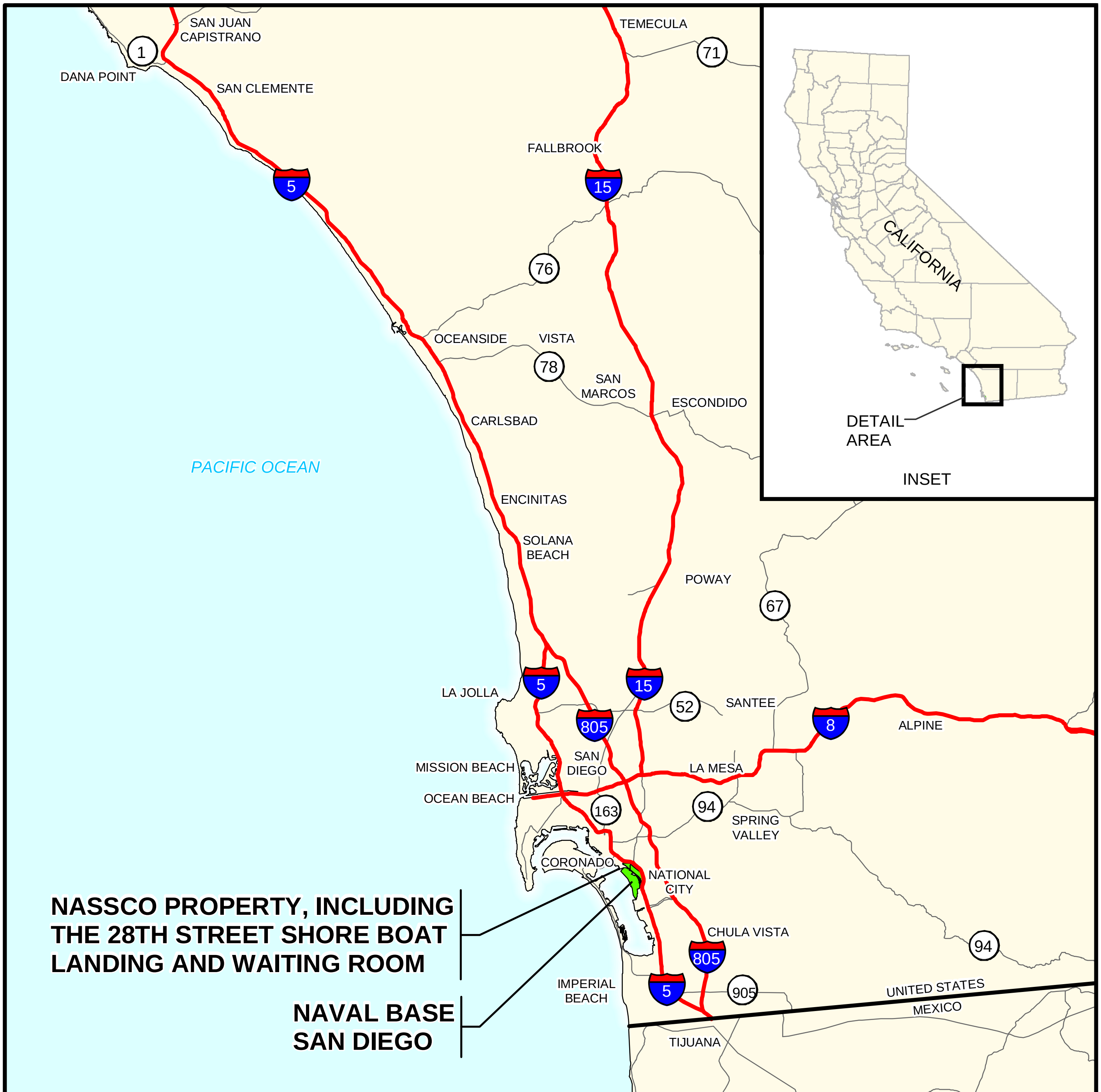


LEGEND

76 STATE HIGHWAY

15 INTERSTATE HIGHWAY

UNITED STATES/MEXICO BORDER

NAVAL BASE SAN DIEGO

WATER

5 0 5 10 Miles

Scale: 1" = 10 Miles

N

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

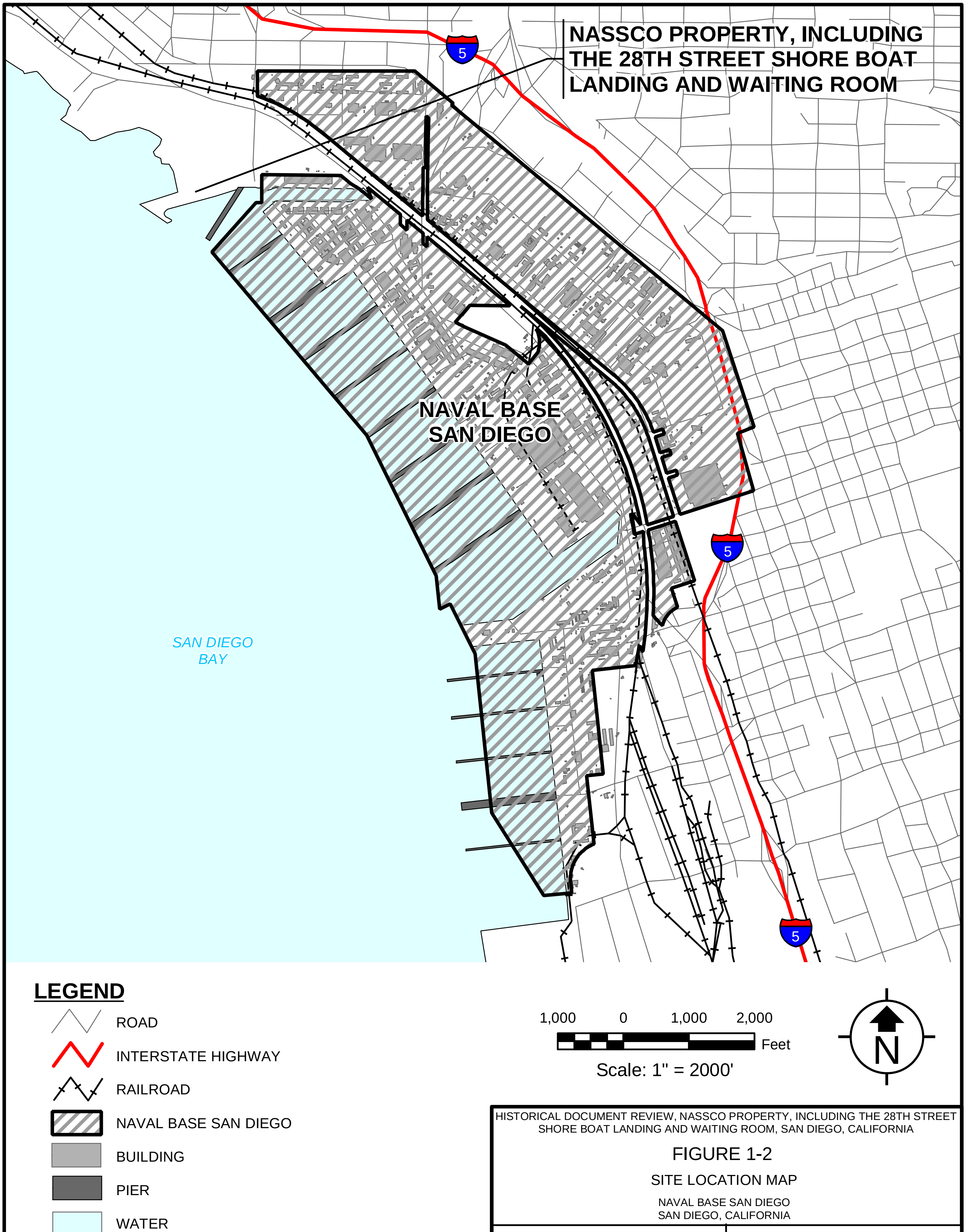
FIGURE 1-1

REGIONAL LOCATION MAP

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032R3410.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

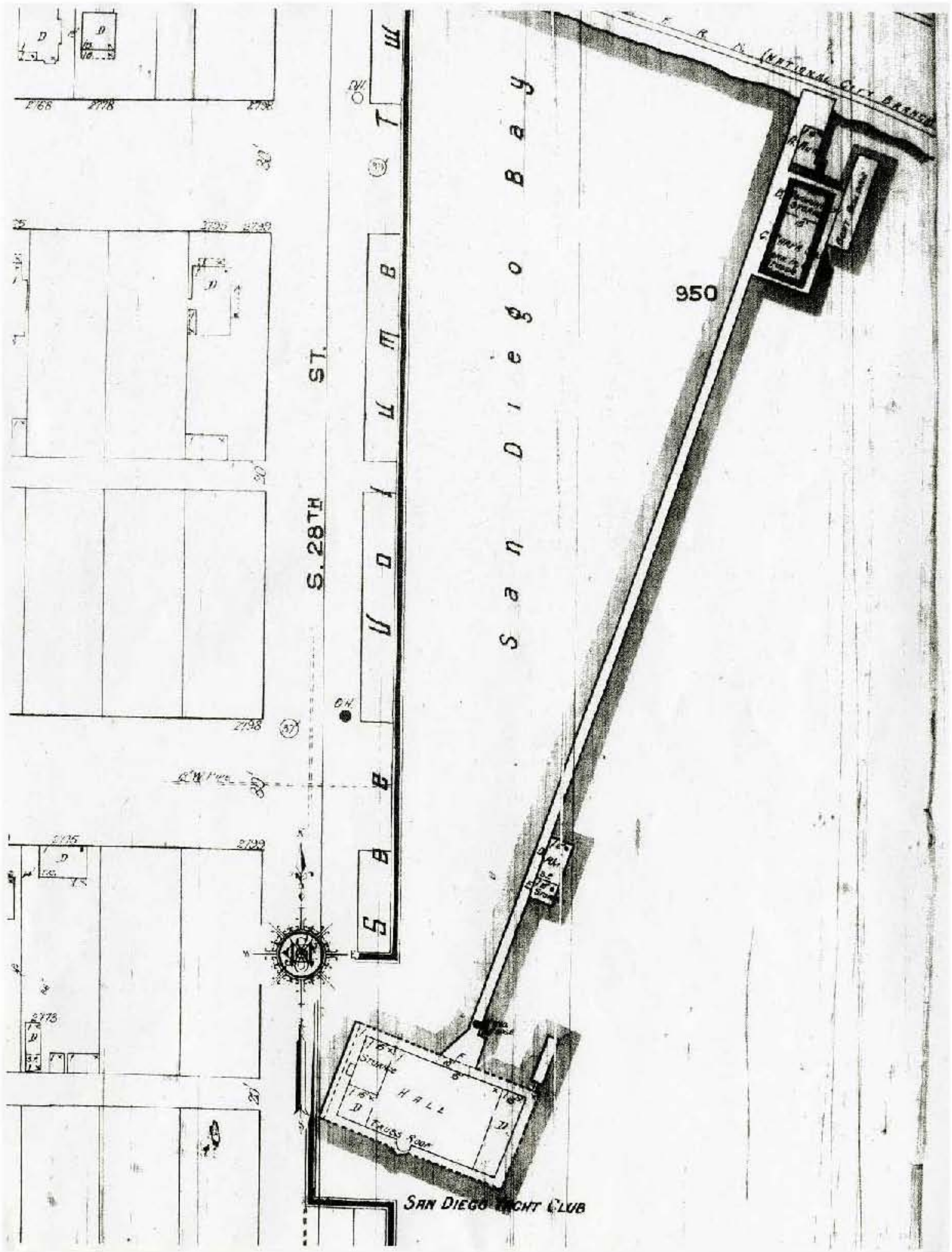
FIGURE 1-2

SITE LOCATION MAP

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032S3411.mxd

NAVFAC
Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-1

1921 MAP, SANBORN FIRE INSURANCE MAP

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3412.mxd

	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.	
Deck above mean lower low water	9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Berthing space available	200	200	26	300	300	[illegible]	
Capacity per square foot	25 pounds			40 pounds			350 pounds.
Lighted or unlighted	Lighted			Lighted			Unlighted.
Depth of water at mean lower low water			12			12	Shore end 21 feet, outer 22 feet.
Transit sheds	None			None			None.
Mechanical handling facilities.	1 fixed conveyor, operated by electricity, inside; 1 fixed hoist, electrically operated, capacity ½ ton, reach 8 feet, outside; 6 1-ton hand cars.			1 fixed conveyor, electrically operated, outside; 1 fixed hoist, electrically operated, capacity ½ ton, reach 6 feet, outside; 5 1-ton hand cars.			1 steam locomotive; 1 Brown hoist, capacity 15 tons, reach 50 feet, operated by steam, outside; 50 flat cars, 20-ton capacity.
Railway facilities: Name of railway connecting.	None			None			Atchison, Topeka & Santa Fe Ry. and San Diego & Arizona Ry.
Tracks on open wharf							Four 3,200 feet long; surface.
Water supply	City supply			City supply			City supply; 2-inch main; rate of delivery, 18,000 gallons per hour.
Fire protection	8 portable chemical extinguishers			4 ¾-inch fire plugs, 10 portable chemical extinguishers.			Six 2-inch fire plugs, 50 feet of hose.
Electric current	Alternating current; 110 volts for lights; 220 volts for power.			Alternating current; 110 volts for lights; 220 volts for power.			None.

Reference number on map.	36			37			38		
Name	San Diego Marine Construction Co. Pier.			Standard Oil Co. Pier.			California Naval Reserve Pier.		
Location in harbor	At foot of Sampson Street			Near foot of Schley Street			At foot of Twenty-eighth Street, Reed Hubbell's addition.		
Owned by	San Diego Marine Construction Co.			Standard Oil Co.			State of California.		
Operated by	do.			do.			San Diego Yacht Club.		
Purpose for which used	Berthing vessels under repair			Used as oil receiving and bunkering station			Landing, and berthing of yachts and naval boats.		
Type of construction	Timber on railroad rails for piles			Wharf with long approach; timber deck on concrete jacketed wooden piles.			Timber deck on concrete jacketed wooden piles.		
	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.
Description:	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
Dimensions	630	630	7	25	25	200	60	60	120
Width of apron	Open wharf						5	7	5
Deck above mean lower low water	9	9	9	14	14	14	12	12	12
Berthing space available	100	100	0	25	25	200	60	60	120
Capacity per square foot	30 pounds			150 pounds			100 pounds.		
Lighted or unlighted	Unlighted			Lighted			Lighted.		
Depth of water, mean lower low water	5	5	11			23	8	8	11
Transit sheds	None			None			None.		
Mechanical handling facilities.	2 push cars, capacity ½ ton each			Pipe lines handling fuel oil, refined and naphtha products.			Do.		
Railway facilities	None			None			Do.		
Water supply	City supply			do.			City supply; 2-inch main; rate of delivery, 18,000 gallons per hour.		
Fire protection	40-gallon foamite cart			1 40-gallon foamite tank on cart; 4 portable chemical extinguishers.			1 2-inch fire plug, 100 feet of hose, and 12 portable chemical extinguishers.		
Electric current	Alternating current, 110 volts for lights			Alternating current, 110 volts for lights			Alternating current, 110 volts for lights.		

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

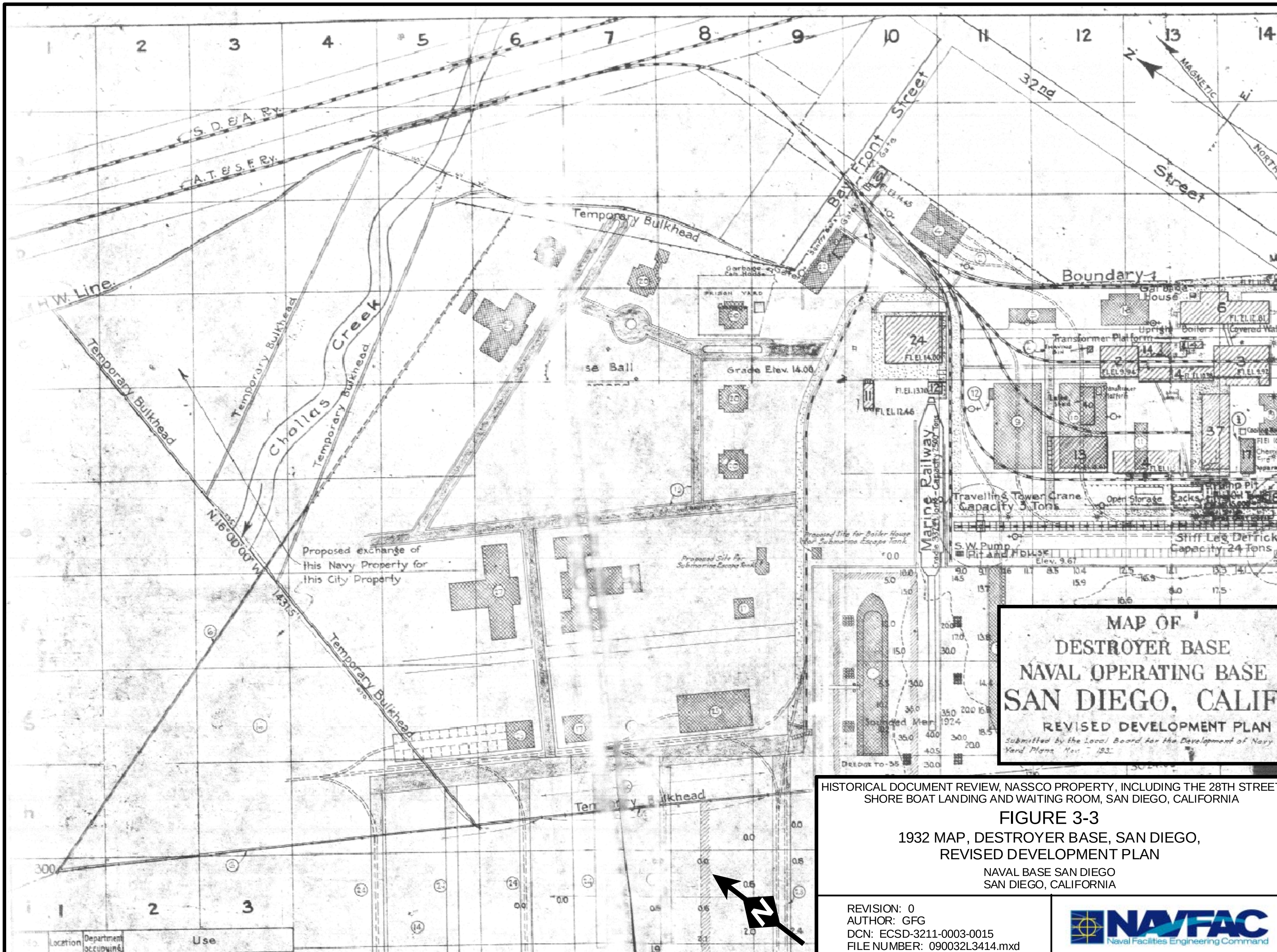
FIGURE 3-2

1924 TABLE, U.S. ARMY WAR DEPARTMENT CORPS OF ENGINEERS REPORT

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3413.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

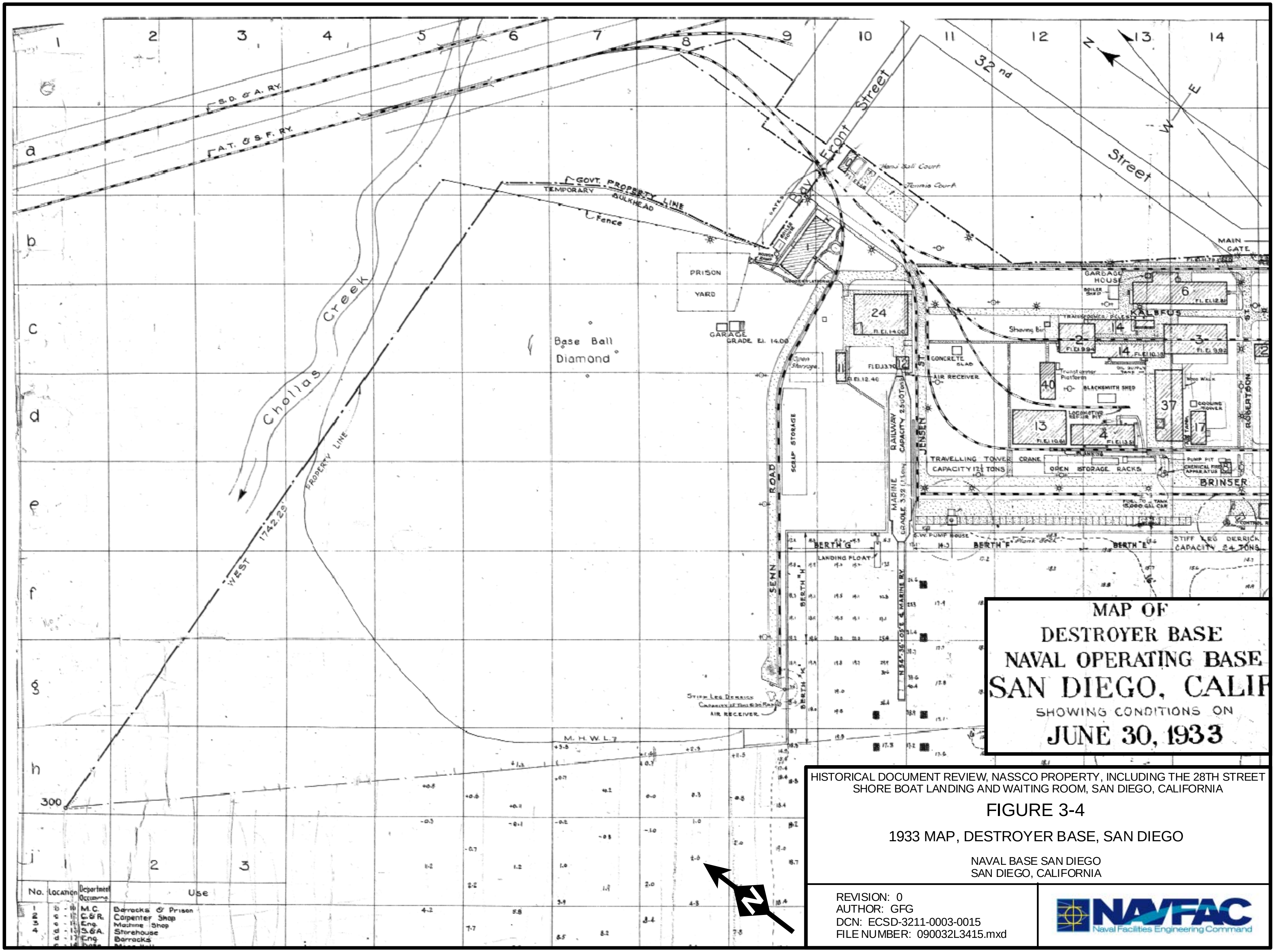
FIGURE 3-3

1932 MAP, DESTROYER BASE, SAN DIEGO, REVISED DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3414.mxd

NAVFAC
Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

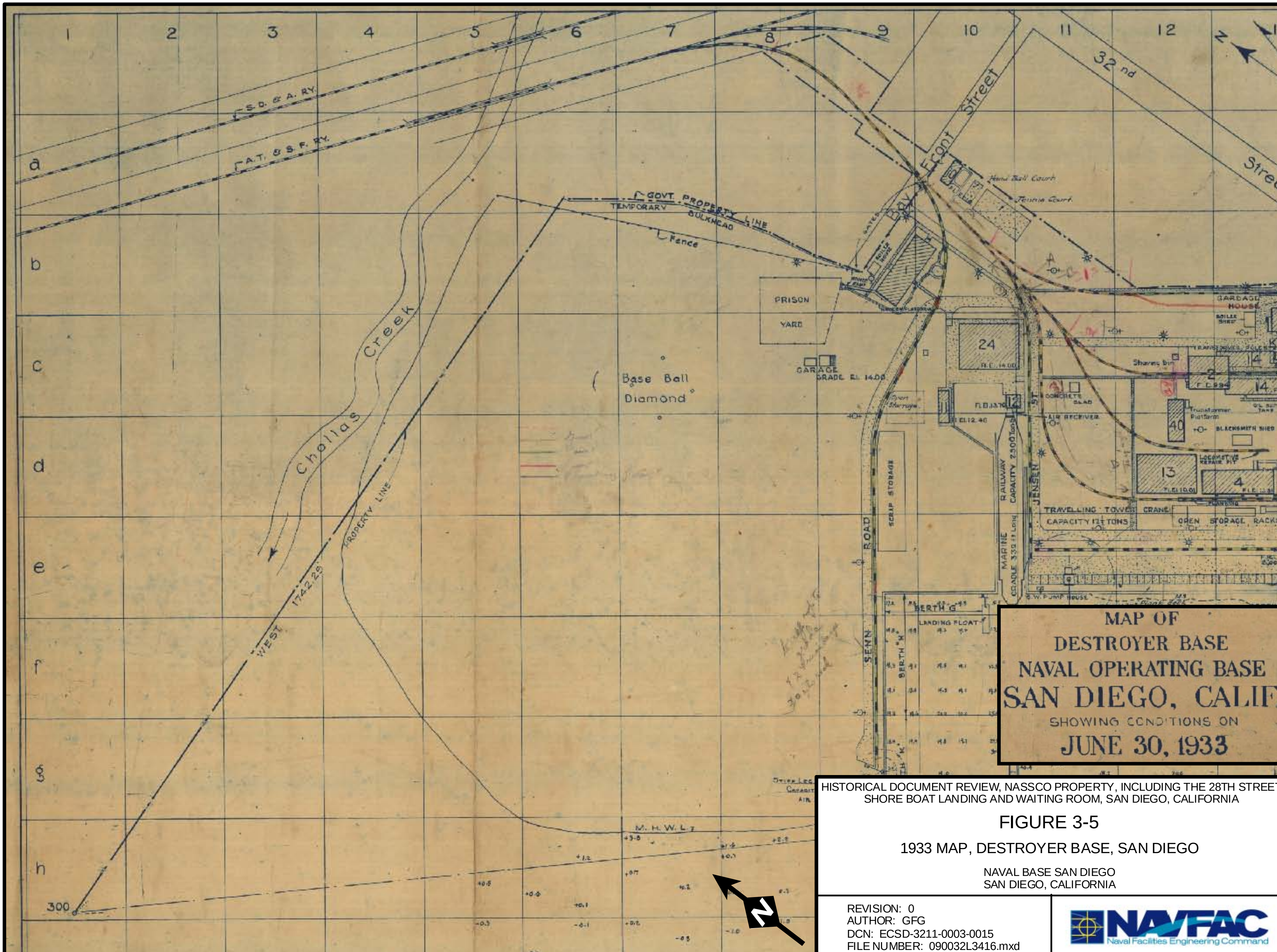
FIGURE 3-4

1933 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3415.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

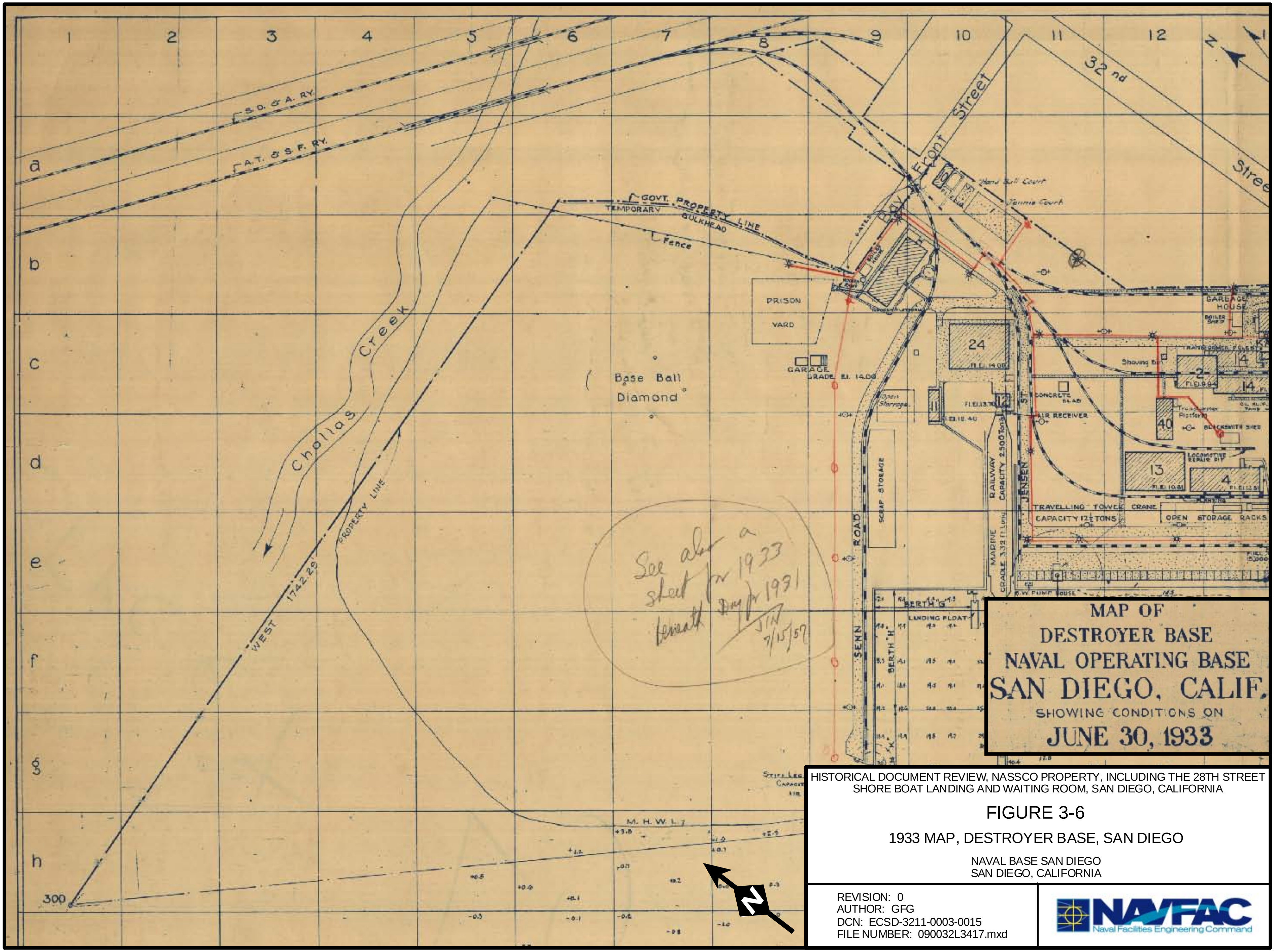
FIGURE 3-5

1933 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3416.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

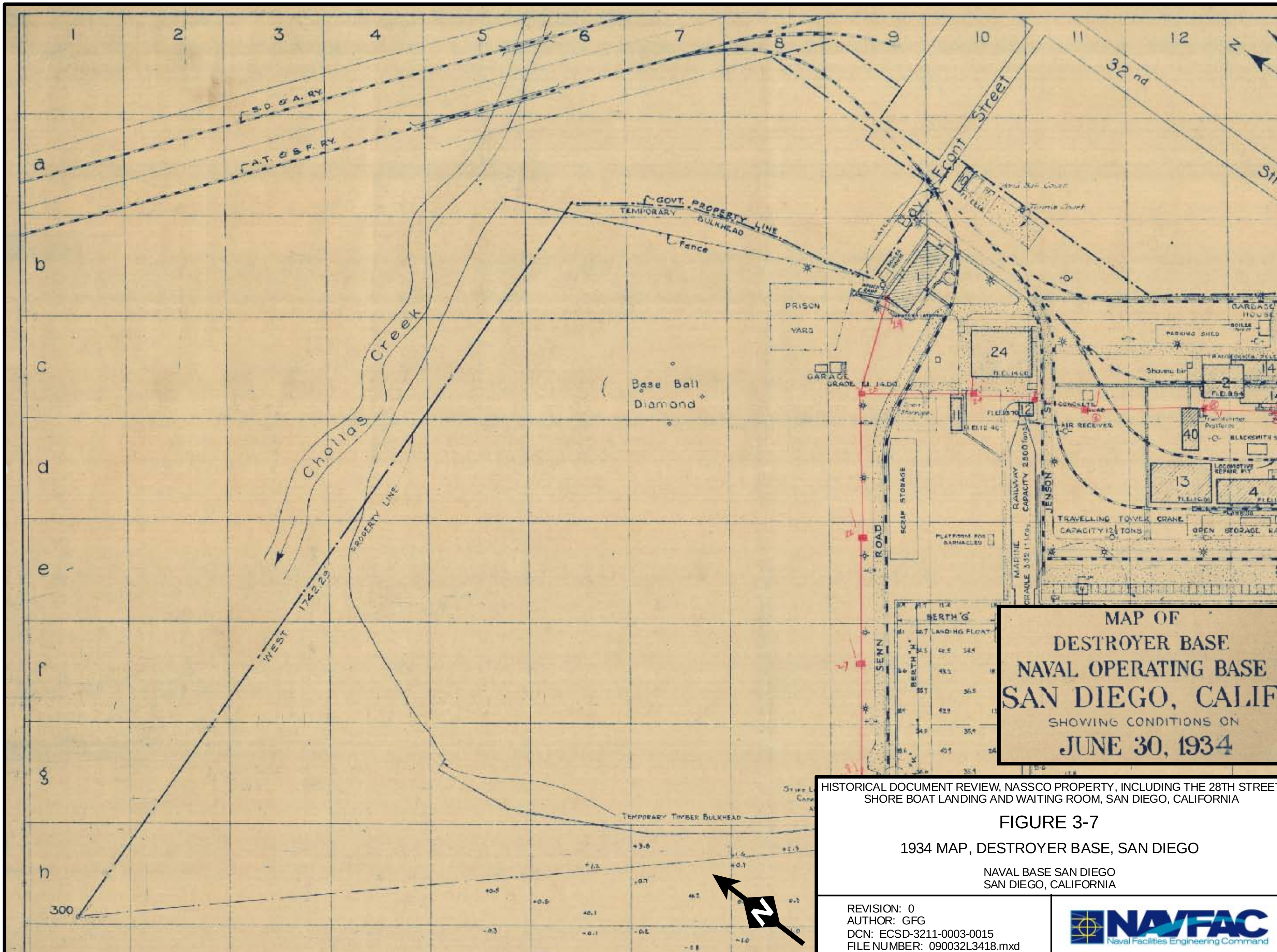
FIGURE 3-6

1933 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3417.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

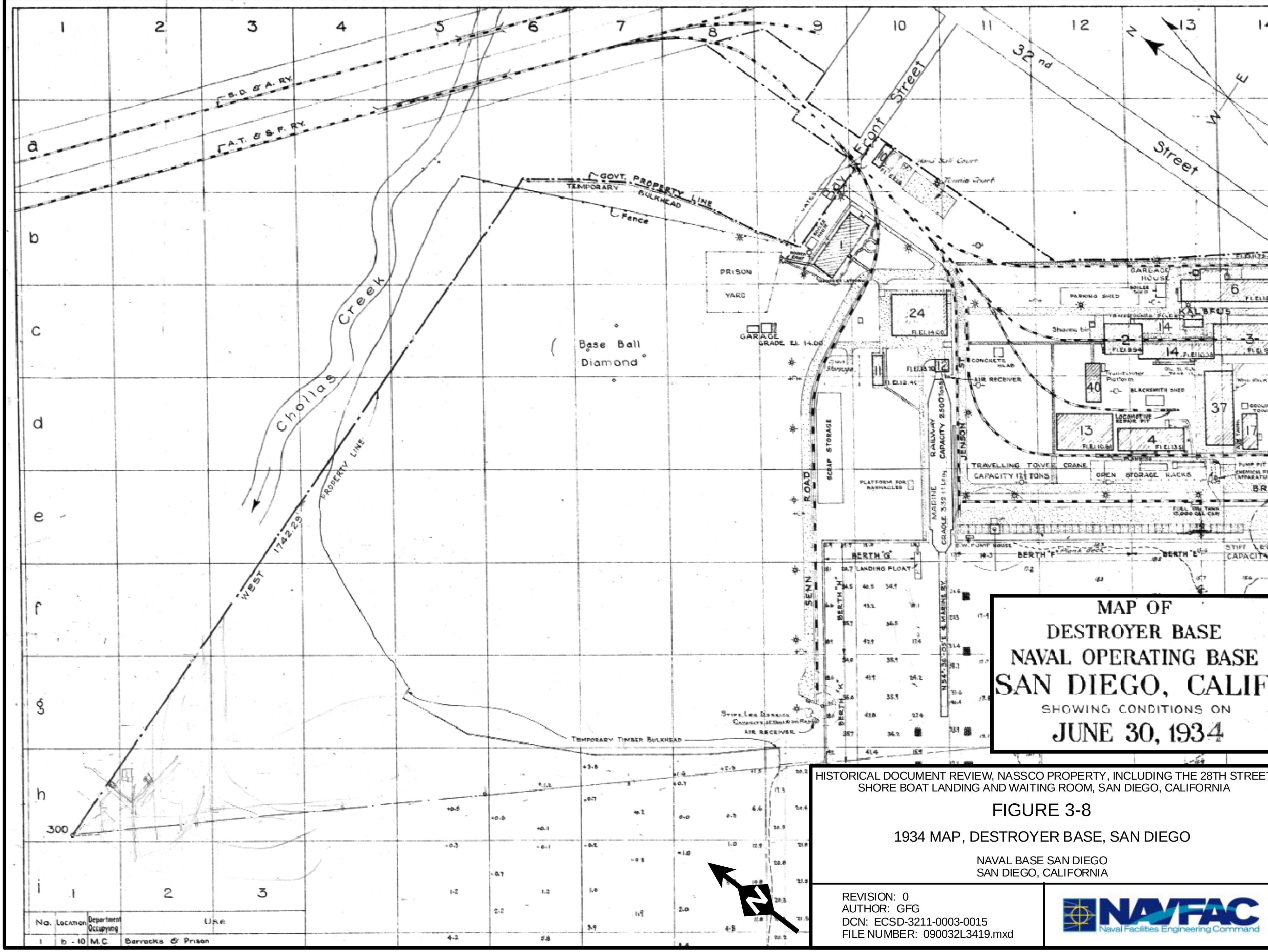
FIGURE 3-7

1934 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3418.mxd

NAVFAC
Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

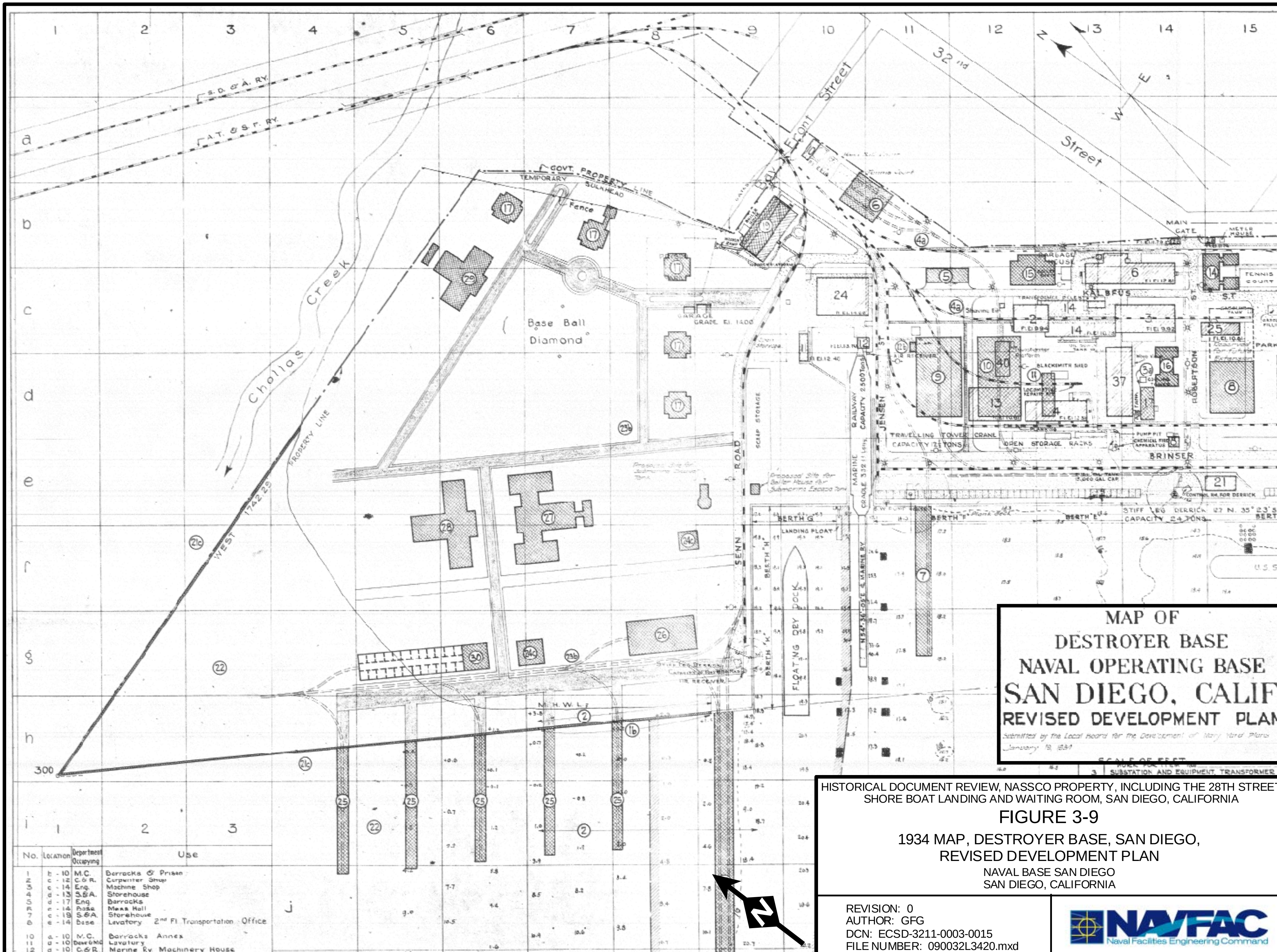
FIGURE 3-8

1934 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3419.mxd

NAVFAC
Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

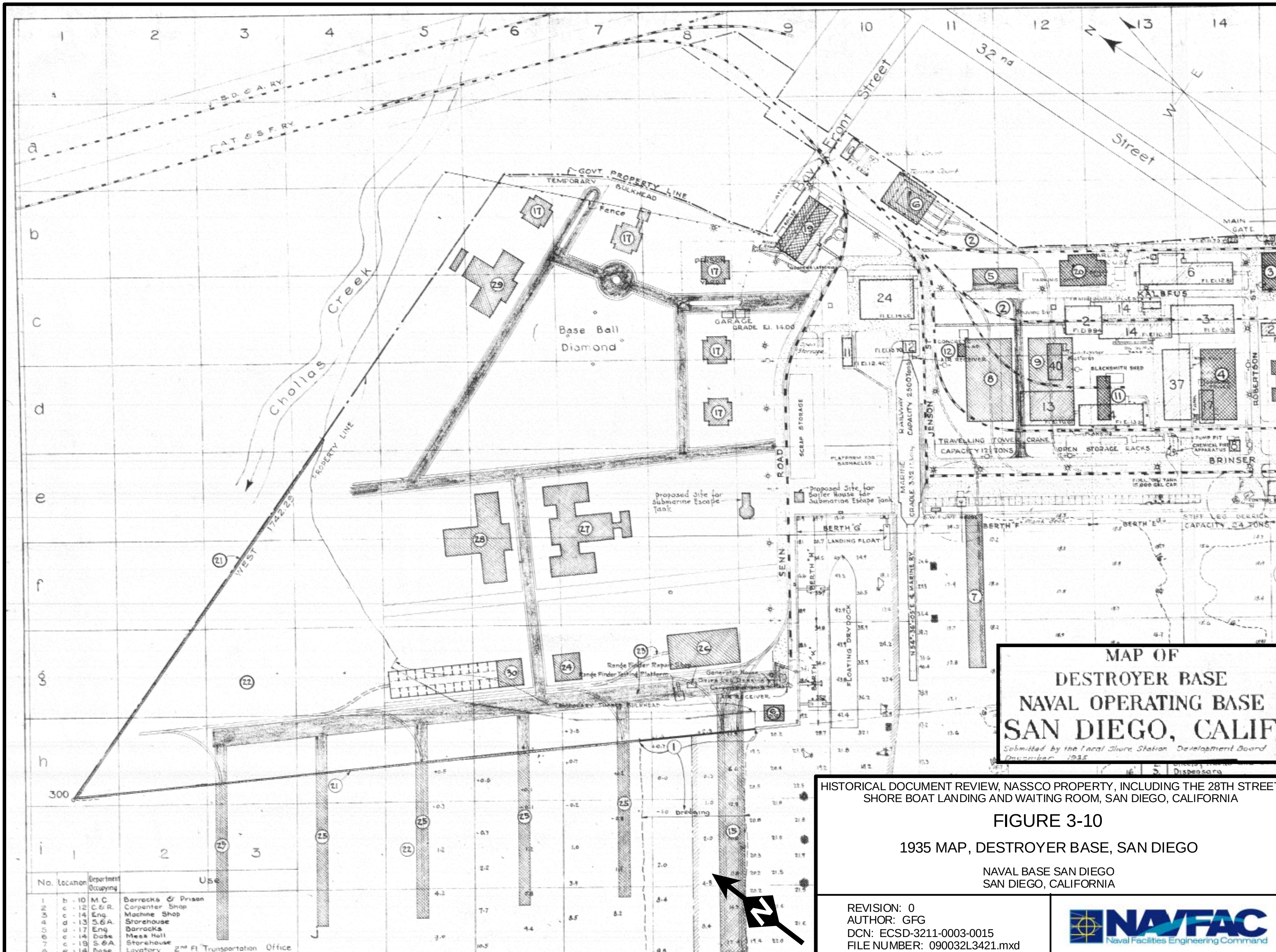
FIGURE 3-9

1934 MAP, DESTROYER BASE, SAN DIEGO, REVISED DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3420.mxd

NAVFAC
Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

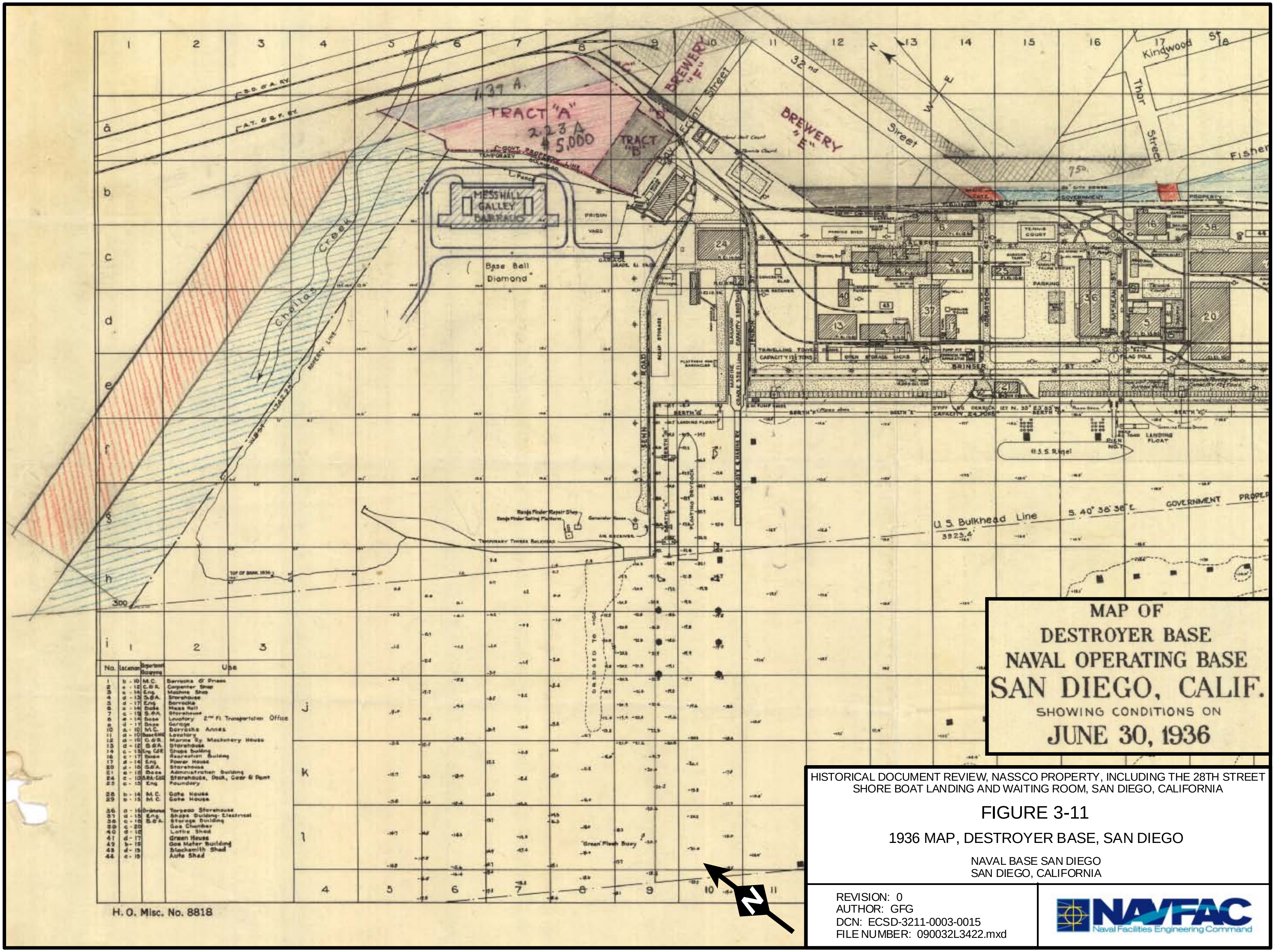
FIGURE 3-10

1935 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3421.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-11

1936 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

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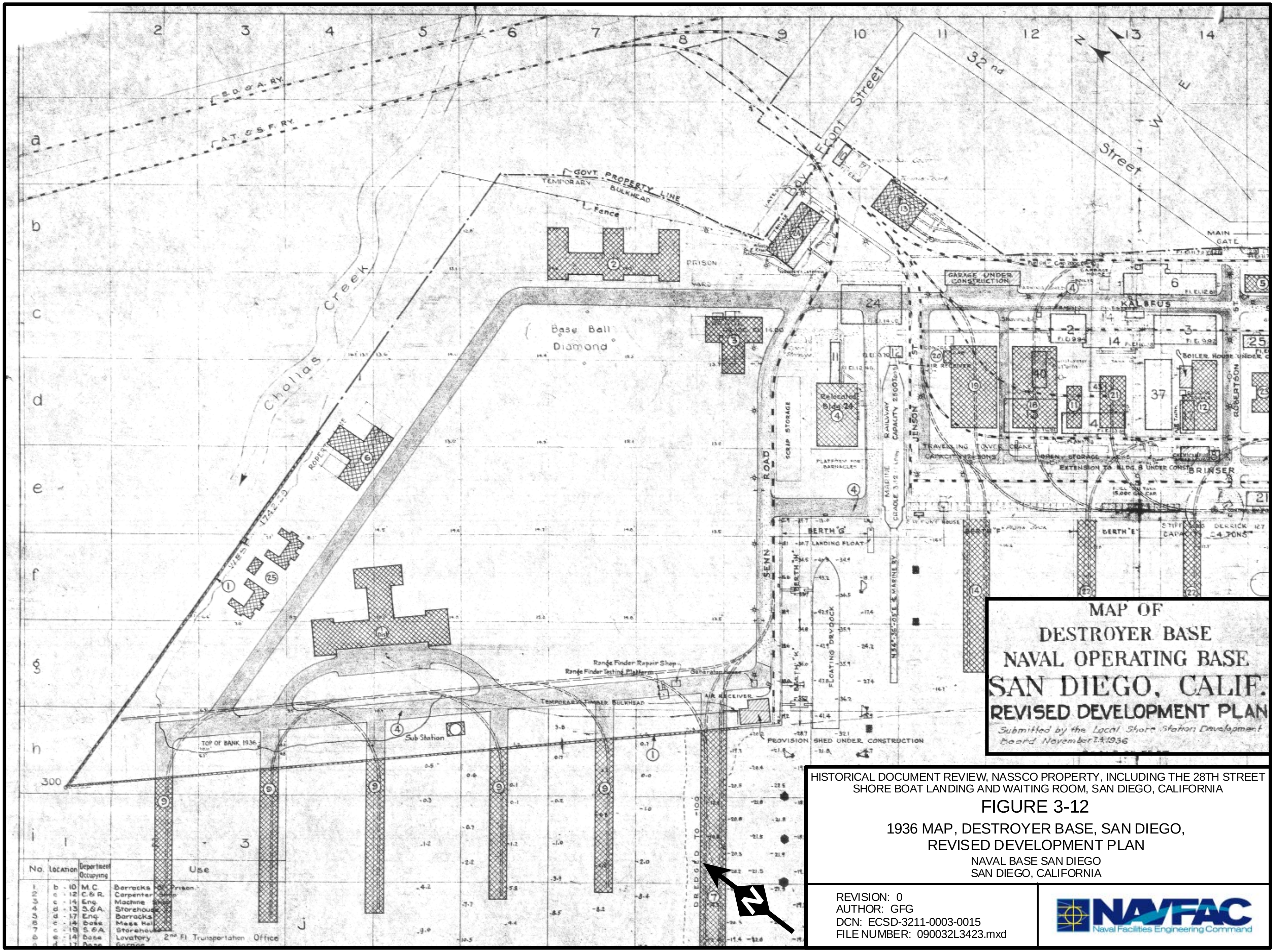
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3422.mxd



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-12

1936 MAP, DESTROYER BASE, SAN DIEGO, REVISED DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3423.mxd

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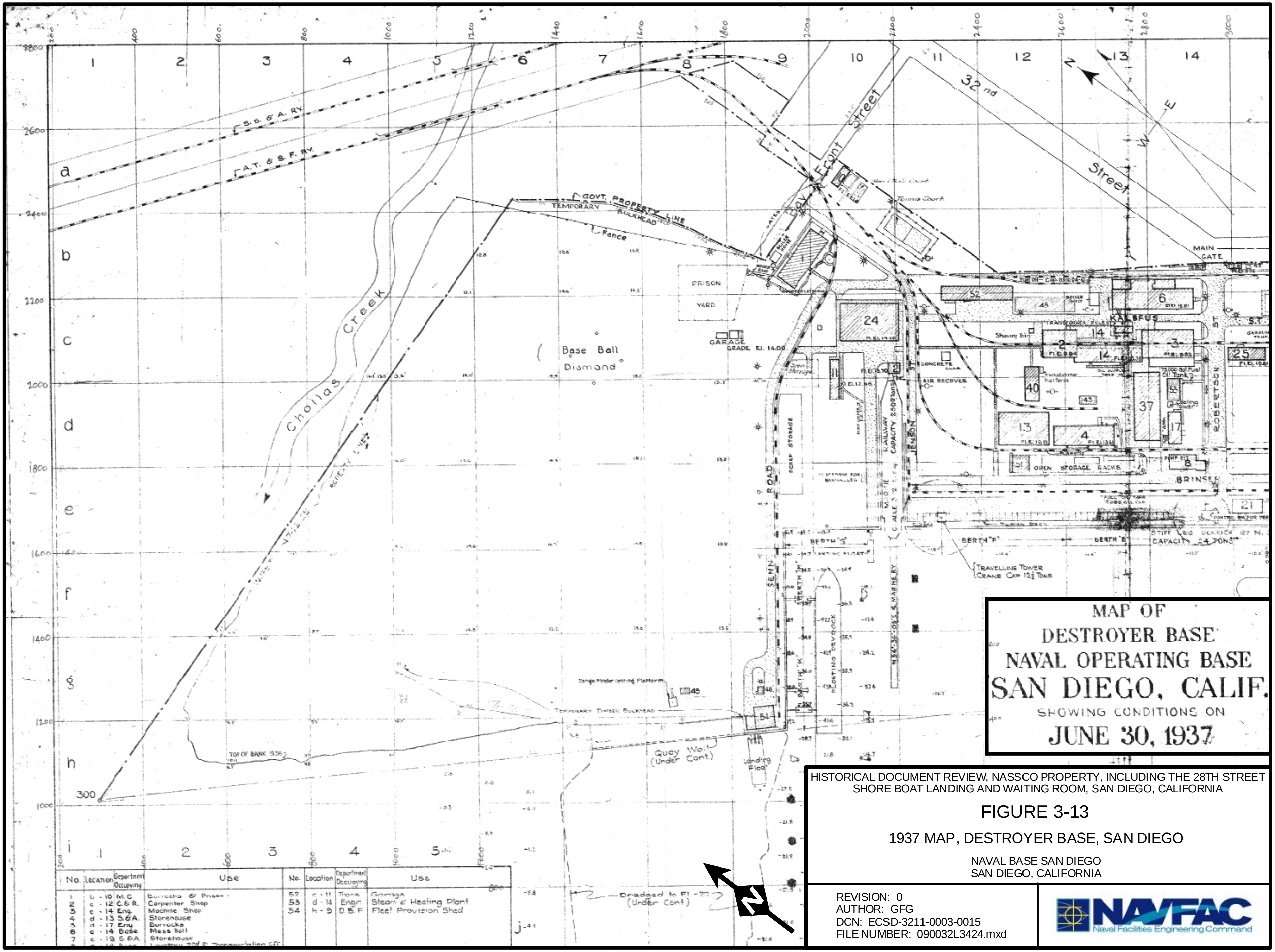

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-13

1937 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3424.mxd

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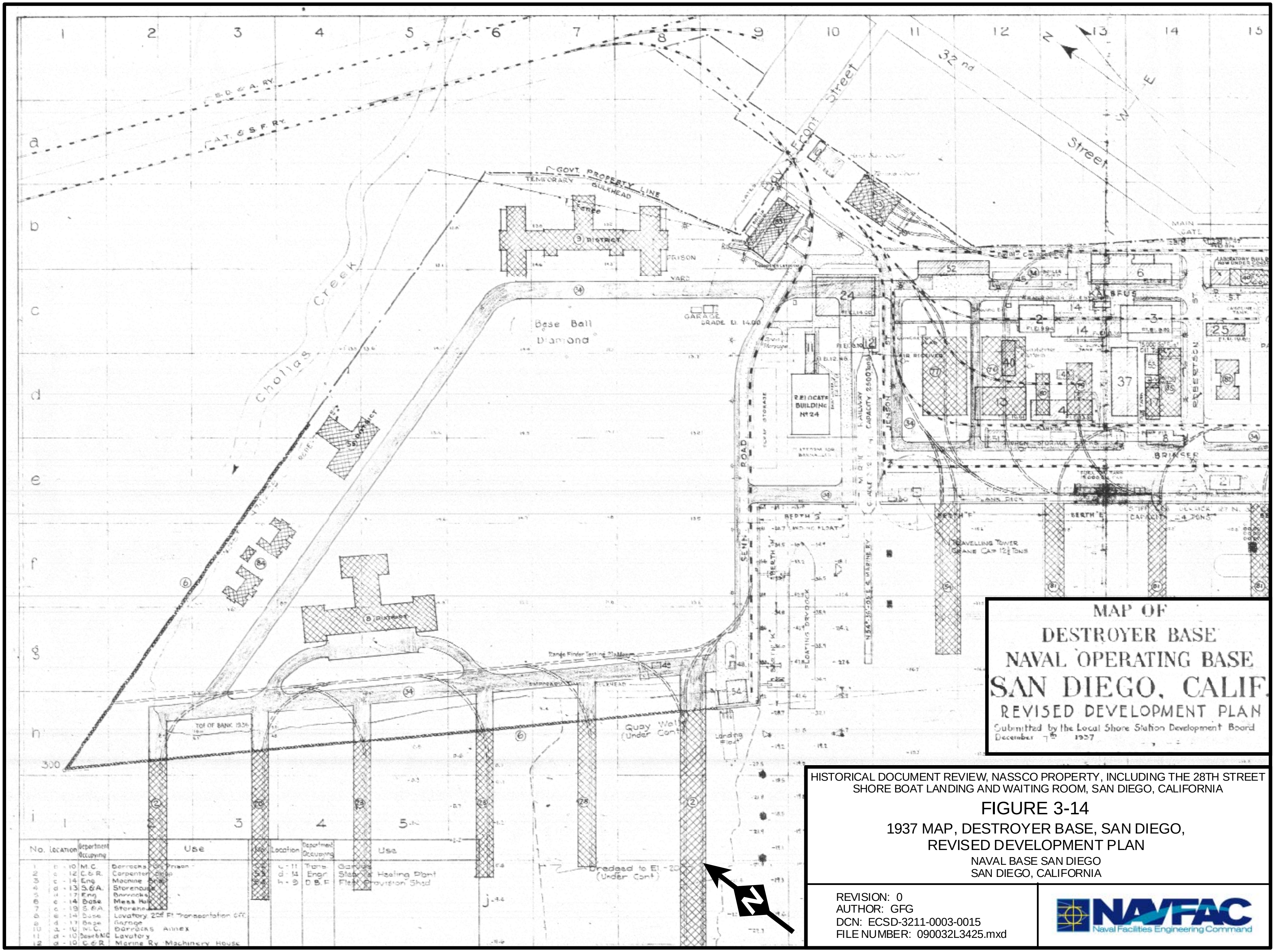

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-14

1937 MAP, DESTROYER BASE, SAN DIEGO, REVISED DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3425.mxd

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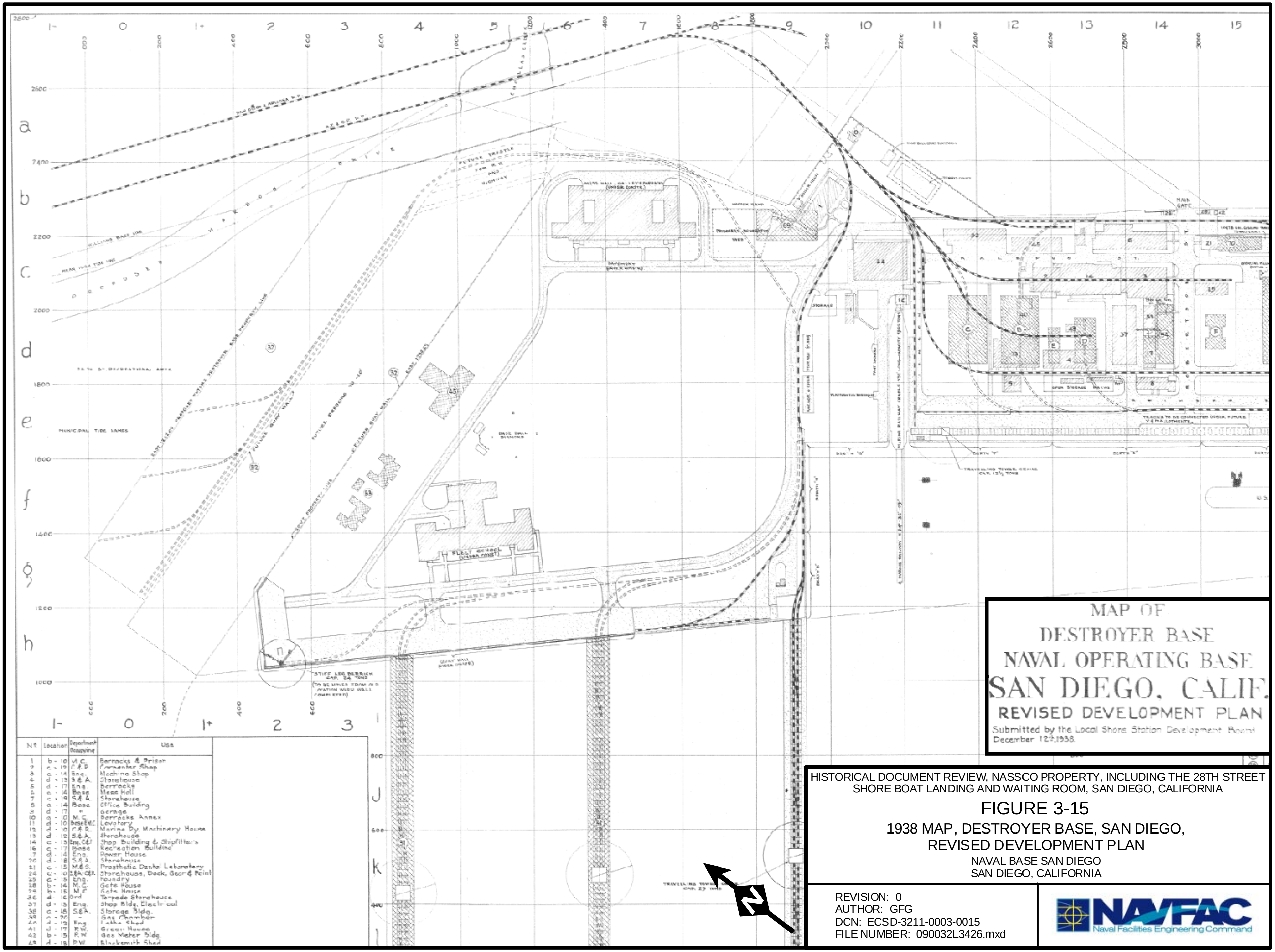

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-15

1938 MAP, DESTROYER BASE, SAN DIEGO, REVISED DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3426.mxd

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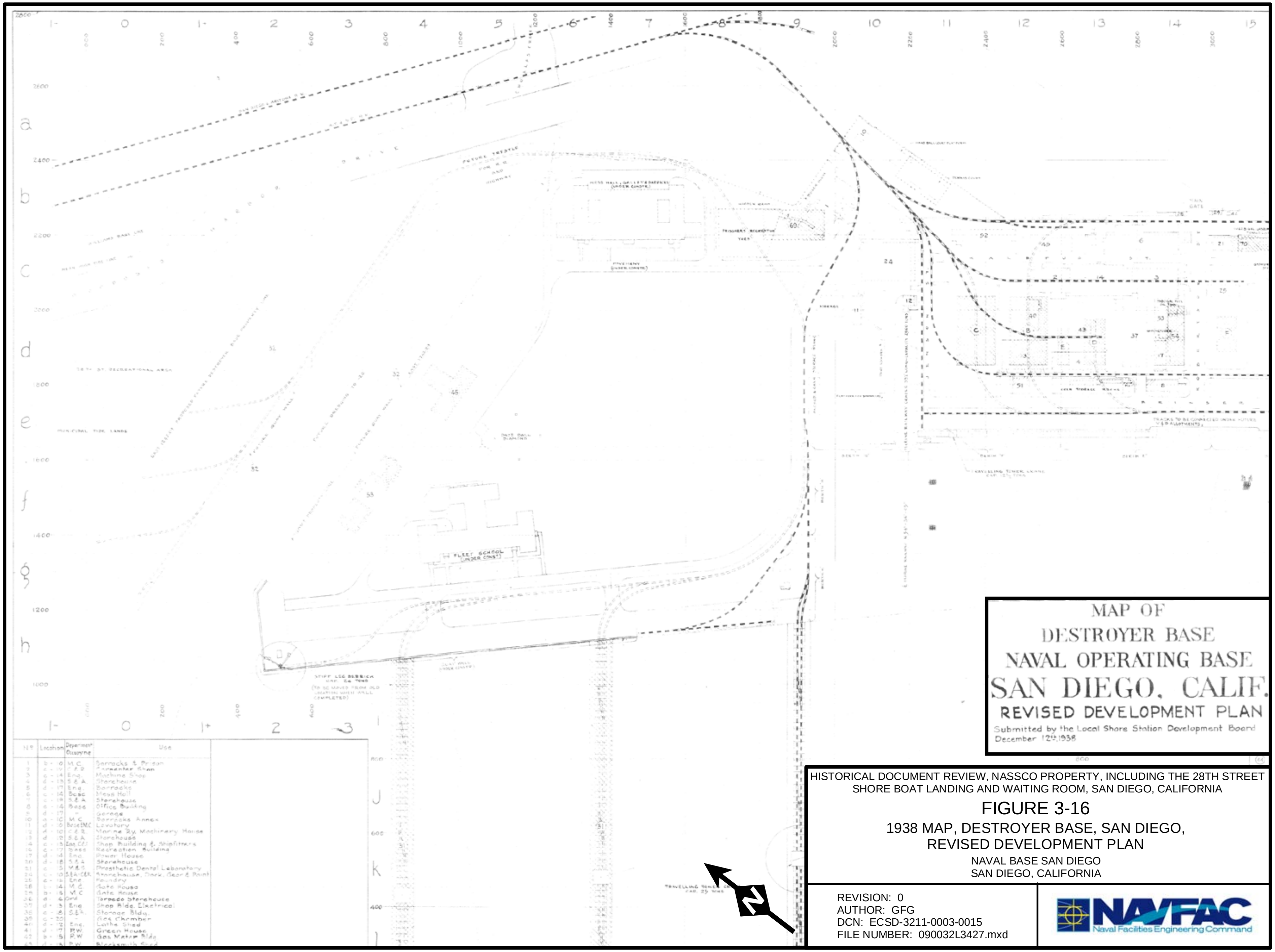

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-16

1938 MAP, DESTROYER BASE, SAN DIEGO, REVISED DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3427.mxd

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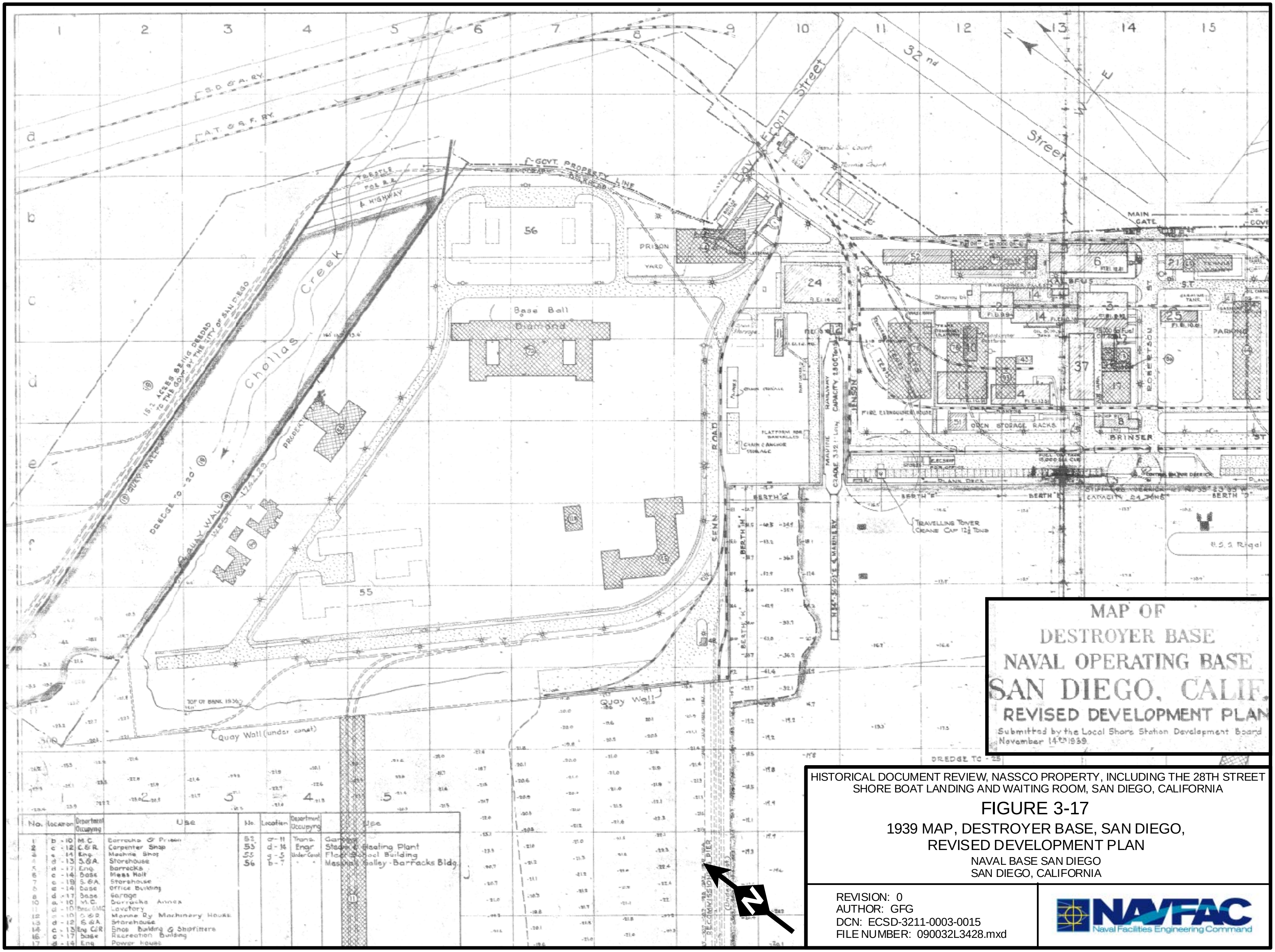

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-17

1939 MAP, DESTROYER BASE, SAN DIEGO, REVISED DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3428.mxd

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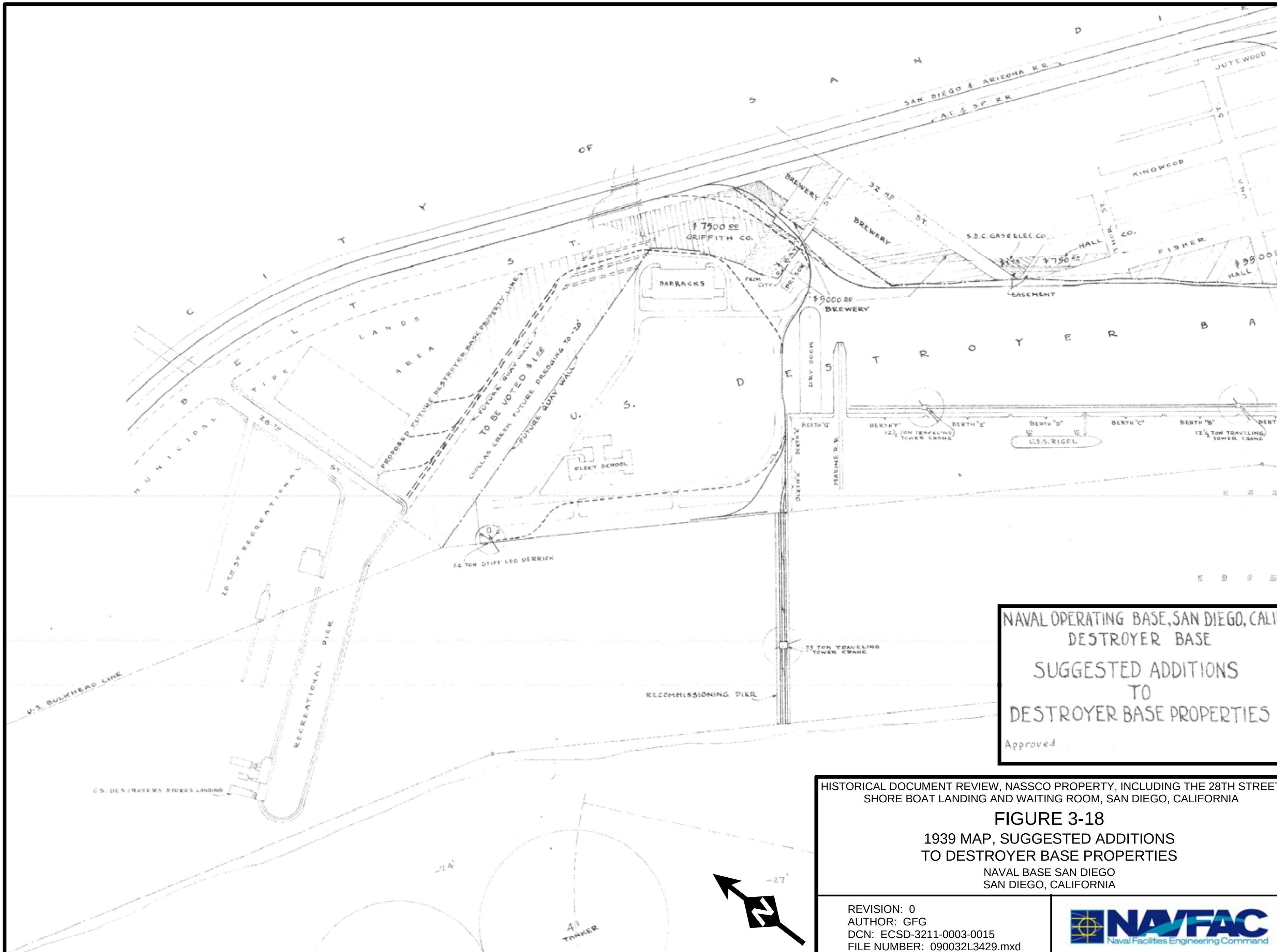


HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

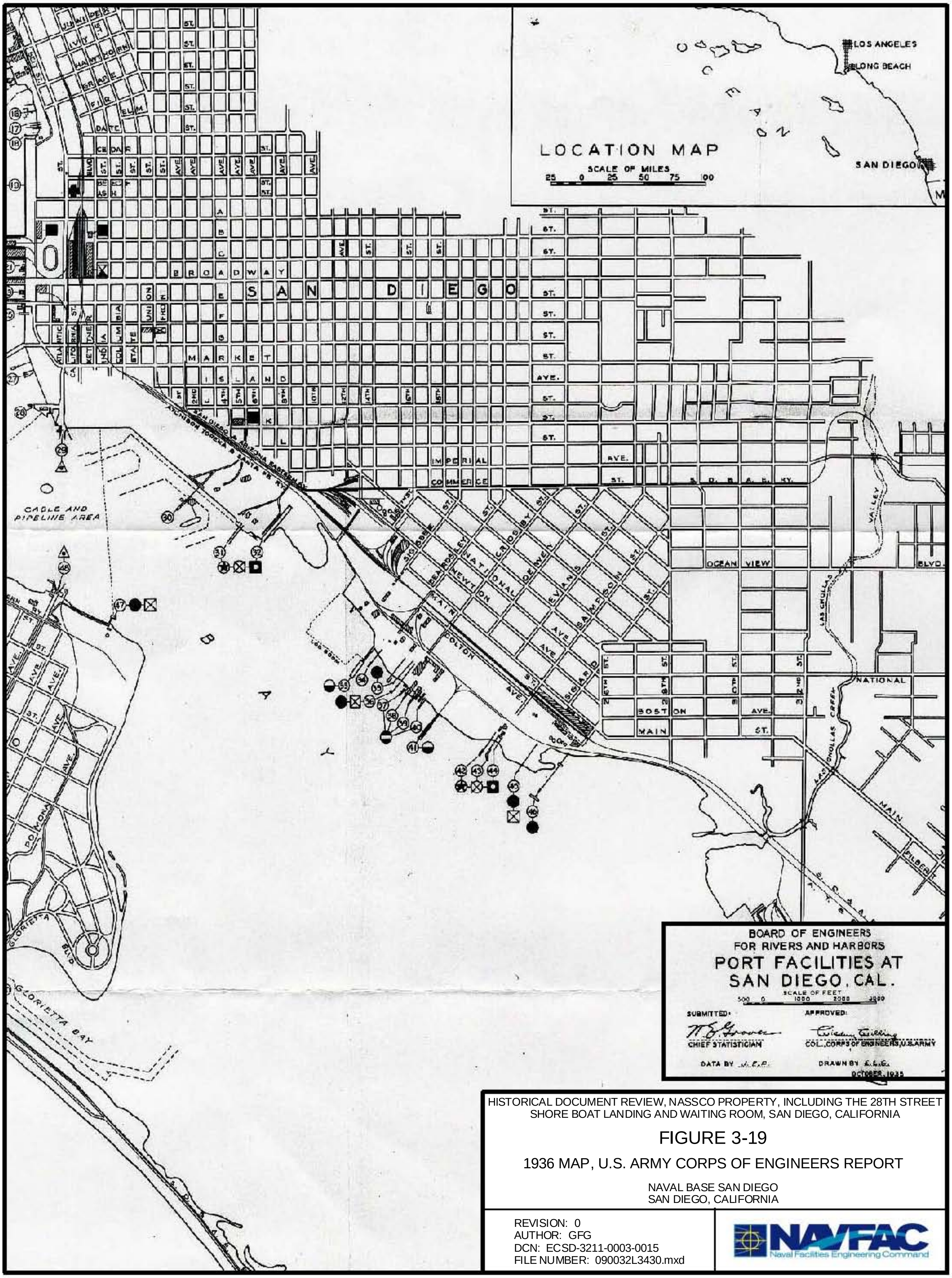
FIGURE 3-18

1939 MAP, SUGGESTED ADDITIONS TO DESTROYER BASE PROPERTIES

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3429.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-19

1936 MAP, U.S. ARMY CORPS OF ENGINEERS REPORT

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3430.mxd

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-20

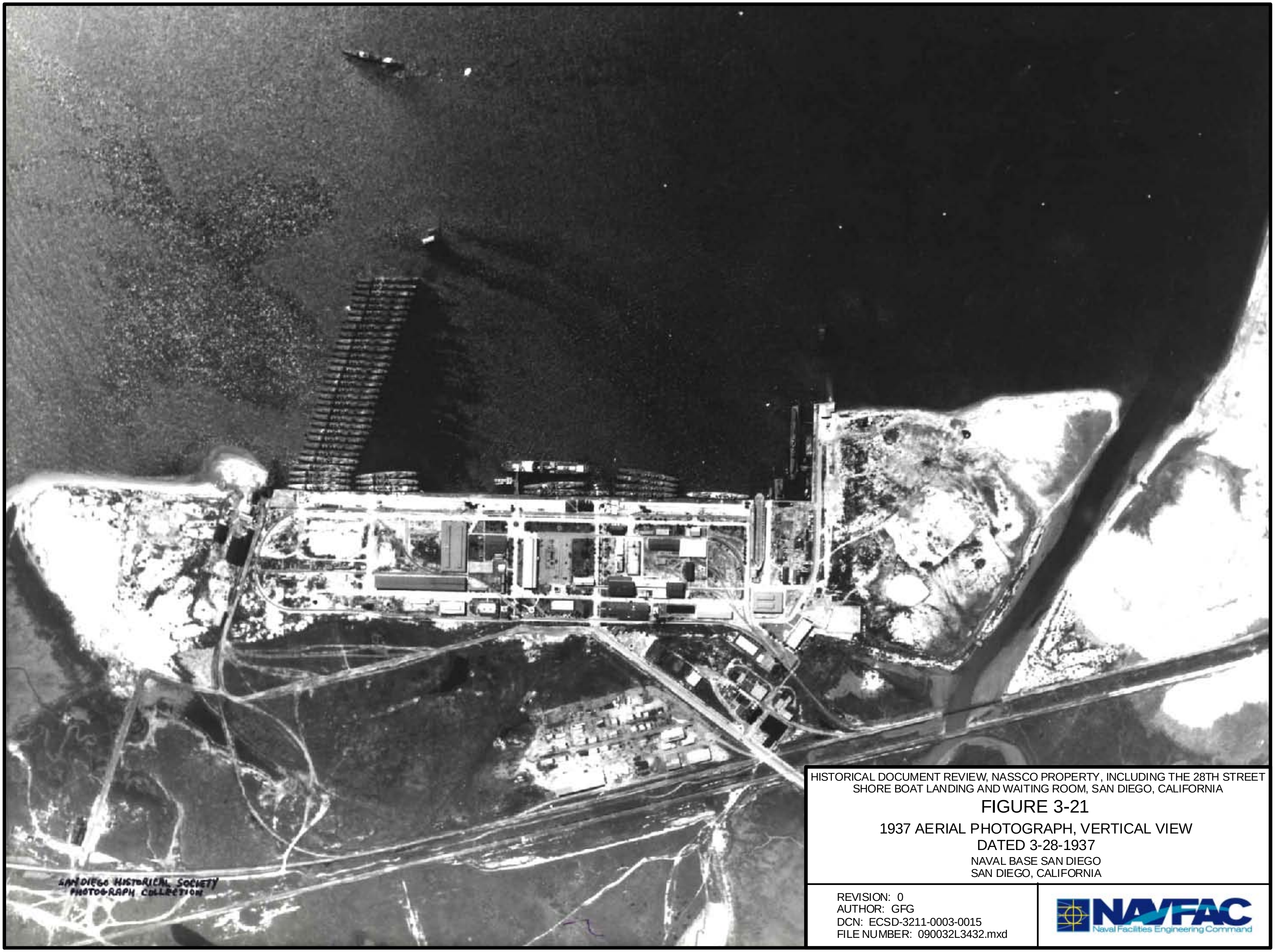
1936 AERIAL PHOTOGRAPH, OBLIQUE VIEW NORTH

DATED 11-3-1936

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3431.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-21

1937 AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED 3-28-1937

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3432.mxd

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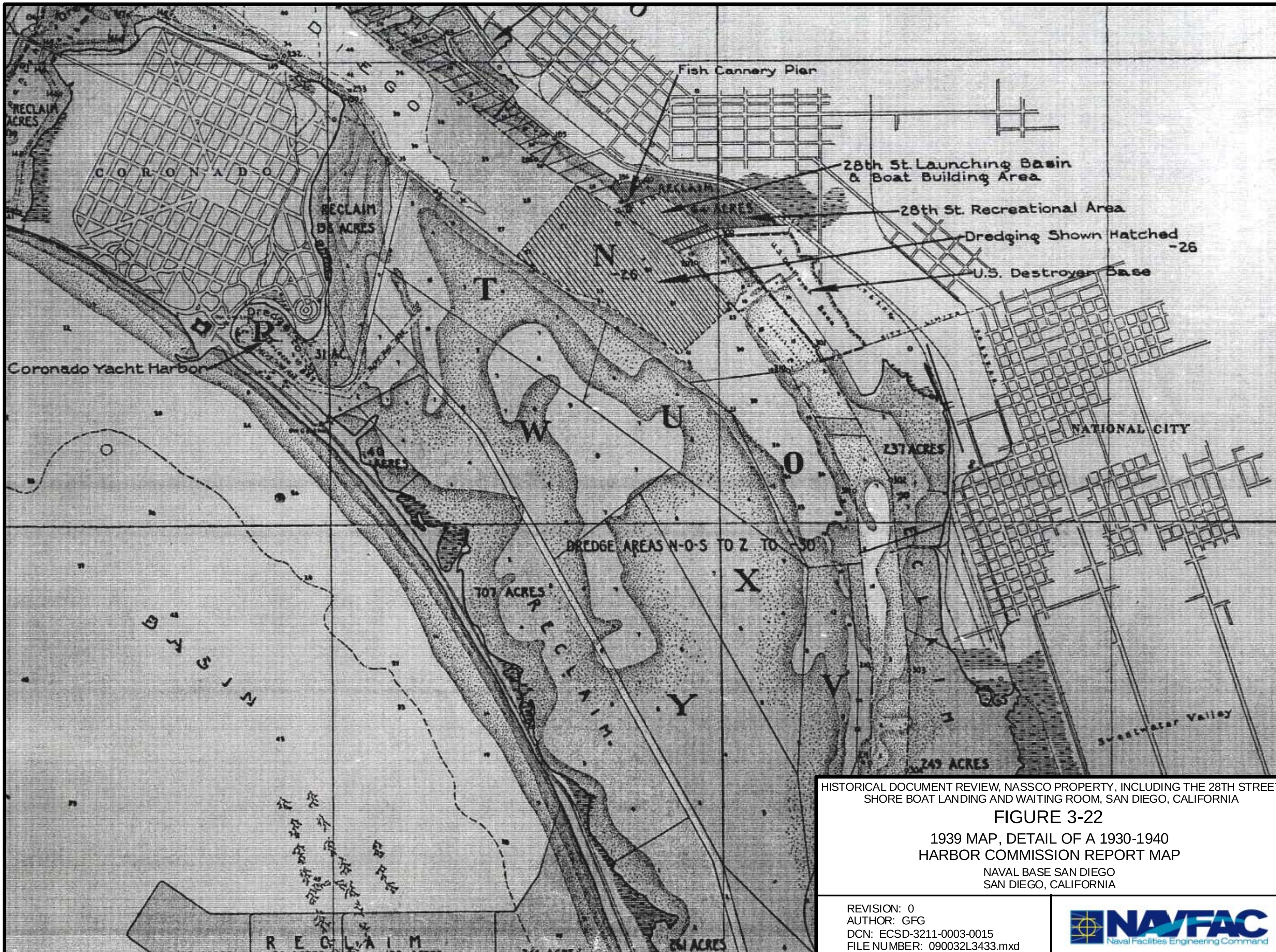
Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-22

1939 MAP, DETAIL OF A 1930-1940 HARBOR COMMISSION REPORT MAP

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3433.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-23

1940 AERIAL PHOTOGRAPH, OBLIQUE VIEW NORTH

DATED 3-8-1940

NAVAL BASE SAN DIEGO

SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3434.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-24

1941 AERIAL PHOTOGRAPH, OBLIQUE VIEW NORTH
DATED 1-12-1941

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3435.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-25

1941 AERIAL PHOTOGRAPH, OBLIQUE VIEW SOUTH
DATED 1-12-1941

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3436.mxd

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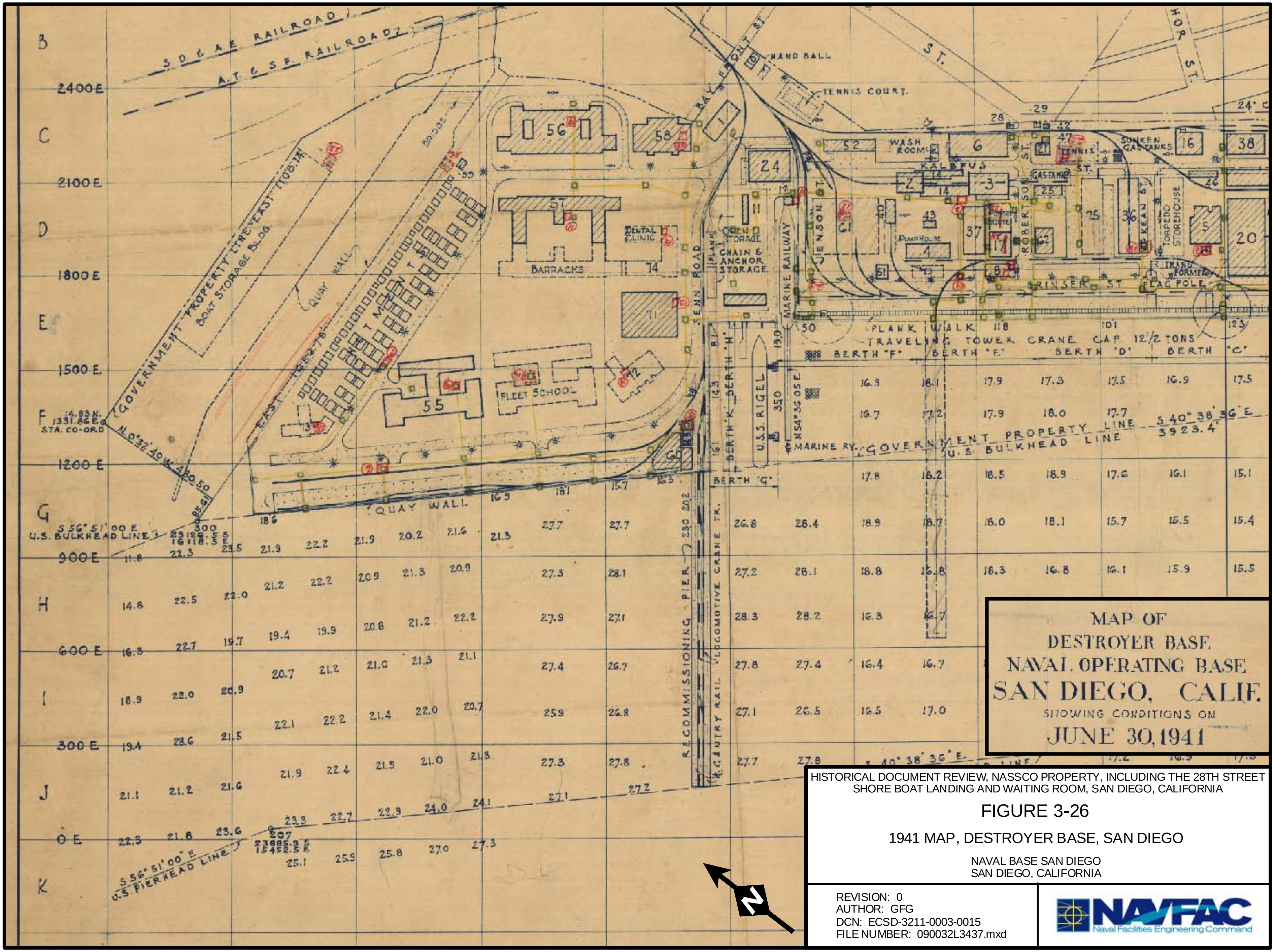

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-26

1941 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3437.mxd

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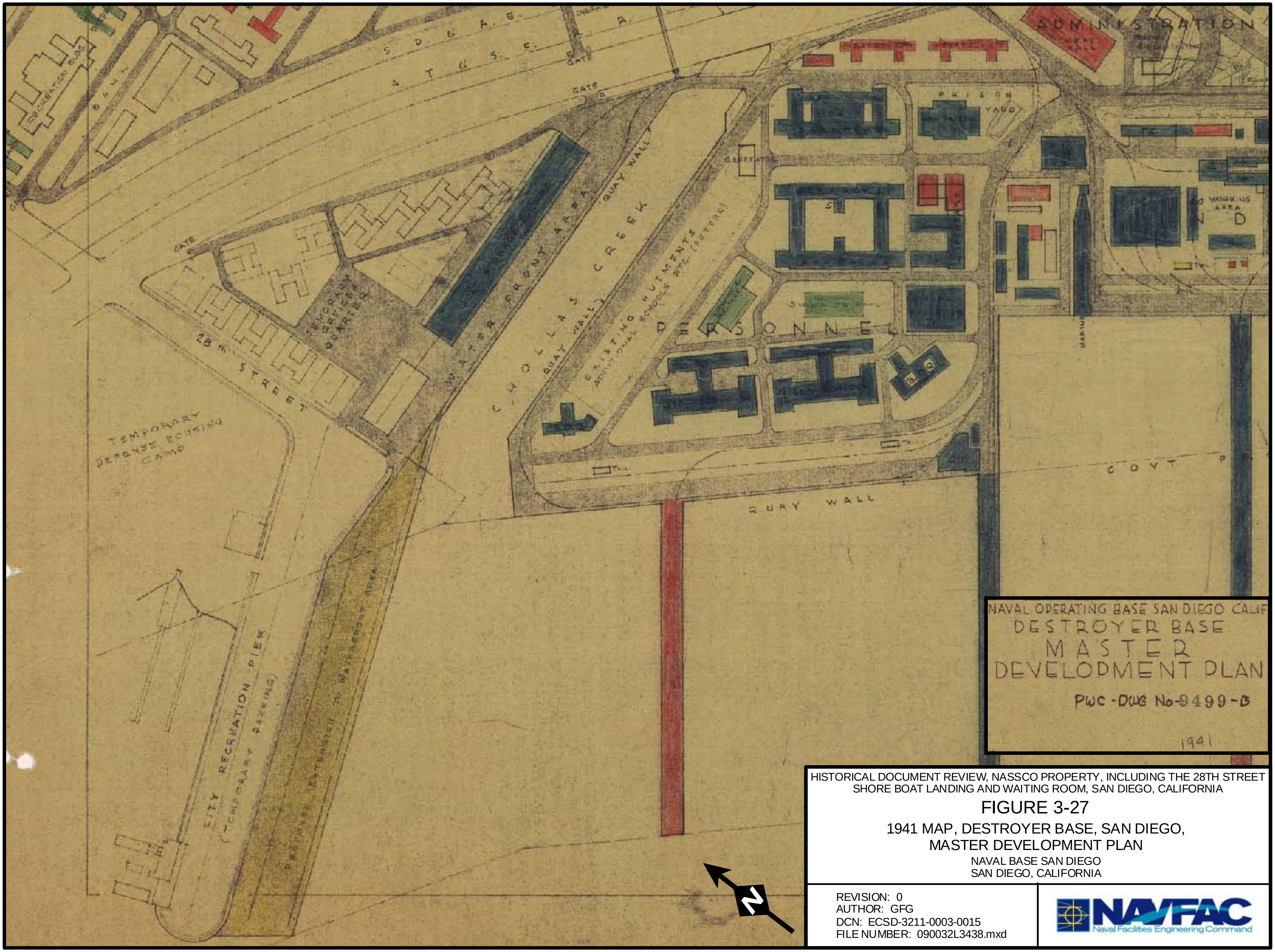

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-27

1941 MAP, DESTROYER BASE, SAN DIEGO, MASTER DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3438.mxd

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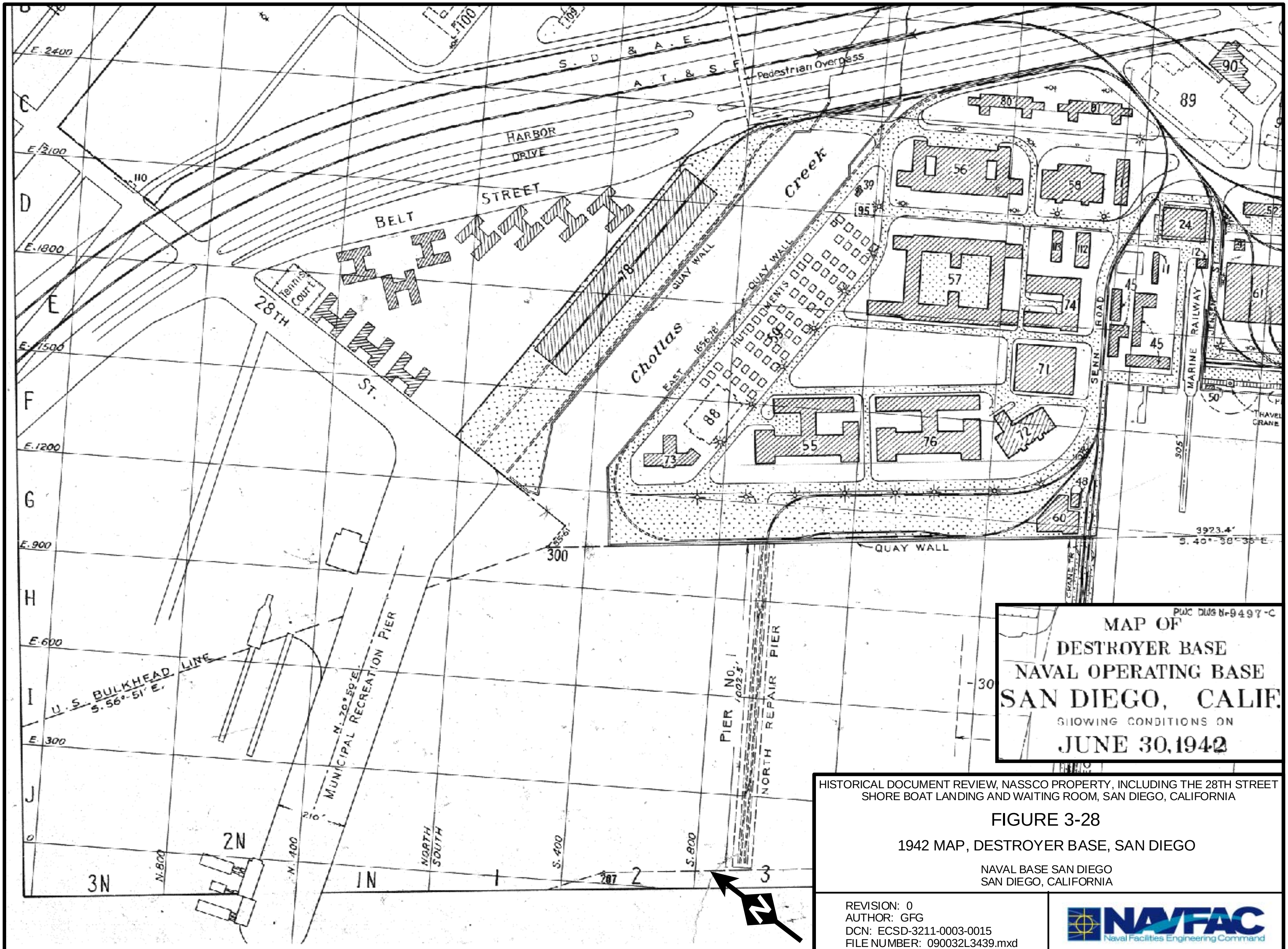

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-28

1942 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3439.mxd

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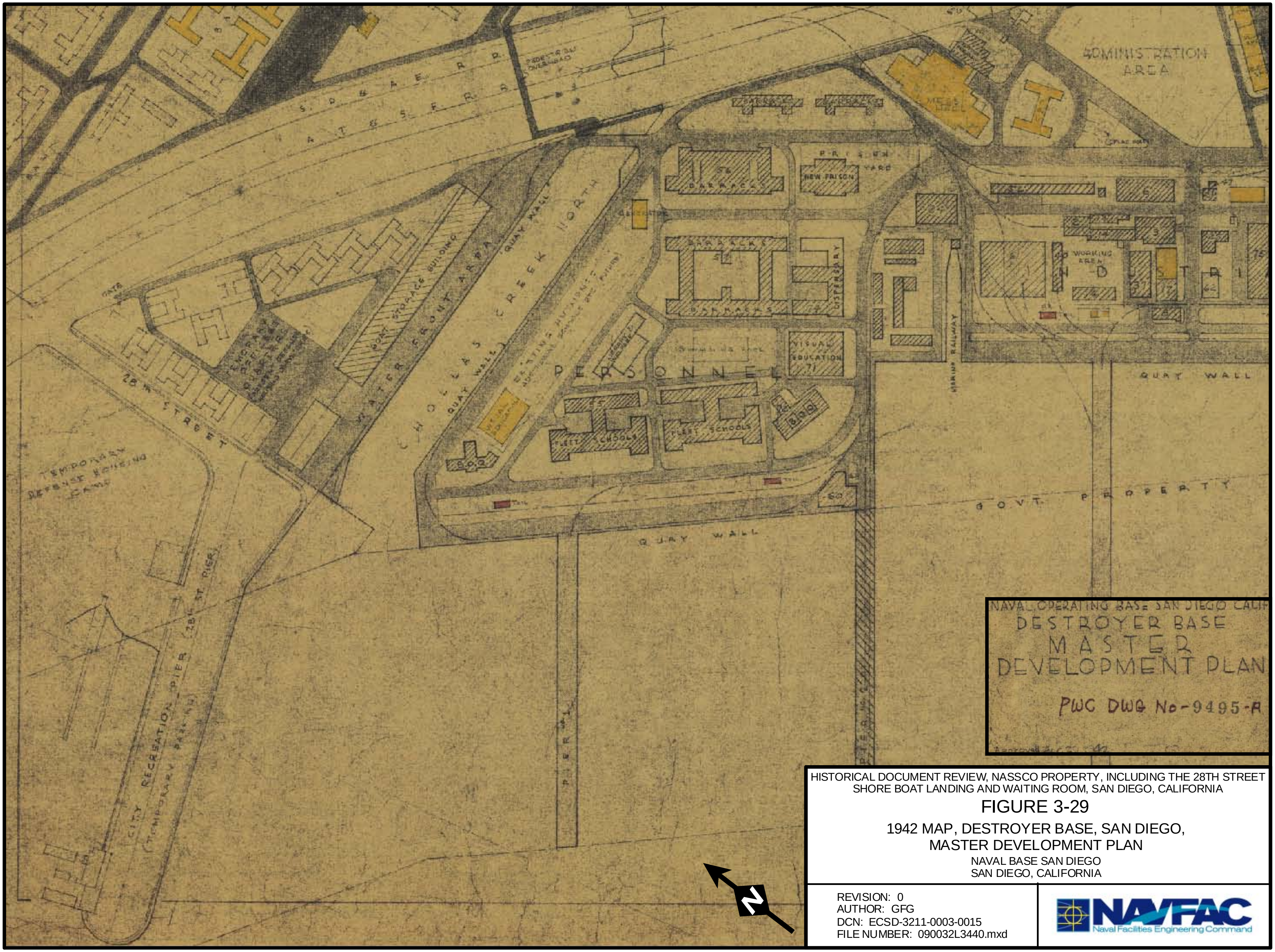


HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

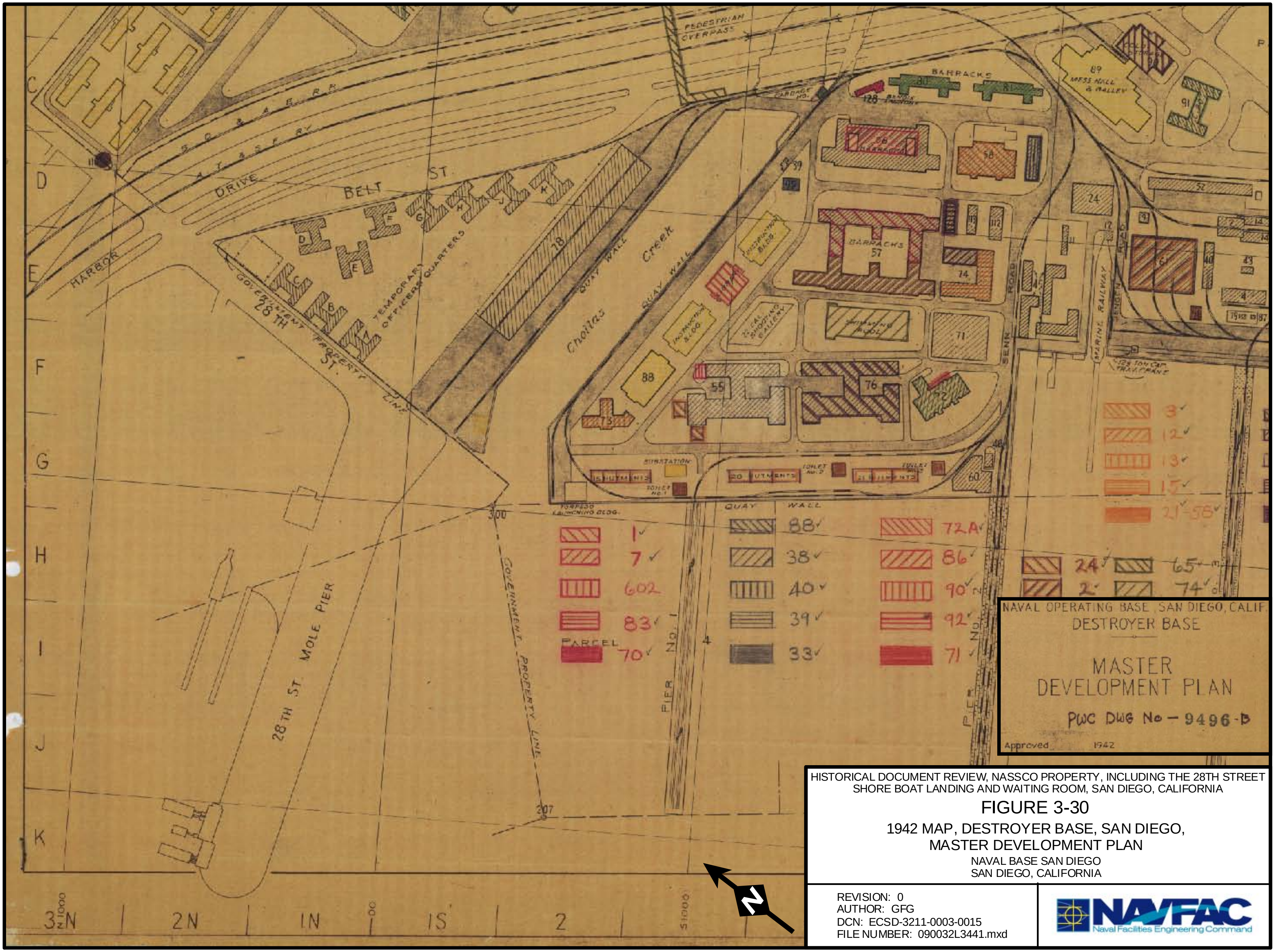
FIGURE 3-29

1942 MAP, DESTROYER BASE, SAN DIEGO, MASTER DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3440.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

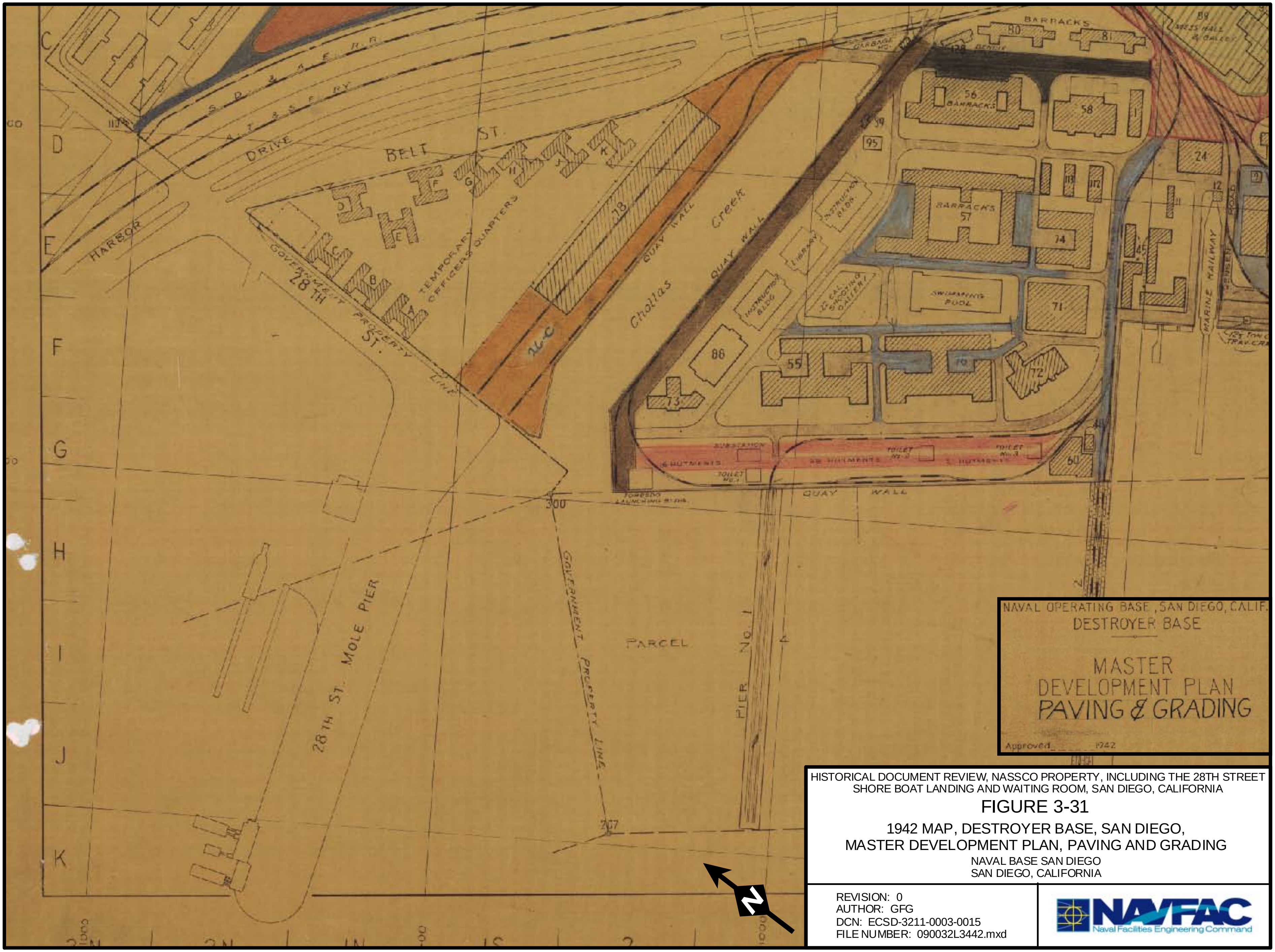
FIGURE 3-30

1942 MAP, DESTROYER BASE, SAN DIEGO, MASTER DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3441.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

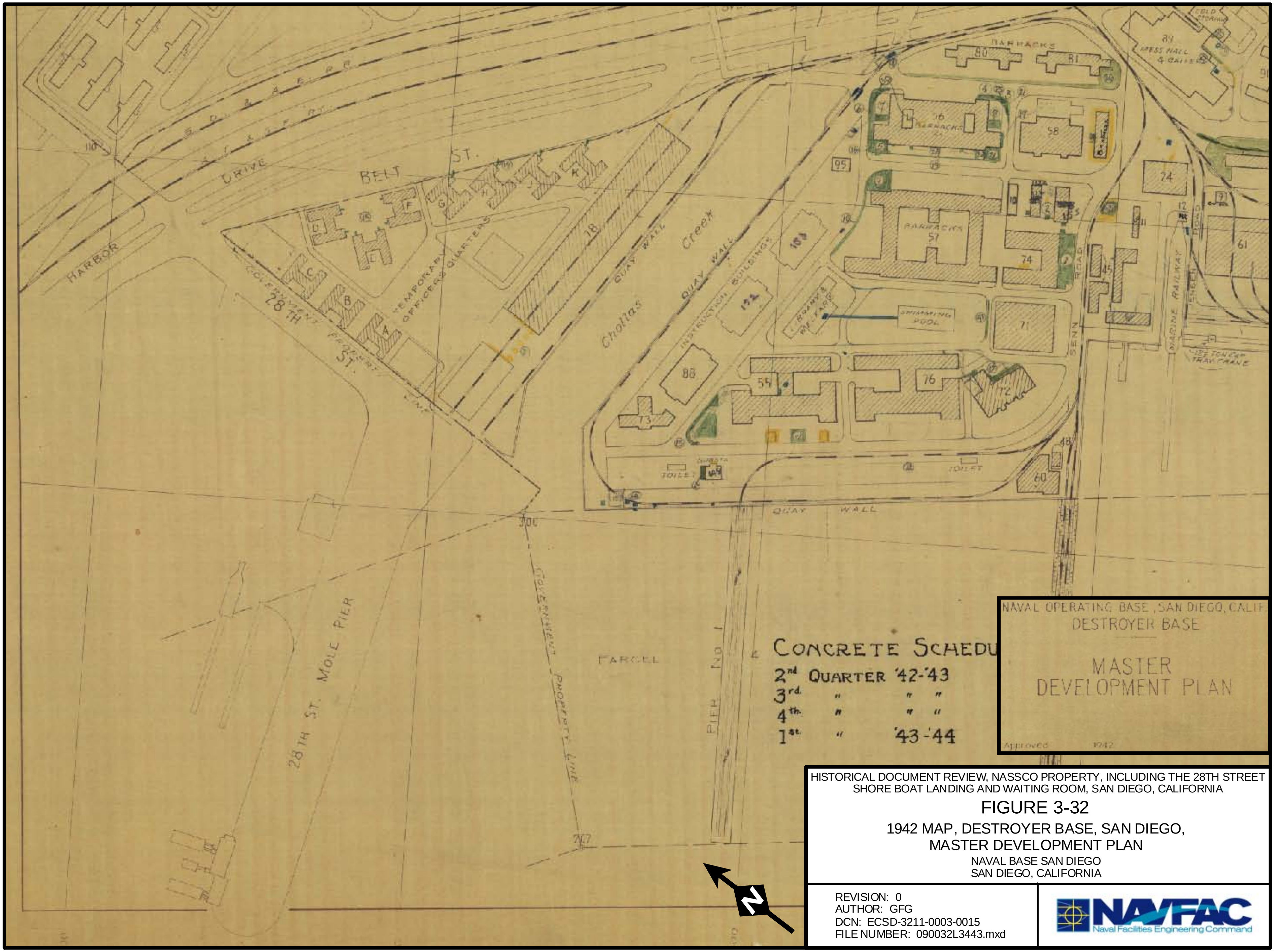
FIGURE 3-31

1942 MAP, DESTROYER BASE, SAN DIEGO, MASTER DEVELOPMENT PLAN, PAVING AND GRADING

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3442.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

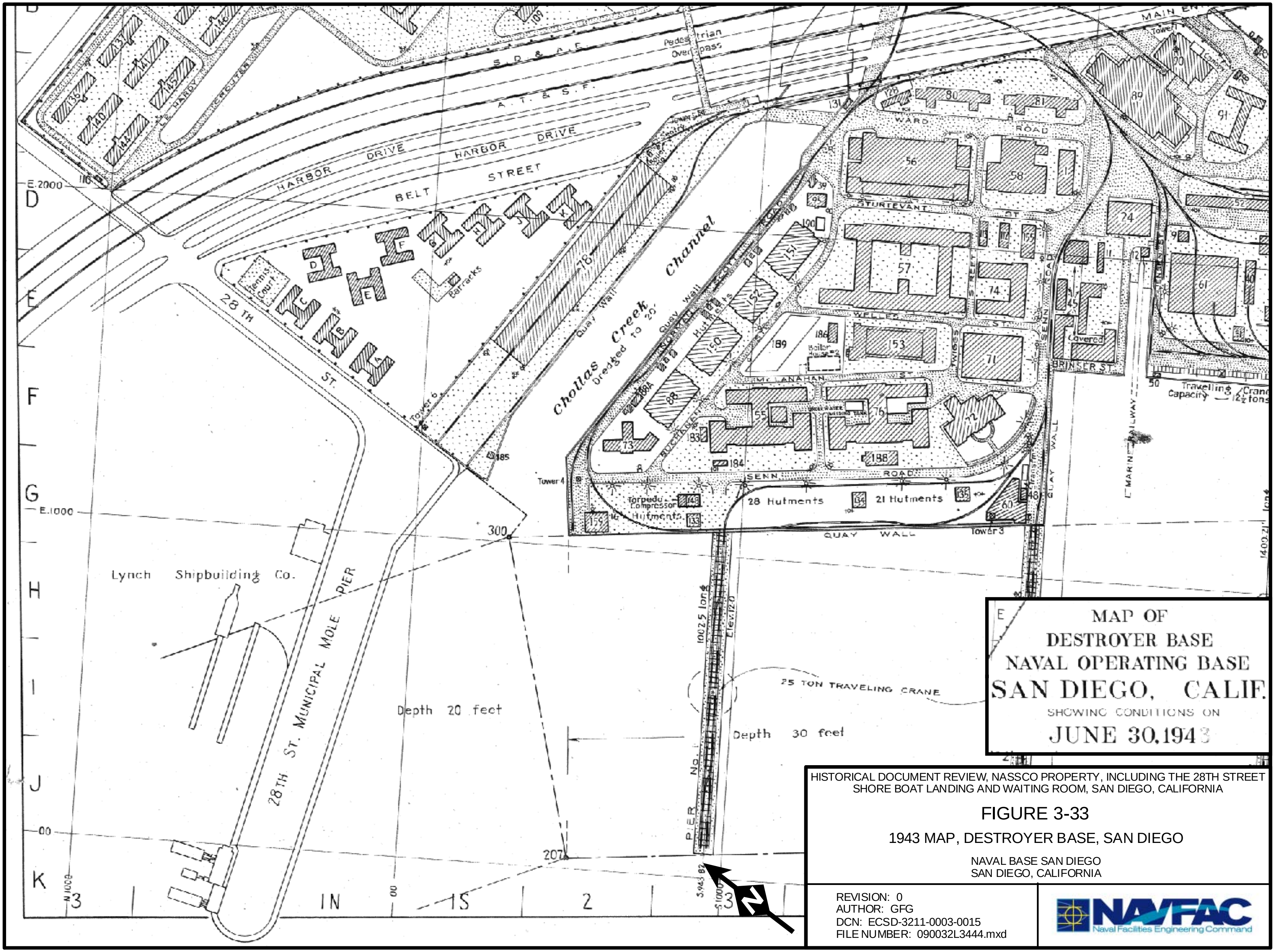
FIGURE 3-32

1942 MAP, DESTROYER BASE, SAN DIEGO, MASTER DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3443.mxd

NAVFAC Naval Facilities Engineering Command



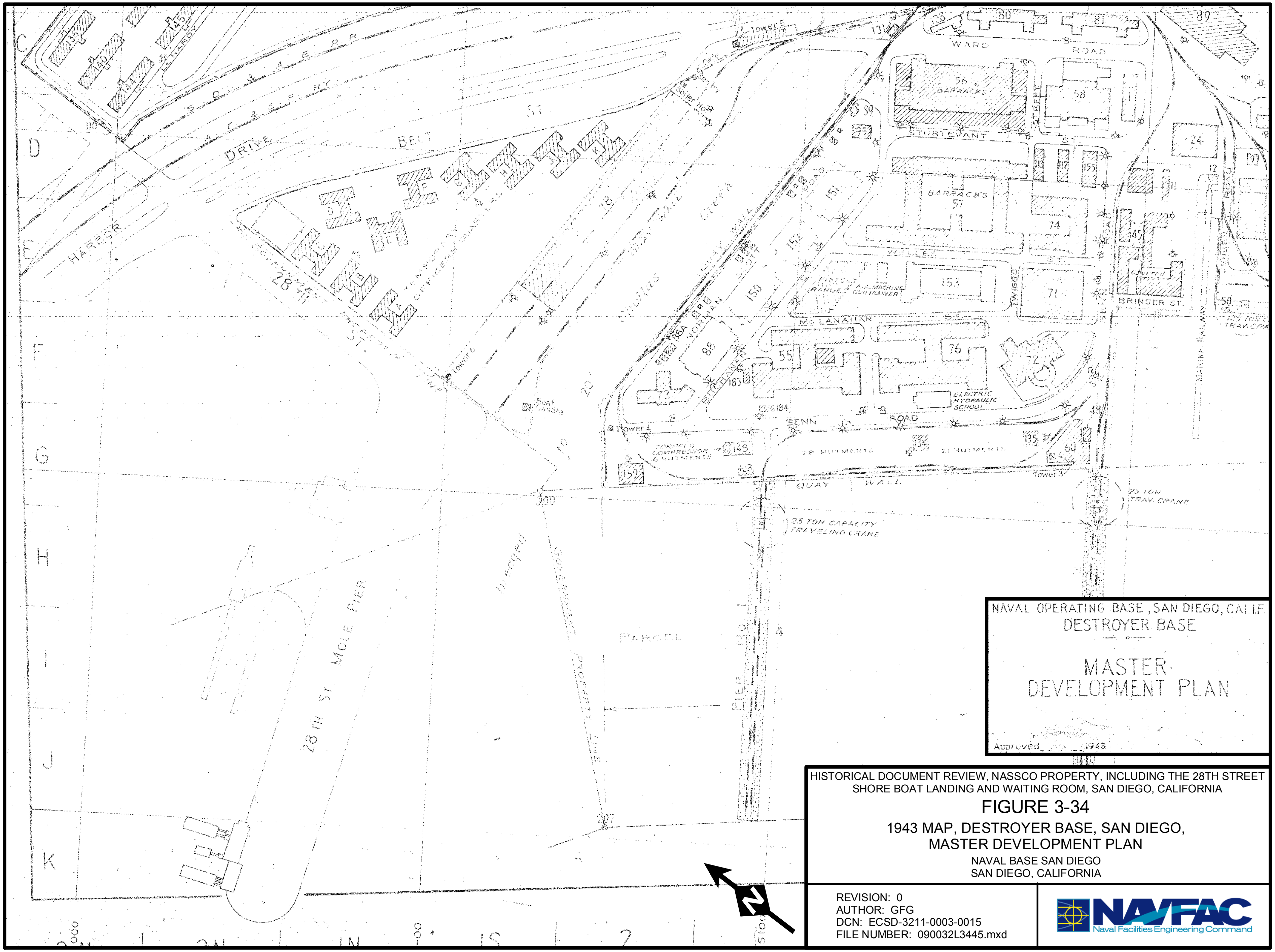
HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-33

1943 MAP, DESTROYER BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3444.mxd



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-34

1943 MAP, DESTROYER BASE, SAN DIEGO, MASTER DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3445.mxd

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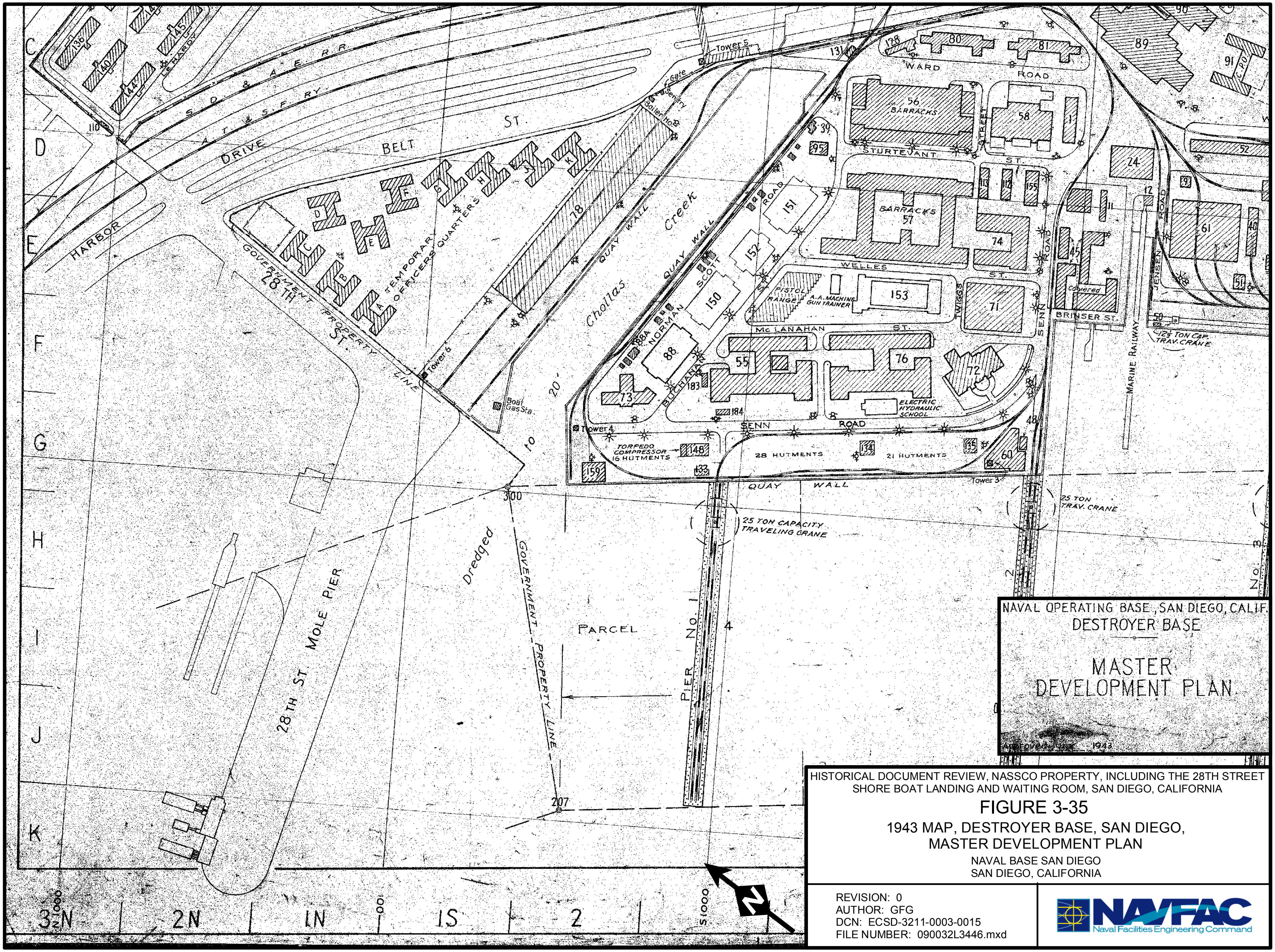


HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

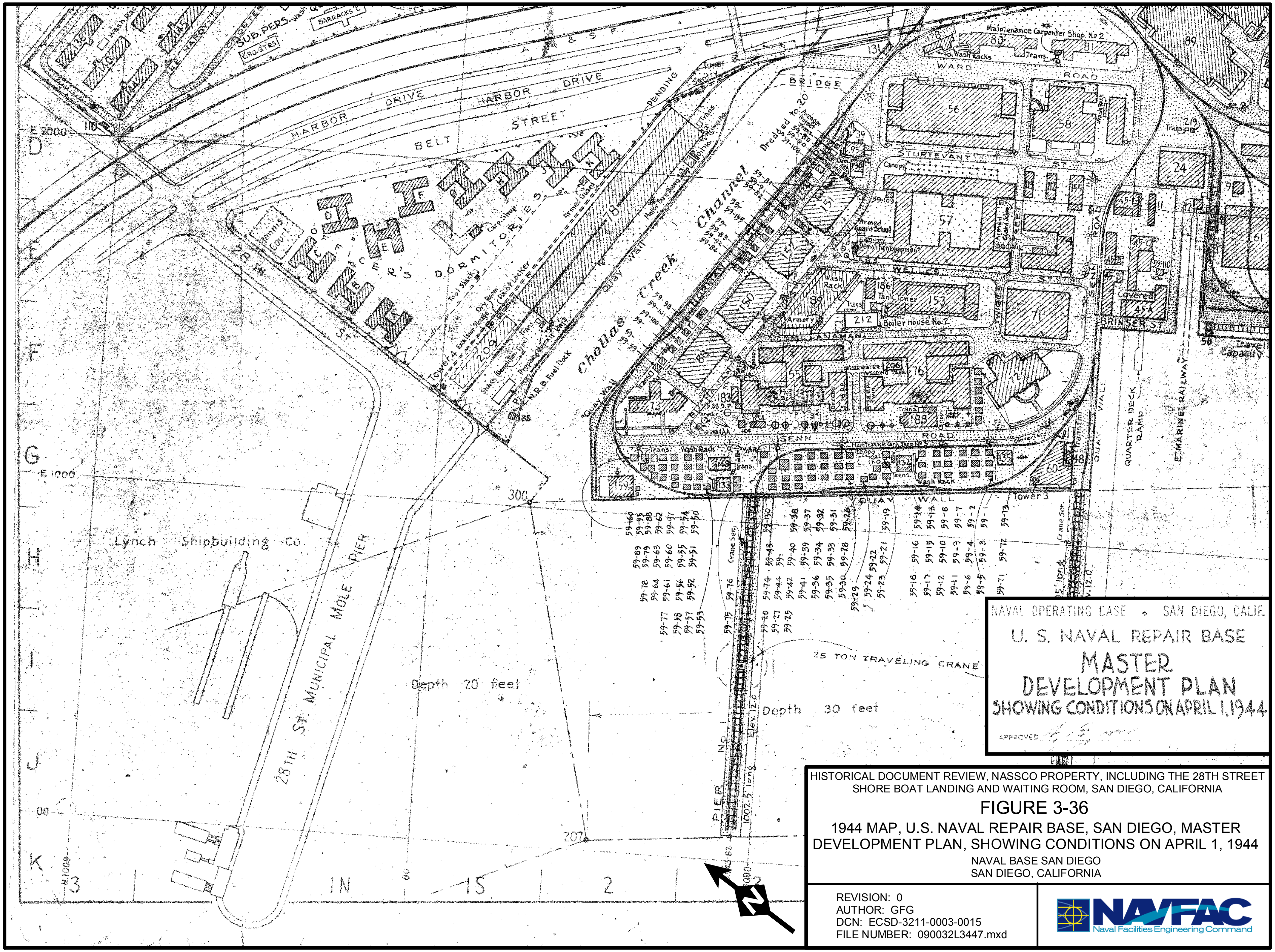
FIGURE 3-35

1943 MAP, DESTROYER BASE, SAN DIEGO, MASTER DEVELOPMENT PLAN

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3446.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

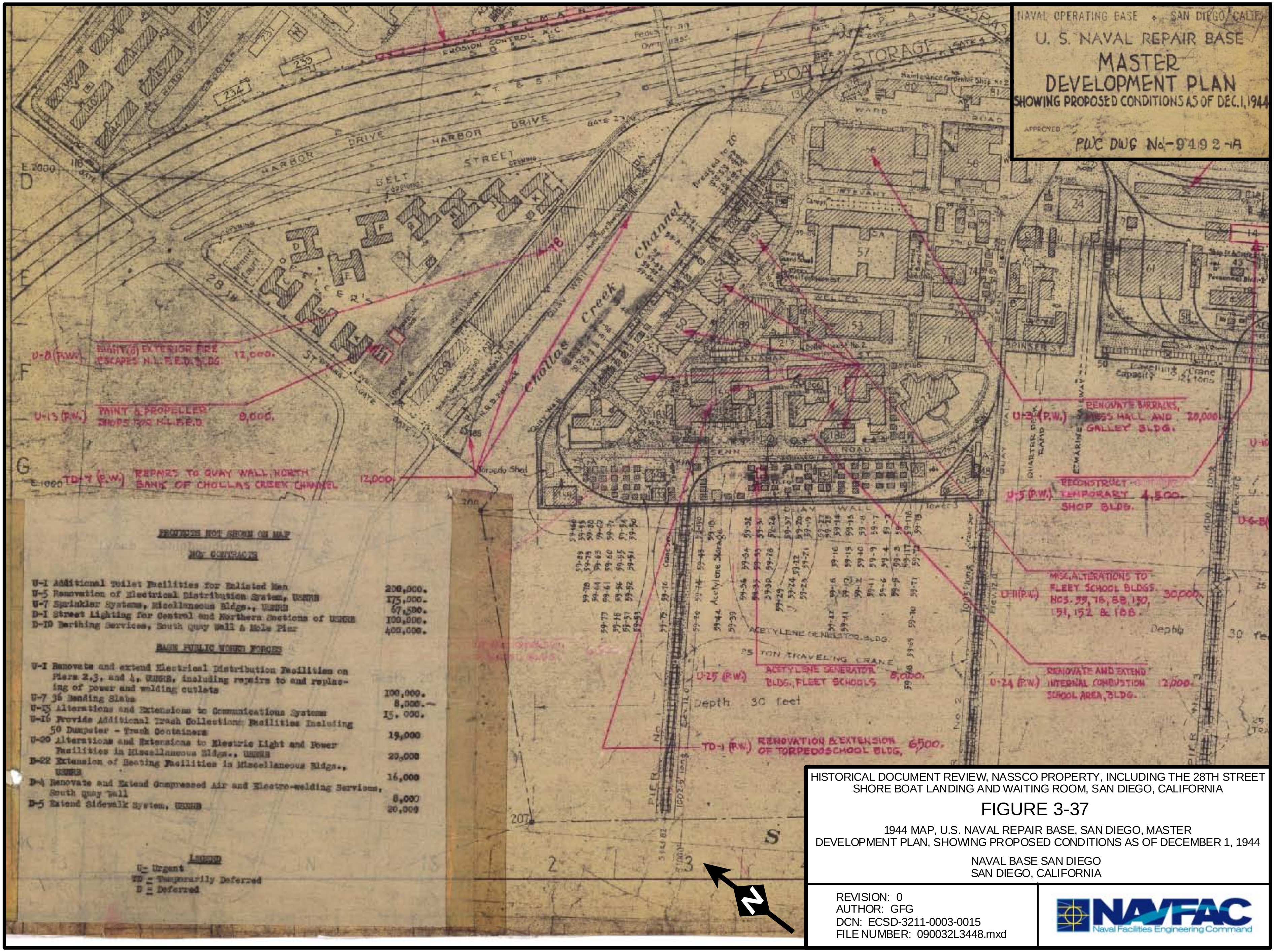
FIGURE 3-36

1944 MAP, U.S. NAVAL REPAIR BASE, SAN DIEGO, MASTER DEVELOPMENT PLAN, SHOWING CONDITIONS ON APRIL 1, 1944

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3447.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

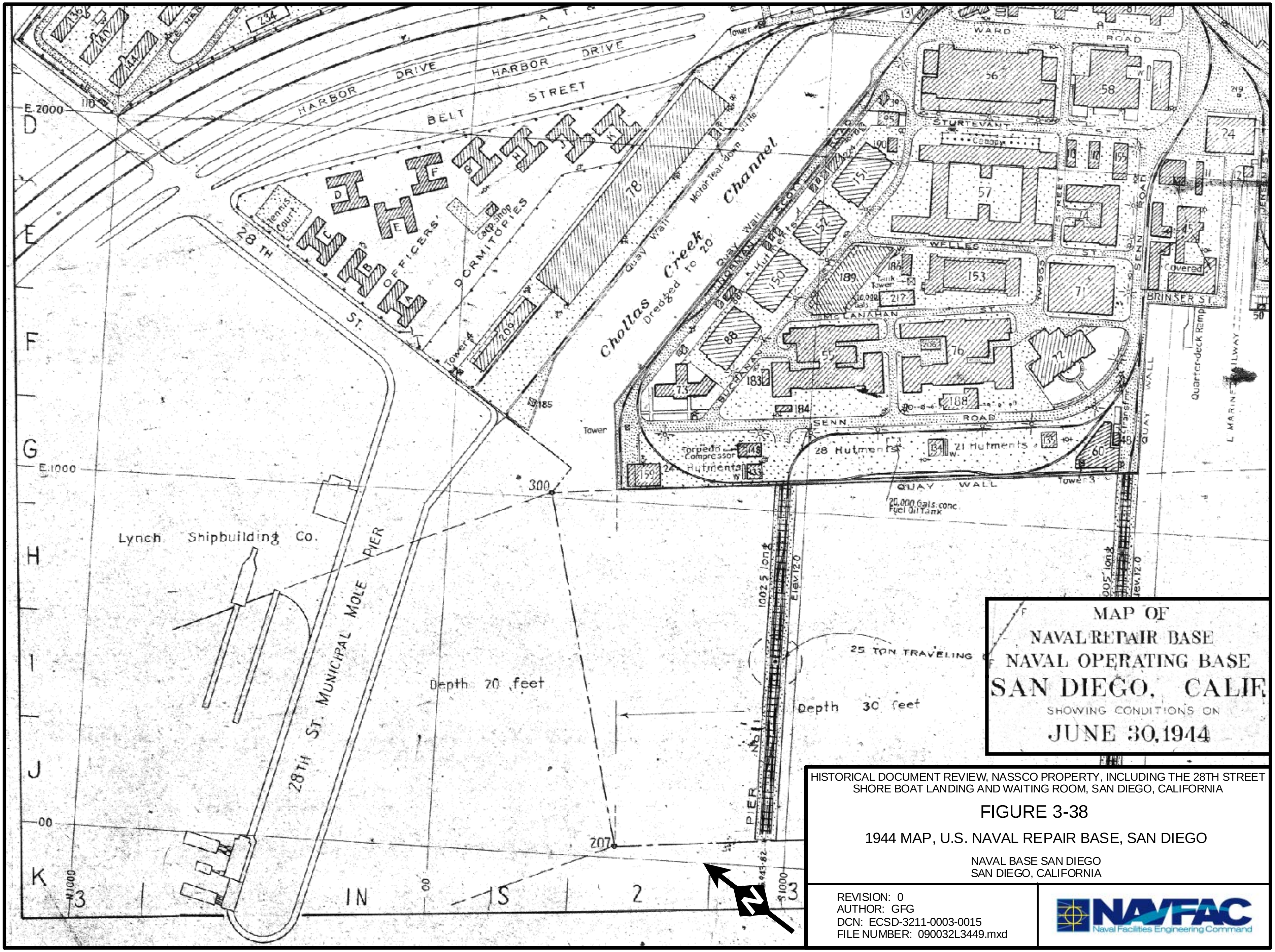
FIGURE 3-37

1944 MAP, U.S. NAVAL REPAIR BASE, SAN DIEGO, MASTER DEVELOPMENT PLAN, SHOWING PROPOSED CONDITIONS AS OF DECEMBER 1, 1944

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3448.mxd

NAVFAC Naval Facilities Engineering Command



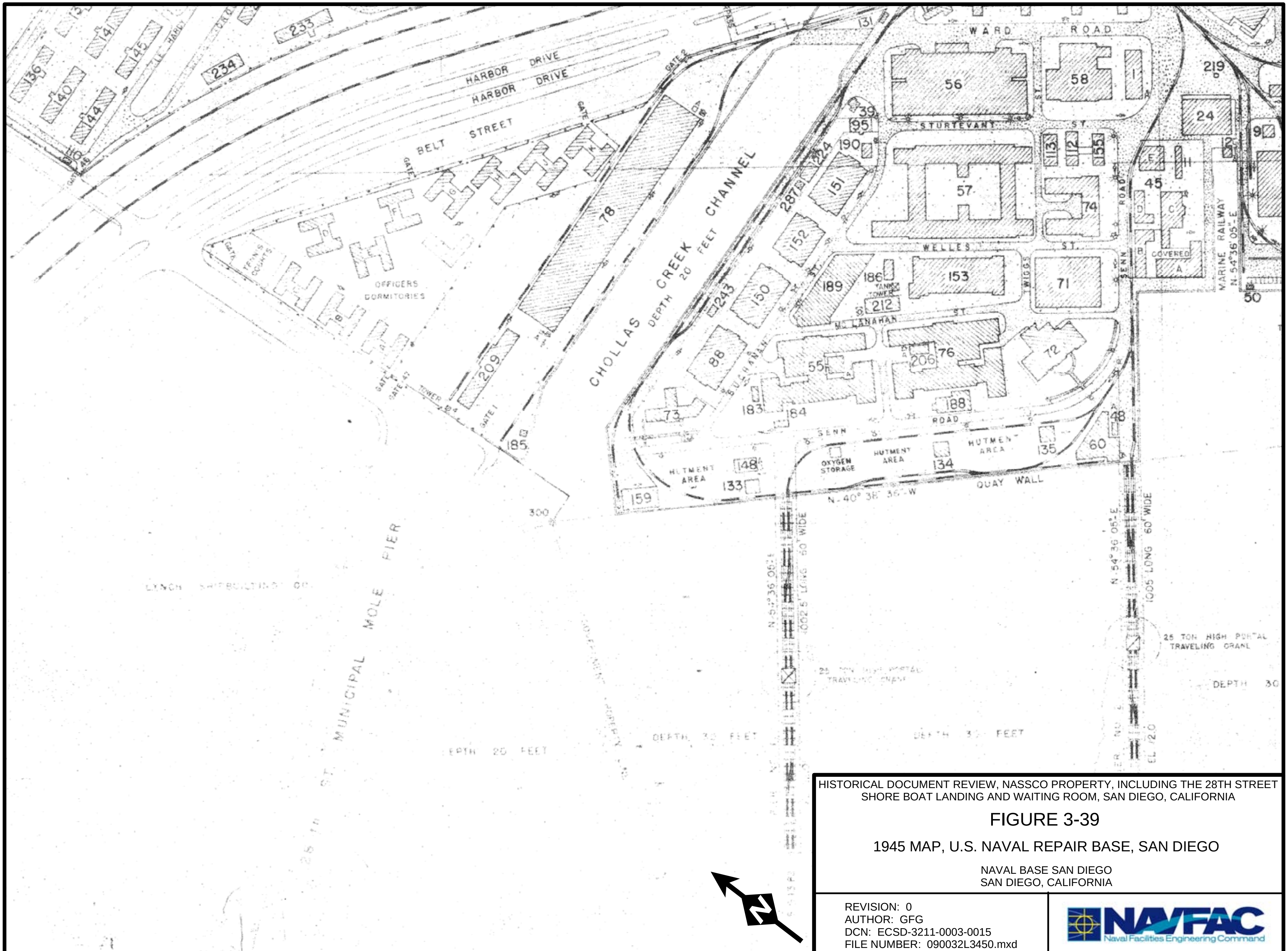
HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-38

1944 MAP, U.S. NAVAL REPAIR BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3449.mxd



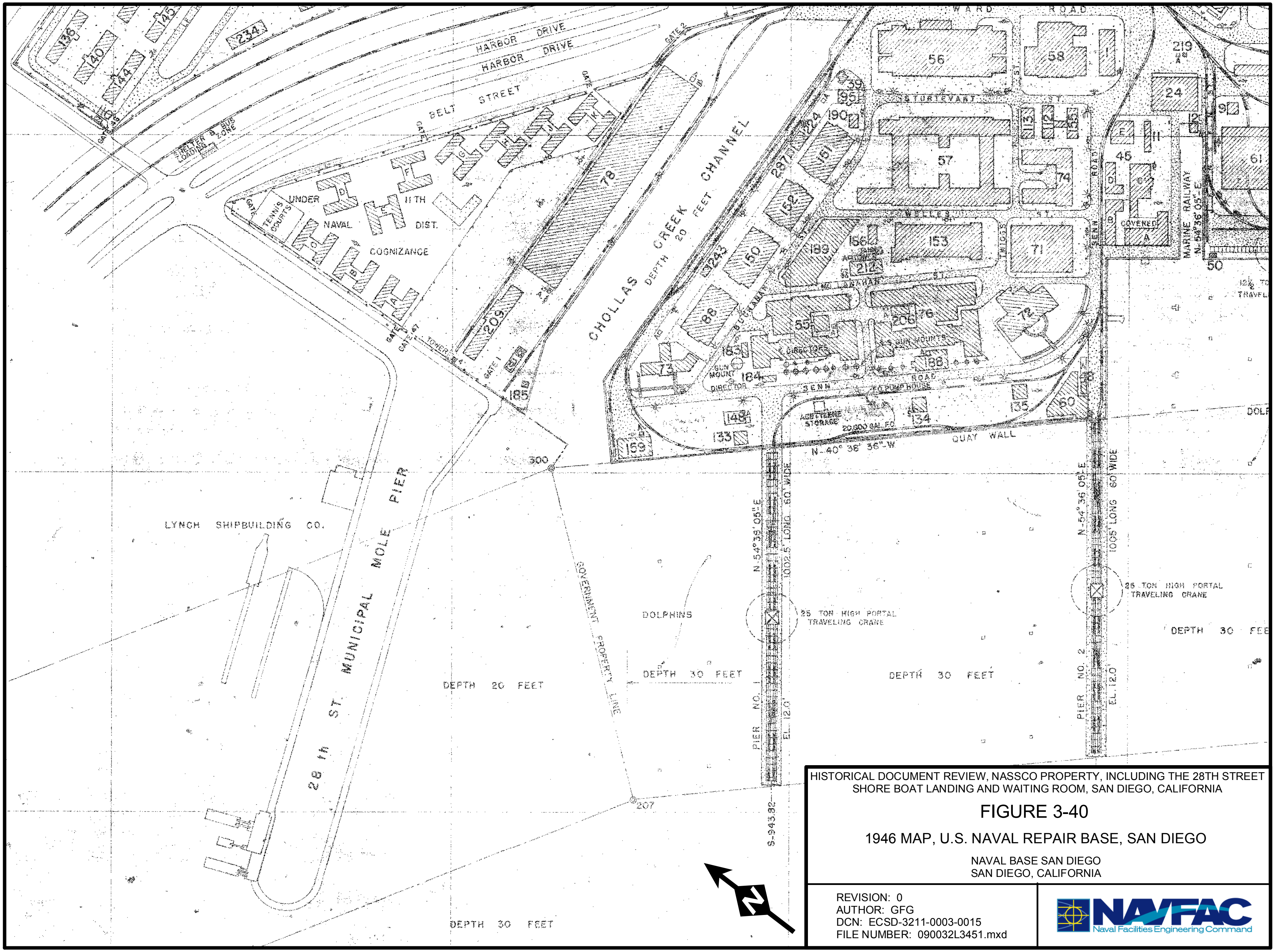
HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-39

1945 MAP, U.S. NAVAL REPAIR BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3450.mxd



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

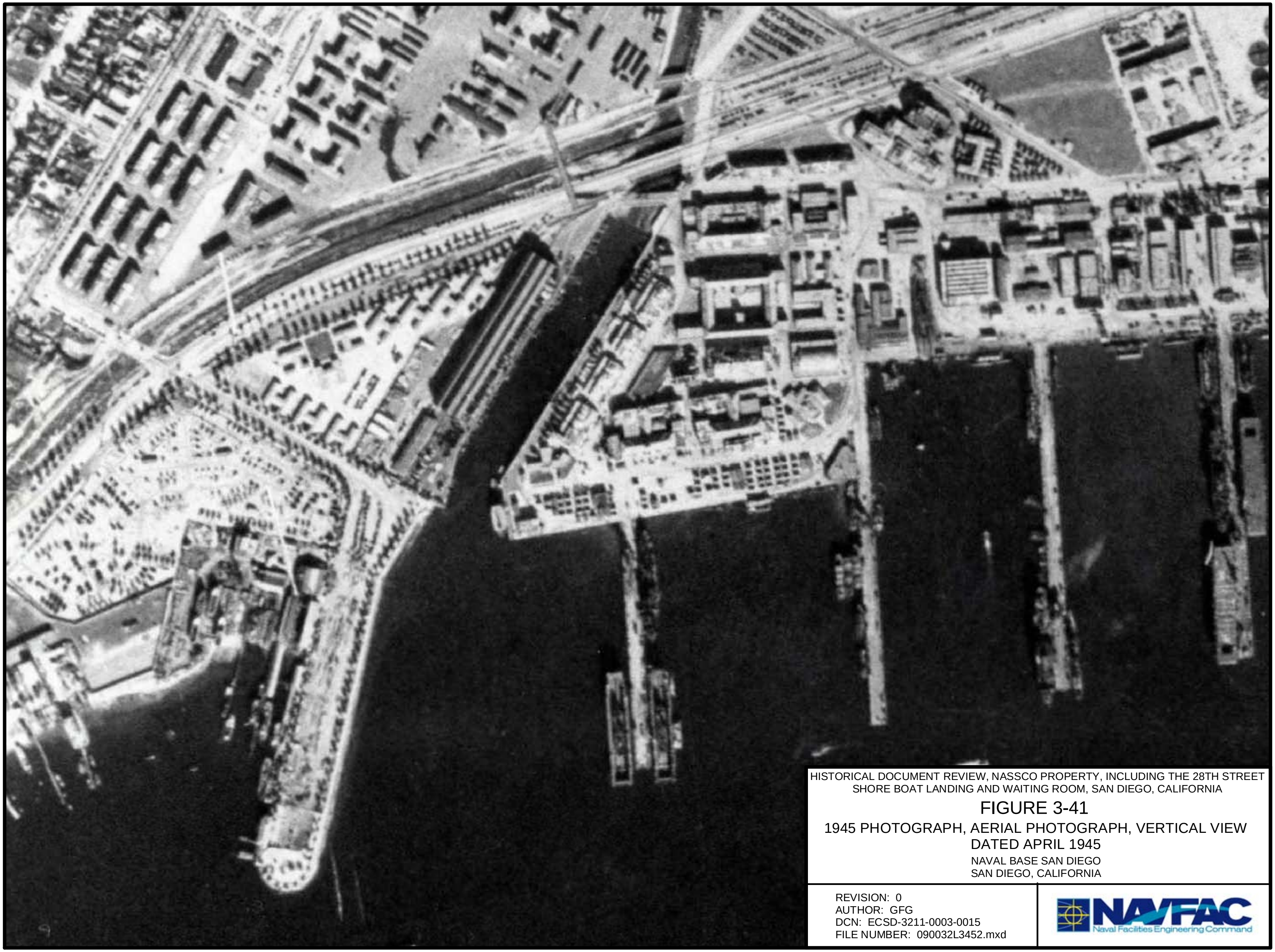
FIGURE 3-40

1946 MAP, U.S. NAVAL REPAIR BASE, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3451.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

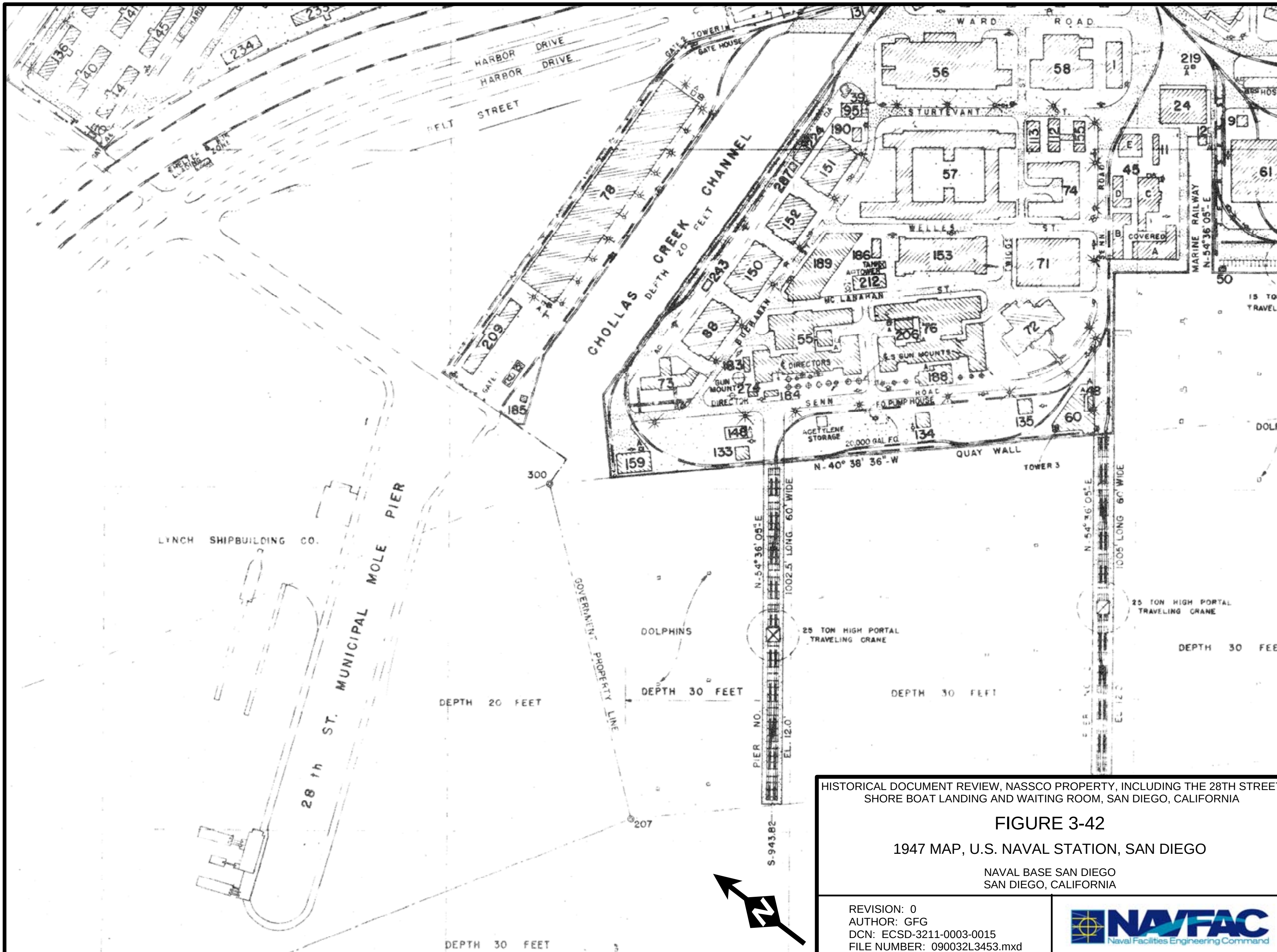
FIGURE 3-41

1945 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED APRIL 1945

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3452.mxd

NAVFAC
Naval Facilities Engineering Command



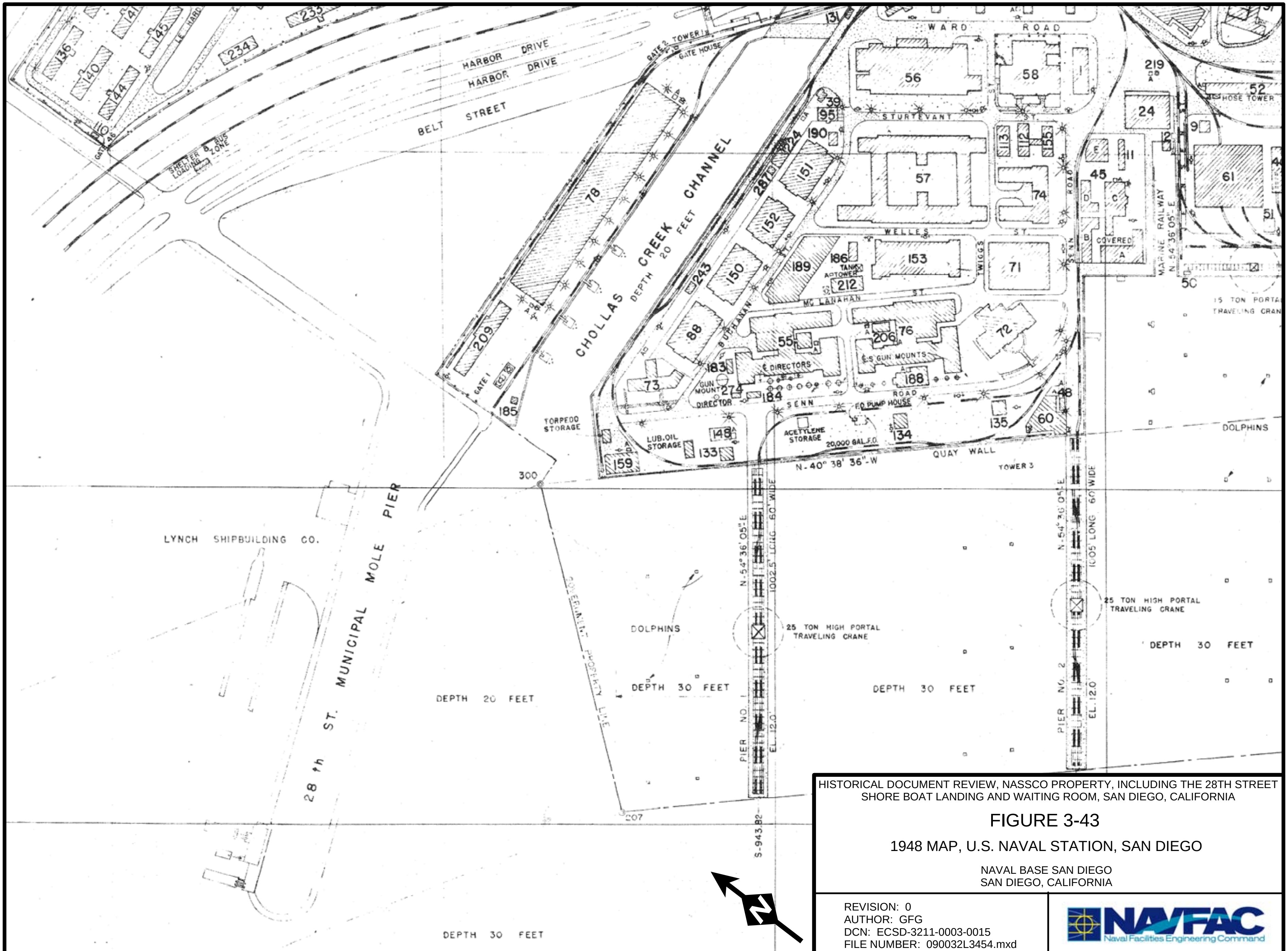
HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-42

1947 MAP, U.S. NAVAL STATION, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3453.mxd



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

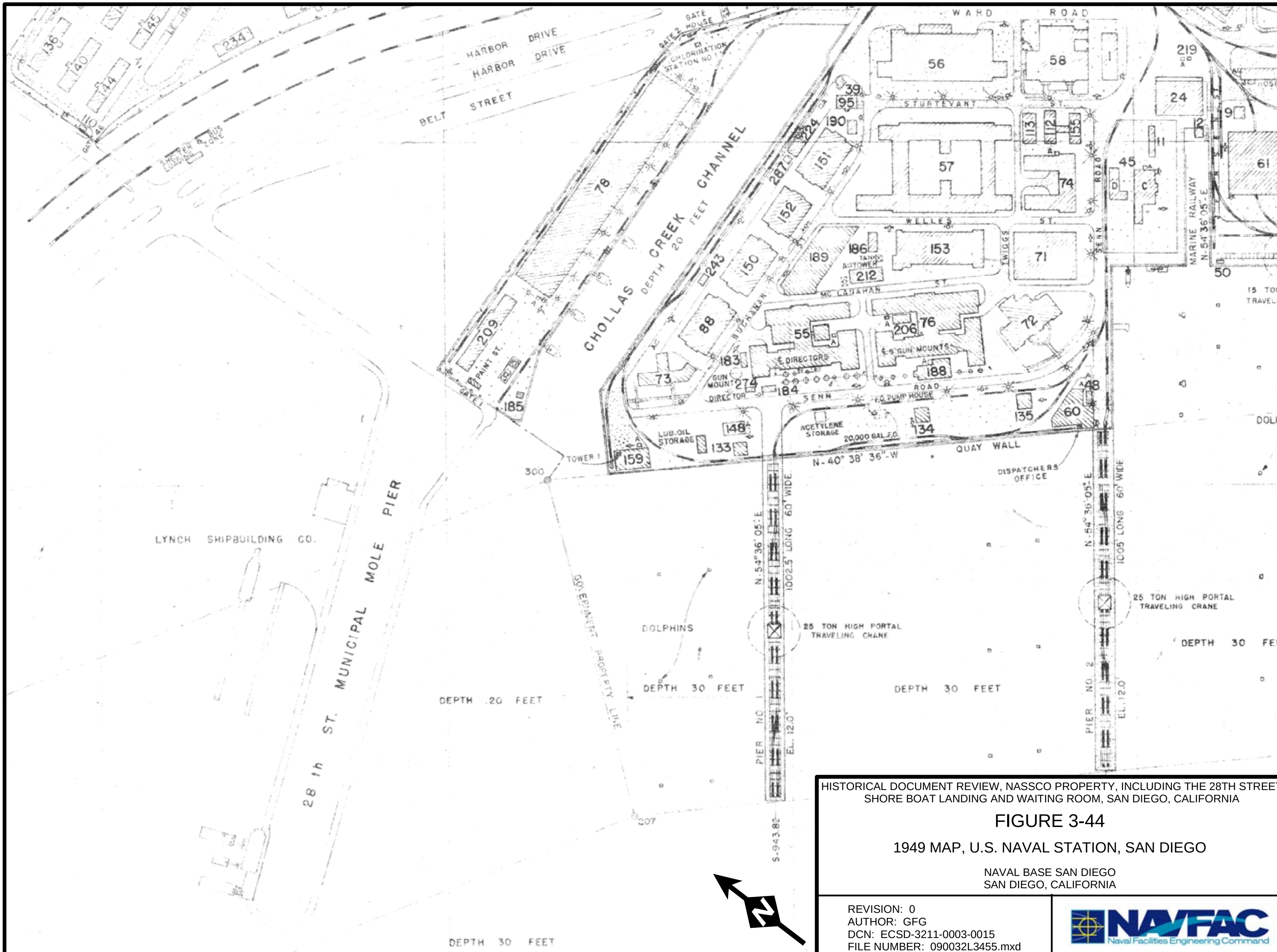
FIGURE 3-43

1948 MAP, U.S. NAVAL STATION, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3454.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-44

1949 MAP, U.S. NAVAL STATION, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3455.mxd

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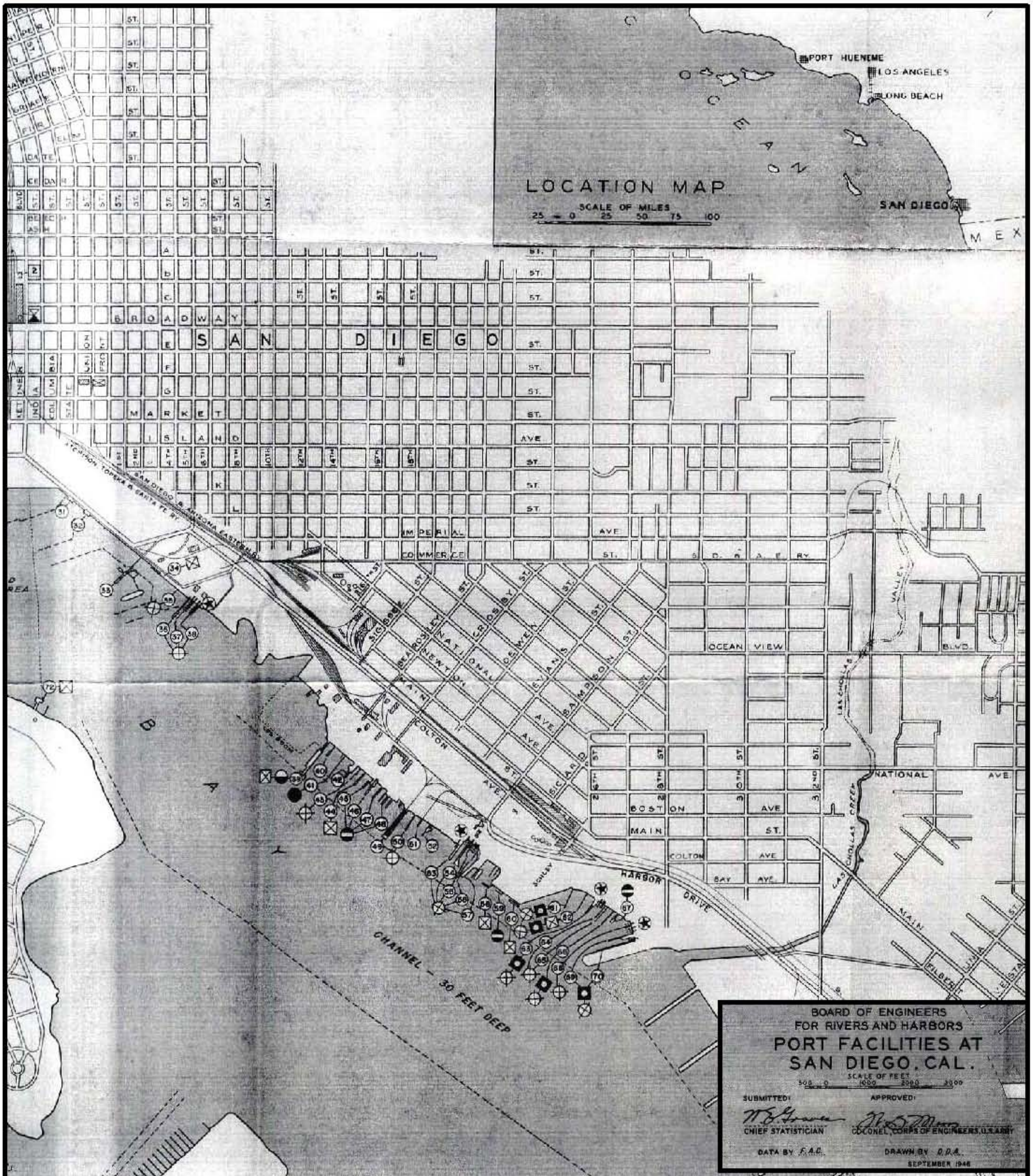

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-45

1946 MAP, U.S. ARMY CORPS OF ENGINEERS REPORT

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

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PIERS, WHARVES, AND DOCKS

PORT San Diego, Calif.

REFERENCE NUMBER ON MAP	67	68	69
NAME	Peoples Fish Co. Pier.	Lynch Shipyard Pier No. 3.	Lynch Shipyard Pier No. 2.
LOCATION ON WATER FRONT	Foot of 28th Street, adjacent to National Iron Works Pier No. 1.	About 230 feet north of 28th Street Mole.	About 100 feet north of 28th Street Mole.
OWNED BY	Peoples Fish Co.	Lynch Shipbuilding Co.	Lynch Shipbuilding Co.
OPERATED BY	do.	do.	do.
PURPOSE FOR WHICH USED	Receipt of fish and mooring of fishing vessels.	Berthing vessels awaiting repair.	Berthing vessels for repair and outfitting.
TYPE OF CONSTRUCTION	Open timber pile, timber deck pier projecting from masonry bulkhead with solid fill.	Open timber pile, timber deck.	Open timber pile, timber deck.

DESCRIPTION:	67 Face (feet)	67 Northwest side (feet)	67 South side (feet)	68 Face (feet)	68 North side (feet)	68 South side (feet)	69 Face (feet)	69 North side (feet)	69 South side (feet)
DIMENSIONS	36	175	75+100	5	370	370	15+40	430	230+200
DEPTH OF WATER, m.l.l.w.	28	28-0	28-0	25	25-0	25-0	25	25-0	25-0
BERTHING SPACE AVAILABLE	36	75	75	0	100	200	0	290	230
WIDTH OF APRON	Part open.			Open pier.			Open.	Open and 15.	Outer 230 open.
DECK ABOVE m.l.l.w.	15			11			11		
CAPACITY PER SQUARE FOOT (LBS.)	-			-			-		
LIGHTED OR UNLIGHTED	Lighted.			Unlighted.			Lighted.		

	67	68	69
TRANSIT SHEDS:	None.	None.	None.
TYPE OF CONSTRUCTION			
LENGTH AND WIDTH (FT.)			
TOTAL FLOOR AREA FOR CARGO (SQ. FT.)			
NUMBER OF FLOORS			
HEIGHT BETWEEN FLOORS (FT.)			
ALLOWABLE LOAD PER SQ. FT. (LBS.)			
LIGHTED OR UNLIGHTED			
MECHANICAL HANDLING FACILITIES	Vertical and horizontal fish unloaders and conveyors for unloading two vessels at one time to cannery in rear.	None.	None.
RAILWAY CONNECTIONS:	None.	None.	None.
WATER SUPPLY (available to vessels)	-	None.	City service.
FIRE PROTECTION (other than city service)	Portable extinguishers.	None.	-
ELECTRIC CURRENT (available to vessels)	-	None.	-
REMARKS:	Inner 100 feet of pier is 24 feet wide.	Marine railway No. 2 along south side. Larger railway is proposed for north side.	Marine railway on north side. Machine shop and other buildings at inner end. Pier equipped with compressed air, water, and electric lines. Trucks have access to rear.

PIERS, WHARVES, AND DOCKS

PORT San Diego, Calif.

REFERENCE NUMBER ON MAP	70	71	72
NAME	Lynch Shipyard Wharf No. 1.	Hotel del Coronado Boathouse Landing.	Union Oil Co. Wharf.
LOCATION ON WATER FRONT	Along north side of 28th Street Mole.	Glorietta Bay, Coronado.	Foot of Avenue "A", Coronado.
OWNED BY	Lynch Shipbuilding Co.	Hotel del Coronado.	Union Oil Co. of California.
OPERATED BY	do.	do.	do.
PURPOSE FOR WHICH USED	Berthing vessels for repair and outfitting.	Berthing recreational craft.	Receipt of petroleum products and bunkering vessels.
TYPE OF CONSTRUCTION	Shore wharf of open timber piling with timber deck along stone bulkhead of 28th Street Mole.	Open timber pile wharf, timber deck and landing floats. Approach 100 by 10 feet.	Open timber pile, L-head wharf with timber deck and 140- by 18-foot approach.

DESCRIPTION:	70 Face (feet)	70 West side (feet)	70	71 Face (feet)	71 Northwest side (ft.)	71 Southeast side (ft.)	72 Face (feet)	72 East side (feet)	72 West side (feet)
DIMENSIONS	630	30		75	75	75	100	45	60
DEPTH OF WATER, m.l.l.w.	25-0	25		9	-	-	20	20-0	20-0
BERTHING SPACE AVAILABLE	430	0		Floats.	-	-	100	45	60
WIDTH OF APRON	Part open.			Open (on floats).			Part open.		
DECK ABOVE m.l.l.w.	12			10			6		
CAPACITY PER SQUARE FOOT (LBS.)	-			200			250		
LIGHTED OR UNLIGHTED	Part lighted.			Lighted.			Lighted.		

	70	71	72
TRANSIT SHEDS:	None; several small shop buildings along wharf	None.	None.
TYPE OF CONSTRUCTION			
LENGTH AND WIDTH (FT.)			
TOTAL FLOOR AREA FOR CARGO (SQ. FT.)			
NUMBER OF FLOORS			
HEIGHT BETWEEN FLOORS (FT.)			
ALLOWABLE LOAD PER SQ. FT. (LBS.)			
LIGHTED OR UNLIGHTED			
MECHANICAL HANDLING FACILITIES	Steel frame stiff-leg electric derrick with capacity of 10 tons and 75-foot boom, is located about 75 feet from outer end. Shipyard equipment available for use on all piers, includes mobile cranes, tractor crane on pneumatic tires, gasoline-powered auto crane with 35-foot boom and hard rubber tires.	One hand-operated derrick with 8-foot boom.	One unrigged mast and boom derrick.
RAILWAY CONNECTIONS:	None.	None.	None.
WATER SUPPLY (available to vessels)	City service.	City service.	A 2-inch water pipe line.
FIRE PROTECTION (other than city service)	Portable and mobile equipment.	Portable extinguishers.	Portable extinguishers.
ELECTRIC CURRENT (available to vessels)	-	None.	Two outlets on wharf for extension cords.
REMARKS:	Wharf equipped with compressed air, water, and electric lines. Trucks have access to wharf.	About 150 feet of berthing at landing floats. Clubhouse occupies wharf.	One 4-inch and three 2-inch pipelines connect tanks in rear. Pumps, meters, and hose attached for bunkering petroleum products. Trucks have full access to wharf. Two small sheds on wharf.

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-46

1946 TABLE, U.S. ARMY CORPS OF ENGINEERS REPORT

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3457.mxd

MARINE REPAIR PLANTS

PORT San Diego, Calif.

NAME OF PLANT	Lynch Shipbuilding Co.	Martinolich Shipbuilding Co.	National Iron Works.
LOCATION	North side 28th Street.	Between foot of Schley Street and 26th Street extended.	Foot of 26th, 27th, and 28th Streets.
OWNED BY	Lynch Shipbuilding Co.	Martinolich Shipbuilding Co.	National Iron Works.
OPERATED BY	do.	do.	do.
Address	Foot of 28th Street.	2465 Belt Street.	Harbor Drive and 28th Street.
REPAIR EQUIPMENT	Machine, wood working, pattern, pipe, electric and welding shops; foundry and mold loft. Two marine railways.	General hull and engine repair equipment. One marine railway.	Machine, carpenter, structural steel, fabrication, pattern, sheet metal, pipe, electrical, blacksmith, and layout shops; foundry and galvanizing plant. Special deck fittings for tuna fishing boats. Five marine railways.
NATURE OF REPAIRS UNDERTAKEN	Construction and repair of wood and steel vessels. Handles deck equipment, pumps, electric fittings, canvas work, and rigging.	Repair of hulls, engines, and deck fittings of wood and steel vessels.	Construction and repair of large wood and metal tuna fishing boats.
LARGEST SHAFTS PRODUCED	18 inches by 24 feet.	No data.	24 inches by 22 feet.
LARGEST CASTINGS PRODUCED	Iron - 3 tons; bronze - 1800 pounds.	None.	Iron - 10 tons; aluminum - 1500 pounds; bronze - 1 ton; brass - 1/2 ton.
CAPACITY	Vessels up to 150 feet on ways; any size according to draft in water.	Vessels 156 by 40 feet, of 1000 tons capacity.	Vessels 150 by 35 by 17 on ways; any size in water.
STOCK MATERIAL CARRIED	Large stock of general material.	Small general stock.	Average stock all shipyard material and special fittings. Structural and plate steel and lumber.
REMARKS	Building ways available in addition to two marine ways. At Ref. Nos. 68-70.	At Ref. No. 61.	At Ref. Nos. 62-66.

MARINE REPAIR PLANTS

NAME OF PLANT	San Diego Marine Construction Co.	Shepherd Diesel Marine.	Standard Iron Works.
LOCATION	Foot of Sampson Street.	Between foot of Dewey and Evans Streets extended.	Harbor Drive at Beardsley Street.
OWNED BY	San Diego Marine Construction Co.	Shepherd Tractor & Equipment Co.	Standard Iron Works.
OPERATED BY	do.	Shepherd Diesel Marine Division	do.
Address	Foot of Sampson Street.	2043 Main Street.	Harbor Drive at Beardsley Streets.
REPAIR EQUIPMENT	Machine, welding, blacksmith, electric and boat shops; portable electric and gas-welding units. 1,000-ton floating drydock and 8 marine railways.	Machine shop; repair shop with monorail hoist for vessels' engines.	Machine and structural shops; foundry; electric and gas-welding equipment.
NATURE OF REPAIRS UNDERTAKEN	Construction and repair of wood and metal vessels; repair of Diesel, gasoline, and steam engines; scraping, cleaning, and painting.	Installation and repair of Diesel engines.	Retubing and maintenance of boilers; repair of engines and power plants.
LARGEST SHAFTS PRODUCED	8 inches by 25 feet.	No data.	20 inches by 22 feet.
LARGEST CASTINGS PRODUCED	None	None	Iron and brass up to 7 tons.
CAPACITY	Vessels up to 1,000 tons.	-	-
STOCK MATERIAL CARRIED	-	-	-
REMARKS	At Ref. Nos. 53-57.	Repairs at company pier, 300 by 15	Near Ref. No. 40.

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-47

1946 TABLE, U.S. ARMY CORPS OF ENGINEERS REPORT

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3458.mxd

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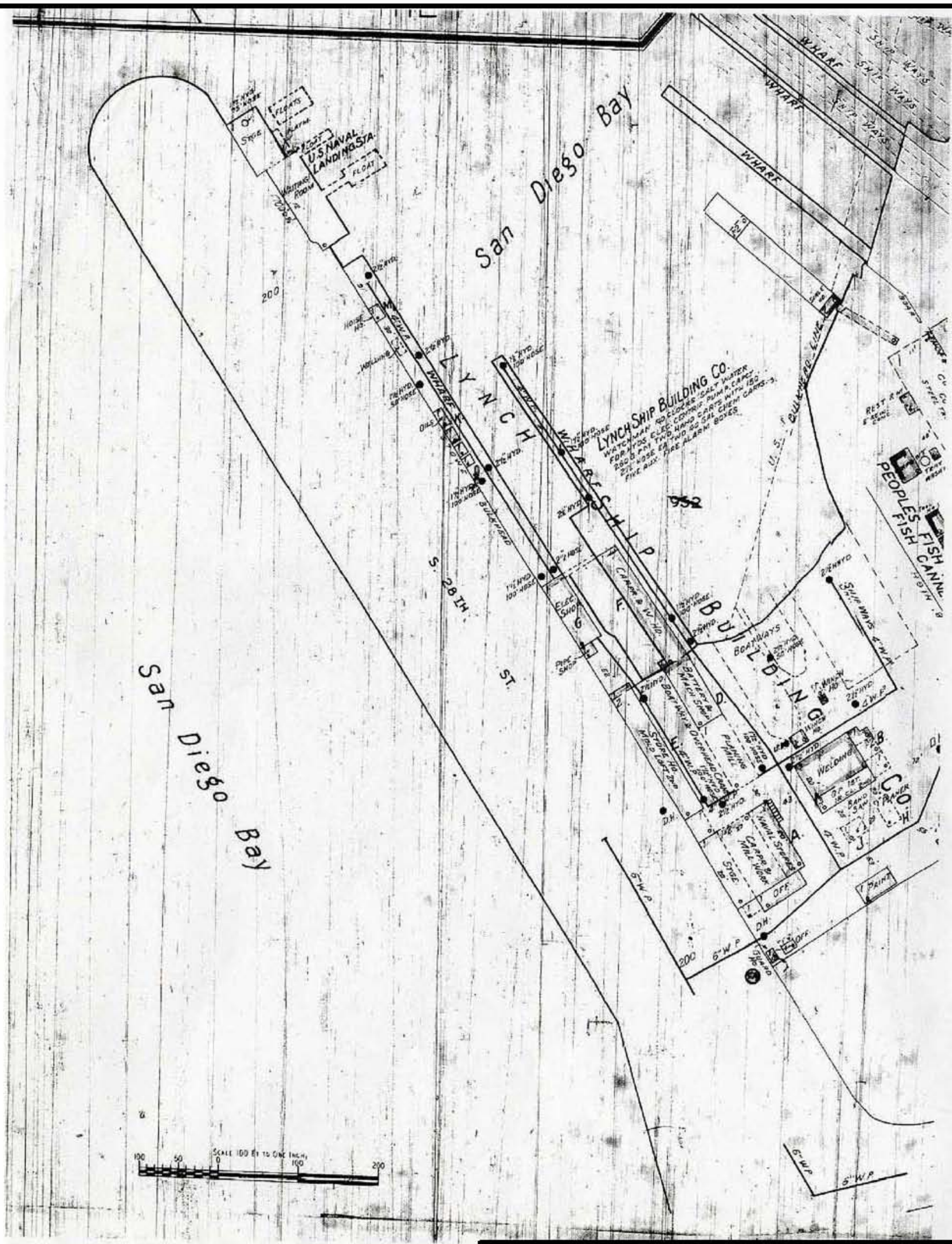


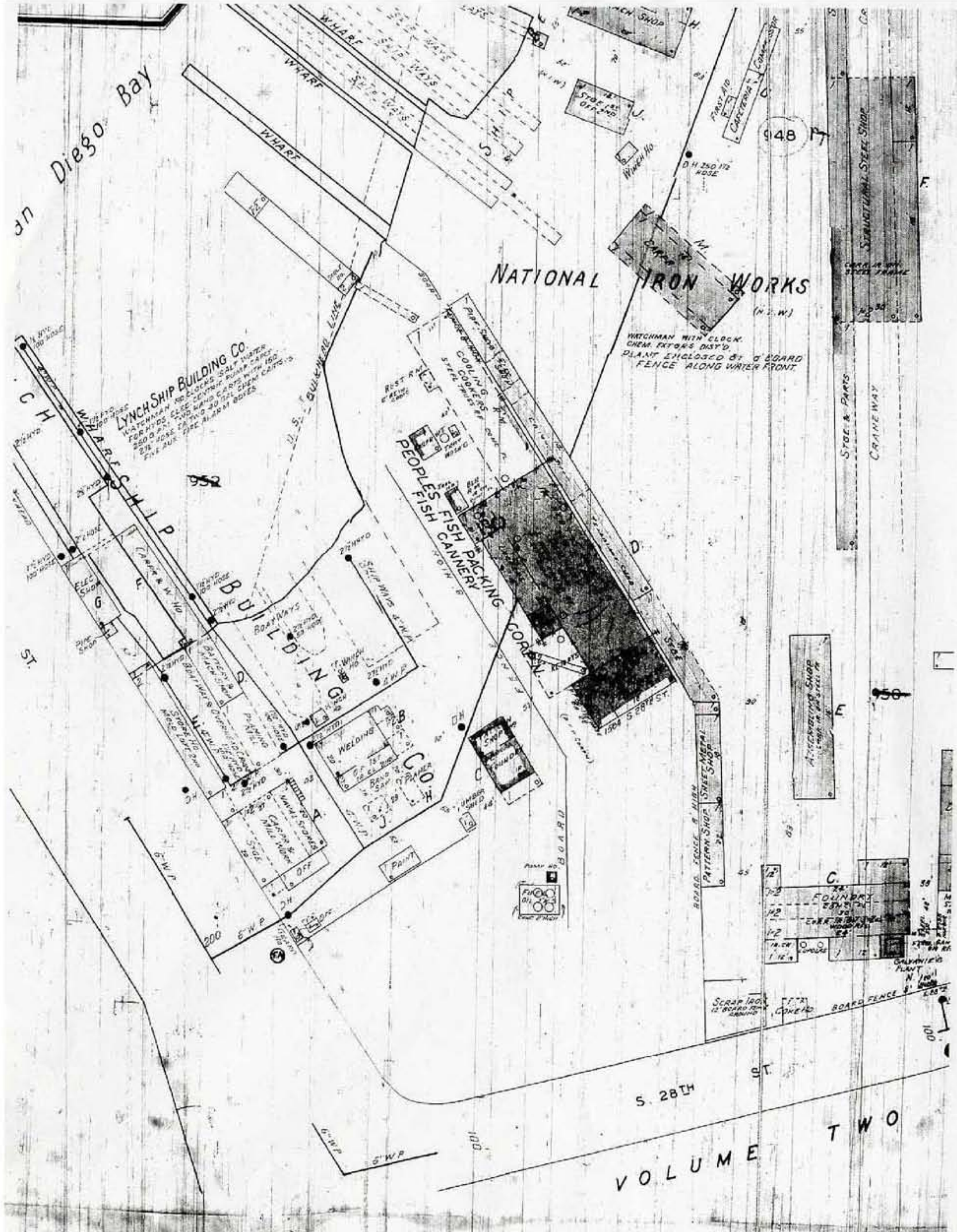
HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-48

1949 MAP, SANBORN FIRE INSURANCE MAP

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3459.mxd



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-49

1949 MAP, SANBORN FIRE INSURANCE MAP, DETAIL

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

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FILE NUMBER: 090032L3460.mxd

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-50

1949 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED 2-16-1949

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3461.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-51

1950 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED 10-29-1950

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3462.mxd

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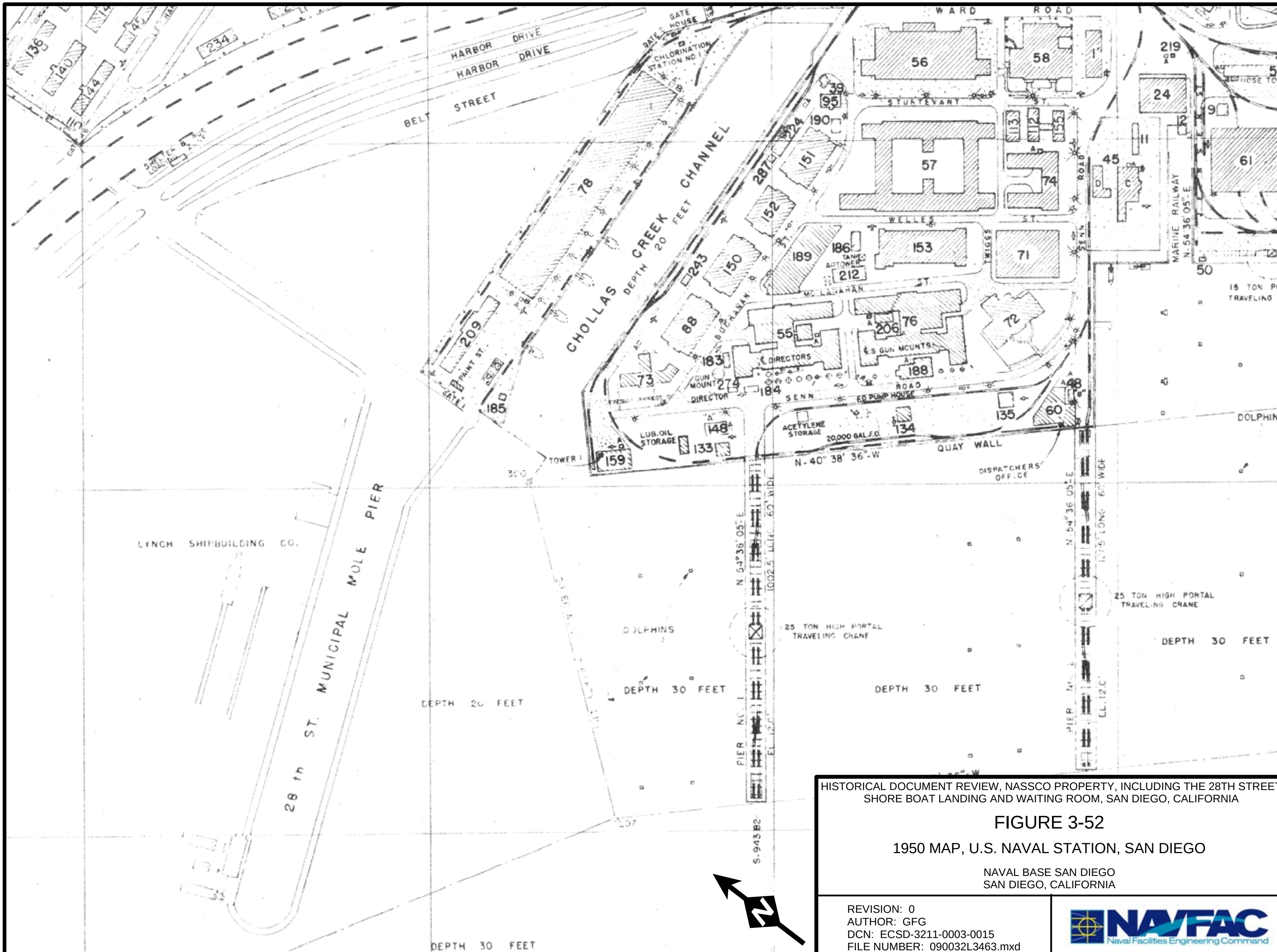

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-52

1950 MAP, U.S. NAVAL STATION, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3463.mxd

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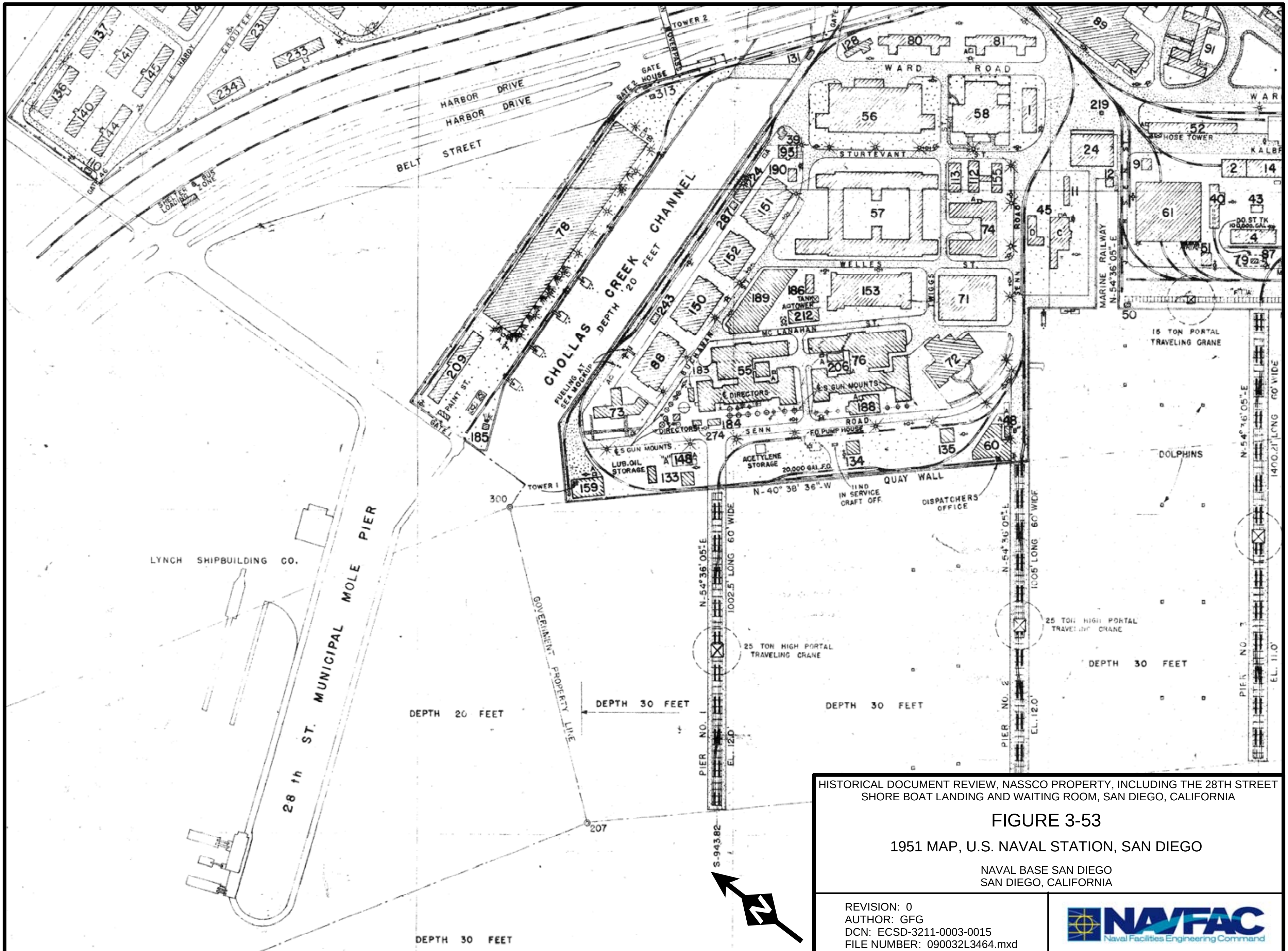

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-53

1951 MAP, U.S. NAVAL STATION, SAN DIEGO

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

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AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3464.mxd

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-54

1953 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED 3-31-1953

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3465.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-55

1956 PHOTOGRAPH, AERIAL PHOTOGRAPH, OBLIQUE VIEW
DATED 1956

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

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AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3466.mxd

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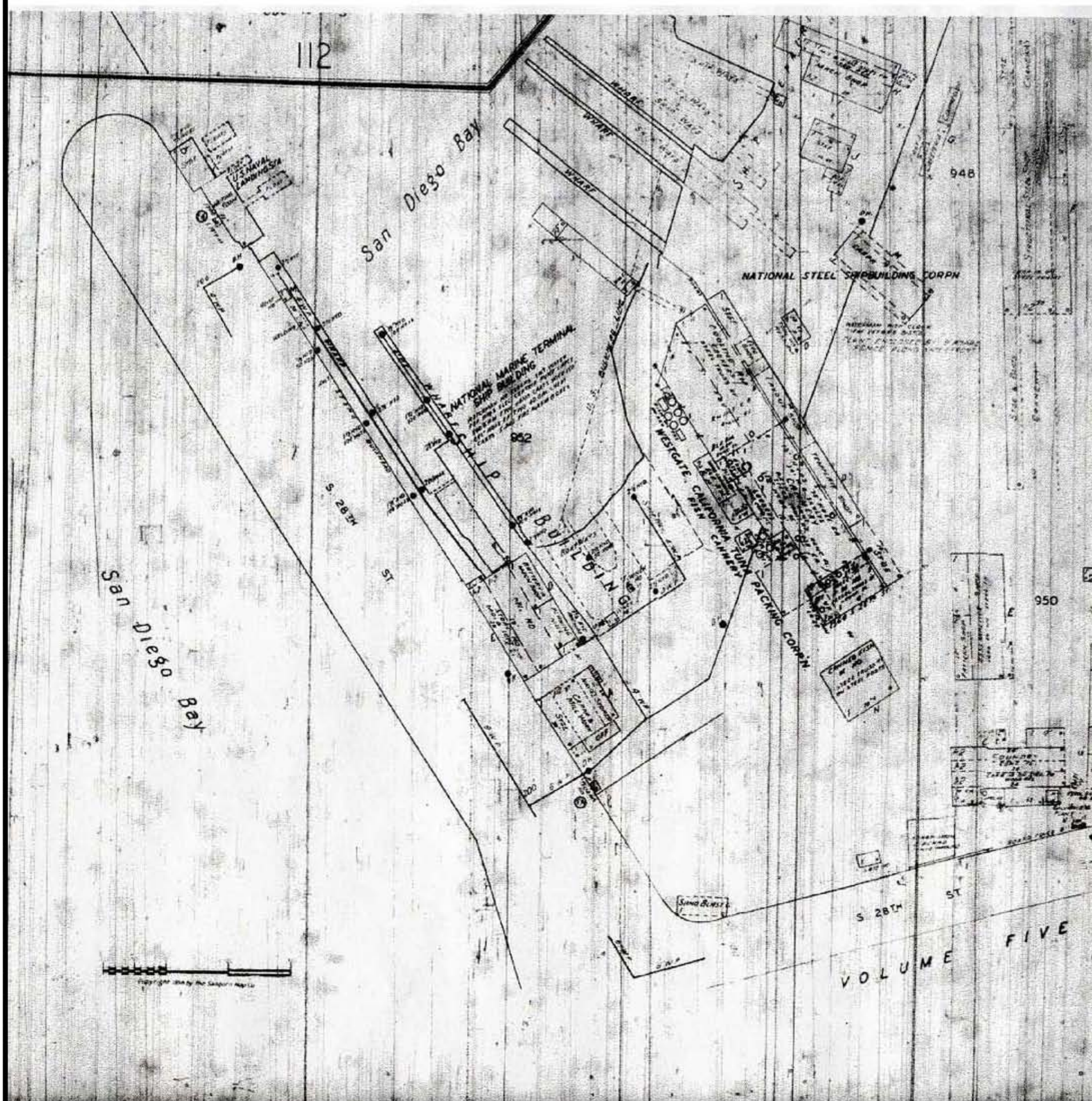

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-56

1956 MAP, SANBORN FIRE INSURANCE MAP

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3467.mxd

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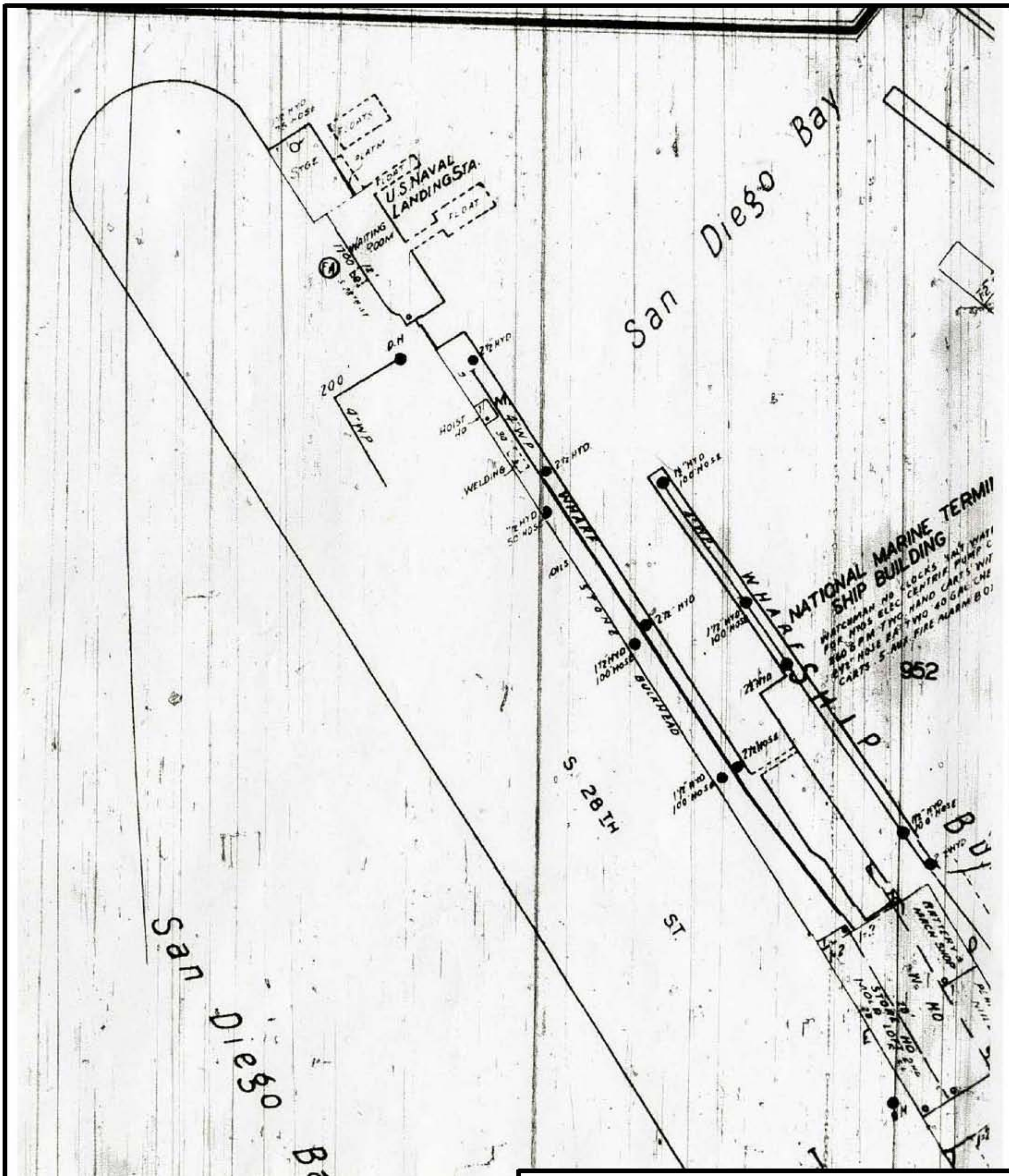

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-57

1956 MAP, SANBORN FIRE INSURANCE MAP, DETAIL 1

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3468.mxd

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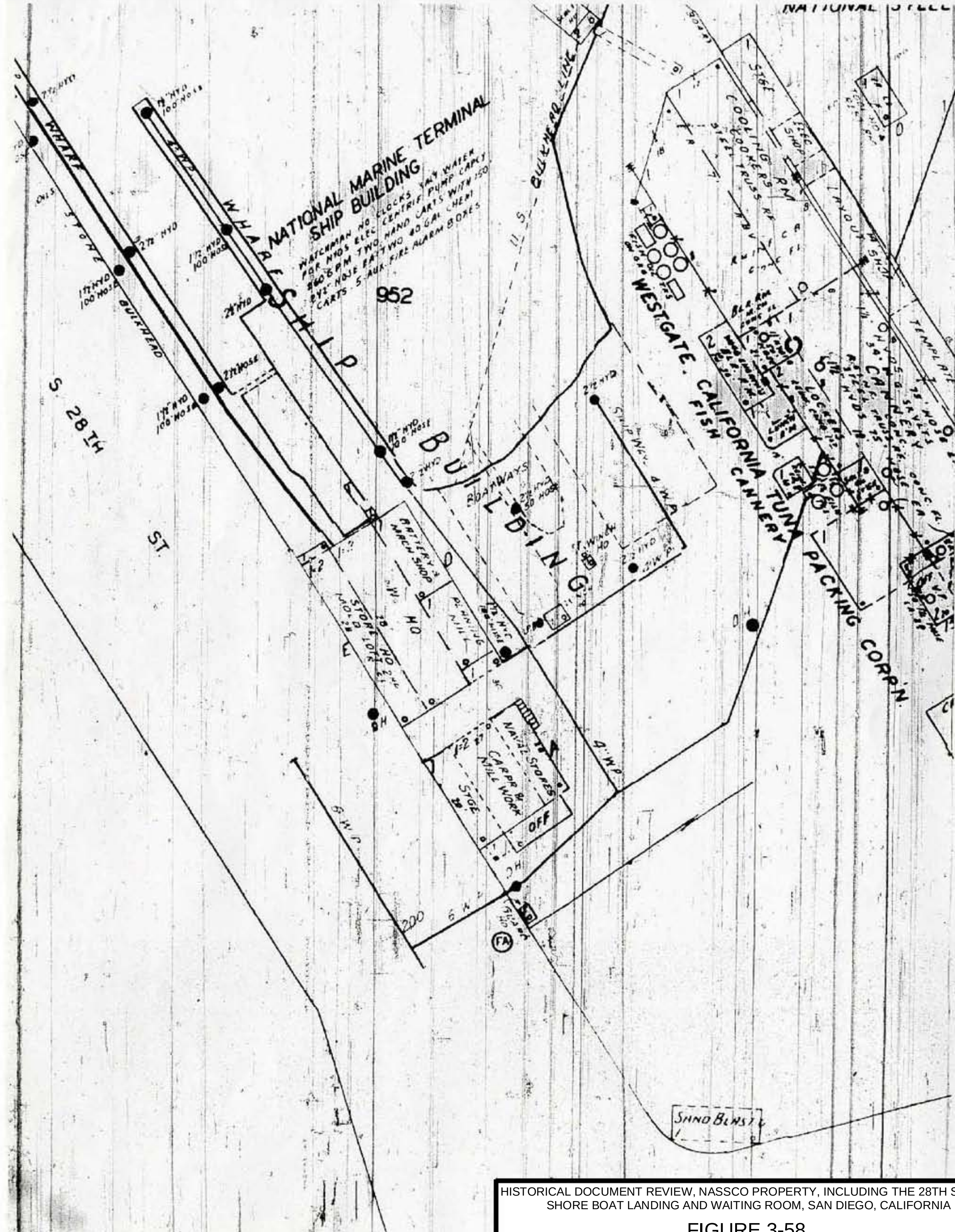

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-58

1956 MAP, SANBORN FIRE INSURANCE MAP, DETAIL 2

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3469.mxd

Corps of Engineers Port Code No. 80020 - San Diego Harbor, Calif.

REFERENCE NUMBER ON MAP	79		Dock Code No. 573	80		Dock Code No. 572	81		Dock Code No. 298
NAME	National Marine Terminal, Pier No. 1.			28th Street Pier.			Johnson Western Constructors Wharf.		
LOCATION ON WATERFRONT	Northeast side of San Diego Bay on northwest side of 28th Street Pier.			Northeast side of San Diego Bay, outer end of 28th Street Pier at foot of 28th Street.			Southwest side of San Diego Bay approximately 2.0 miles south of Coronado, North Island.		
OWNED BY	National Steel and Shipbuilding Corp.			City of San Diego.			Johnson Western Constructors.		
OPERATED BY	National Marine Terminal, Inc.			City of San Diego, Harbor Department.			do.		
PURPOSE FOR WHICH USED	Mooring vessels for outfitting and repair; fueling small craft.			Receipt of lumber and steel; receipt and shipment of general cargo in foreign and domestic trade.			Mooring company-owned floating equipment.		
TYPE OF CONSTRUCTION	Masonry bulkhead, solid fill with timber pile, timber-decked, asphalt-surfaced extension.			Concrete bulkhead with solid fill; mooring dolphins in line with face.			Timber pile, timber deck; mooring dolphins in line with face.		
DESCRIPTION	Face (feet)	West side (feet)		Face (feet)			Face (feet)	North side (feet)	South side (feet)
Dimensions	540	30		270			85	60	60
Depth Alongside at M.L.L.W.	16	16		30-28			4	-	-
Usable Berthing Space	540	-		325 w/dolphins			300 w/dolphins		-
Width of Apron	30			Open.			Open.		
Height of Deck Above M.L.L.W.	12			12-10			14-12		
Load Capacity per Sq.Ft.(Lbs.)	-			600			-		
Lighted or Unlighted	Lighted.			Lighted.			-		
TRANSIT SHEDS	None.			None.			None.		
Number and Type of Construction									
Length and Width (feet)									
Height Inside (feet)									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	Use of cranes described under Ref. No. 70.			-			One 10-ton pneumatic, stiff-leg derrick with 80-foot boom.		
RAILWAY CONNECTIONS	None.			None.			San Diego & Arizona Eastern Railway track at rear of property.		
HIGHWAY CONNECTIONS	Via 28th Street (approach and access), asphalt, 75 feet wide, from Harbor Drive (arterial).			Same as Ref. No. 79.			Via Silver Strand Boulevard (marginal and arterial), asphalt and concrete, 75 feet wide.		
WATER SUPPLY (Available to Vessels)	Through small line.			-			-		
ELECTRIC CURRENT (Available to Vessels)	A. C., 110 volts, single-phase, 60-cycle; A. C., 220 volts, 3-phase, 60-cycle.			-			-		
FIRE PROTECTION (Other than City)	Hand extinguishers and watchmen.			-			-		
REMARKS	Metered pumps located on wharf for fueling purposes. Wharf equipped with compressed air line. Vehicular parking lot in rear on 28th Street Pier.			Approximately 2.2 acres of open storage in rear. Trucks have access to face and to open storage area. Masonry bulkhead with solid fill along southeast side of pier for a total distance of 1,650 feet.			Open private storage in rear for contractors supplies and equipment.		

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-59

1956 TABLE, U.S. ARMY CORPS OF ENGINEERS REPORT

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3470.mxd

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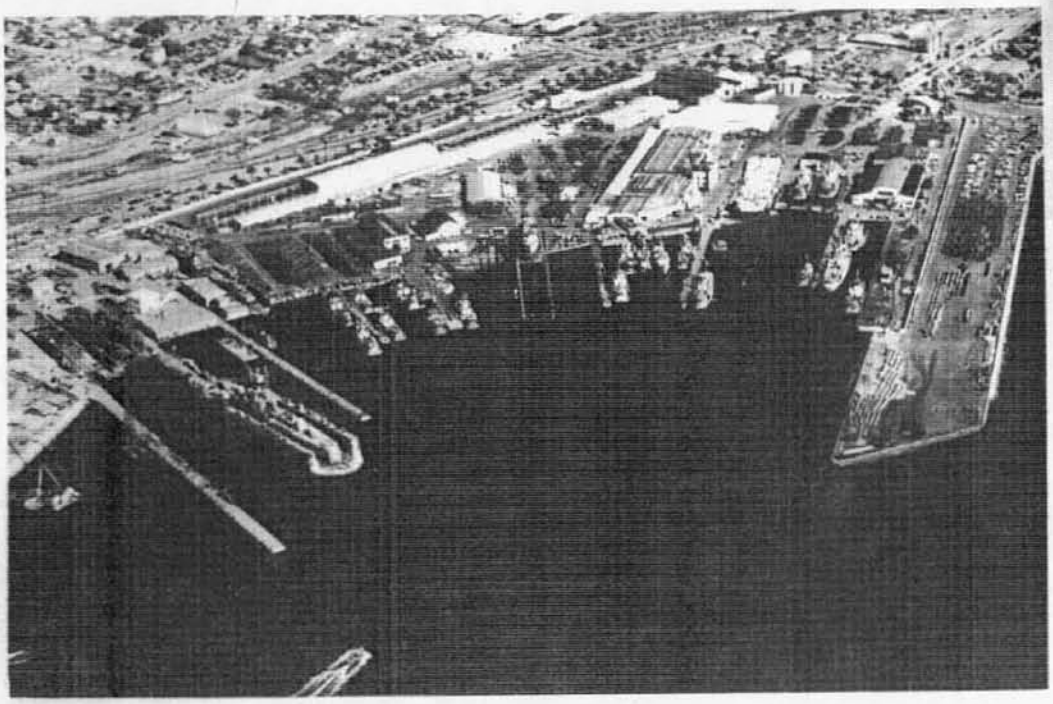
B Street Pier in center and portion of Embarcadero Municipal Wharf in upper center and left.



View showing marine repair facilities of Martinolich Shipbuilding Co. on left and National Steel and Shipbuilding Corp. in center and right; 28th Street Pier on far right.

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-60

1956 PHOTOGRAPH, U.S. ARMY CORPS OF ENGINEERS REPORT

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3471.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-61

1958 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED 3-1-1958

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3472.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-62

1959 PHOTOGRAPH, AERIAL PHOTOGRAPH, OBLIQUE VIEW
DATED 11-6-1959

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3473.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-63

1960 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED 9-3-1960

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3474.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-64

1964 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW DATED 1964

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3475.mxd

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HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-65

1974 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED 1974

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3476.mxd

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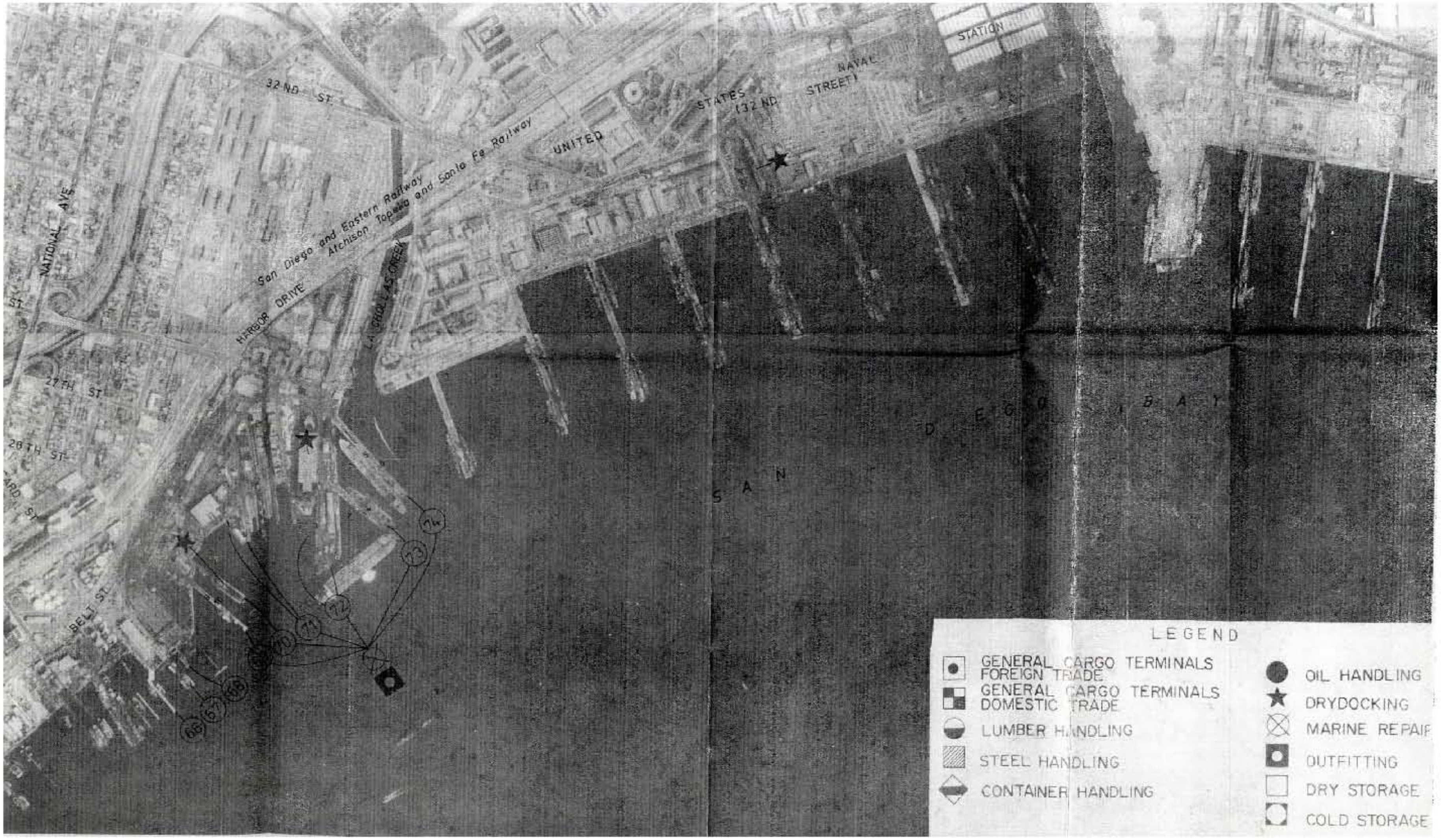


HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

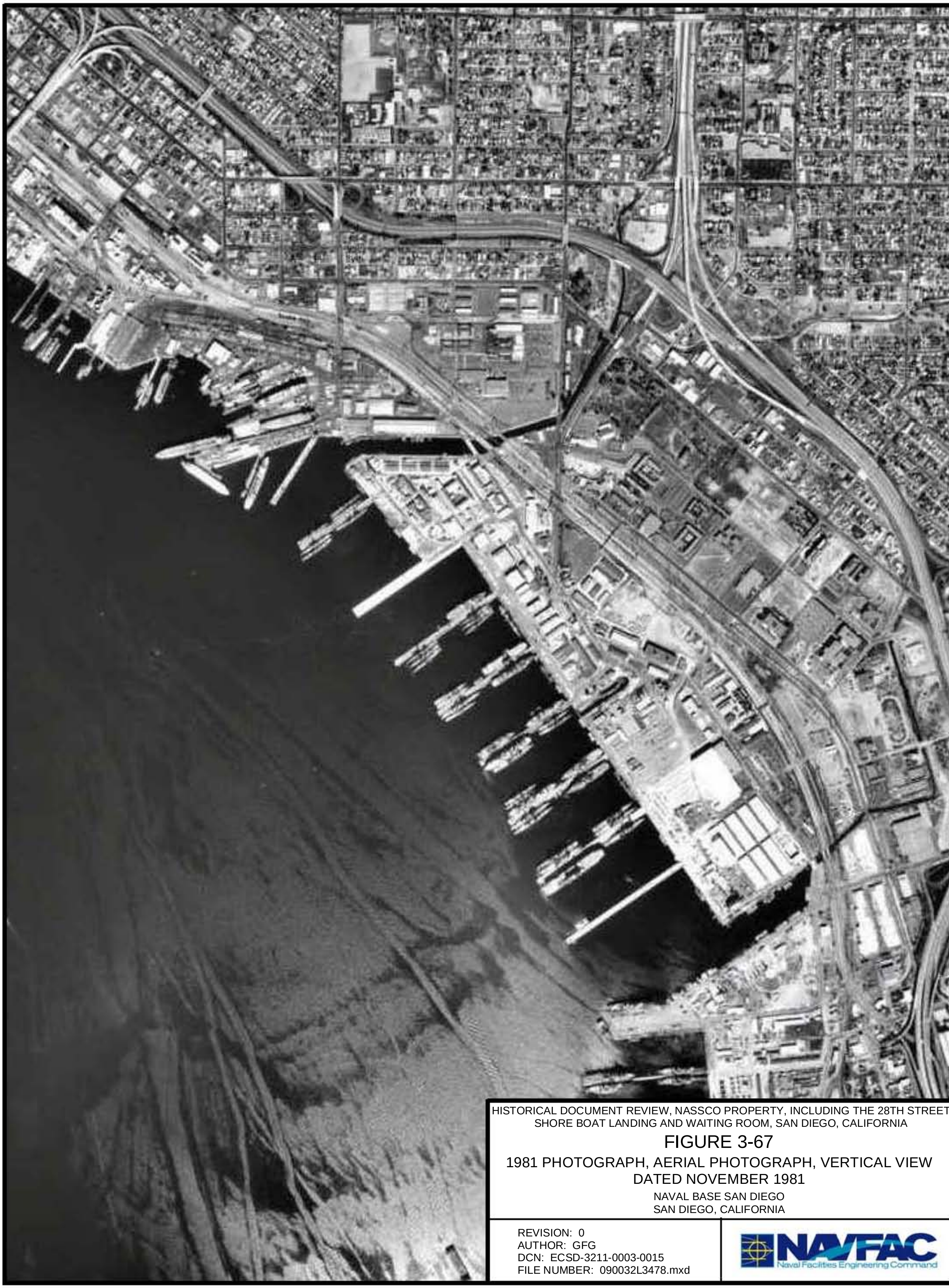
FIGURE 3-66

1978 PHOTOGRAPH, U.S. ARMY CORPS OF ENGINEERS REPORT

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3477.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-67

1981 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED NOVEMBER 1981

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3478.mxd

NAVFAC Naval Facilities Engineering Command

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

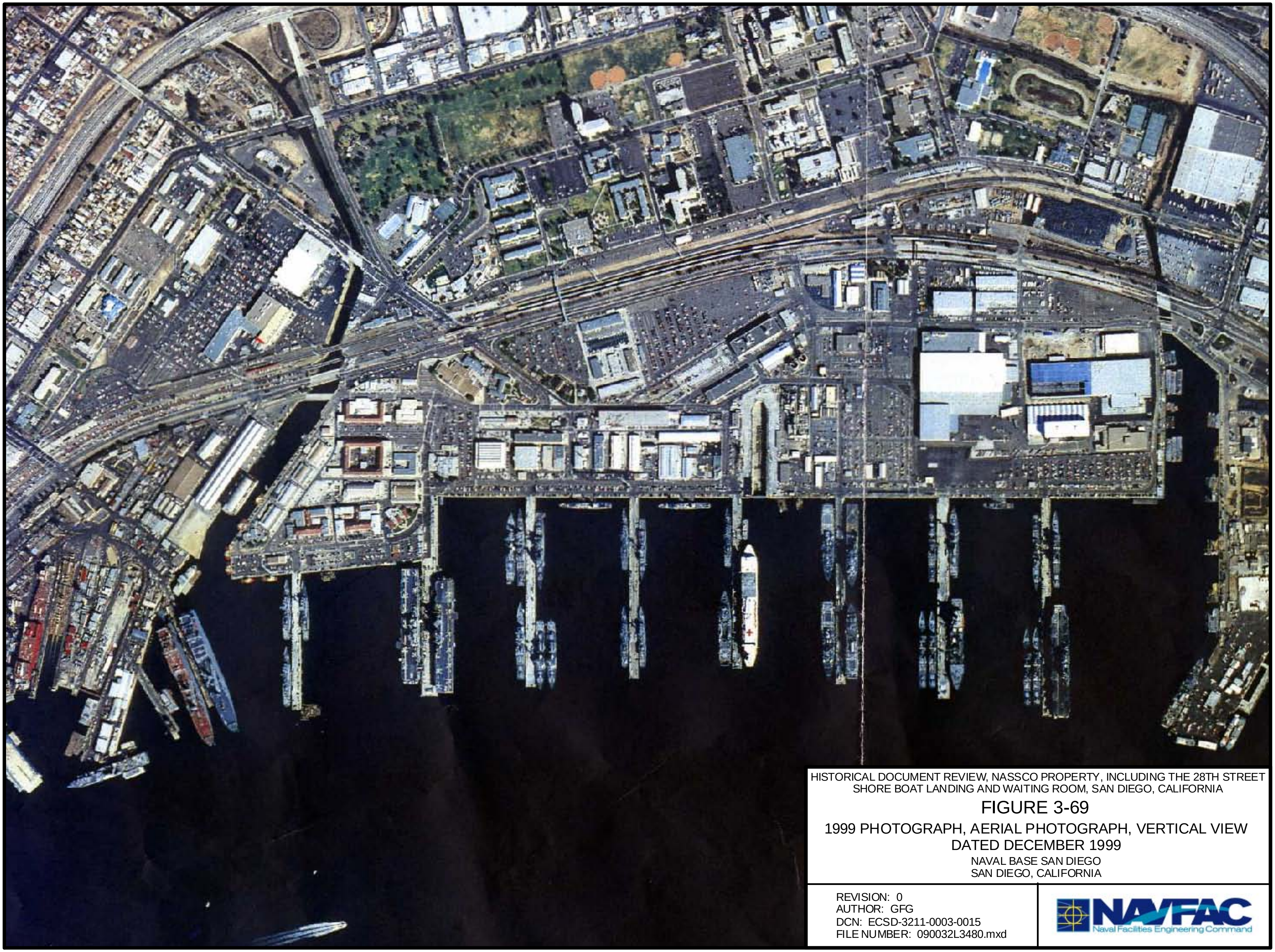
FIGURE 3-68

1989 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED 1989

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3479.mxd

NAVFAC Naval Facilities Engineering Command



HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-69

1999 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED DECEMBER 1999

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3480.mxd

NAVFAC Naval Facilities Engineering Command

HISTORICAL DOCUMENT REVIEW, NASSCO PROPERTY, INCLUDING THE 28TH STREET SHORE BOAT LANDING AND WAITING ROOM, SAN DIEGO, CALIFORNIA

FIGURE 3-70

2002 PHOTOGRAPH, AERIAL PHOTOGRAPH, VERTICAL VIEW
DATED 2002

NAVAL BASE SAN DIEGO
SAN DIEGO, CALIFORNIA

REVISION: 0
AUTHOR: GFG
DCN: ECSD-3211-0003-0015
FILE NUMBER: 090032L3481.mxd

NAVFAC
Naval Facilities Engineering Command

APPENDIX A

EDR REPORT(S)

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NASSCO Property
2798 Harbor Drive
San Diego, CA 92113

Inquiry Number: 2345259.4
October 23, 2008

The EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map

N	TARGET QUAD NAME: SOUTHERN CA SHEET 2 MAP YEAR: 1904 SERIES: 60 SCALE: 1:250000	SITE NAME:	NASSCO Property	CLIENT:	Tetra Tech EC, Inc.
		ADDRESS:	2798 Harbor Drive San Diego, CA 92113	CONTACT:	Ulrika Messer
		LAT/LONG:	32.6911 / 117.134	INQUIRY#:	2345259.4
				RESEARCH DATE:	10/23/2008

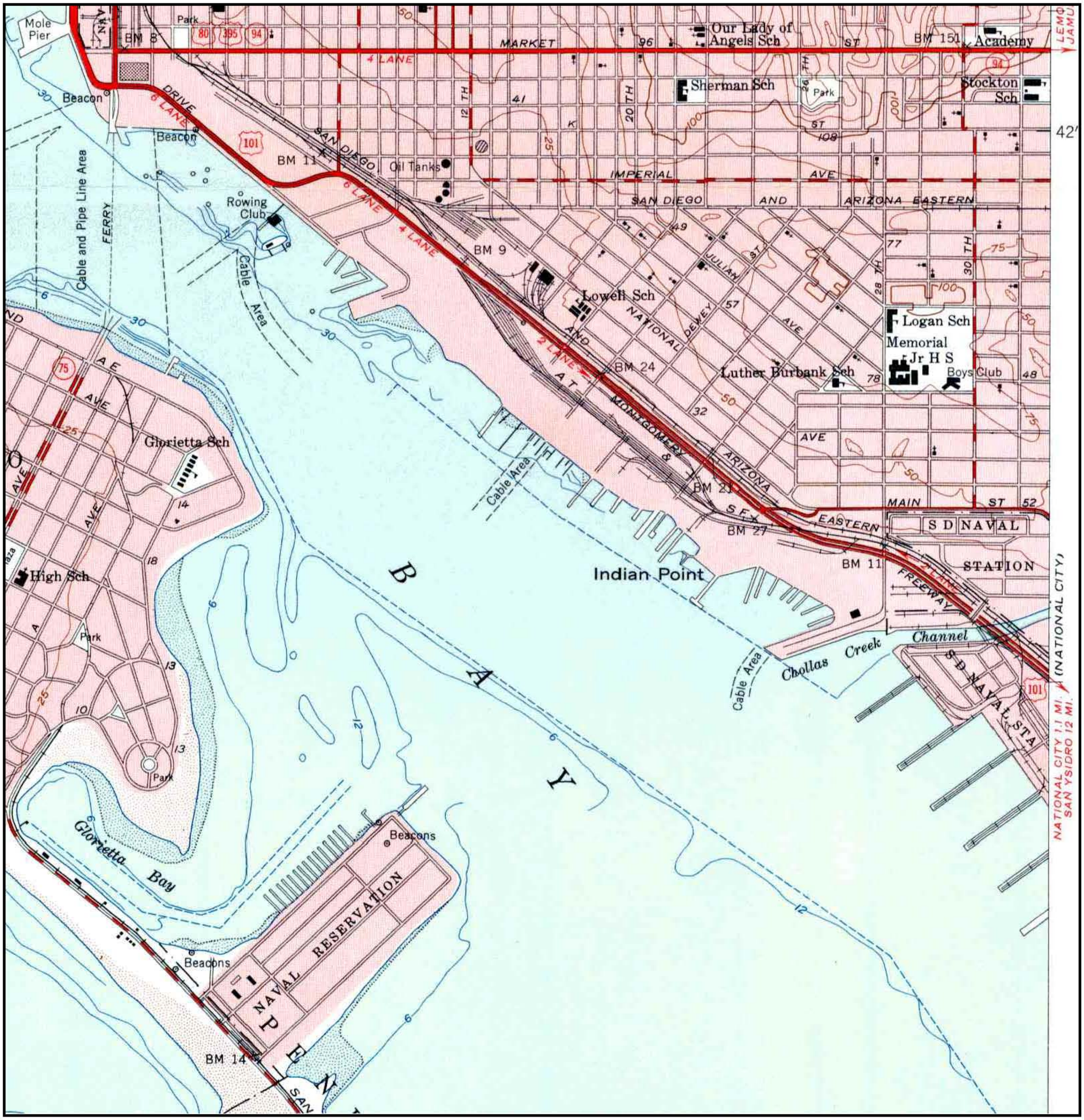
Historical Topographic Map

N ↑	TARGET QUAD NAME: SAN DIEGO MAP YEAR: 1930 SERIES: 15 SCALE: 1:62500	SITE NAME: NASSCO Property ADDRESS: 2798 Harbor Drive San Diego, CA 92113 LAT/LONG: 32.6911 / 117.134	CLIENT: Tetra Tech EC, Inc. CONTACT: Ulrika Messer INQUIRY#: 2345259.4 RESEARCH DATE: 10/23/2008

Historical Topographic Map

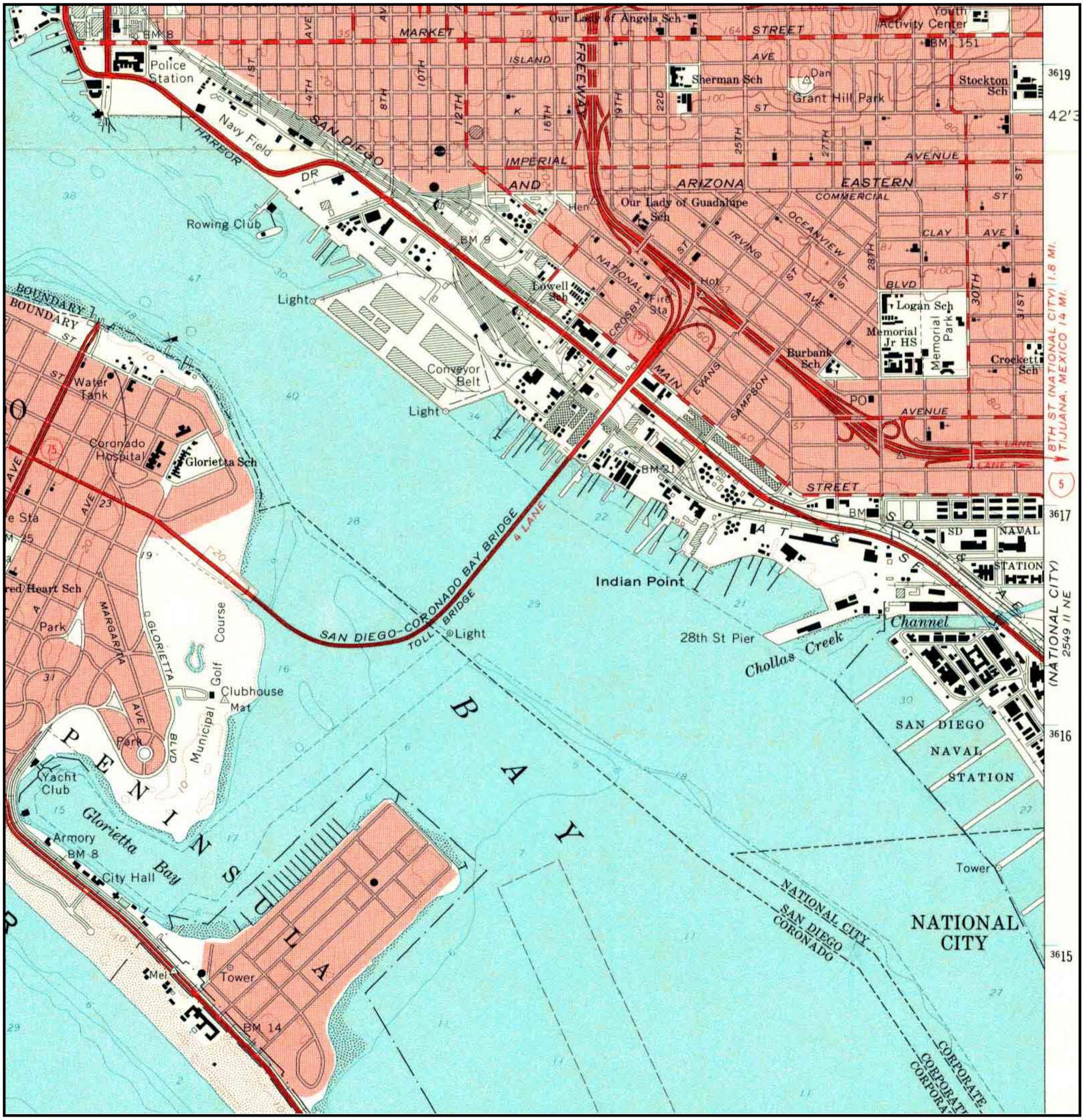
N	TARGET QUAD NAME: POINT LOMA MAP YEAR: 1942 SERIES: 7.5 SCALE: 1:31680	SITE NAME: NASSCO Property ADDRESS: 2798 Harbor Drive San Diego, CA 92113 LAT/LONG: 32.6911 / 117.134	CLIENT: Tetra Tech EC, Inc. CONTACT: Ulrika Messer INQUIRY#: 2345259.4 RESEARCH DATE: 10/23/2008

Historical Topographic Map



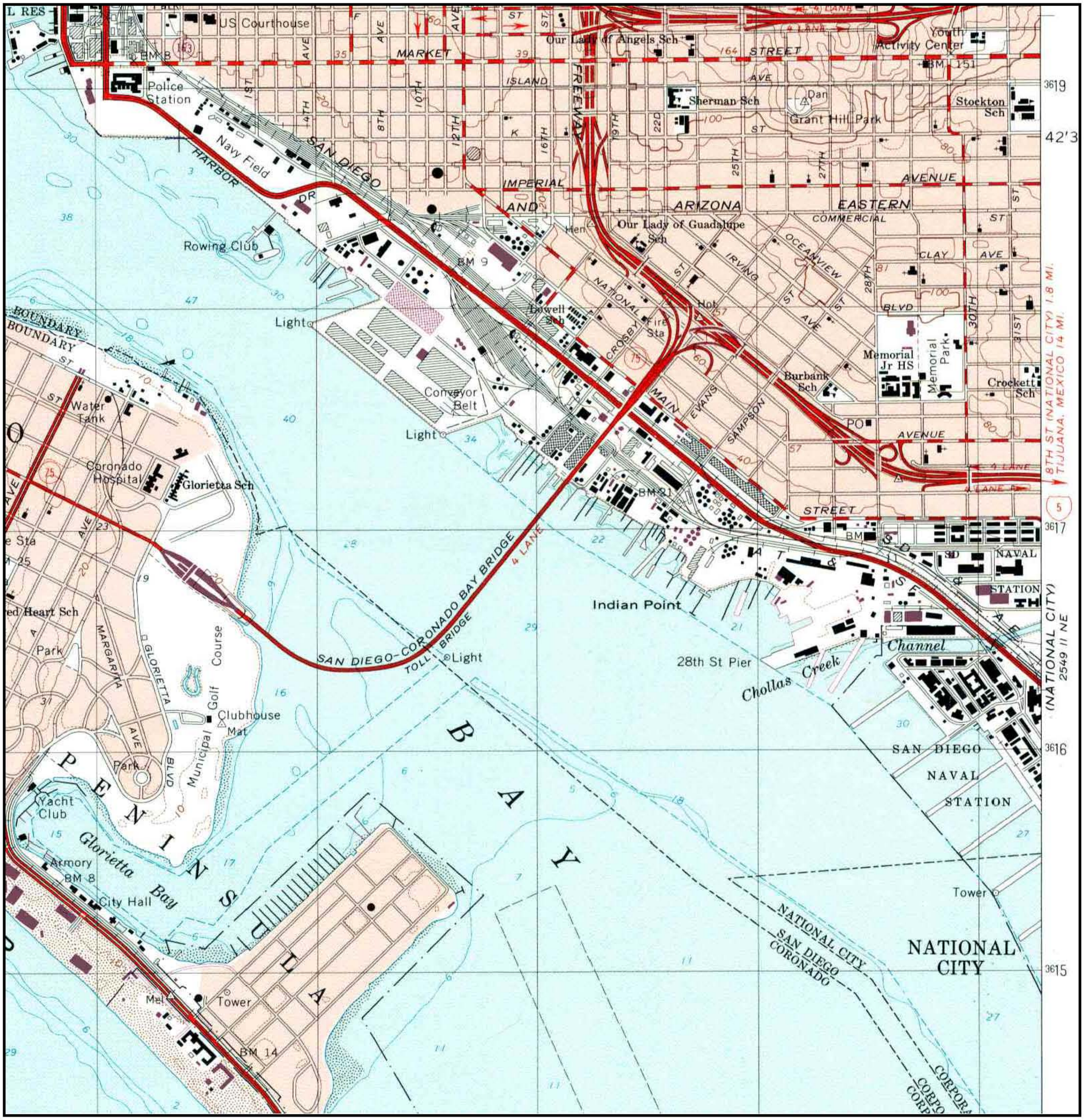
N	TARGET QUAD NAME: POINT LOMA	SITE NAME:	NASSCO Property	CLIENT:	Tetra Tech EC, Inc.
	MAP YEAR: 1953	ADDRESS:	2798 Harbor Drive	CONTACT:	Ulrika Messer
			San Diego, CA 92113	INQUIRY#:	2345259.4
	SERIES: 7.5	LAT/LONG:	32.6911 / 117.134	RESEARCH DATE:	10/23/2008
	SCALE: 1:24000				

Historical Topographic Map



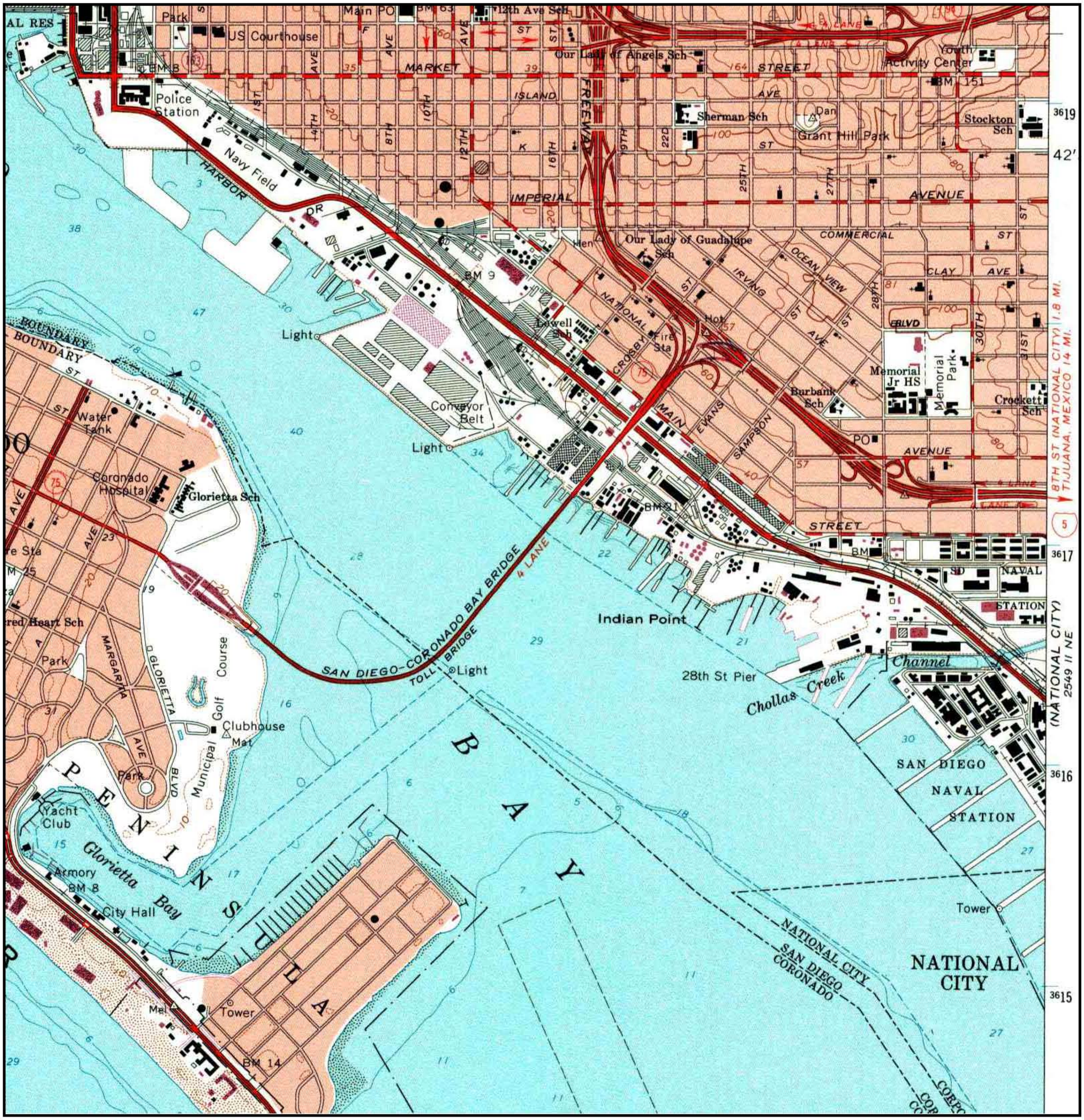
N	TARGET QUAD NAME: POINT LOMA MAP YEAR: 1967 SERIES: 7.5 SCALE: 1:24000	SITE NAME: NASSCO Property ADDRESS: 2798 Harbor Drive San Diego, CA 92113 LAT/LONG: 32.6911 / 117.134	CLIENT: Tetra Tech EC, Inc. CONTACT: Ulrika Messer INQUIRY#: 2345259.4 RESEARCH DATE: 10/23/2008

Historical Topographic Map



TARGET QUAD NAME: POINT LOMA MAP YEAR: 1975 PHOTOREVISED FROM:1967 SERIES: 7.5 SCALE: 1:24000	SITE NAME: NASSCO Property ADDRESS: 2798 Harbor Drive San Diego, CA 92113 LAT/LONG: 32.6911 / 117.134	CLIENT: Tetra Tech EC, Inc. CONTACT: Ulrika Messer INQUIRY#: 2345259.4 RESEARCH DATE: 10/23/2008

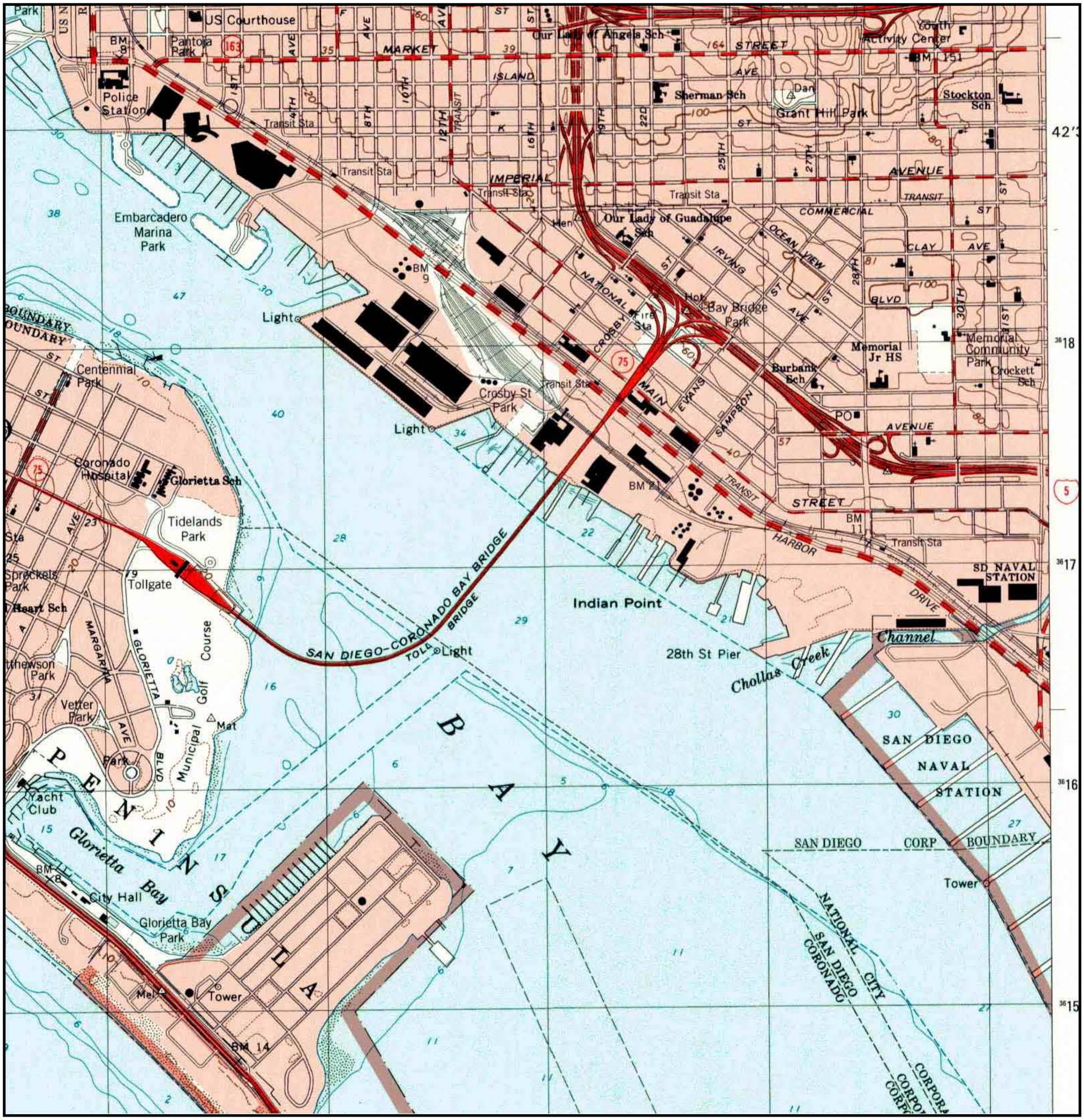
Historical Topographic Map



TARGET QUAD NAME: POINT LOMA MAP YEAR: 1994 REVISED FROM: 1967 SERIES: 7.5 SCALE: 1:24000	SITE NAME: NASSCO Property ADDRESS: 2798 Harbor Drive San Diego, CA 92113 LAT/LONG: 32.6911 / 117.134	CLIENT: Tetra Tech EC, Inc. CONTACT: Ulrika Messer INQUIRY#: 2345259.4 RESEARCH DATE: 10/23/2008

N

Historical Topographic Map



N	TARGET QUAD NAME: POINT LOMA MAP YEAR: 1996 SERIES: 7.5 SCALE: 1:24000	SITE NAME: NASSCO Property ADDRESS: 2798 Harbor Drive San Diego, CA 92113 LAT/LONG: 32.6911 / 117.134	CLIENT: Tetra Tech EC, Inc. CONTACT: Ulrika Messer INQUIRY#: 2345259.4 RESEARCH DATE: 10/23/2008

NASSCO Property

2798 Harbor Drive

San Diego, CA 92113

Inquiry Number: 2345259.5

October 23, 2008

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:
Aerial Photography October 23, 2008

Target Property:
2798 Harbor Drive
San Diego, CA 92113

Year	***Scale***	***Details***	***Source***
1953	Aerial Photograph. Scale: 1"=555'	Flight Year: 1953	Park
1963	Aerial Photograph. Scale: 1"=555'	Flight Year: 1963	Cartwright
1974	Aerial Photograph. Scale: 1"=600'	Flight Year: 1974	AMI
1989	Aerial Photograph. Scale: 1"=666'	Flight Year: 1989	USGS
1994	Aerial Photograph. Scale: 1"=666'	Flight Year: 1994	USGS
2002	Aerial Photograph. Scale: 1"=666'	Flight Year: 2002	USGS
2005	Aerial Photograph. Scale: 1"=485'	Flight Year: 2005	EDR


INQUIRY #: 2345259.5
YEAR: 1953
= 555'
N

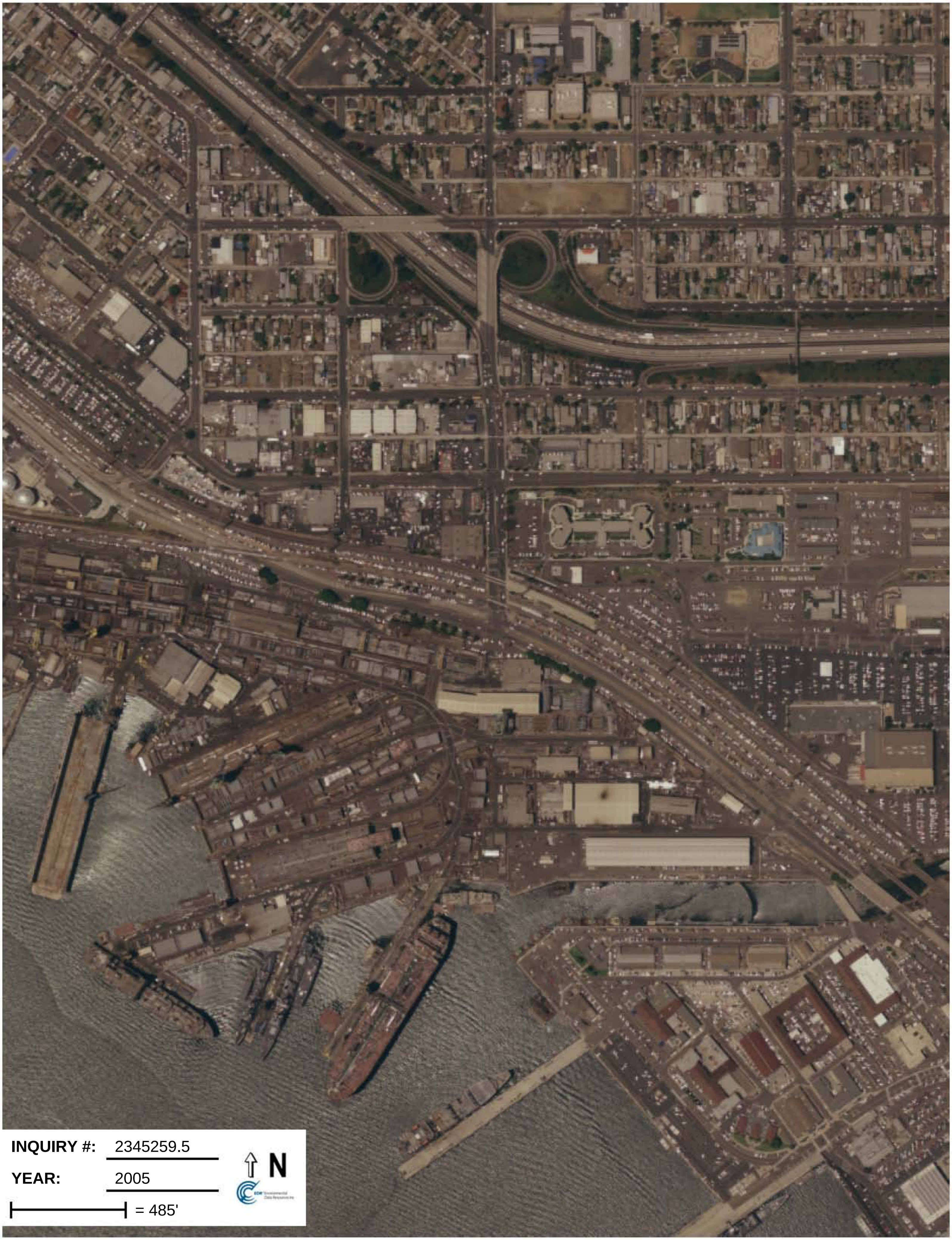

INQUIRY #: 2345259.5
YEAR: 1963
= 555'
N


INQUIRY #: 2345259.5
YEAR: 1974
= 600'
N


INQUIRY #: 2345259.5
YEAR: 1989
= 666'
N


INQUIRY #: 2345259.5
YEAR: 1994
= 666'
N


INQUIRY #: 2345259.5
YEAR: 2002
= 666'
N
EDR Environmental Data Resources Inc



INQUIRY #: 2345259.5

YEAR: 2005

= 485'

N

NASSCO Property
2798 Harbor Drive
San Diego, CA 92113

Inquiry Number: 2345259.3s
October 23, 2008

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

10/23/08

Site Name:
NASSCO Property
2798 Harbor Drive
San Diego, CA 92113

EDR Inquiry # 2345259.3s

Client Name:
Tetra Tech EC, Inc.
1230 Columbia
San Diego, CA 92101

Contact: Ulrika Messer

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Tetra Tech EC, Inc. were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: NASSCO Property
Address: 2798 Harbor Drive
City, State, Zip: San Diego, CA 92113
Cross Street:
P.O. # NA
Project: NA
Certification # DD9A-446A-8CFC

Maps Identified - Number of maps indicated within "( )"

1971 (1)	1956 (1)
1970 (1)	1950 (1)
1965 (1)	1921 (1)
1962 (1)	
1960 (1)	
1959 (1)	

Total Maps: 9

Sanborn® Library search results
Certification # DD9A-446A-8CFC

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

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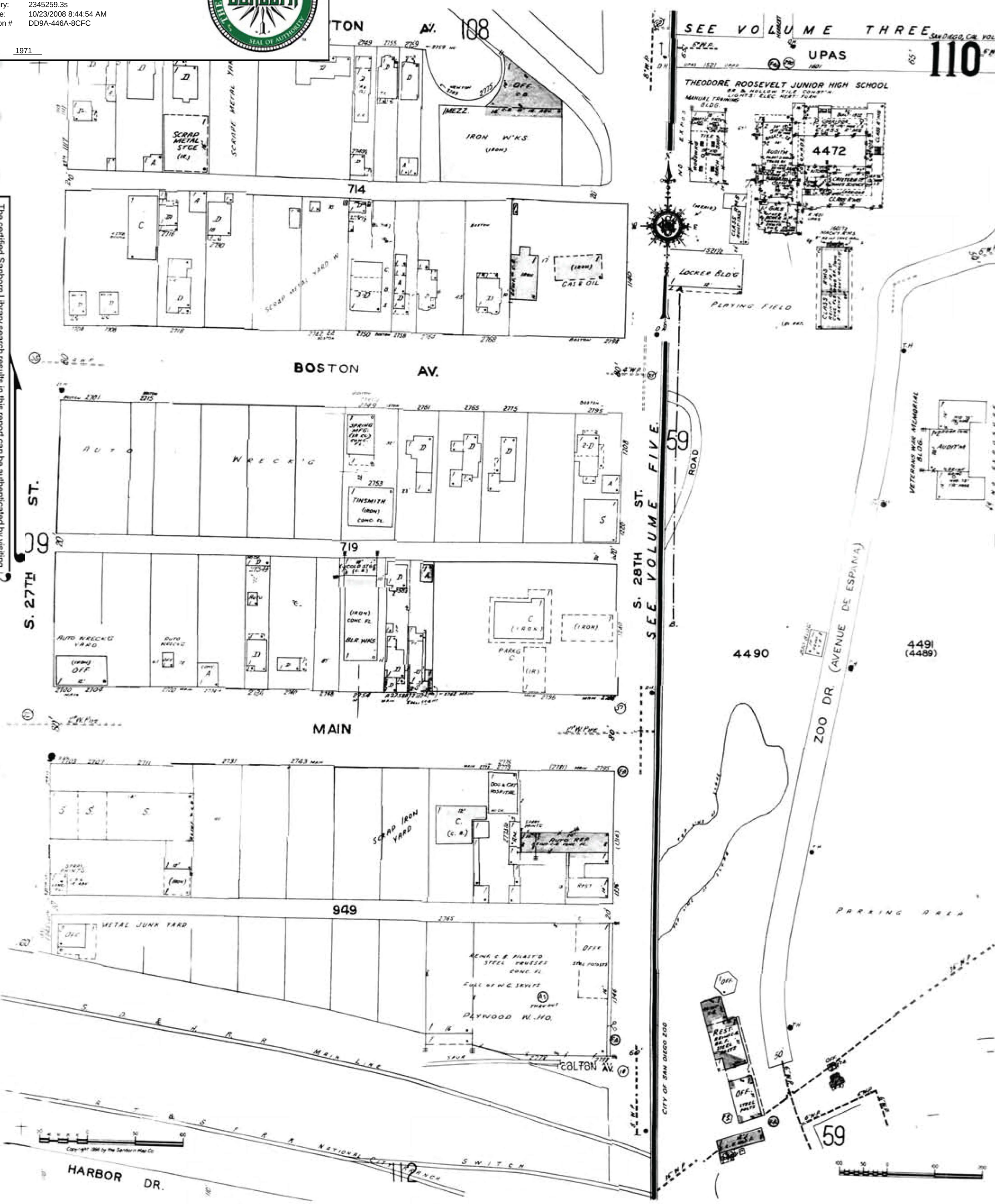
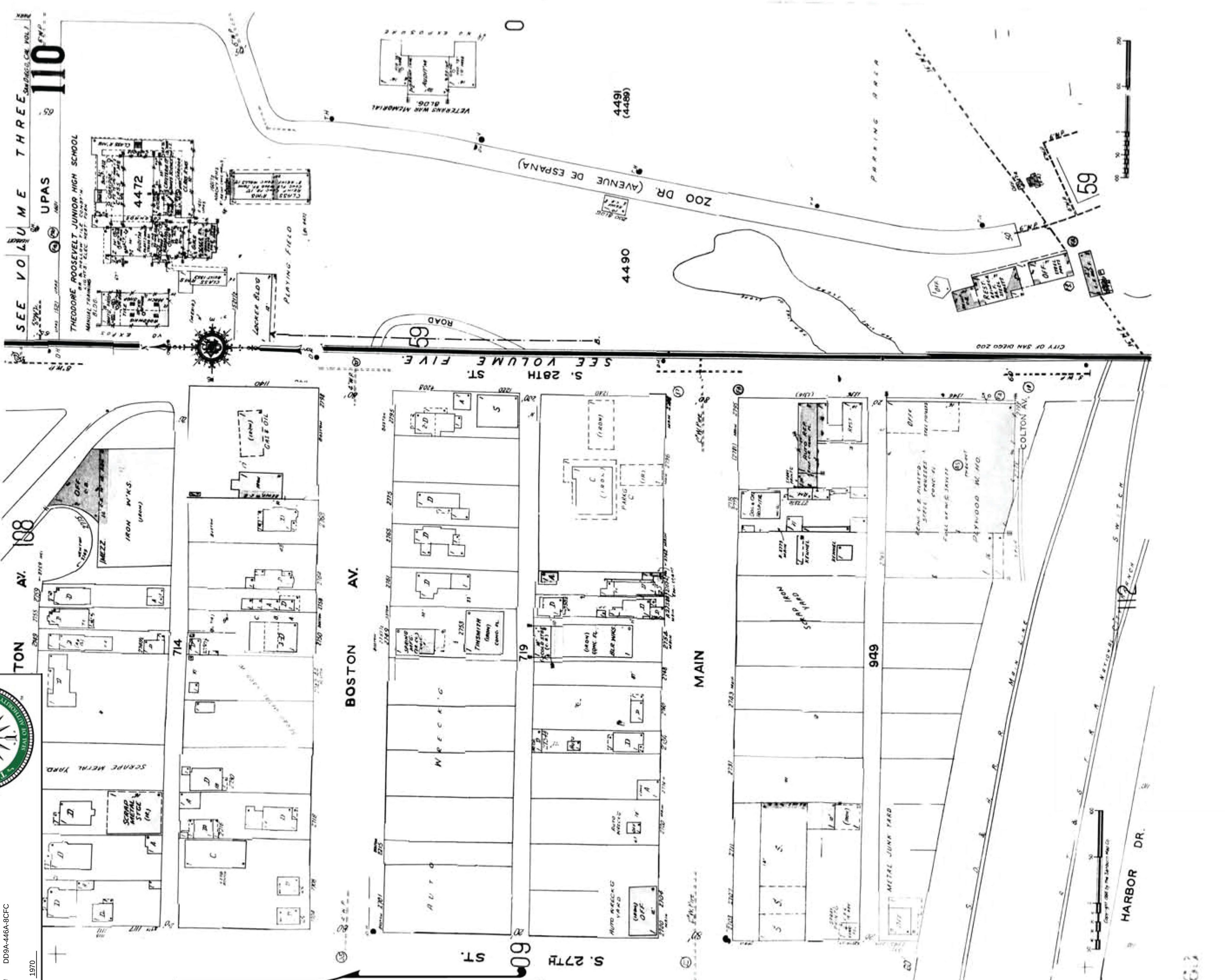
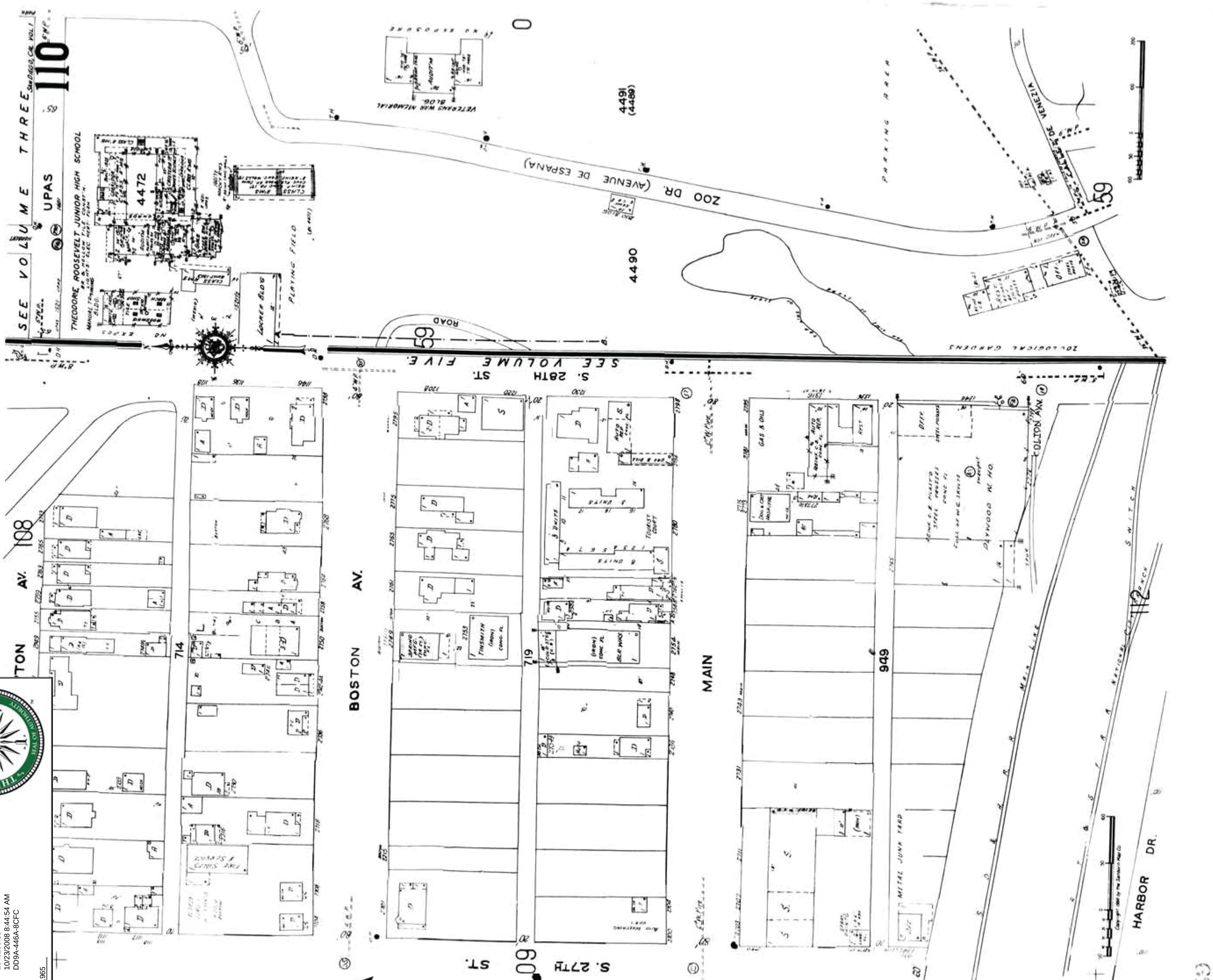

SEE VOLUME THREE
110
108
UPAS
THEODORE ROOSEVELT JUNIOR HIGH SCHOOL
4472
LOCKER BLDG
PLAYING FIELD
IRON WKS
SCRAP METAL STGE
714
BOSTON AV.
AUTO WRECK'G
TINSMITH
719
S. 27TH ST.
S. 28TH ST.
SEE VOLUME FIVE
59
ROAD
MAIN
AUTO WRECK'G YARD
SCRAP IRON YARD
AUTO REP
949
METAL JUNK YARD
PLYWOOD W. HO.
CALTON AV.
CITY OF SAN DIEGO ZOO
HARBOR DR.
112
ZOO DR. (AVENUE DE ESPANA)
4490
4491
(4489)
VETERANS WAR MEMORIAL BLDG.
PARKING AREA

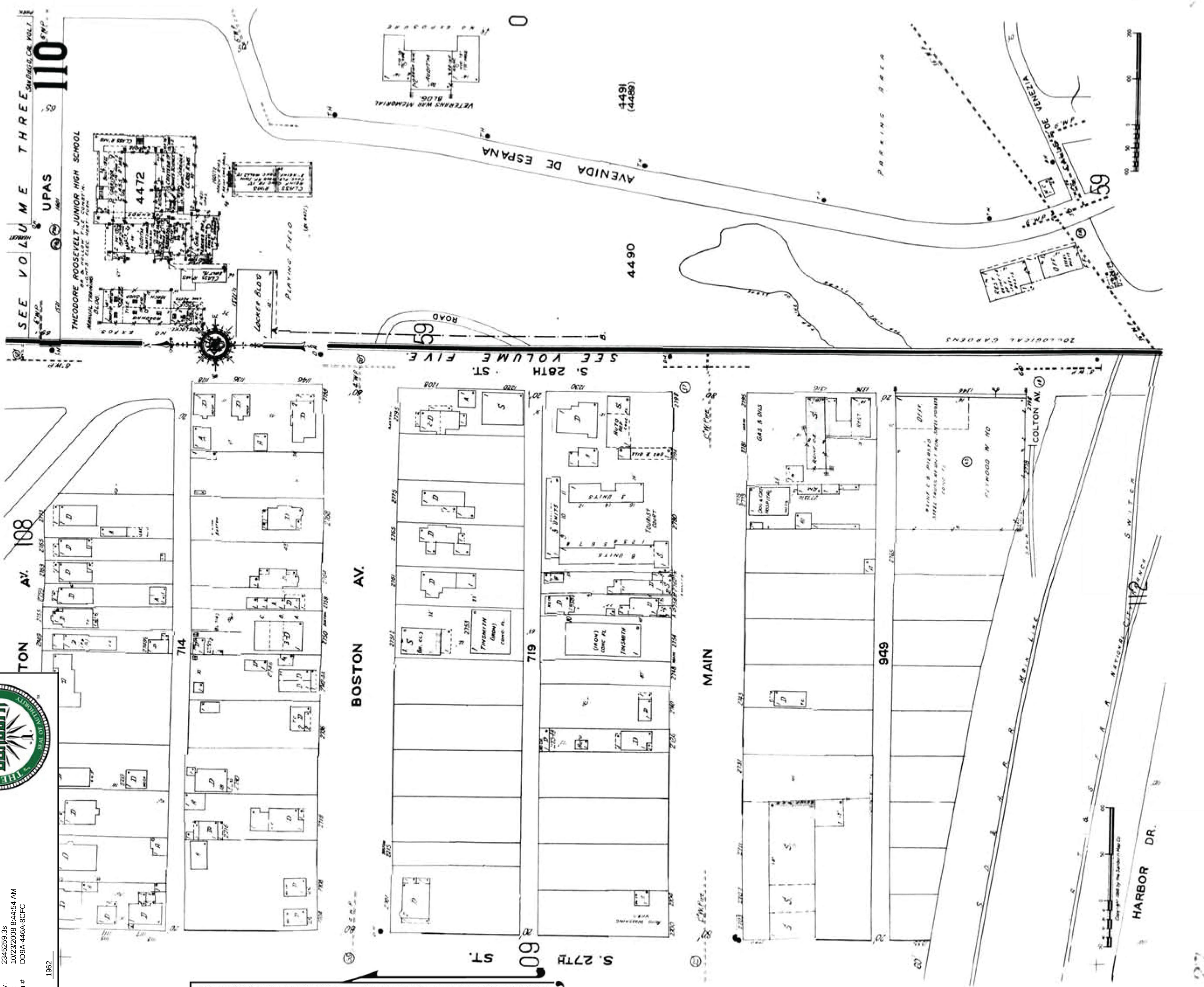


Site Name: NASSCO Property
Address: 2798 Harbor Drive
City, ST, ZIP: San Diego CA 92113
Client: Tetra Tech EC, Inc.
EDR Inquiry: 2345259.3s
Order Date: 10/23/2008 8:44:54 AM
Certification #: DD9A-446A-8CFC
Copyright: 1970

Certification # DD9A-446A-8CFC

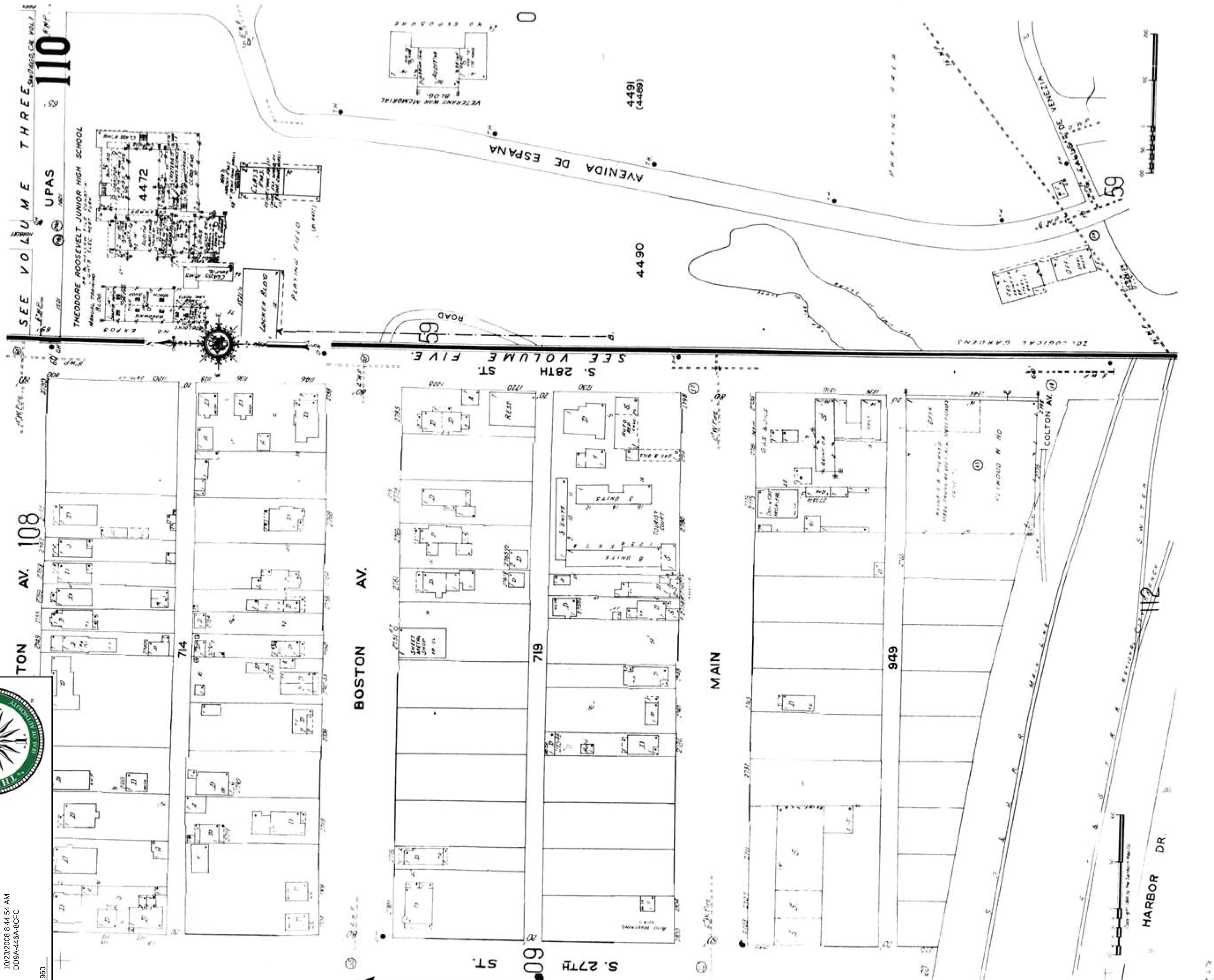


SEE VOLUME THREE
110
UPAS
THEODORE ROOSEVELT JUNIOR HIGH SCHOOL
4472
PLAYING FIELD
LOCKER BLDG.
VETERANS WAR MEMORIAL BLDG.
ZOO DR. (AVENUE DE ESPANA)
4491 (4489)
4490
PARKING AREA
ZOOLOGICAL GARDENS
59
SEE VOLUME FIVE
S. 28TH ST.
108
BOSTON AV.
714
719
MAIN
646
COLTON AVE.
TOURIST COURT
GAS & OILS
PLYWOOD W. HO.
METAL JUNK YARD
HARBOR DR.
112
S. 27TH ST.



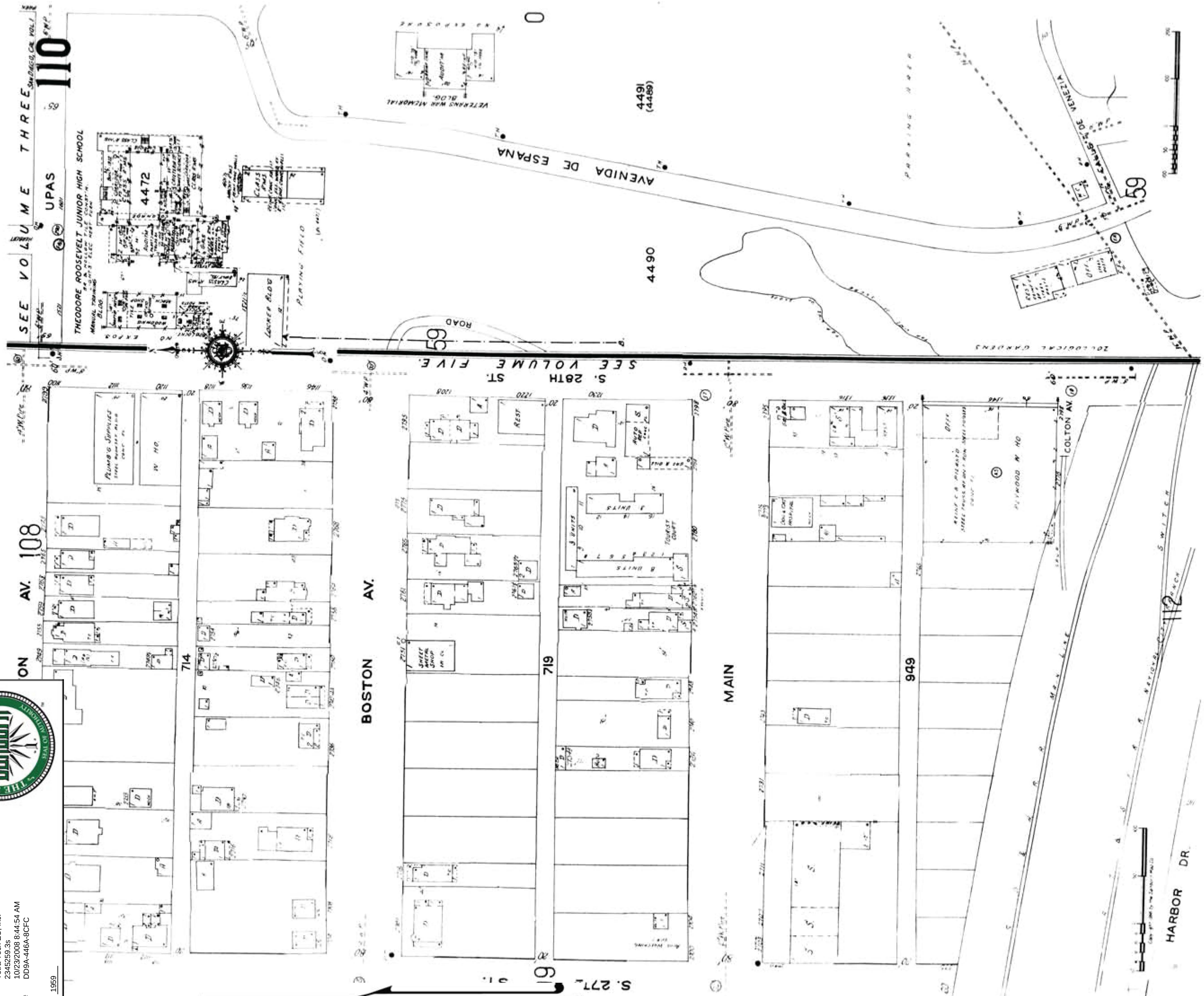
Site Name: NASSCO Property
Address: 2798 Harbor Drive
City, ST, ZIP: San Diego CA 92113
Client: Tetra Tech EC, Inc.
EDR Inquiry: 2345259.3s
Order Date: 10/23/2008 8:44:54 AM
Certification #: DD9A-446A-8CFC
Copyright: 1962

Certification # DD9A-446A-8CFC



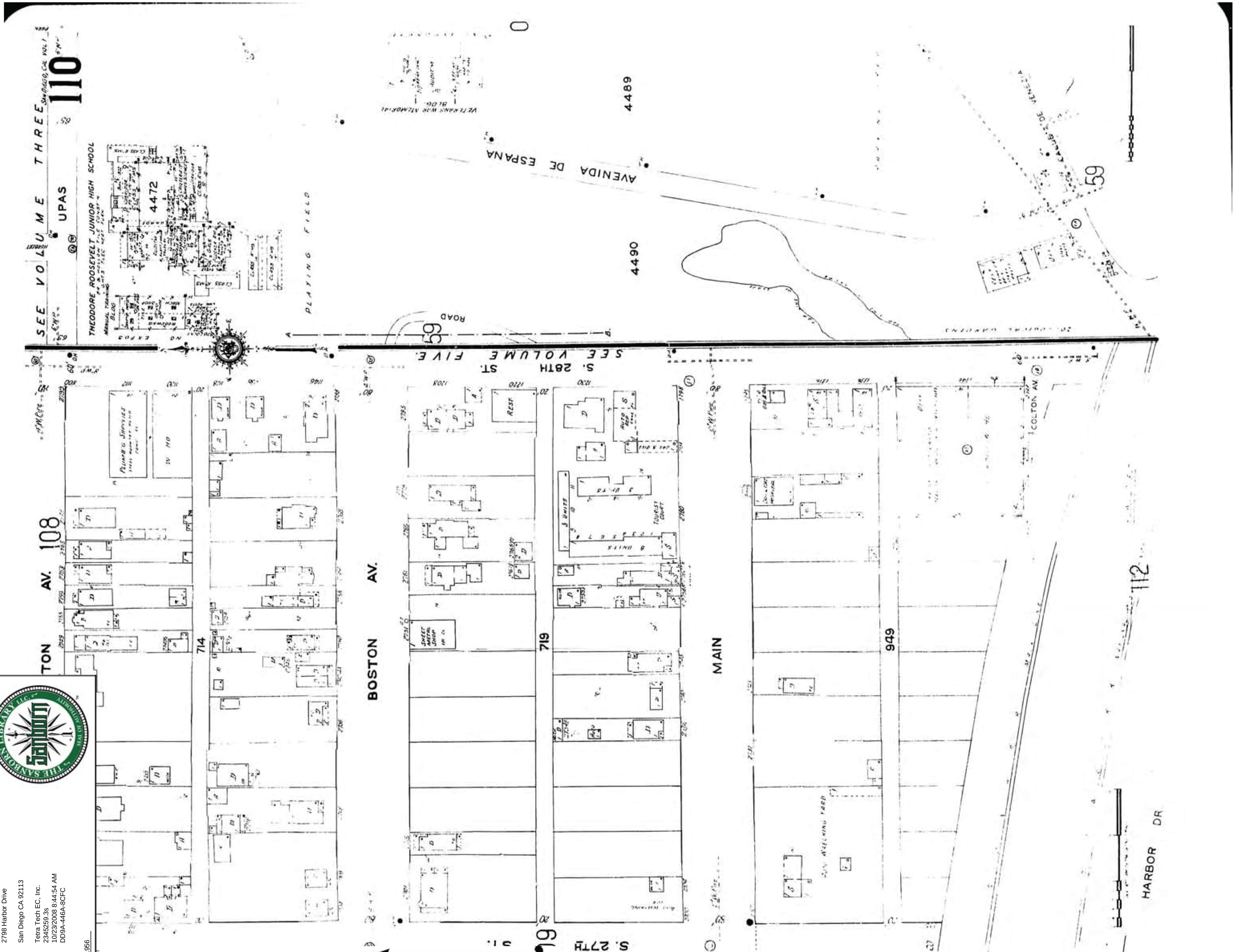
Site Name: NASSCO Property
Address: 2798 Harbor Drive
City, ST, ZIP: San Diego CA 92113
Client: Tetra Tech EC, Inc.
EDR Inquiry: 2345259.3s
Order Date: 10/23/2008 8:44:54 AM
Certification #: DD9A-446A-8CFC
Copyright: 1960

Certification # DD9A-446A-8CFC

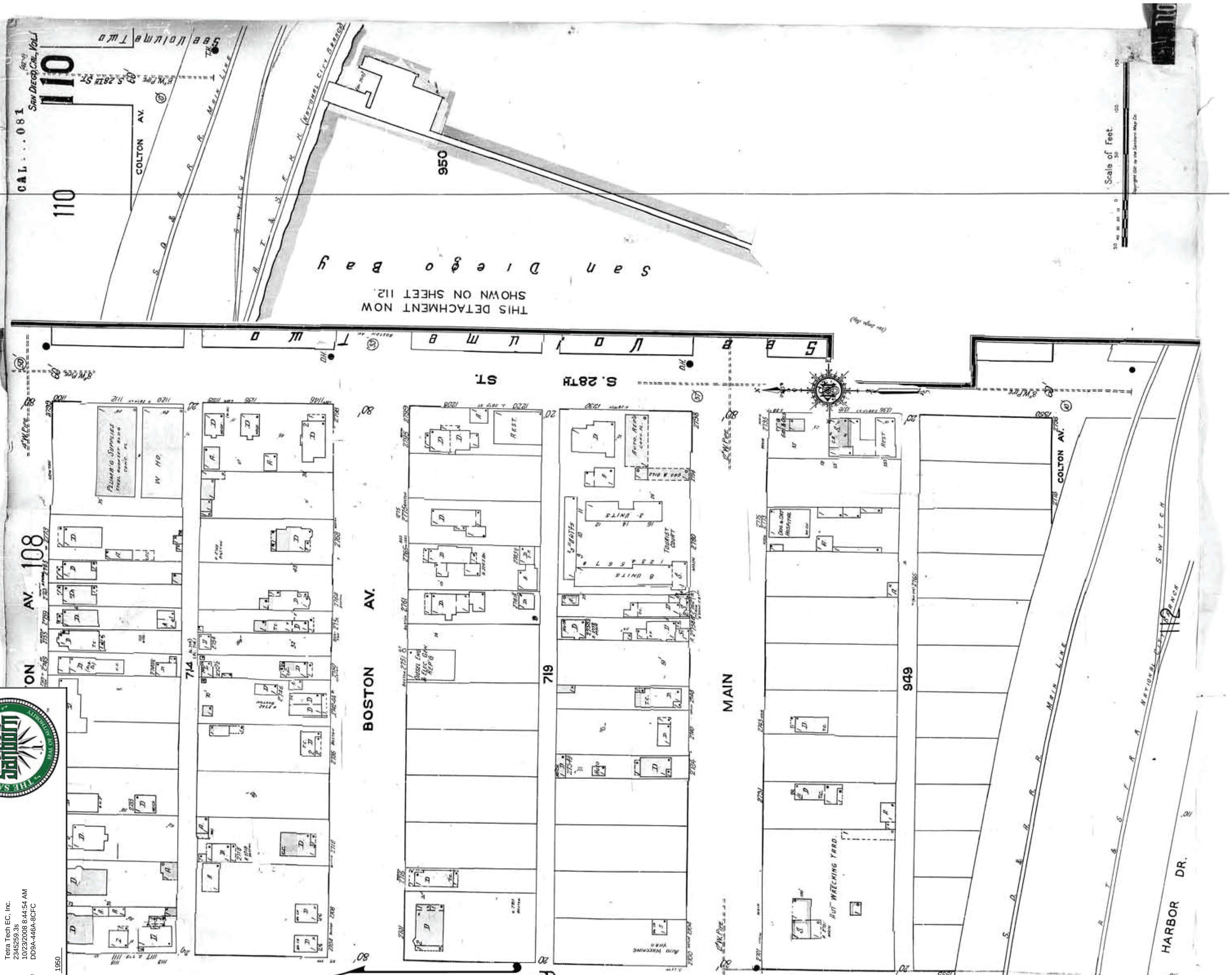


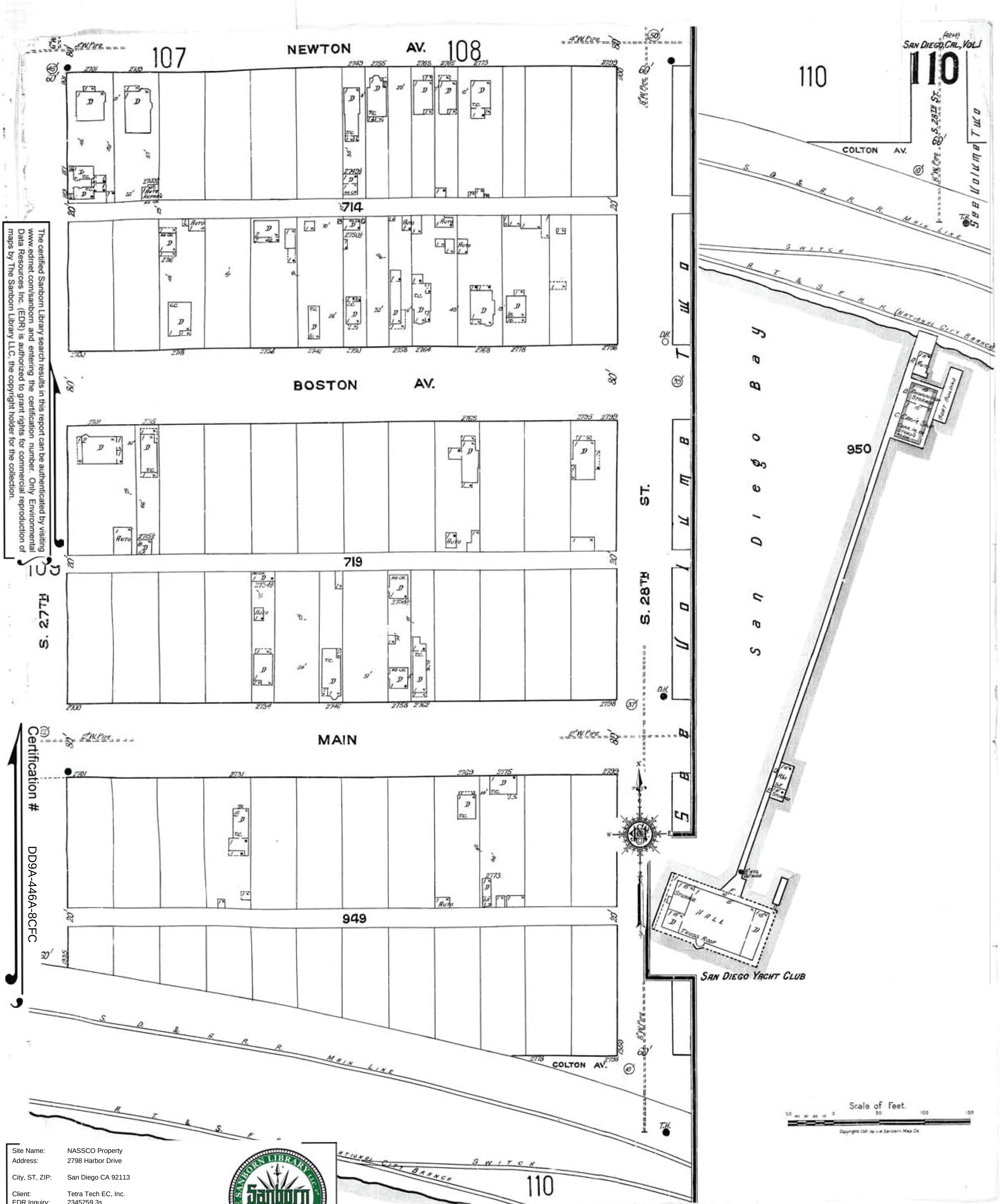
Site Name: NASSCO Property
Address: 2798 Harbor Drive
City, ST, ZIP: San Diego CA 92113
Client: Tetra Tech EC, Inc.
EDR Inquiry: 2345259.3s
Order Date: 10/23/2008 8:44:54 AM
Certification # DD9A-446A-8CFC
Copyright: 1959

Certification # DD9A-446A-8CFC



SEE VOLUME THREE
110
UPAS
THEODORE ROOSEVELT JUNIOR HIGH SCHOOL
4472
PLAYING FIELD
AVENIDA DE ESPANA
4489
4490
ROAD
SEE VOLUME FIVE
S. 28TH ST.
108
AV.
TON
714
BOSTON AV.
719
MAIN
949
COLTON AV.
112
HARBOR DR
S. 27TH ST.
PLUMB'G SUPPLIES
REST.
AUTO REP.
TOURIST COURT
SHEET METAL SHOP


110
CAL . . . 081
San Diego, Cal. Vol.
COLTON AV.
950
San Diego Bay
THIS DETACHMENT NOW SHOWN ON SHEET 112.
S. 28TH ST.
108
714
BOSTON AV.
719
MAIN
949
HARBOR DR.
S. 27TH
Scale of Feet.
TOURIST COURT
AUTO WRECKING YARD



Site Name:	NASSCO Property
Address:	2798 Harbor Drive
City, ST, ZIP:	San Diego CA 92113
Client:	Tetra Tech EC, Inc.
EDR Inquiry:	2345259.3s
Order Date:	10/23/2008 8:44:54 AM
Certification #	DD9A-446A-8CFC
Copyright:	1921

The EDR Environmental LienSearch™ Report

2798 HARBOR DR
SAN DIEGO
SAN DIEGO, CA 92113-3650

Project Number: 2345259.7S

Index Date: 10/14/2008

The Standard in Environmental Risk Information

440 Wheelers Farm Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone:	1-800-352-0050
Fax:	1-800-231-6802
Internet:	www.edrnet.com

EDR Environmental LienSearch™ Report

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EDR Environmental LienSearch™ Report

TARGET PROPERTY INFORMATION

ADDRESS

CLIENT REF	2345259.7S
Site Address	2798 HARBOUR DR.
Site CSZ	San Diego, CA 92113-3650

RESEARCH SOURCE

Sources:	**San Diego County**

DEED INFORMATION

Type of Deed:	Abstract of Lease Amendment
Title is vested in:	Natioinal Steel and Shipbuilding Company
Title received from:	San Diego Unified Port District
Deed Dated:	12/06/1994
Deed Recorded:	12/13/1994
Instrument No.:	1994-0711050

LEGAL DESCRIPTION

Description:	Parcel 1: true point of beginning of parcel no. 1, containing 3,446,322 square feet or 79.12 acres of tideland area and being more fully described in Instrument No. 1994-0711050 in the Deed records of san Diego county, California. Parcel 2: Containing 1,112,046 square feet or 25.53 acres of water covered area and being more fully described in Instrument No. 1994-0711050 in the Deed records of san Diego county, California. Parcel 3: containing 764,703 square feet or 17.56 acres of water covered area and being more fully described in Instrument No. 1994-0711050 in the Deed records of san Diego county, California. Parcel 4: containing 179,000 square feet or 4.02 acres of water covered area and being more fully described in Instrument No. 1994-0711050 in the Deed records of san Diego county, California.
Assessor's Parcel Number:	7600240601

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

If yes:

1st Party:

2nd Party:

Dated:

Recorded:

Book:

Page:

Comments:

EDR Environmental LienSearch™ Report

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found ☐ Not Found ☒

Copy of Deed and any instruments.

Recording Requested by
and mail to:

District Clerk
San Diego Unified Port District
P.O. Box 488
San Diego, CA 92112
No Document Fee
Recordation for Benefit of District

9430

1124 NY

DOC # 1994-0711050
13-DEC-1994 02:22 PM

OFFICIAL RECORDS
SAN DIEGO COUNTY RECORDER'S OFFICE
GREGORY SMITH, COUNTY RECORDER
FEES: 0.00

ABSTRACT OF LEASE AMENDMENT

C. ABSTRACT OF LEASE AMENDMENT NO. 1: This is the final paragraph and abstract of Lease Amendment No. 1, dated [illegible], 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 21, 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

32187 K

944

(FOR USE BY SAN DIEGO UNIFIED PORT DISTRICT)

STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO)

On ______December 13th, 1994__________ before me,
______Timothy A. Deuel, Notary Public______________, personally appeared
______Donald E. Hillman, Jr.______________________, 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 Timothy A. Deuel

TIMOTHY A. DEUEL
Notary Public — California
SAN DIEGO COUNTY

32187 17

Ennumerated by

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°29'03" east a distance of 87.80 feet; thence north 0°30'57" east a distance of 228.36 feet to the TRUE POINT OF BEGINNING of Parcel No. 1; thence leaving said U.S. Naval Station boundary north 89°29'03" west a distance of 7.24 feet; thence south 60°37'30" west a distance of 23.74 feet; thence north 88°32'59" west a distance of 12.80 feet; thence north 56°35'58" west a distance of 26.90 feet; thence north 89°30'26" west a distance of 300.07 feet; thence south 71°16'38" 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°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°18'38" east a distance of 209.49 feet; thence north 18°26'23" west a distance of 29.34 feet; thence north 76°04'11" east a distance of 409.07 feet; thence north 14°04'19" west a distance of 176.98 feet; thence south 75°59'06" west a distance of 50.70 feet; thence north 11°54'59" west a distance of 33.16 feet; thence north 66°39'00" east a distance of 357.83 feet; thence north 23°25'07" west a distance of 114.70 feet; thence south 66°40'40" west a distance of 347.70 feet; thence north 21°32'06" west a distance of 35.09 feet; thence north 66°50'04" east a distance of 39.30 feet; thence north 23°17'35" west a distance of 117.05 feet; thence south 66°35'50" west a distance of 136.67 feet; thence north 23°26'05" west a distance of 34.97 feet; thence north 66°27'25" east a distance of 40.85 feet; thence north 23°18'37" west a distance of 117.31 feet; thence south 66°34'17" west a distance of 38.40 feet; thence north 52°41'02" west a distance of 99.58 feet; thence north 36°38'30" east a distance of 280.78 feet; thence north 58°06'09" west a distance of 235.80 feet; thence north 23°07'04" east a distance of 44.85 feet; thence north 65°55'29" west a distance of 216.37 feet; thence south 23°42'13" west a

REVISIONS:

TRACED BB/DD CHECKED REVIEWED APPROVED 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. 4550 DRAWING NO. 021-022

EXHIBIT "A"

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°28'54" 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 326.00 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 78.59 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 475.13 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 61.75 feet; thence south 65°37'28" east a distance of 575.85 feet; thence south 80°56'13" east a distance of 243.49 feet to the

REVISION

DRAWN DB/mn CHECKED REVIEWED APPROVED 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

EXHIBIT "A"

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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 27.16 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.

REVISED:

DRAWN BB/mn CHECKED REVIEWED APPROVED 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 P.T. 4590 DRAWING NO. 021-022

EXHIBIT "A"

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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 Southwest Marine, 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 Southwest Marine, Inc. 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°25'50" 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°18'37" 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 65°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°32'08" 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 114.70 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 170.96 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.

REVISED:

DRAWN BB/mn CHECKED [illegible] REVIEWED [illegible] APPROVED 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. 3590 DRAWING NO. 021-022

EXHIBIT "A"

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 67.80 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°30'28" east a distance of 300.07 feet; thence south 56°35'56" east a distance of 25.90 feet; thence south 85°32'58" west 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

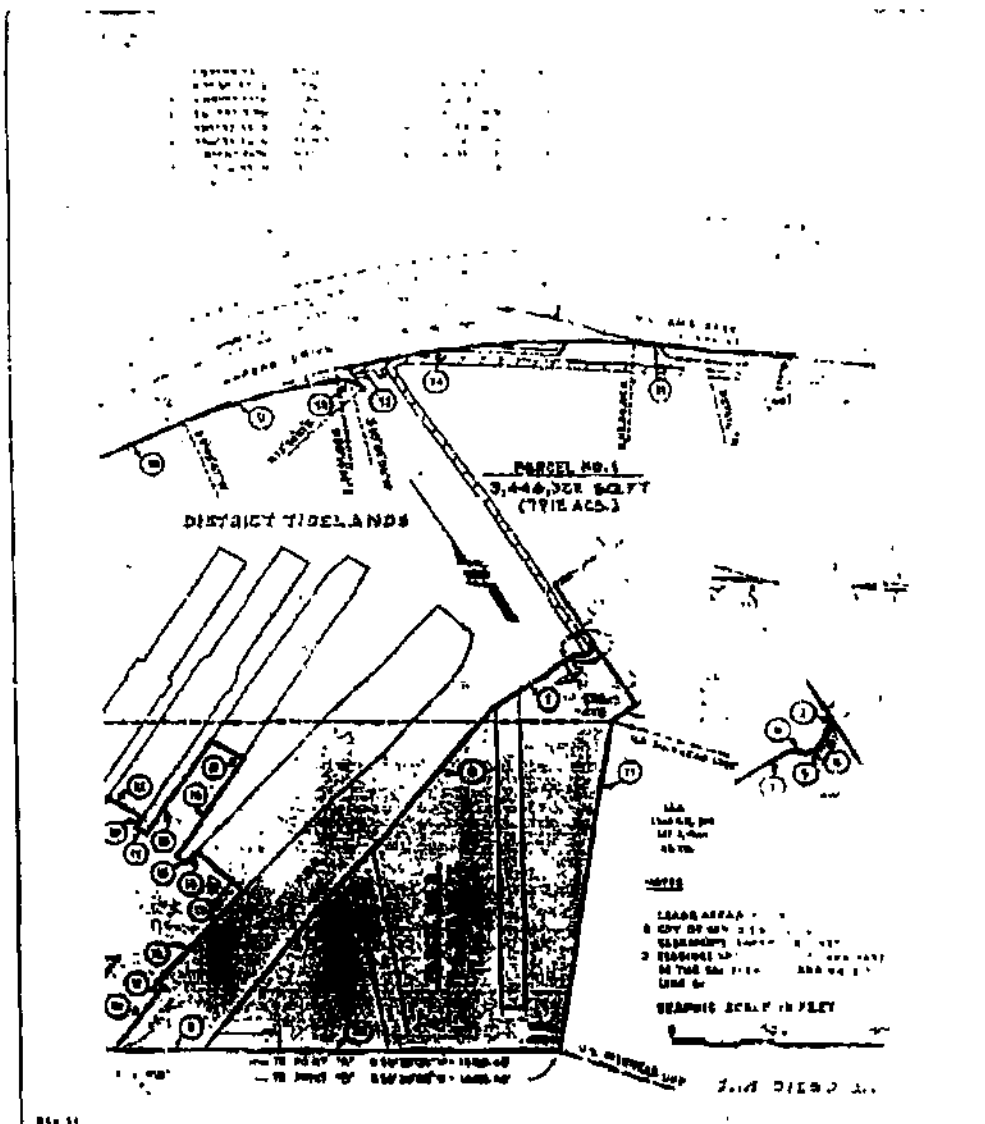
Beginning at Point "8" as described in the above Parcel No. 2, said Point "8" lying on the above described U.S. Pierhead Line north 56°20'08" west and distant 1488.40 feet from Harbor Line Station No. 479, said Point "8" also being the TRUE POINT OF BEGINNING of Parcel No. 4; thence along the said U.S. 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. 021-022, Sheets 1, 2, and 3, dated 21 April 1994, and made a part of this agreement.

REVISED:

DRAWN RB/mn CHECKED REVIEWED APPROVED 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. 4890 DRAWING NO. 021-022

EXHIBIT "A"



SAN DIEGO UNIFIED PORT DISTRICT

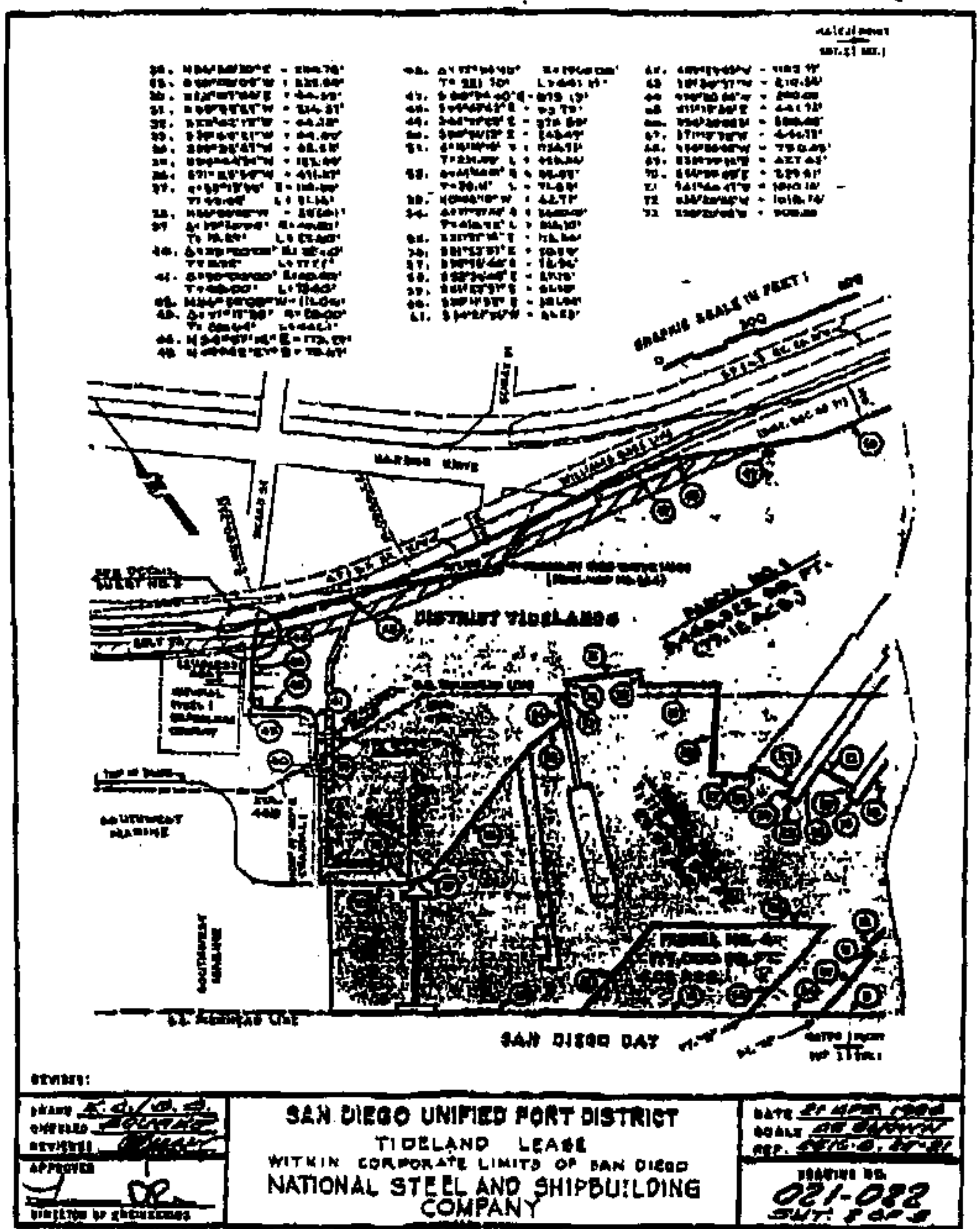
TIDELAND LEASE

WITHIN CORPORATE LIMITS OF SAN DIEGO

NATIONAL STEEL AND SHIPBUILDING COMPANY

DRAWING NO. 021-022

EXHIBIT "B"


SAN DIEGO BAY
DISTRICT TIDELANDS
SAN DIEGO UNIFIED PORT DISTRICT
TIDELAND LEASE
WITHIN CORPORATE LIMITS OF SAN DIEGO
NATIONAL STEEL AND SHIPBUILDING COMPANY
021-082

952

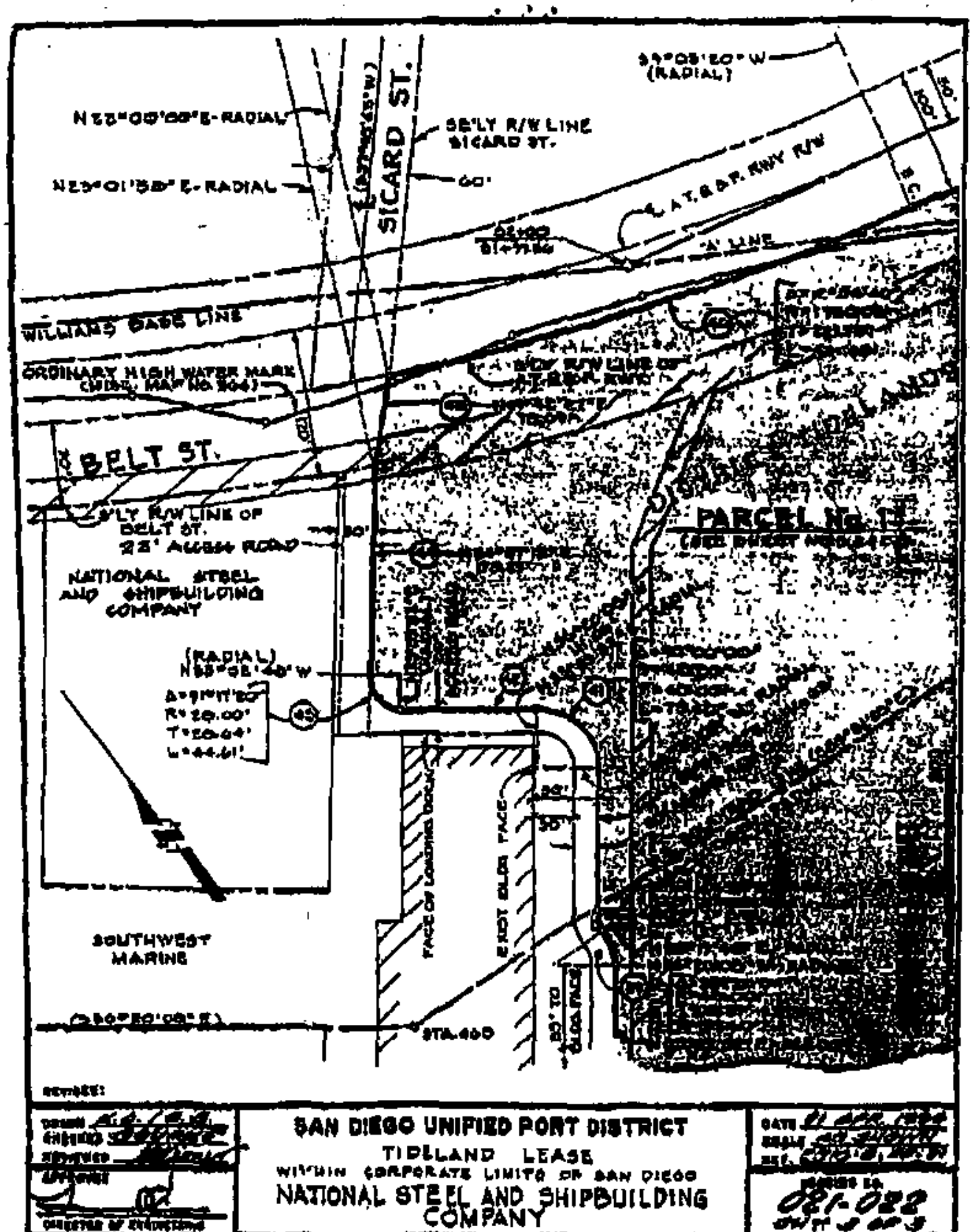


EXHIBIT "B"

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EXAMPLES OF REAL PROPERTY IMPROVEMENTS

1. New buildings, or permanent structures, or alterations, or additions to existing buildings or permanent structures.

2. Fill, wharfs, or bridges over existing water area, or dredging of existing land area.

3. Piers, docks, or inclined building ways, or improvements or upgrades of such facilities to facilitate berthing of ships, such as permanent fenders, mooring bitts, dredging (in excess of maintenance dredging), structural upgrades, browing and boarding tower systems, and utility facilities, (such as fresh water and salt water, steam, air, gas, electric power, and sewage connections).

4. New graving dock(s) or improvements to existing graving docks; which would include items similar to those listed in No. 3 above, plus improvements to pumping system, periodic major overhaul of the caisson, and major preservation systems for graving dock walls.

5. Improvements and upgrades of facilities on piers to facilitate connections from and operation of floating dry dock.

6. Improvements and upgrades of permanent utility systems (such as electrical distribution, gas distribution, compressed air systems, water, fire mains, and sewage systems).

7. Platens (a structure which is a special work station built on engineered, level reinforced concrete foundations to facilitate the weld-assembly of major ship structural assemblies) with various special outfitting items such as pin jigging turning jigs and straight ribs.

8. Roads, paving, curbs, crane rails and foundations, fixed conveyor systems, and other feeder systems for transportation of materials.

9. Ground cover as ordered by Lessor.

10. Other permanent improvements, fixtures, and equipment, which can be fully depreciated within the term of this Lease.

This list is not exclusive or exhaustive of those improvements which qualify for credit under Paragraph 4(a) of this Lease, but is for example only. Items listed are not approved for construction. Any proposed construction must be submitted as required by Lease provisions.

EXHIBIT "C"

NASSCO Property
2798 Harbor Drive
San Diego, CA 92113

Inquiry Number: 2345259.6
October 22, 2008

The EDR-City Directory Abstract

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening report designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1903 through 2006. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

This report compiles information by geocoding the subject properties (that is, plotting the latitude and longitude for such subject properties and obtaining data concerning properties within 1/8th of a mile of the subject properties). There is no warranty or guarantee that geocoding will report or list all properties within the specified radius of the subject properties and any such warranty or guarantee is expressly disclaimed. Accordingly, some properties within the aforementioned radius and the information concerning those properties may not be referenced in this report.

Date EDR Searched Historical Sources: October 22, 2008

Target Property:
2798 Harbor Drive
San Diego, CA 92113

Year	***Uses***	***Source***
1903	Address Not Listed in Research Source	San Diego Directory Co.
1907	Address Not Listed in Research Source	San Diego Directory Co.
1921	Address Not Listed in Research Source	San Diego Directory Co. Inc.
1927	Address Not Listed in Research Source	San Diego Directory Co.
1933	Address Not Listed in Research Source	San Diego Directory Co.
1938	Address Not Listed in Research Source	San Diego Directory Co.
1940	Address Not Listed in Research Source	Southern California Telephone Co.
1943	Address Not Listed in Research Source	San Diego Directory Co.
1945	Address Not Listed in Research Source	Southern California Telephone Co.
1948	Address Not Listed in Research Source	San Diego Directory Co.
1950	Address Not Listed in Research Source	The Pacific Telephone & Telegraph Co.
1952	Address Not Listed in Research Source	R. L. Polk & Co. of California
1955	Address Not Listed in Research Source	The Pacific Telephone Telegraph Co.
1956	Address Not Listed in Research Source	R. L. Polk & Co.
1960	Address Not Listed in Research Source	R. L. Polk & Co.
1961	Address Not Listed in Research Source	R. L. Polk & Co.

Year	Uses	Source
1962	Address Not Listed in Research Source	Community Directory Co.
1965	Address Not Listed in Research Source	Luskey Brothers & Co., Inc.
1966	Address Not Listed in Research Source	R. L. Polk & Co.
1970	Address Not Listed in Research Source	John M. Ducy
1971	Address Not Listed in Research Source	Community Directory Co.
1975	Address Not Listed in Research Source	R. L. Polk & Co.
1976	Address Not Listed in Research Source	Luskey Brothers & Co., Inc.
1980	Address Not Listed in Research Source	Pacific Telephone
1984	Address Not Listed in Research Source	R. L. Polk & Co.
1985	Address Not Listed in Research Source	R. L. Polk & Co.
1989	Address Not Listed in Research Source	PACIFIC BELL
1991	Address Not Listed in Research Source	Pacific Bell White Pages
1992	Address Not Listed in Research Source	Pacific Bell White Pages
1995	Address Not Listed in Research Source	Pacific Bell White Pages
2000	Address Not Listed in Research Source	Haines & Company
2006	**HARBOR DR** PROTECTION INC (2798) NASSCO (2798) NATL STEEL AND (2798) SIPCO SURFACE (2798) AB$ AMERICAS (2798) IMIALLC (2798)	Haines Company, Inc.

Adjoining Properties

SURROUNDING

Multiple Addresses
San Diego, CA 92113

Year	Uses	Source
1903	Address Not Listed in Research Source	San Diego Directory Co.
1907	Address Not Listed in Research Source	San Diego Directory Co.
1921	**MAIN**	San Diego Directory Co. Inc.
	SERRANA SIMON LAB R (2775)	
	SERRANA ESPIRON ROSA LAB H (2775)	
	WHITE GEO ELECTR R REAR (2775)	
	LIONES ALONZO CONTRAS LAB H REAR (2775)	
	SERRANA EMMA R (2775)	
	SERRANA JOHN LAB R (2775)	
1927	**MAIN**	San Diego Directory Co.
	MERTADA GREGORIO (2769)	
	ORTIZ SIMON (2775)	
	MUNOZ JUAN (2777)	
	S 28TH (2777)	
	SAVAGE TIRE CO (2801)	
	SCHLEY (2801)	
	MURPHY E J (2812)	
1933	**MAIN**	San Diego Directory Co.
	KREUZLGER M W VET SURG (2773)	
	NOEL A B GAS STA (2795)	
	NELSON CHAS (2812)	
1938	Address Not Listed in Research Source	San Diego Directory Co.
1940	Address Not Listed in Research Source	Southern California Telephone Co.
1943	Address Not Listed in Research Source	San Diego Directory Co.
1945	Address Not Listed in Research Source	Southern California Telephone Co.
1948	Address Not Listed in Research Source	San Diego Directory Co.
1950	Address Not Listed in Research Source	The Pacific Telephone & Telegraph Co.
1952	Address Not Listed in Research Source	R. L. Polk & Co. of California

Year	Uses	Source
1955	**__**S 28TH ST**__**	The Pacific Telephone Telegraph Co.
	JOES AUTO SERV (1316)	
	BLANCO JOE JOES AUTO SERV (1316)	
	UNITED STATES PLYWOOD CORP (1346)	
1956	Address Not Listed in Research Source	R. L. Polk & Co.
1960	**__**S 28TH ST**__**	R. L. Polk & Co.
	FLOYD & RAYS AUTO SERV (1316)	
	UNITED STATES PLYWOOD CORP (1346)	
1961	Address Not Listed in Research Source	R. L. Polk & Co.
1962	Address Not Listed in Research Source	Community Directory Co.
1965	Address Not Listed in Research Source	Luskey Brothers & Co., Inc.
1966	Address Not Listed in Research Source	R. L. Polk & Co.
1970	**__**S 28TH ST**__**	John M. Ducy
	CLUB TWENTY EIGHT TAVERN (1336)	
	UNITED STATES PLYWOOD CHAMPION PAPERS INC LBR (1346)	
	WELOWOOD STRUCTURES PRE FAB ROOF STRUCTURES (1346)	
1971	Address Not Listed in Research Source	Community Directory Co.
1975	Address Not Listed in Research Source	R. L. Polk & Co.
1976	Address Not Listed in Research Source	Luskey Brothers & Co., Inc.
1980	**__**S 28TH ST**__**	Pacific Telephone
	CLUB TWENTY EIGHT TAVERN (1336)	
	__MAIN ST**__**	Pacific Telephone
	MAIN STREET SMALL ANIMAL HOSPITAL (2773)	
	LION AUTO BODY & PAINTING BODY REPR & PAINT (2795)	
	ME DONALDS (2796)	
	TWEEDS SHELL SERVICE (2804)	
	KEARNEY MESA USED CARS USED CAR SIS (2820)	
	ANDYS AUTO WRECKING & REPAIR (2820)	
1984	Address Not Listed in Research Source	R. L. Polk & Co.

Year	*Uses*	*Source*
1985	Address Not Listed in Research Source	R. L. Polk & Co.
1989	Address Not Listed in Research Source	PACIFIC BELL
1991	Address Not Listed in Research Source	Pacific Bell White Pages
1992	****MAIN****	Pacific Bell White Pages
	TUGEND ROBERT K DVM MAIN STREET SMALL ANIMAL HOSPITAL (2773)	
	STADTMORE DONNA DVM MAIN STREET SMALL ANIMAL HOSPITAL (2773)	
	KELLY MICHAEL J DVM MAIN STREET SMALL ANIMAL HOSPITAL (2773)	
	MULLIGAN THOMAS W DVM MAIN STREET SMAL ANIMAL HOSPITAL (2773)	
	TUGGEY DAMLAN....... .... (2773)	
	SAN DIEGO (2796)	
1995	Address Not Listed in Research Source	Pacific Bell White Pages
2000	Address Not Listed in Research Source	Haines & Company
2006	****S 28TH ST****	Haines Company, Inc.
	ALLSERVICES (1346)	
	AUTO STORAGE (1346)	
	****MAIN ST****	Haines Company, Inc.
	DVM NIEMIEC BROOK (2773)	
	DVM TUGEND ROBERT K (2773)	
	DVM MAIN ST SMALL (2773)	
	KELLY MICHAEL J (2773)	
	DVM VCAMAIN ST (2773)	
	ANIML MULLIGAN THOMAS (2773)	
	ANIMAL HSPTL WALKER AMY DVM (2773)	
	EL POLLO LOCO (2795)	
	DIEGO (2795)	
	POLESTAR SAND (2795)	
	MCDONALDS (2796)	

APPENDIX B

PROPERTY RECORDS

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PERIMETER DATA

THAT PORTION WEST OF HARBOR DRIVE

POINT OF BEGINNING:
STATION 479 ON THE U.S. PIERHEAD LINE ESTABLISHED SEPT 8, 1959 AS SHOWN ON HARBOR LINES OF SAN DIEGO BAY, SEPT 8, 1959

COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE
1	N 41° 15' 04"E	1,010.07'	26	R=5,679.65'; Δ=34°31'08"; L=3,421.81'	
2	EAST	85.61'	27	N 37° 53' 30"W	209.88'
3	N 0° 32' 40"W	430.50'	28	S 62° 55' 32"W	30.31'
4	EAST	1,210.56'	29	R=5,559.65'; Δ=3°10'02"; L=307.33'	
5	S 50° 42' 40"E	198.88'	30	N 71° 34' 48"E	146.54'
6	R=1,450.00', Δ=9°30'38"; L=240.69'		31	S 2° 42' 27"E	217.17'
7	S 50° 42' 40"E (computed)	153.56'	32	R=5,679.65'; Δ=13°45'50"; L=1,364.40'	
8	N 19° 23' 00"W (computed)	191.89'	33	S 5° 40' 45"W	247.07'
9	S 50° 48' 40"E	650.72'	34	S 83° 24' 28"W (computed)	8.78'
10	S 0° 03' 00"E	154.94'	35	N 18° 25' 12"W (computed)	82.28'
11	S 50° 48' 40"E	129.11'	36	S 71° 34' 12"W (computed)	24.54'
12	N 0° 03' 00"W	154.94'	37	S 2° 14' 16"W (computed)	44.60'
13	S 50° 48' 40"E	322.55'	38	S 9° 58' 30"W (computed)	32.94'
14	S 0° 12' 44"E	155.30'	39	S 10° 04' 15"W	216.76'
15	S 50° 48' 40"E	77.64'	40	S 83° 24' 28"W	667.11'
16	N 0° 12' 44"W	155.30'	41	S 6° 35' 32"E	1,593.72'
17	S 50° 49' 42"E	1,643.24'	42	S 83° 24' 28"W	255.81'
18	S 0° 11' 45"W	2.79'	43	S 6° 35' 32"E	1,047.40'
19	N 89° 50' 15"W	613.27'	44	R=564.18'; Δ=74° 24' 15"; L=732.64'	
20	S 39° 08' 45"W	336.09'	45	S 6° 35' 32"E	160.57'
21	R=1,100.00'; Δ=07°03'37"; L=135.55'		46	S 83° 24' 28"W	428.73'
22	S 66° 41' 35"E	707.79'	47	N 32° 44' 04"W	1,494.94'
23	S 50° 48' 00"E	449.05'	48	N 6° 35' 32"W	2,440.12'
24	N 39° 12' 00"E	222.70'	49	N 26° 56' 01"W (computed)	847.12'
25	R=480.56'; Δ=42°09'20"; L=353.57'		50	S 63° 03' 59"W (computed)	176.54'
			51	N 6° 35' 32"W (computed)	507.86'
			52	N 26° 56' 01"W (computed)	2,401.49'
			53	N 40° 38' 36"W (computed)	3,657.08'

NOTE
BEARINGS AND DISTANCES ABOVE, EXCEPT THOSE DESIGNATED AS COMPUTED, WERE COMPILED FROM THE INDIVIDUAL DEEDS AS SHOWN ON SHEETS 3 & 4 OF THIS SUMMARY MAP

PERIMETER DATA

THAT PORTION EAST OF S.D. & A.E.R.R. AND NORTH OF 8th STREET

POINT OF BEGINNING:
THE INTERSECTION OF THE CENTER LINES OF 28th STREET AND MAIN STREET AS SHOWN ON RECORD OF SURVEY MAP 1016 FILED S.D. Co. RECORDER.

COURSE	BEARING	DISTANCE	COURSE	BEARING	DISTANCE
1A	N 89° 28' 50"E	658.69'	27A	R=325.39'; Δ=25° 32' 32"; L=145.06'	
2A	N 89° 29' 50"E (computed)	1,744.45'	28A	R=370.39'; Δ=25° 32' 32"; L=165.12'	
3A	S 50° 46' 45"E (computed)	766.50'	29A	N 50° 42' 30"W	167.98'
4A	S 39° 13' 15"W	40.00'	30A	N 0° 03' 15"W	58.19'
5A	S 50° 46' 45"E	1,681.45'	31A	S 50° 42' 30"E	204.87'
6A	S 50° 51' 40"E	3,757.98'	32A	R=325.39'; Δ=25°32'32"; L=145.06'	
7A	S 18° 23' 30"E	1,472.08'	33A	R=370.39'; Δ=25°32'32"; L=165.12'	
8A	S 71° 34' 48"W	330.10'	34A	S 50° 42' 30"E	54.00'
9A	S 18° 23' 50"E	950.57'	35A	R=16.00'; Δ=90°00'00"; L=25.13'	
10A	S 71° 34' 48"W	1,180.96'	36A	N 39° 17' 30"E	209.11'
11A	N 18° 24' 00"W	580.34'	37A	N 0° 03' 15"W	200.48'
12A	N 71° 34' 48"E	150.26'	38A	N 73° 54' 25"W	656.30'
13A	N 18° 24' 00"W	80.00'	39A	N 0° 10' 00"W	277.69'
14A	S 71° 34' 48"W	150.26'	40A	N 0° 33' 20"E	753.19'
15A	N 18° 24' 00"W	250.23'	41A	N 0° 45' 30"E	205.06'
16A	N 71° 34' 48"E	150.26'	42A	N 50° 45' 15"W (computed)	51.10'
17A	N 18° 24' 00"W	80.00'	43A	S 0° 45' 30"W	236.86'
18A	S 71° 34' 48"W	150.26'	44A	S 0° 11' 10"E	552.75'
19A	N 18° 24' 00"W	250.23'	45A	N 89° 26' 40"W	27.34'
20A	N 71° 34' 48"E	150.26'	46A	S 0° 33' 20"W	200.00'
21A	N 18° 24' 00"W	80.00'	47A	S 0° 10' 00"E	246.20'
22A	S 71° 34' 48"W (computed)	150.71'	48A	S 0° 09' 10"E	295.00'
23A	R=1,961.06', Δ=31°11'34"; L=1,067.63' computed		49A	N 50° 48' 40"W (computed)	1,352.43'
24A	N 50° 49' 36"W (computed)	3,179.55'	50A	R=3,014.93'; Δ=21°10'20"; L=1,114.09'	
25A	N 39° 17' 30"E	75.07'	51A	N 0° 36' 40"W	384.73'
26A	N 50° 42' 30"W	70.00'			

NOTE
BEARINGS AND DISTANCES ABOVE, EXCEPT THOSE DESIGNATED AS COMPUTED, WERE COMPILED FROM THE INDIVIDUAL DEEDS AS SHOWN ON SHEETS 3 & 4 OF THIS SUMMARY MAP

PERIMETER DATA

THAT PORTION NORTH OF 8th STREET BETWEEN A.T. & S.F.R.R. AND S.D. & A.E.R.R.

POINT OF BEGINNING:
THE INTERSECTION OF A LINE COMMON TO BOTH THE A.T. & S.F.R.R. AND THE S.D. & A.E.R.R. WITH THE BEGINNING OF A TANGENT CURVE CONCAVE SOUTHWESTERLY AND HAVING A RADIUS OF 5,779.65' SAID RADIUS BEARS S 39° 10' 24"W AS SHOWN ON RECORD OF SURVEY MAP 1014 FILED S.D. Co. RECORDER.

COURSE	BEARING	DISTANCE
1B	S 50° 49' 36"E	1,841.31'
2B	R=1,861.06'; Δ=32°25'36"; L=1,053.27'	
3B	S 18° 24' 00"E	1,278.99'
4B	S 71° 34' 48"W	422.87'
5B	R=5,779.65'; Δ=39°42'00"; L=4,004.69'	

NOTE:
BEARINGS AND DISTANCES ABOVE WERE COMPILED FROM THE DEED AS SHOWN ON SHEETS 3 & 4 OF THIS SUMMARY MAP.

PERIMETER DATA

THAT PORTION SOUTH OF 8th STREET BETWEEN A.T. & S.F.R.R. AND S.D. & A.E.R.R.

POINT OF BEGINNING:
THE INTERSECTION OF THE SOUTHERLY RIGHT OF WAY LINE OF 8th STREET WITH A POINT ON A 5,779.65' RADIUS CURVE OF THE EASTERLY RIGHT OF WAY LINE OF THE A.T. & S.F.R.R., THE RADIUS AT SAID INTERSECTION BEARS N 79° 38' 21"E AS SHOWN ON RECORD OF SURVEY MAP 1029 FILED S.D. Co. RECORDER.

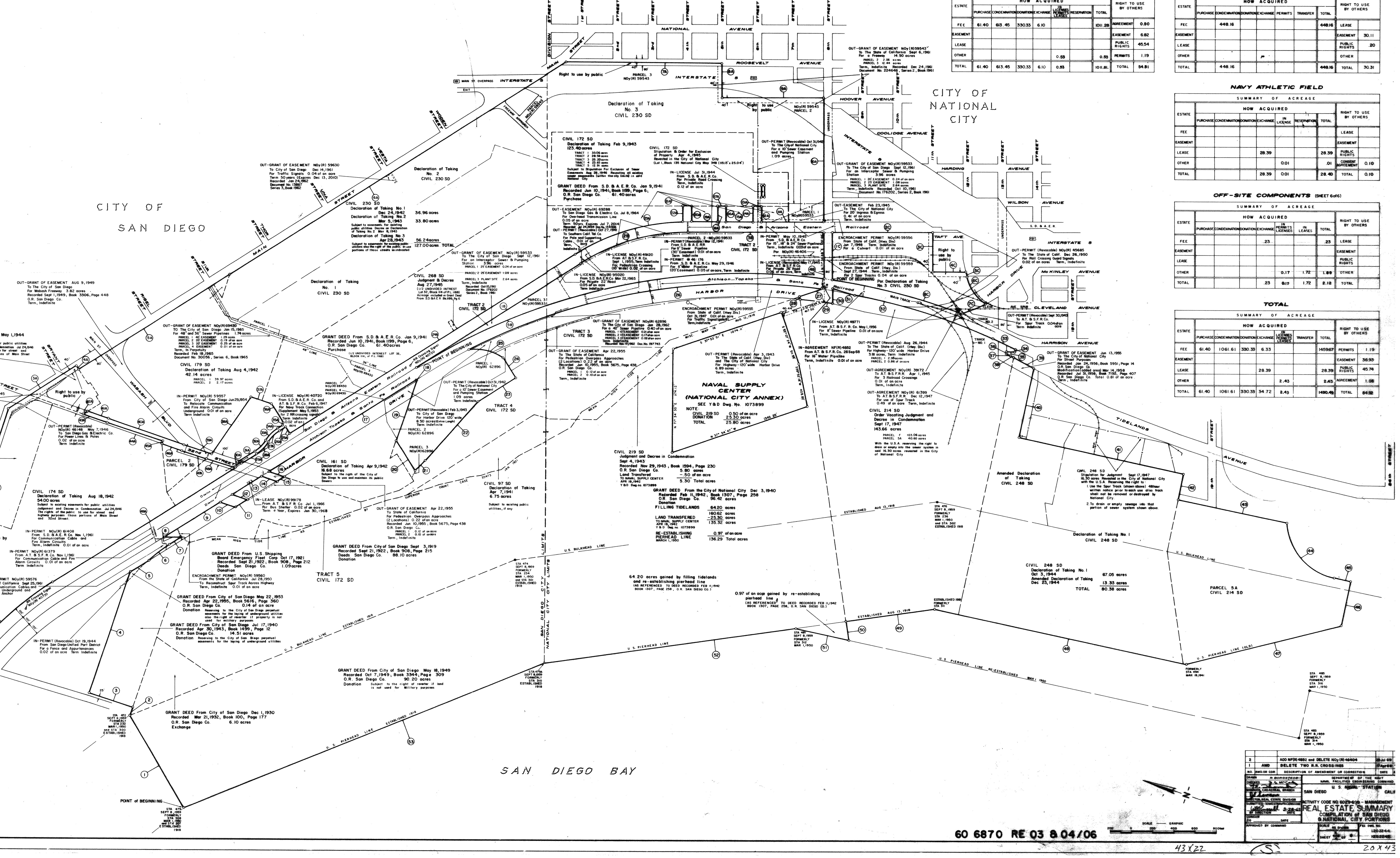
COURSE	BEARING	DISTANCE
1C	N 71° 34' 48"E	433.66'
2C	S 18° 25' 00"E	950.30'
3C	S 71° 34' 48"W	370.17'
4C	S 18° 25' 12"E	307.38'
5C	S 59° 43' 48"W	42.50'
6C	R=401.00'; Δ=47°59'56"; L=335.91' computed	
7C	R=1,280.00; Δ=9°38'22"; L=214.70' computed	
8C	R=5,779.65'; Δ=12°55'51"; L=1,304.38' computed	

NOTE:
BEARINGS AND DISTANCES ABOVE, EXCEPT THOSE DESIGNATED AS COMPUTED, WERE COMPILED FROM THE INDIVIDUAL DEEDS AS SHOWN ON SHEET 4 OF THIS SUMMARY MAP.

NOTE:
RECORD OF SURVEY MAPS MENTIONED IN PERIMETER DATA AS FOLLOWS:
R of S 1014 Filed June 23, 1942
R of S 1016 Filed July 23, 1942
R of S 1029 Filed Oct 28, 1942
IN THE OFFICE OF THE RECORDED OF SAN DIEGO COUNTY.

FEDERAL JURISDICTION

LAND ACQUIRED BY	AREA IN ACRES	DATE ACCEPTED BY USA	STATE LANDS COMMISSION ACTION	APPLICABLE STATE STATUTE	DEGREE
DEED 9-3-19 Deeds Bk908, Pg215	88.10	NA	NA	SEC 34 POLITICAL CODE	EXCLUSIVE
DEED 10-17-21 Deeds Bk908, Pg212	1.09	NA	NA	SEC 34 POLITICAL CODE	EXCLUSIVE
DEED 12-1-30 O.R. Bk100, Pg177	6.10	NA	NA	SEC 34 POLITICAL CODE	EXCLUSIVE
DEED 12-3-40 O.R. Bk1307, Pg256	136.29	NA	NA	SEC 34 POLITICAL CODE	EXCLUSIVE
CIVIL 97	6.75	1-4-43	1-8-43	SEC 34 POLITICAL CODE	PARTIAL
CIVIL 161	16.68	12-30-42	1-4-43	SEC 34 POLITICAL CODE	PARTIAL
CIVIL 172	123.40	10-30-43	11-4-43	SEC 34 POLITICAL CODE	PARTIAL
CIVIL 174	54.00	12-9-42	12-16-42	SEC 34 POLITICAL CODE	PARTIAL
CIVIL 179	42.14	12-26-42	1-5-43	SEC 34 POLITICAL CODE	PARTIAL
CIVIL 230	127.00	7-24-43	7-28-43	SEC 34 POLITICAL CODE	PARTIAL
DEED 7-17-40 O.R. Bk1499, Pg12	14.51	7-5-43	7-12-43	SEC 34 POLITICAL CODE	PARTIAL
DEED 5-18-49 Bk3344, Pg309	90.20	5-1-50	CERT. 1473 FILED S.D. Co. 12-13-50	SEC 34 POLITICAL CODE	PARTIAL
CIVIL 214	143.66	PROPRIETORIAL ONLY			
CIVIL 219	5.30	PROPRIETORIAL ONLY			
CIVIL 248	80.38	PROPRIETORIAL ONLY			
CIVIL 407	3.55	PROPRIETORIAL ONLY			
CIVIL 444	10.59	PROPRIETORIAL ONLY			
DEED 1-9-41 O.R. Bk1199, Pg6	61.40	PROPRIETORIAL ONLY			
DEED 5-22-53 Bk5616, Pg360	0.14	PROPRIETORIAL ONLY			



NAVAL STATION

SUMMARY OF ACREAGE

ESTATE	HOW ACQUIRED: PURCHASE	CONDEMNATION	DONATION	EXCHANGE	IN LICENSES PERMITS LEASES	RESERVATION	TOTAL	RIGHT TO USE BY OTHERS	
FEE	61.40	613.45	330.33	6.10			1011.28	AGREEMENT	0.50
EASEMENT								EASEMENT	6.82
LEASE								PUBLIC RIGHTS	45.54
OTHER					0.53		0.53	PERMITS	1.19
TOTAL	61.40	613.45	330.33	6.10	0.53		1011.81	TOTAL	54.51

NAVY RECREATIONAL FACILITIES ANNEX

SUMMARY OF ACREAGE

ESTATE	HOW ACQUIRED: PURCHASE	CONDEMNATION	DONATION	EXCHANGE	PERMITS	TRANSFER	TOTAL	RIGHT TO USE BY OTHERS	
FEE		448.16					448.16	LEASE	
EASEMENT								EASEMENT	30.11
LEASE								PUBLIC RIGHTS	.20
OTHER								OTHER	
TOTAL		448.16					448.16	TOTAL	30.31

NAVY ATHLETIC FIELD

SUMMARY OF ACREAGE

ESTATE	HOW ACQUIRED: PURCHASE	CONDEMNATION	DONATION	EXCHANGE	IN LICENSE	RESERVATION	TOTAL	RIGHT TO USE BY OTHERS	
FEE								LEASE	
EASEMENT								EASEMENT	
LEASE				28.39			28.39	PUBLIC RIGHTS	
OTHER					0.01		.01	CONSENT AGREEMENT	0.10
TOTAL				28.39	0.01		28.40	TOTAL	0.10

OFF-SITE COMPONENTS (SHEET 6 of 6)

SUMMARY OF ACREAGE

ESTATE	HOW ACQUIRED: PURCHASE	CONDEMNATION	DONATION	EXCHANGE	IN PERMITS LICENSES	IN LEASES	TOTAL	RIGHT TO USE BY OTHERS	
FEE				.23			.23	LEASE	
EASEMENT								EASEMENT	
LEASE								PUBLIC RIGHTS	
OTHER					0.17	1.72	1.89	OTHER	
TOTAL				.23	0.17	1.72	2.12	TOTAL	

TOTAL

SUMMARY OF ACREAGE

ESTATE	HOW ACQUIRED: PURCHASE	CONDEMNATION	DONATION	EXCHANGE	IN LICENSES PERMITS LEASES	TRANSFER	TOTAL	RIGHT TO USE BY OTHERS	
FEE	61.40	1061.61	330.33	6.33			1459.67	PERMITS	1.19
EASEMENT								EASEMENT	36.93
LEASE				28.39			28.39	PUBLIC RIGHTS	45.74
OTHER					2.43		2.43	AGREEMENT	1.06
TOTAL	61.40	1061.61	330.33	34.72	2.43		1490.49	TOTAL	84.92

NO.	AMD. OR COR.	DESCRIPTION OF AMENDMENT OR CORRECTION	DATE
2		ADD NF(R) 4852 and DELETE NOy (R) 46404	28 Jul 69
1	AMD	DELETE TWO R.R. CROSSINGS	17 Apr 68

DRAWN R. BORGSTEDE
CHECKED J. G. McCa[illegible]
MANAGER, CADASTRAL BRANCH
DIRECTOR, REAL ESTATE DIVISION
SUBMITTED - SOWESTNAVFACENGCOM
BY DIRECTION 3-29-67 DATE
CONCUR
CO ______ DATE ______
APPROVED BY COMMAND

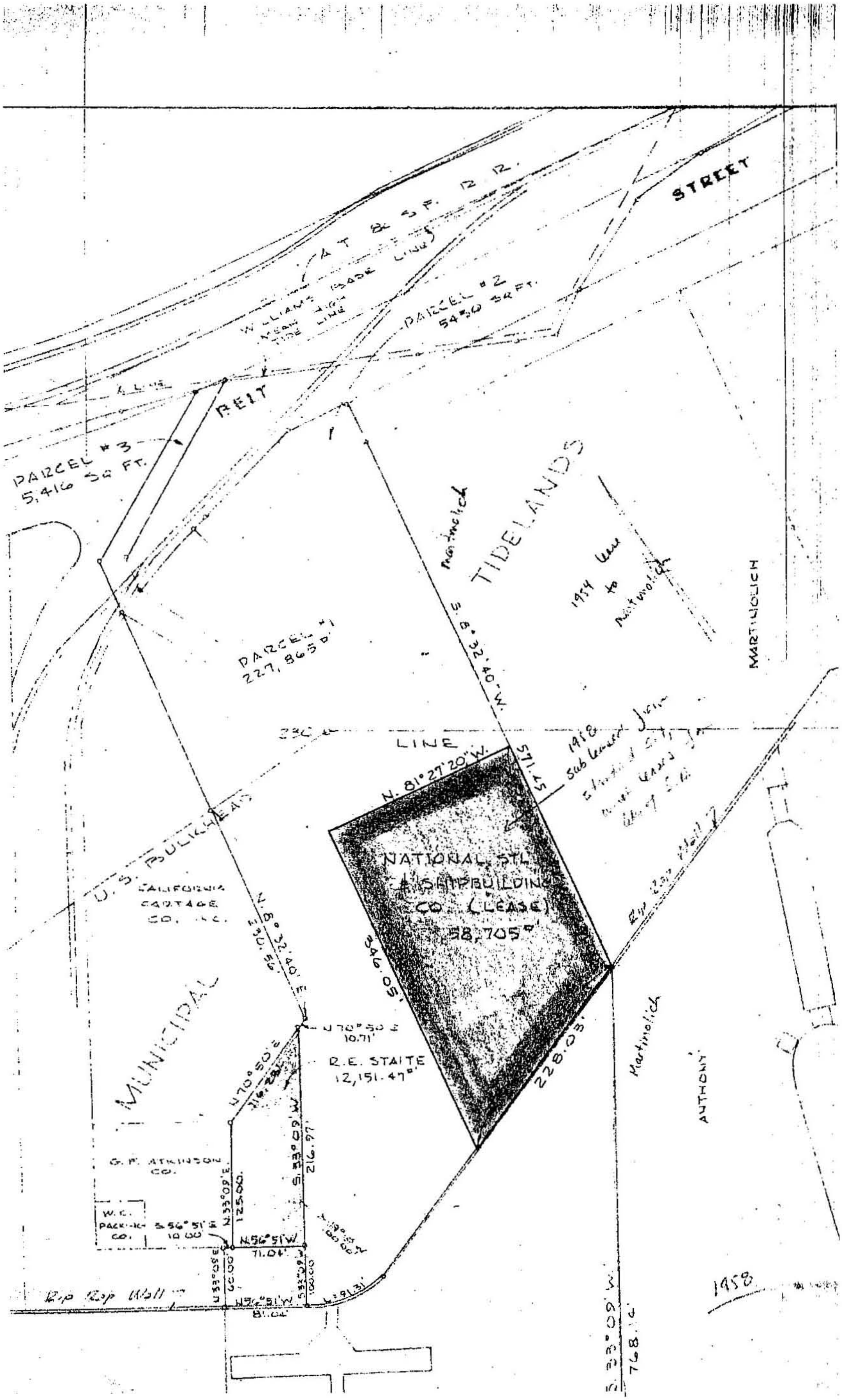
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
U. S. NAVAL STATION
SAN DIEGO CALI[F]
ACTIVITY CODE NO. 6029-699 - MANAGEMENT
REAL ESTATE SUMMARY
COMPILATION of SAN DIEGO & NATIONAL CITY PORTIONS
SCALE AS SHOWN
SHEET 3/4 OF 6
FEC DWG. NO. 1202244 1202245

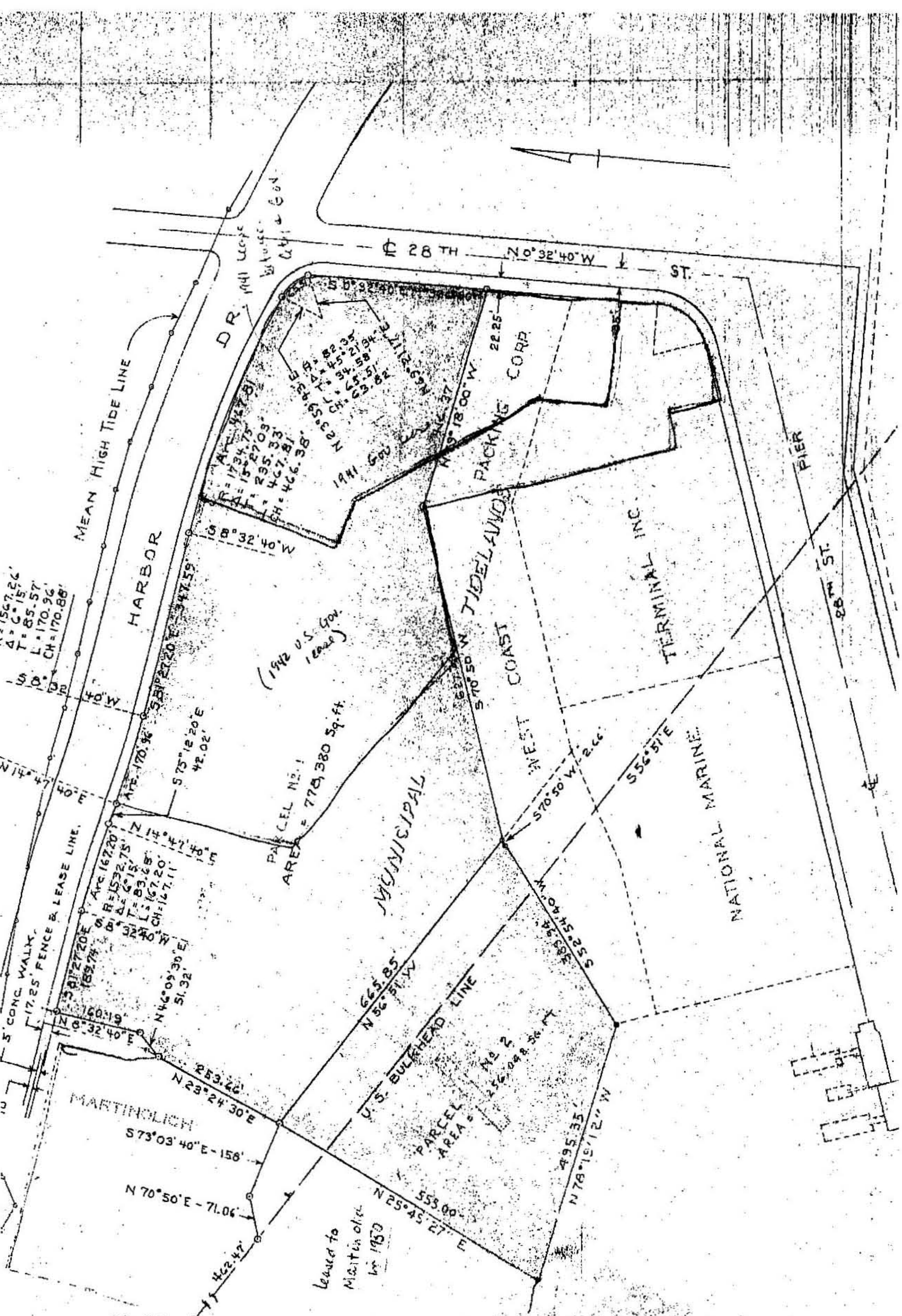
60 6870 RE 03 8 04/06

43 X 22

(S)

20 X 43


A T & S.F. R R.
STREET
WILLIAMS GRADE LINE
MEAN HIGH TIDE LINE
PARCEL #2 5450 SQ FT.
BELT
PARCEL #3 5,416 SQ FT.
TIDELANDS
Martinolich
1954 lease to Martinolich
MARTINOLICH
PARCEL #1 227,865 □'
S. 8°32'40"W.
LINE
N. 81°27'20"W.
571.45
1958
U.S. BULKHEAD
NATIONAL STL & SHIPBUILDING CO. (LEASE) 58,705□'
346.05'
228.03'
Rip Rap Wall
CALIFORNIA CARTAGE CO. INC.
N.8°32'40"E.
330.56'
N70°50'E 10.71'
R.E. STAITE 12,151.47□'
MUNICIPAL
N70°50'E 216.28'
S.33°09'W. 216.97'
G.P. ATKINSON CO.
N.33°09'E. 125.00
W.C. PACKING CO.
S.56°51'E 10.00
N.56°51'W. 71.04'
N56°51'W 81.04
L=91.31
S.33°09'W. 768.16'
Martinolich
ANTHONY
Rip Rap Wall
1958



NOTE- AREA TO BE LEASED SHOWN SHADED.

DRAWN BY L.M.P.
TRACED BY H.R.S.
CHECKED BY D.C.H.
APPROVED
HARBOR ENGINEER

HARBOR DEPARTMENT - CITY OF SAN DIEGO
MUNICIPAL TIDELANDS LEASE
NATIONAL STEEL & SHIPBUILDING CORP.
EXHIBIT "B"

DATE - 7-23-51
SCALE - 1" = 200'
DRAWING No
86-B-8

REVISED BY L.M.P. DEC. 13 '51 FROM 85-B-5 APPROVED BY HARBOR ENGINEER

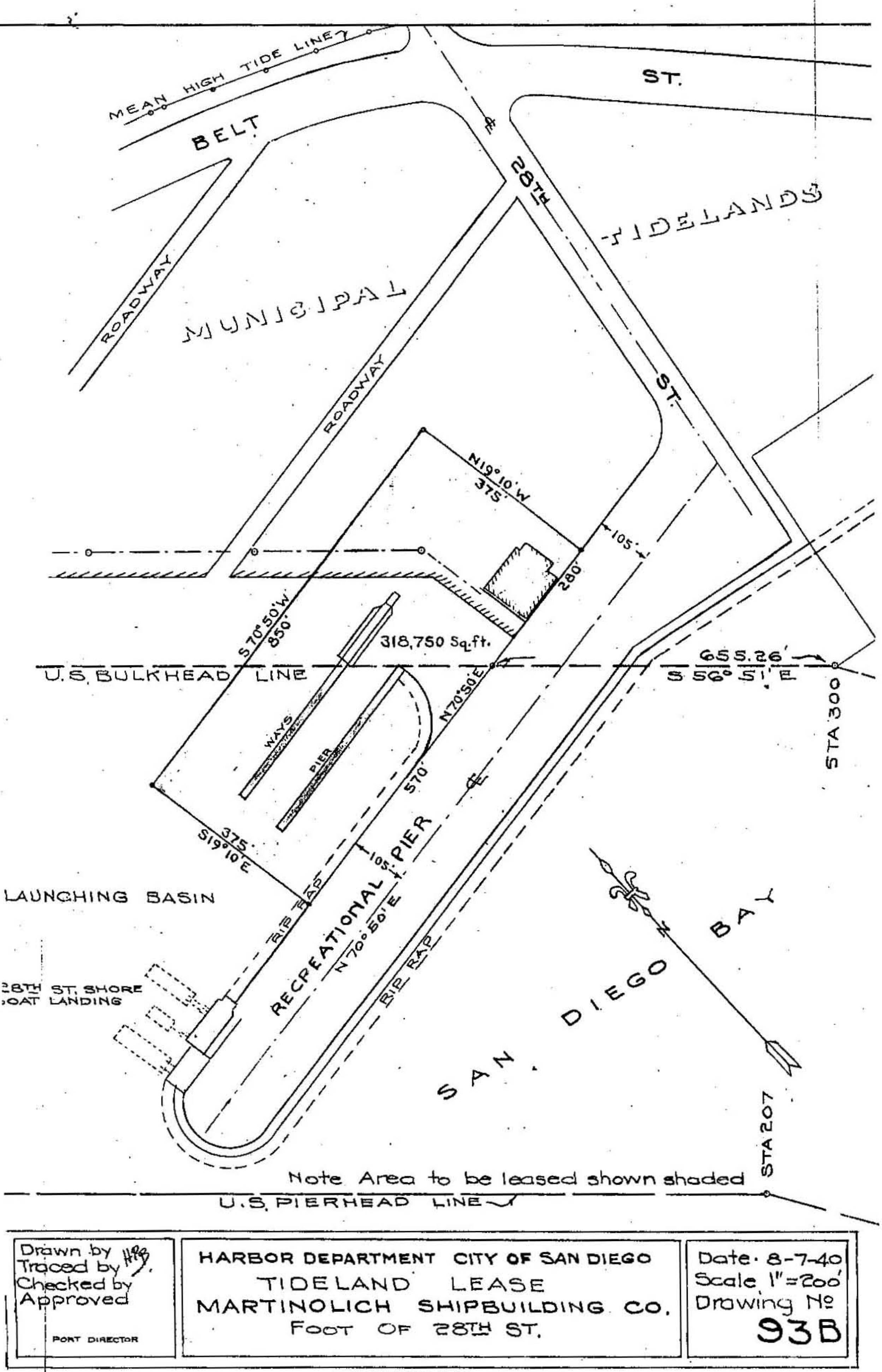
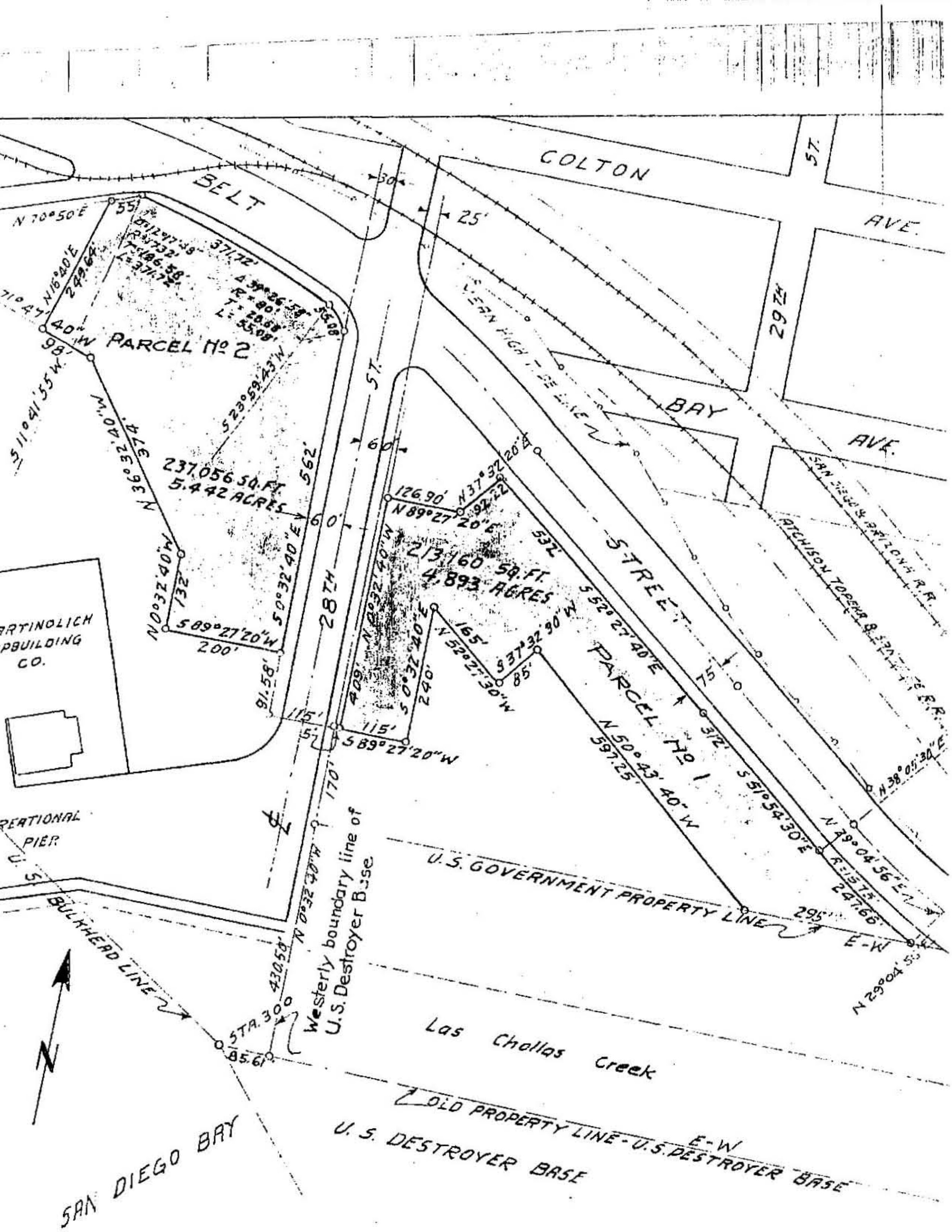

MEAN HIGH TIDE LINE
BELT
ST.
28TH
ROADWAY
MUNICIPAL
TIDELANDS
ROADWAY
ST.
N19°10'W
375'
105'
280'
S70°50'W
850'
318,750 Sq.ft.
655.26'
U.S. BULKHEAD LINE
S 56° 51' E
STA 300
WAYS
PIER
N70°50'E
570'
375'
S19°10'E
105'
RECREATIONAL PIER
N70°50'E
LAUNCHING BASIN
RIP RAP
RIP RAP
28TH ST. SHORE
BOAT LANDING
SAN DIEGO BAY
N
STA 207
Note Area to be leased shown shaded
U.S. PIERHEAD LINE
Drawn by
Traced by
Checked by
Approved
PORT DIRECTOR
HARBOR DEPARTMENT CITY OF SAN DIEGO
TIDELAND LEASE
MARTINOLICH SHIPBUILDING CO.
FOOT OF 28TH ST.
Date. 8-7-40
Scale 1"=200'
Drawing No
93B

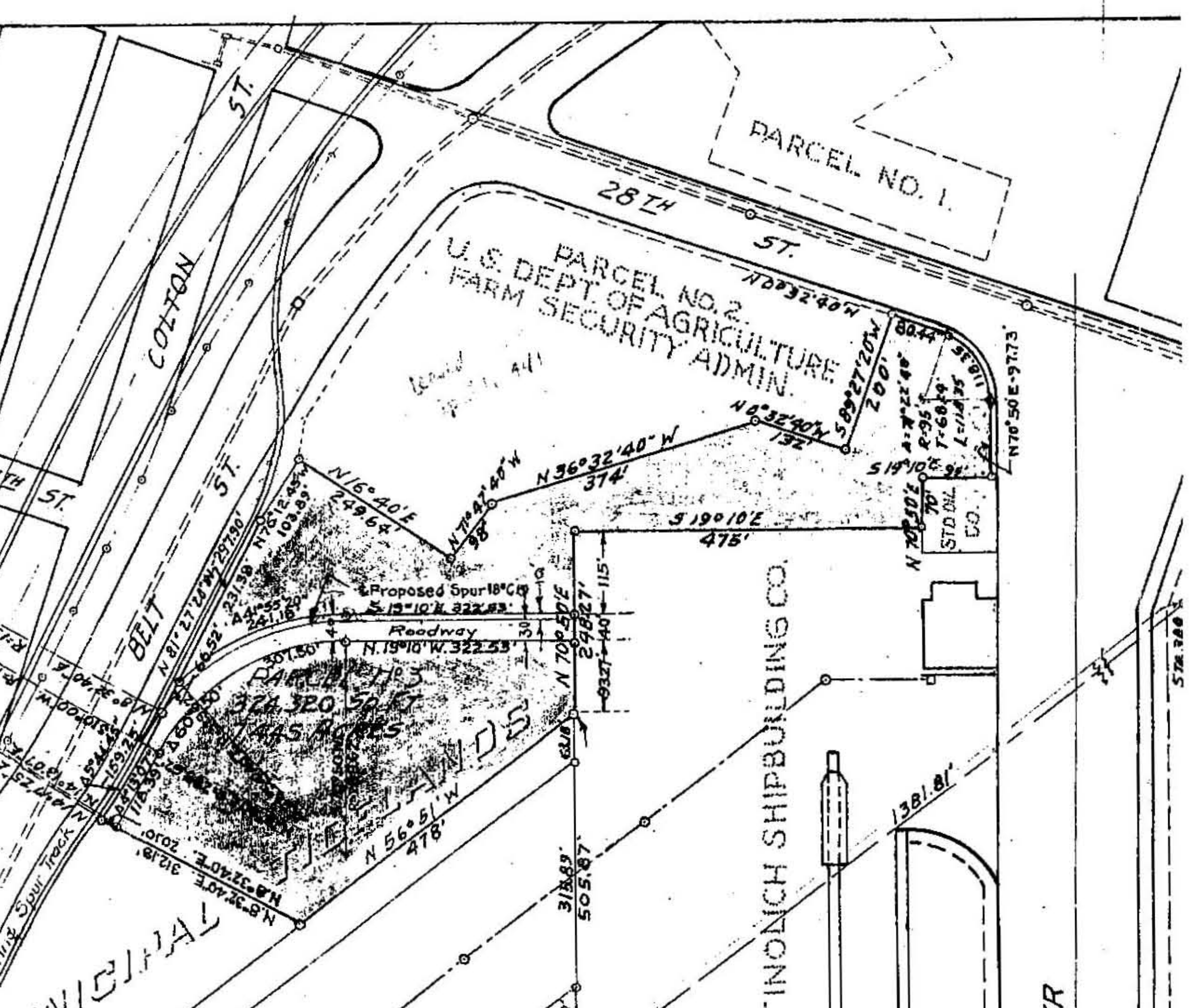
EXHIBIT "A"



NOTE:
Lease Area Shaded

Drawn By Traced By E.H.M. Checked By Approved Port Director	HARBOR DEPARTMENT - CITY OF SAN DIEGO TIDE LAND LEASE U. S. DEPARTMENT OF AGRICULTURE FARM SECURITY ADMINISTRATION	Date Apr. 1, 41 Scale 1" = 200' Drawing No. 144-B-1

EXHIBIT A.

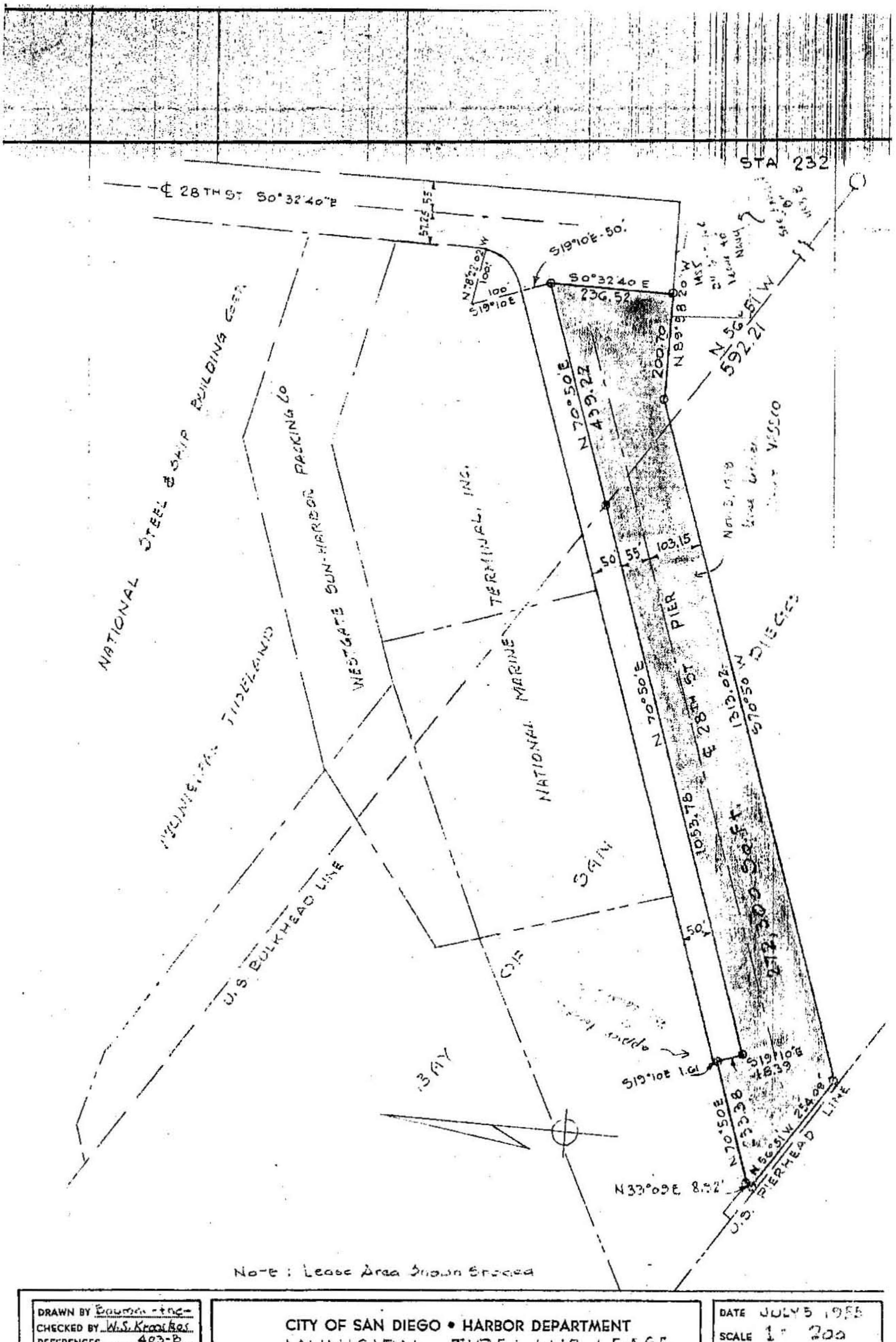


NOTE -
Area to be leased shown shaded.

Revised: Jan. 6th, 1942

Drawn By Traced By E.H.M. Checked By Approved Port Director	HARBOR DEPARTMENT - CITY OF SAN DIEGO TIDE LAND LEASE U.S. DEPARTMENT OF AGRICULTURE FARM SECURITY ADMINISTRATION	Date Nov. 1 - 41 Scale 1" = 200' Drawing No 144-B-5

Exhibit "A"

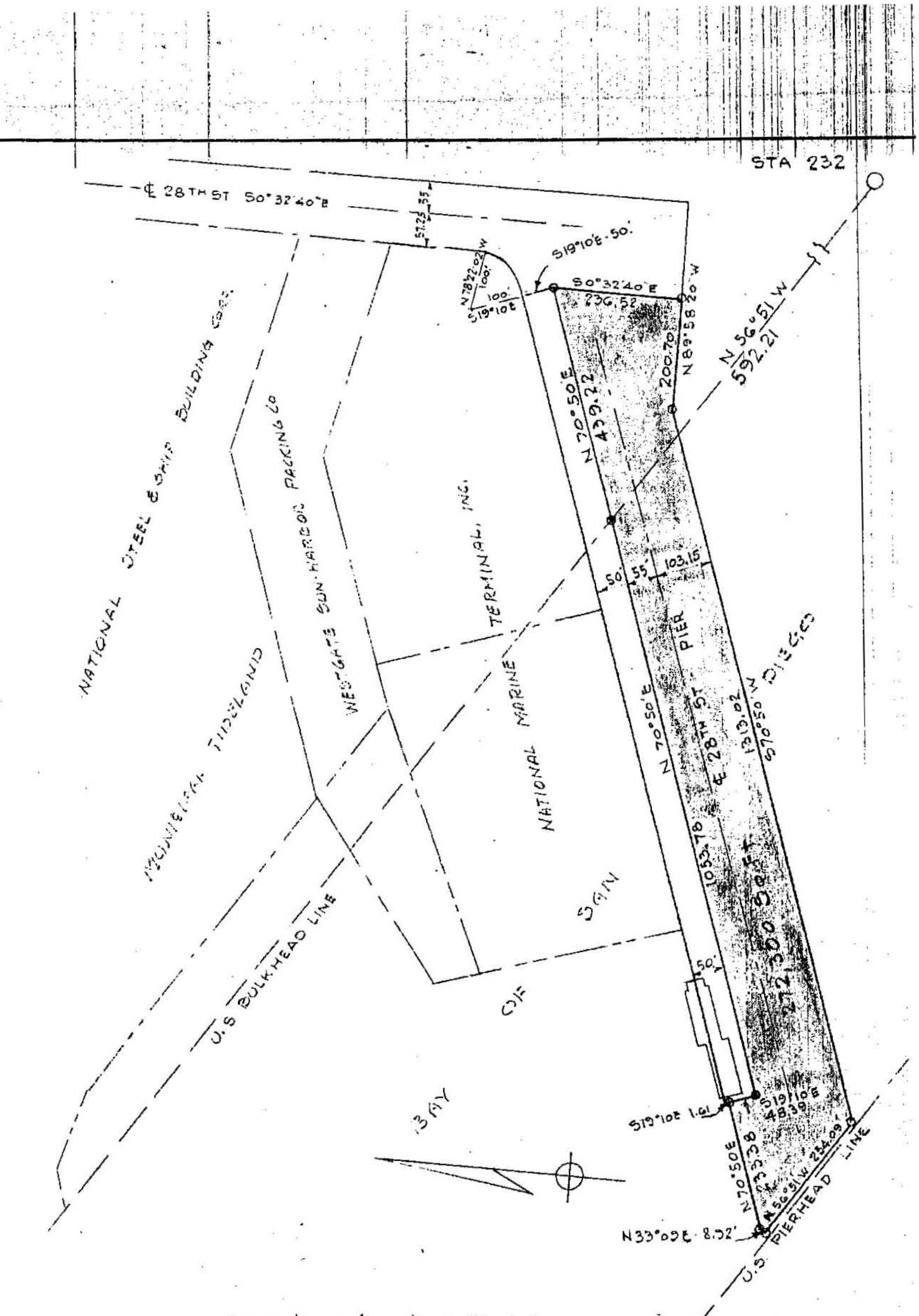


Note: Lease Area Shown Shaded

DRAWN BY Bauman - tng CHECKED BY W.S. Kroolbos REFERENCES 403-B APPROVED BY J.E. Liebmann CHIEF ENGINEER	CITY OF SAN DIEGO • HARBOR DEPARTMENT MUNICIPAL TIDELAND LEASE NATIONAL STEEL & SHIPBUILDING CORP. 28TH STREET PIER	DATE JULY 5 1955 SCALE 1" 200 DRAWING NO. 576-B

EXHIBIT "A"

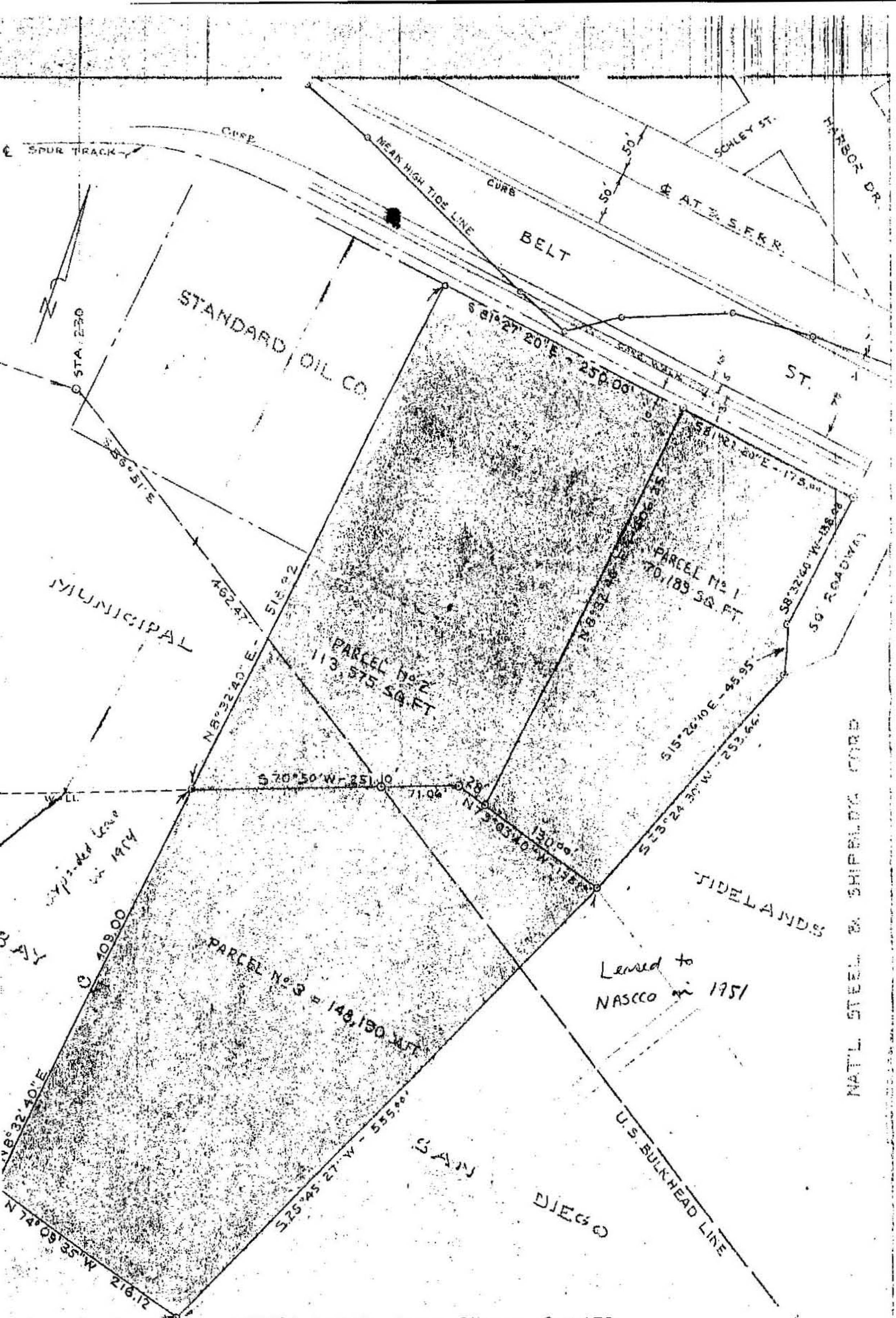
Revised from 434 by W.S.K. - 8-28-58 Approved by ~~Chief Engineer~~ J.E. Liebmann



Note: Lease Area Shown Shaded

DRAWN BY Baumgartner CHECKED BY W.S. Kroesber REFERENCES 403-B APPROVED BY J.E. [signature] CHIEF ENGINEER	CITY OF SAN DIEGO • HARBOR DEPARTMENT MUNICIPAL TIDELAND LEASE NATIONAL STEEL & SHIPBUILDING CORP. PARKING LOT	DATE JULY 5 1955 SCALE 1" 200' DRAWING NO. 434-B

EXHIBIT "A"



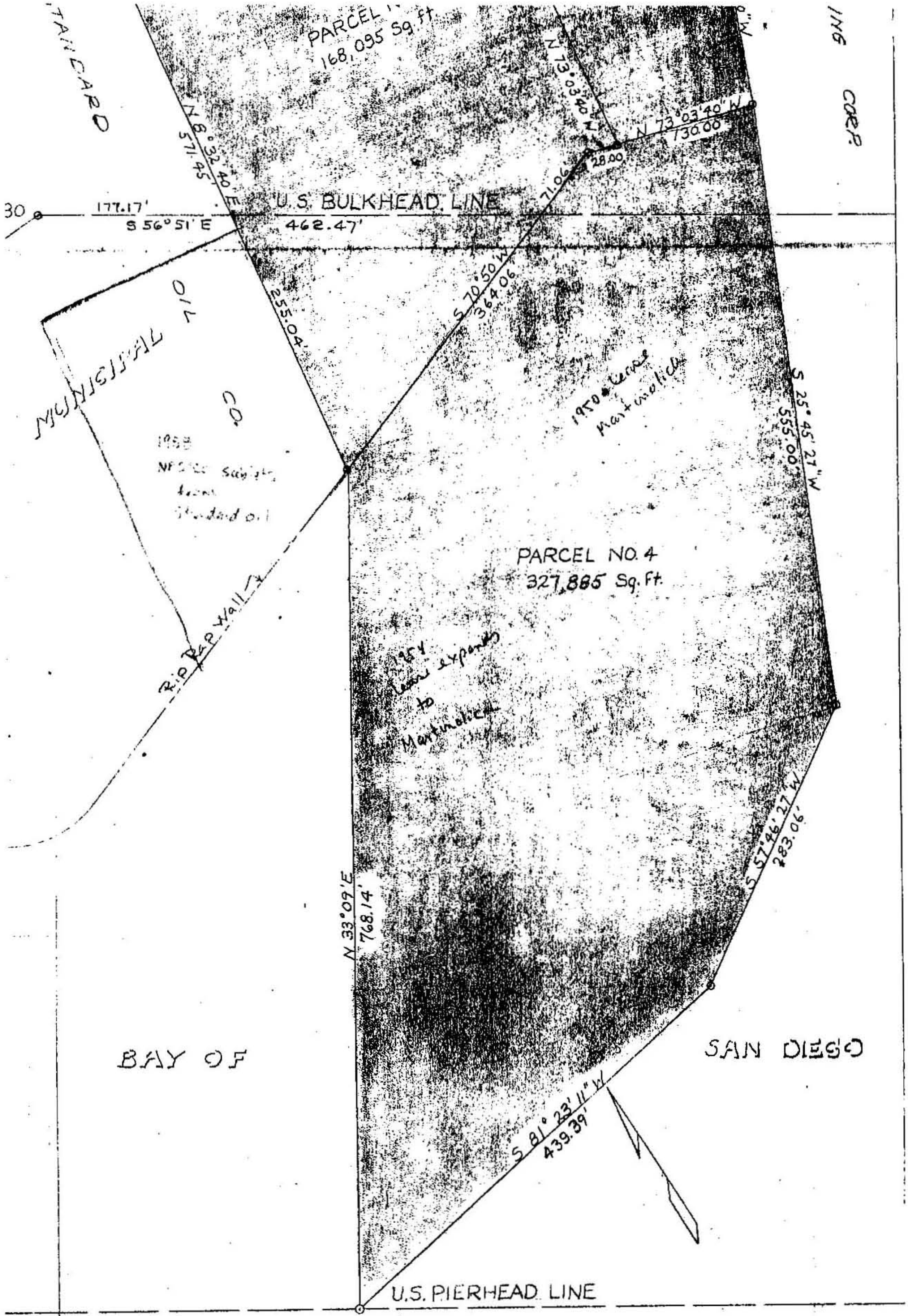
NOTE: LEASE AREA SHOWN SHADED

DRAWN BY / TRACED BY / CHECKED BY D.C.H. / APPROVED J.P. Liebmann, HARBOR ENGINEER	HARBOR DEPARTMENT ~ CITY OF SAN DIEGO MUNICIPAL TIDELANDS LEASE ANTHONY ~~MARTINOLICH~~	DATE: FEB 23 '50 SCALE: 1" = 100' DRAWING No 147-B-5

EXHIBIT "A"

Revised by Paul, 4-25-50, from 147-B-3 Approved by Harbor Engineer J.P. Liebmann

REVISED BY U.H.A., 8-8-50 FROM 147-B-4 APPROVED BY HARBOR ENGINEER J.P. Liebmann

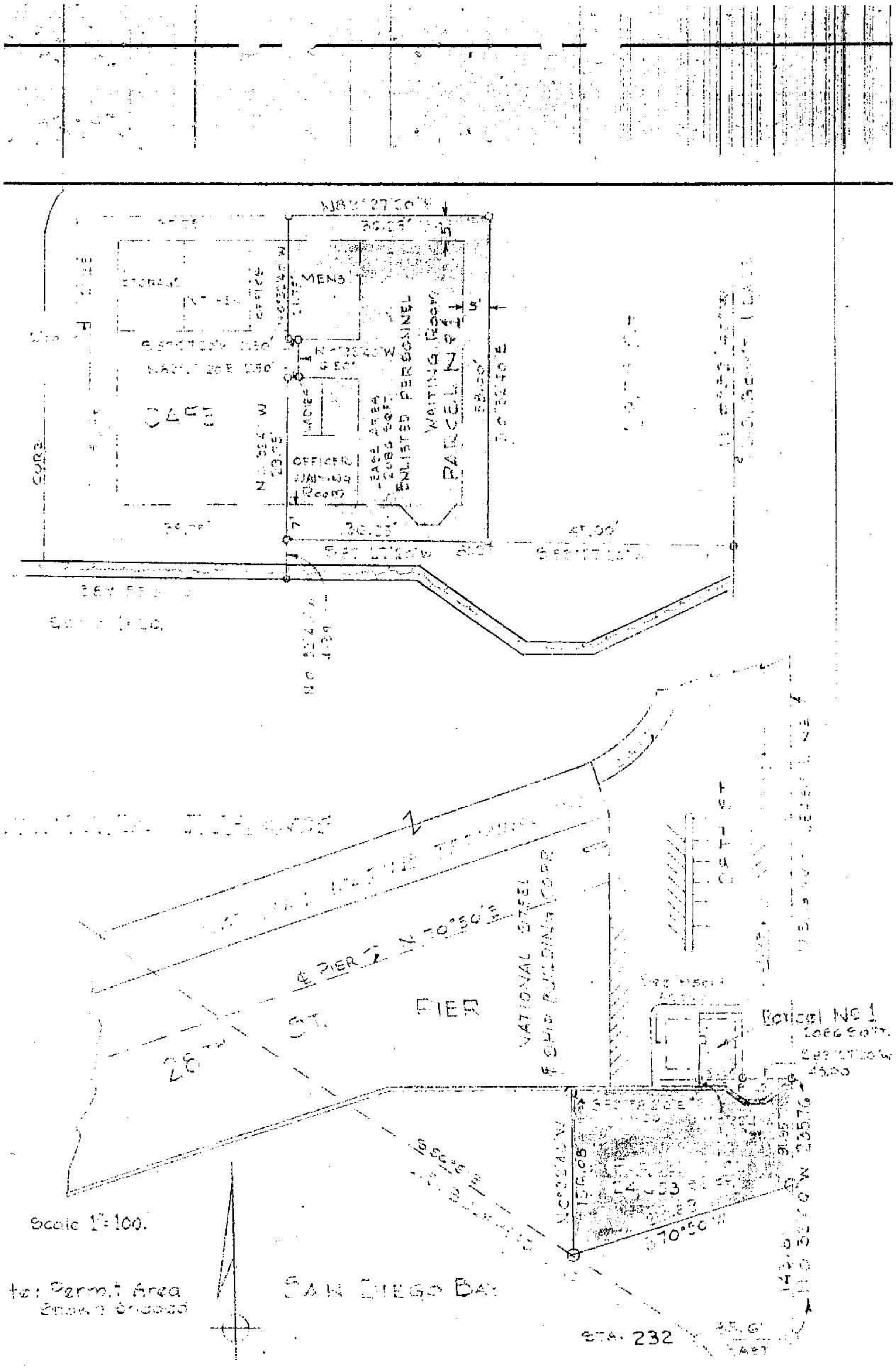


NOTE: Lease area shown shaded.

DRAWN BY W.S.K. TRACED BY CHECKED BY Paul T APPROVED CHIEF ENGINEER	HARBOR DEPARTMENT CITY OF SAN DIEGO MUNICIPAL TIDELANDS LEASE MARTINOLICH SHIPBUILDING CO.	DATE: 7-29-54 SCALE: 1" = 100' DRAWING NO. 1447-B

Revised by WSK and EB 9-15-55 from 147-B-14 Approved by Chief Engineer

EXHIBIT "B"



DRAWN BY [illegible] CHECKED BY Stefanson REFERENCES [illegible] APPROVED BY J.E. Liebmann CHIEF ENGINEER	CITY OF SAN DIEGO • HARBOR DEPARTMENT U. S. NAVY PERMIT	DATE [illegible] SCALE [illegible] DRAWING NO. [illegible] B

EXHIBIT "B"

Appendix B
Apportionment Report

TABLE OF CONTENTS

Page

LIST OF FIGURES

LIST OF FIGURES (Continued)

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

CAO	Cleanup and Abatement Order
CoC	Contaminants of Concern
CSM	Conceptual Site Model
EPA	Environmental Protection Agency
IMO	International Maritime Organization
PAH	Polycyclic Aromatic Hydrocarbons
PCA	Principal Components Analysis
PCB	Polychlorinated Biphenyls
PRP	Potentially Responsible Party
NBSD	Naval Base San Diego
NLS	Naval Landing Station
RWQCB	Regional Water Quality Control Board
SCCWRP	Southern California Coastal Water Research Project
SY	Shipyard Sediment Site
TBT	Tributyltin
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
UNDS	Uniform National Discharge Standards

EXECUTIVE SUMMARY

The San Diego Regional Water Control Board (RWQCB) named the U.S. Navy as a responsible party in the Shipyard Cleanup and Abatement Order (CAO). The CAO addresses contaminated bay sediments at the "Shipyard Sediment Site" which corresponds to the leaseholds of commercial shipbuilding facilities operated by NASSCO and BAE. The RWQCB identified three potential pathways for contaminant releases from Navy facilities/operations to contribute to the sediment contamination at the Shipyard Sediment Site (SY): (1) releases to the Bay from the former Navy 28th Street Landing Station that was operated by the Navy from 1938 to 1956; (2) stormwater discharges from Naval Base San Diego (NBSD) into Chollas Creek with subsequent transport and accumulation of contaminants in bottom sediment within the site footprint; and (3) discharges/releases from NBSD directly into San Diego Bay with subsequent transport and accumulation of contaminants in bottom sediment within the site footprint. This report evaluates these three pathways and estimates the potential contributions of Navy sources (apportionment) to the SY.

A recent comprehensive review of historical documents by the Navy indicates that the 28th Street Landing Station consisted solely of a storage room, waiting room, and finger pier that were used by ship launches to ferry sailors to and from Navy ships moored in San Diego Bay. The records also suggest that no industrial activities occurred at this facility. Specific information on the types and quantities of contaminants possibly released as a result of Navy activities at this facility and transported to the SY via Pathway 1 is unavailable. Consequently, the maximum potential magnitude of contaminant inputs from this Navy source was estimated by assuming that the quantity of contaminants was proportional to the size of the facility and duration of operation in comparison to the size and duration of the adjacent commercial shipbuilding operations. This calculation is extremely conservative because it implies that discharges from the Navy shuttle boat operations were comparable to those associated with ship building and maintenance, and that inputs from all other sources were negligible. Even with this highly conservative analysis, the total Navy contaminant contribution to the SY from this pathway is estimated to be less than 0.2% of the total contaminant loading. Given the small area of use, limited level of activity, limited period of operation, absence of contamination at depth in the nearest sediment core profile, co-association of contaminants with the shipyard marker compound (tributyltin) in sediments, and unlikely utilization or release of several of these contaminants with known operations, the potential release to the SY from this Navy source is considered to be negligible for all practical purposes.

the only area that is potentially influenced by Creek discharges is in the triangular region to the south of the 28th Street Pier. Within this region, the only station that indicated potential impact (i.e., sediment contaminant levels above Bay background) was Station NA22. Parties have agreed that the region represented by Station NA22 should be included in the Mouth of Chollas Creek Total Maximum Daily Load (TMDL) and removed from the CAO assessment. Consequently, the areas of the SY that are thought to be influenced by Chollas Creek discharges have already been incorporated into the TMDL and removed from the CAO. In addition, the Navy's contribution to contaminant loading at the SY via Pathway 2 is negligible as demonstrated by the small relative portion of the Chollas Creek contaminant loading to the Bay that can be attributed to the Navy stormwater discharges, the portion of the solids loading from the Creek that is likely deposited at the SY, the observed spatial gradients of contamination in the area, and the relative chemical signatures of bottom sediments in the area. Existing data indicate that Navy's stormwater discharges contribute only a small fraction of any of the contaminants of concern to the total Chollas Creek watershed contaminant load. Further, modeling studies indicate that a large fraction of the particles discharging from Chollas Creek are trapped in the mouth area and are not dispersed into the Bay. The fraction of particles discharged from Chollas Creek that settle in the SY is less than 1% of the total particle loading, with the majority of settling occurring in the region south of the 28^{th} Street Pier (NA22). In addition, the chemical signature of the sediments in the Creek mouth area is clearly distinctive from the SY area sediments, which indicates different contaminant sources. Overall, the Navy's contribution to contaminant inputs via this pathway is estimated to be less than 0.08%, and the areas of concern have already been incorporated into the Mouth of Chollas Creek TMDL where the Navy is an active participant in the assessment and implementation.

Pathway 3 was evaluated by interpreting spatial patterns in sediment contaminant concentrations as an indicator of contaminant sources and transport directions. Differences in the ratios of individual contaminants are used as an indicator of the chemical signatures or fingerprints of different input sources. CAO contaminants of concern consistently exhibit similar spatial gradients, with highest concentrations within the SY footprint and decreasing concentrations in the direction of NBSD. This infers transport and/or dispersion in the direction of NBSD, which is opposite of the pattern required to support Pathway 3.

Further, concentrations of TBT, which was a biocide used in anti-fouling paints on the hulls of commercial and recreational vessels but rarely on military vessels, are strongly correlated with concentrations of several other metals (arsenic, copper, lead, and zinc), which suggests similar SY input sources and environmental fate. The relationship between TBT and several metals represents the major proportion (56%) of the variance in the sediment contaminant data. The remaining variance in the dataset is related to differences in sediment grain size (11%) and patterns in total organic carbon, mercury, polychlorinated biphenyls (PCBs) (18%), and polycyclic aromatic hydrocarbons (PAHs) (6%). This does not imply that the SY did not contribute to loadings for mercury, PCBs, or PAHs. Instead, the loadings for these contaminants likely reflect inputs from a number of upland and in-bay sources, including the SY. The exact apportionment of the non-shipyard contributions cannot be determined accurately from the existing information.

Given that the spatial patterns and gradients of sediment contaminants are not consistent with transport from the NBSD area to the SY area, contamination at the SY clearly co-occurs with TBT which is a shipyard-specific contaminant, and chemical fingerprints indicate clear differences between NBSD and the SY, the potential contribution to the SY from Pathway 3 is considered to be negligible for all practical purposes.

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INTRODUCTION

The Regional Water Quality Control Board, San Diego Region (RWQCB) issued a Tentative Cleanup and Abatement Order (CAO; No. R9-2005-0126) for a portion of San Diego Bay referred to as the "Shipyard Sediment Site." The Site comprises approximately 103 acres of San Diego Bay and adjoining shoreline between Sampson and 28th Streets within the NASSCO and BAE leaseholds. The outline of the Shipyard Sediment Site (SY) is shown in Figure 1. The RWQCB issued the CAO because the Site is on the Clean Water Act Section 303(d) list of water quality limited segments due to the presence of elevated copper, mercury, zinc, polycyclic aromatic hydrocarbon (PAH), and polychlorinated biphenyl (PCB) concentrations in Bay sediments. According to the CAO, the presence of elevated concentrations of these sediment contaminants is causing an impairment to various beneficial uses, including aquatic life beneficial use, aquatic-dependent wildlife beneficial use, and human health beneficial use.

Sediments are repositories or sinks for many chemical contaminants released to coastal water bodies because contaminants typically have a strong affinity for particles, which have a tendency to settle and accumulate on the seafloor. Typical contaminants include industrial chemicals, pesticides and herbicides, petroleum residues, metals, and anti-fouling paint residues. Many of these are persistent and not easily degraded in the marine environment. Management and cleanup of contaminated sediments represent significant issues for ports and harbors throughout the U.S.

There are multiple sources of contaminants to San Diego Bay in the region of the SY, including past SY activities, stormdrain discharges, non-point (watershed) inputs from Chollas Creek, surface water runoff from the roadway between the SY properties, fill material added to the shoreline, and accidental releases from ships (Exponent 2001). These inputs are discussed below in the Conceptual Site Model section.

The CAO names NASSCO and BAE, as well as the Navy and other entities, as responsible parties based on the contention that they "have each caused or permitted the discharge of waste to the SY resulting in the accumulation of waste in the marine sediment." In particular, the RWQCB identified the Navy as a potentially responsible party based on their conclusion that:

> *"…the U.S. Navy has caused or permitted the discharge of waste to Chollas Creek and San Diego Bay in a manner causing the creation of pollution or nuisance conditions, that has contributed to both the levels of pollutants and the pollution and nuisance conditions found at the Shipyard Sediment Site through the pollutant transport pathways …"*

Figure 1. Location and boundaries of the Shipyard Sediment Site (SY); the red line indicates the site boundary; Chollas Creek Channel is immediately north of U.S. Naval Station.

The three main pollutant transport pathways from Navy sources to the SY, identified in the CAO, are:

> ***Pathway 1***: Releases directly to the site from Navy activities associated with historical operations at the 28th Street Shore Boat Landing Station;
>
> ***Pathway 2***: Releases of stormwater into Chollas Creek from the Navy owned and operated municipal separate storm sewer system, with subsequent transport to and dispersion in San Diego Bay, including the SY; and
>
> ***Pathway 3***: Releases directly from operations within NBSD into San Diego Bay, with subsequent transport and dispersion to other parts of the Bay, including the SY.

The contributions from these sources and pathways to the existing and historical contaminant loading at the SY have not been determined empirically; instead the CAO justifies the existence and importance of these pathways based on the following:

- The types of pollutants present at elevated concentrations in the SY (selected metals, petroleum hydrocarbons, and synthetic organic compounds) can also be present in current or historical discharges from Navy operations;
- Navy activities that could generate and/or discharge contaminants have occurred in proximity to the SY;
- Past Navy discharges have violated waste discharge requirements; and
- Historical information/documentation was insufficient to demonstrate that Navy activities did not contribute contaminants directly or indirectly to the Site.

While it is likely that past and present Navy operations have discharged contaminants to San Diego Bay, the information needed to accurately characterize the composition and magnitude (*i.e.*, mass) of Navy contributions to the SY, as well as concurrent inputs from all other potential sources, is limited. Further, there are a number of significant technical issues related to distinguishing the inputs from multiple local and regional sources:

- Historical discharge records for all possible sources are incomplete or nonexistent;
- There are multiple potential input sources with similar chemical characteristics (*i.e.*, input sources do not have unique chemical markers, with the possible exception of organotin (TBT) as a marker of SY inputs as discussed below);
- Input histories, as recorded by sediment core geochronologies, may have been disturbed by dredging, prop wash, etc.

Nevertheless, because of the potential magnitude of the cleanup required to respond to the CAO, the Navy presents in this document an independent assessment of these contaminant pathways to determine whether they are tenable and, if so, the possible magnitude of the source. To accomplish this goal, the Navy carefully compiled and reviewed historical information and evaluated multiple lines of evidence using standard, scientifically-accepted tools to develop an estimate of the Navy's potential contribution (apportionment) to contaminant loads in the SY sediments.

CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) for the CAO area of interest, shown schematically in Figure 2, is included to provide a context for understanding the three proposed contaminant transport pathways described in the CAO. The main areas included in the CSM are represented by the SY (yellow), Chollas Creek (green) and NBSD (light blue). Loadings to the general region of the SY include upland sources (purple arrows), stormwater discharges (light blue arrows), creek discharges (yellow arrows), and local waterside activities and other inputs from shallows to the south (gray arrows).

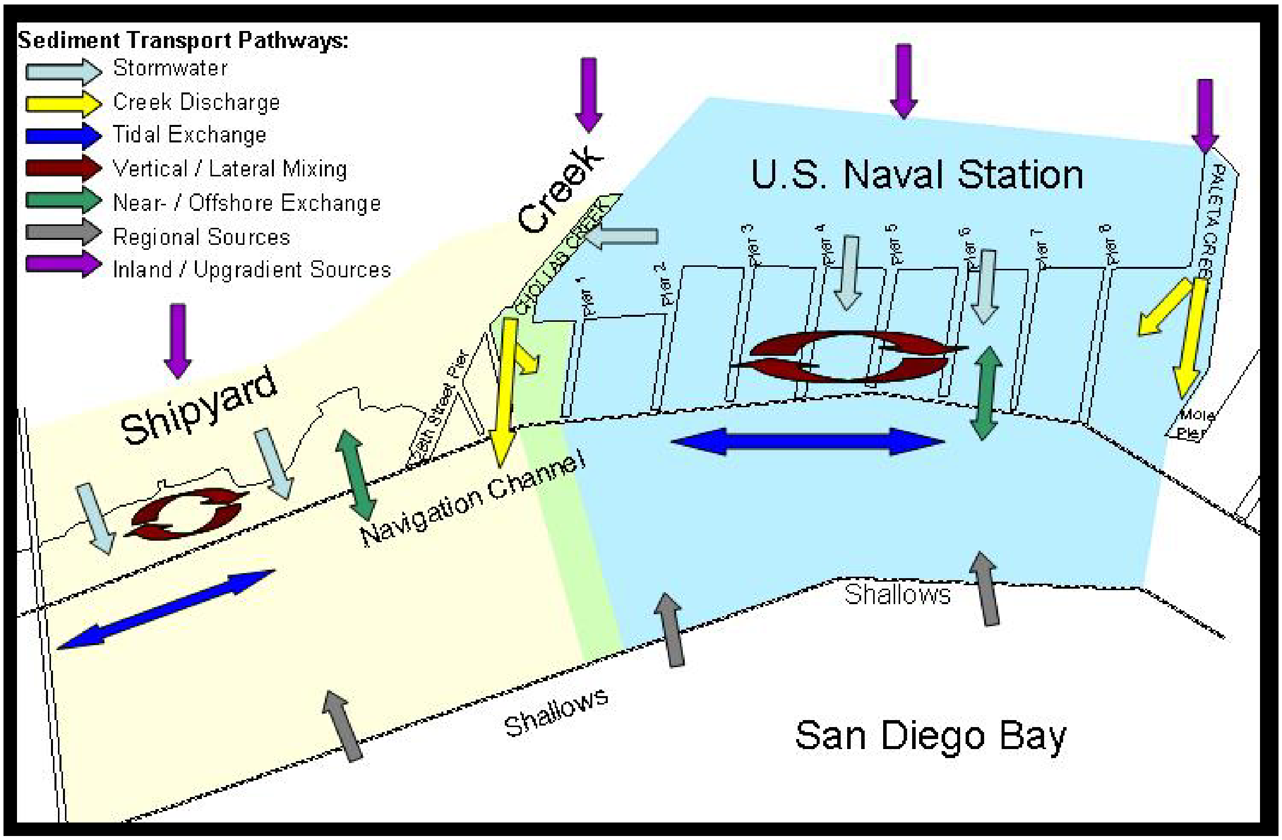

Figure 2. Conceptual site model for the CAO area of interest.

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The primary contaminants of concern (CoCs) addressed by the CAO have strong affinities for particles. Consequently, the fate of CoCs released into San Diego Bay is largely regulated by processes affecting the transport and eventual deposition of particles in the bottom sediments. Particles that settle to the bottom are subject to resuspension by natural processes, such as wave or current induced turbulence, or from human activities such as dredging and propeller scour; the processes affecting resuspension and settling of particles are indicated in the CSM by the red arrows. Once in suspension, particles may be transported by tidal currents to other areas of the Bay, including the navigation channel (green, downward arrows), before settling back to the bay

floor. In this manner, particles with chemical contaminants may accumulate in areas that are removed from their input source (indicated by the green upward arrows). As discussed below for the various pathway analyses, the resulting spatial gradients in contaminant concentrations provide important information for understanding inputs and dispersion that are a fundamental basis for apportionment.

The following sections evaluate the processes and address the potential magnitude of the Navy's contribution to the SY by each of the three pathways identified in the CAO.

POTENTIAL SOURCE PATHWAY 1: DIRECT HISTORICAL RELEASE FROM 28TH STREET LANDING AREA

The CAO Source Pathway 1 is based on historical contaminant loadings from the Navy's operation of a boat landing facility on the 28th Street Mole Pier into San Diego Bay. The precise location of this Naval Landing Station (NLS) within the overall CAO area of interest, as well as a breakdown of individual structures making up the facility, is shown in an aerial photograph from 1956 in Figure 3. The CAO assumes that the Navy performed small boat maintenance operations at this site and, therefore, discharges to the Bay would have been similar to those associated with the commercial shipbuilding operations in the immediate vicinity of the same Mole Pier. Consequently, the maximum potential magnitude of contaminant inputs from this Navy source was estimated by assuming that the quantity of contaminants was proportional to the size of the facility and duration of operation in comparison to the size and duration of the adjacent commercial shipbuilding operations. However, as discussed below, this assumption is based on tenuous and circumstantial evidence. The CAO also uses contaminant concentration data from sediment cores collected as part of the extensive Shipyard Study (Exponent 2001) near the 28th Street Pier to support the claim that Navy operations contributed to contaminant loading at the SY. This argument is also tenuous for reasons discussed below.

A detailed CSM for Source Pathway 1 focusing on potential contaminant inputs and pathways in the immediate vicinity of the 28th Street Mole Pier is provided in Figure 4. This model emphasizes the relative magnitude of inputs from the Navy's boat landing facility compared to inputs from other, concurrent shipbuilding and commercial operations on or adjacent to the pier. This relationship, both spatially and temporally, is the basis for the apportionment calculation discussed below. However, it is recognized that the SY was also subject to inputs from other local point and non-point sources, including stormdrain discharges and releases from wastewater holding ponds.

DESCRIPTION OF HISTORICAL NAVY OPERATIONS AT THE 28TH STREET LANDING STATION

The Navy operated the 28th Street Shore Boat NLS from 1938 to 1956. The facility covered an area of approximately 1 acre at the south end of the 28th Street Mole Pier in the present NASSCO leasehold (Figure 3). Based on initial information obtained by the RWQCB from the Navy (U.S. Navy 2004), the CAO concluded that in addition to the landing station, the Navy also operated a facility that functioned as a small boatyard and, therefore, likely used and discharged cleaning solvents, abrasives, and other chemicals for paint removal, metal plating, surface finishing and painting. Based on interpretations of old maps and photos, the Navy initially concluded that the boatyard activities were associated with maintaining ship launches (U.S. Navy 2004). This interpretation was conveyed to the RWQCB.

However, information compiled recently by the Navy (Tetra Tech 2008), and summarized below, indicates that the Navy's 28th Street facility consisted solely of a storage room, waiting room, and finger pier at the south end of the main 28th Street Mole Pier that were used by the Navy to support ship launches ferrying sailors to and from Navy ships moored in San Diego Bay. These structures are shown in the ca 1949 Sanborn Insurance Map (Figure 5). This map also indicates that the maintenance buildings located partly on a wooden wharf extending along the north face of the 28th Street Mole Pier, including the "Naval Store" at the base of the pier, were operated by the Lynch Ship Building Co. and were not part of the NLS.

Figure 3. Aerial photograph from 1956 showing the location of the Navy operated 28th Street Shore Boat Landing Station.

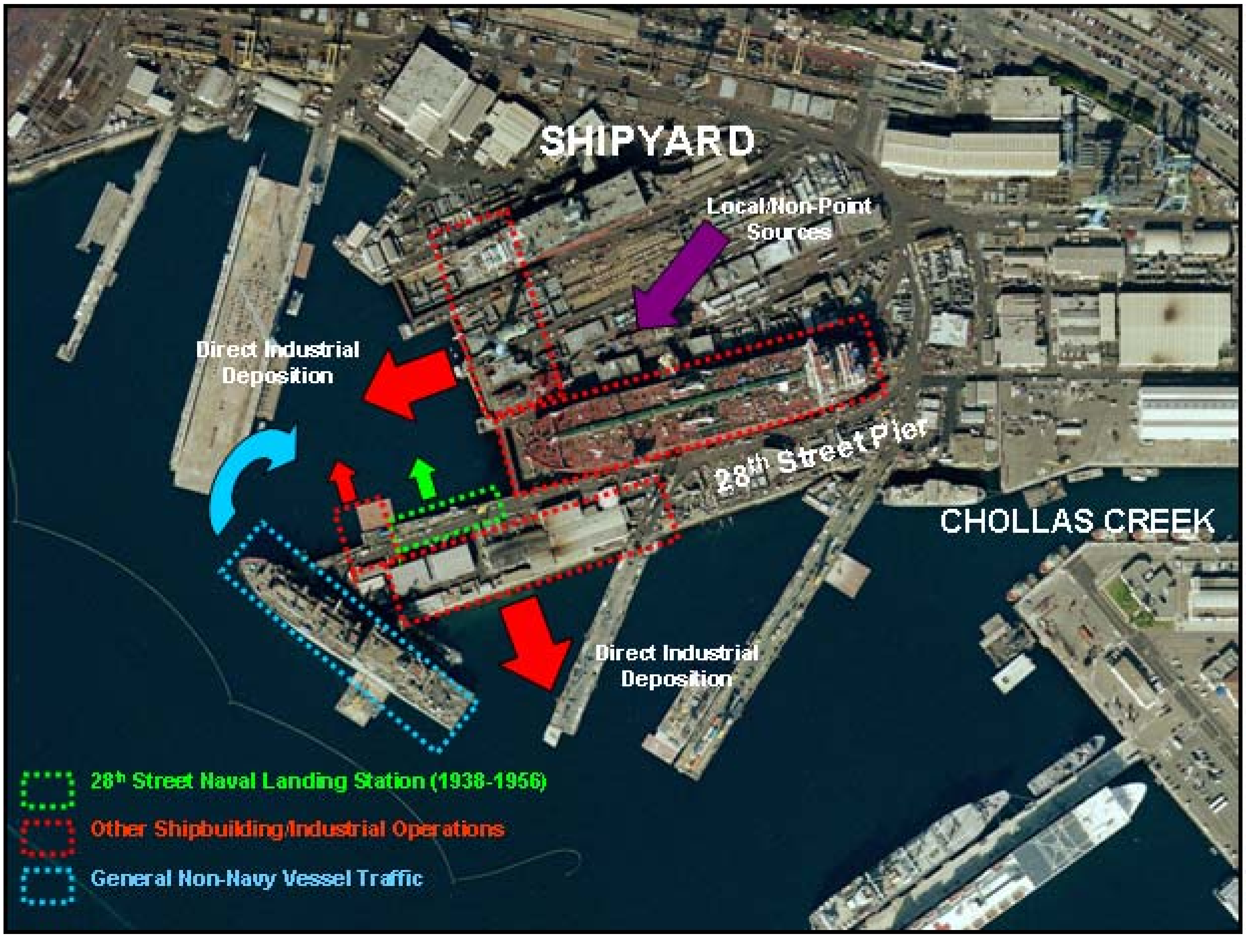


Figure 4. Conceptual site model of contaminant input and fate for potential source Pathway 1 at the Shipyard area.

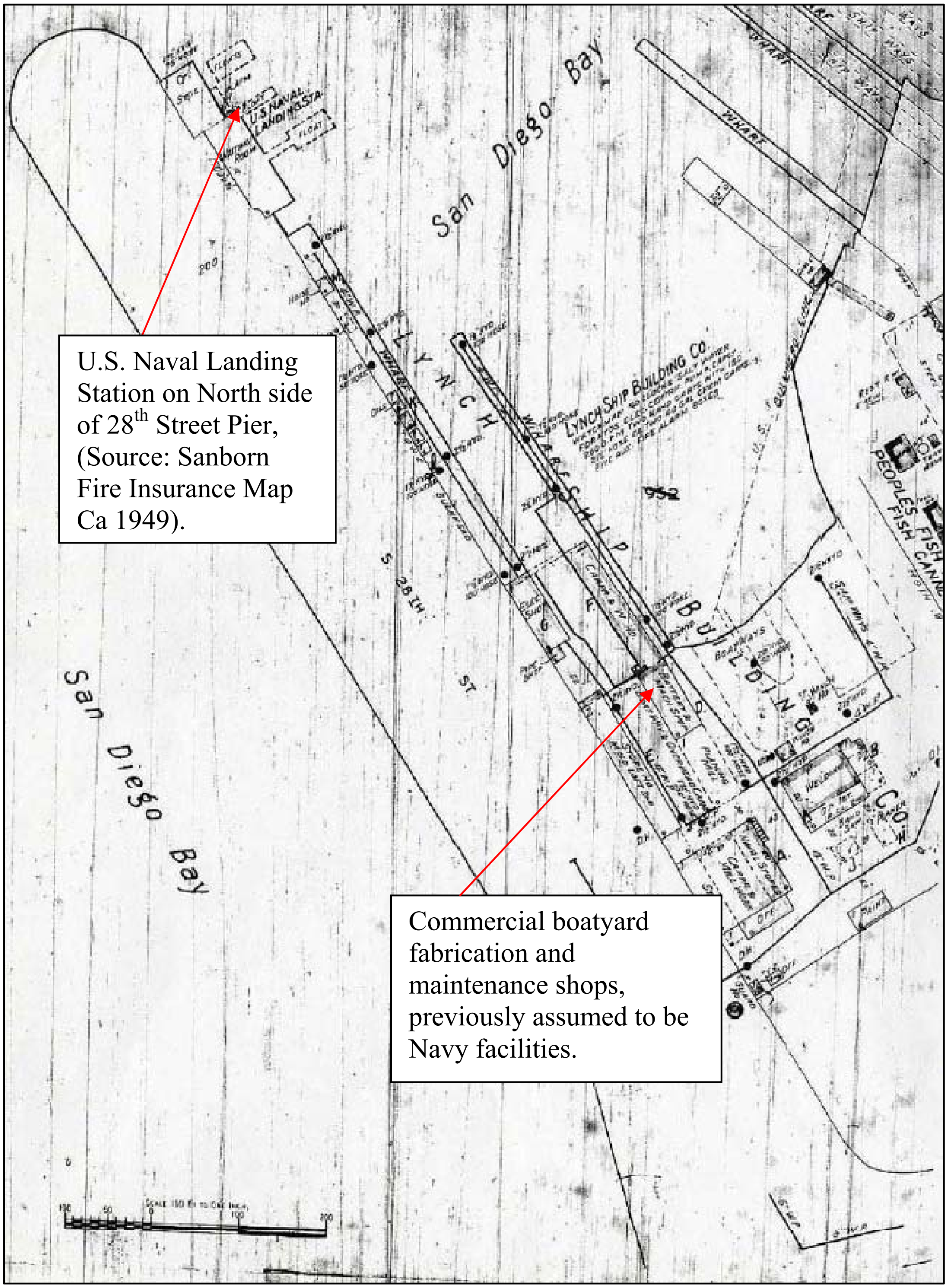


Figure 5. Location of the Naval Landing Station relative to the commercial boatyard maintenance and fabrication facilities operated by Lynch Ship Building Company (Ca 1949 modified from Figure 3-48 in Tetra Tech 2008).

The 1946 County of San Diego Fire Insurance map from the Navy Technical Report of 2004 denotes “Navy building” at the southern end of 28th Street. However, aerial photos from 1952 through 1956 do not show a building at the mapped location of this “Navy building” or any indication that there was ever a structure erected in the area. Thus, the information based on maps and photos is circumstantial, and there is no proof of ownership. Nevertheless, on balance, the information indicates that these buildings were not Navy maintenance facilities, and there is no evidence that the Navy operated a maintenance facility at or near this location.

While some industrial facilities existed at or near the base of the pier, they were operated by the Lynch Shipbuilding Company and National Marine Terminal Incorporated. The commercial shipbuilding structures for these companies included a shipbuilding and maintenance facility located partly on a wooden wharf extending along the north face of the 28th Street Mole Pier and partly on the shore north of the base of the pier. The record of the Lynch Shipbuilding Company occupying the area is extensive:

- A 1940 oblique aerial photograph shows both the Navy's 28th Street facility at the end of the pier and a Lynch Shipbuilding Company structure at the foot of the pier (Figure 3-23 of Tetra Tech 2008).
- In 1942, the Lynch Shipbuilding Company was operating on the north face of the 28th Street Mole Pier and had constructed and delivered six Navy coastal transports in 1942 and six Navy rescue tugs.
- In 1943, the Lynch Shipbuilding Company appears on a Map of Destroyer Base (Figure 3-33 in Tetra Tech 2008) at the 28th Street Mole Pier location. In 1946, the Lynch Shipbuilding Company occupied 630 feet of the pier along the north side of the 28th Street Mole Pier according to a 1946 U.S. Army Corps table (Figure 3-46 of Tetra Tech 2008).
- A 1949 Sanborn Insurance Map (Figure 5) shows the Lynch Shipbuilding Company occupying the location described in the 1946 U.S. Army Corps table, while a 1956 Sanborn Insurance Map (Figure 3-60 of Tetra Tech 2008) denotes National Marine Terminal Shipbuilding in the same location.
- A 1956 U.S. Army Corps table (Figure 3-63 of Tetra Tech 2008) lists National Marine Terminal Incorporated as the occupant, with industrial operations that included machine, woodworking, pattern, electric, and welding shops, a foundry, and a mold loft.

Furthermore, aerial photos from 1940, 1941, 1945, 1949, 1951, and 1953 (reference aerials) show that most of the 28th Street Mole Pier was used for parking, and the only structures present were the NLS and the shipbuilding structures along the north face of the pier. A 1956 U.S. Army Corps aerial photograph shows that the Navy finger pier and floating docks at 28th Street Mole Pier had been removed. These records support the conclusion that industrial activities along the Mole Pier were related only to the commercial shipbuilding activities of Lynch Shipbuilding Company, and later National Marine Terminal Incorporated.

CAO Assertion

There are no historical discharge records for the time period in which the Navy operated the 28th Street NLS to support or refute the nature of any contamination that might have been discharged and deposited at the SY (U.S. Navy 2004 and Tetra Tech 2008). The CAO Technical Support Document (RWQCB 2008) noted that sediment cores collected during the shipyard investigation (Exponent 2001) at two locations near the historical NLS site contained elevated contaminant concentrations within strata that could have been deposited at the time the NLS was operational. The CAO also states that the types of contaminants in the sediments "are associated with the characteristics of the waste the U.S. Navy operations generated at the 28th Street Shore Boat Landing Station site."

Navy Technical Assessment and Conclusion

As mentioned previously, the available information indicates that the Navy did not operate a boat maintenance facility at this location. Furthermore, the sediment core data do not support the CAO pathway for two reasons. First, the core layers which the RWQCB (2008) concluded were deposited at the time the NLS was operational, and contain elevated levels of contaminants of concern, also contain TBT which is a synthetic compound that was not used until after the NLS was closed. Therefore, core strata containing measurable TBT can not be considered representative of possible NLS inputs. Second, the contaminant profiles in the sediment cores collected near the old NLS facility indicate that the magnitude of the historical inputs is minor in comparison with the magnitude of recent inputs (*i.e.*, since the NLS was closed).

The vertical distributions of contaminants in undisturbed cores can provide a temporal history or geochronology of contaminant loadings. For example, contaminants in deeper, buried sediments reflect depositional events that occurred historically, whereas surface (*i.e.*, 0-2 cm) concentrations are expected to reflect recent loadings. The historical trends are important for apportionment assessments because Navy activities in the SY occurred over a discrete period of time (1938-1956). If the Navy operations at the NLS represented a significant source for contaminant loadings, then concentrations in the deeper portions of the cores, which were deposited at the time the NLS was active, would be noticeably elevated. Alternatively, increased contaminant concentrations in sediments deposited after 1956, and outside of the NLS operational period, must have been from non-Navy sources.

There are few direct measurements of sediment deposition rates in San Diego Bay. Peng *et al*. (2003) used radiometric methods (Pb-210) to measure a sedimentation rate of about 1 cm/yr, and Chadwick *et al*. 2006 reported deposition rates of approximately 1.3 cm/yr based on both radioisotope data and sediment trap collections in the vicinity of Paleta Creek. The RWQCB (2008) estimated a sediment deposition rate at the SY of 2 cm/yr based on the appearance of measurable TBT in the 2-4 ft depth interval of sediment cores.

TBT is a synthetic compound that was developed for anti-fouling coatings on boat hulls in the late 1960s, and not commonly used until the late 1970s and early 1980s. The only significant use of TBT by the Navy was on the hulls of two test vessels from about 1984-1990. Because the NLS was closed in 1956, approximately 20 years before TBT appeared in the environment, sediment core strata that contain measurable quantities of TBT can not be considered representative of inputs from the NLS.

The sediment core data collected during the shipyard investigation (Exponent 2001) show that TBT levels throughout the SY are substantially higher in the more-recently deposited (shallower depth intervals) sediments than in the deep, historically-deposited sediments. In general, TBT concentrations in the >6 ft strata are very low, whereas there is a noticeable increase in TBT concentrations between the > 6 ft interval and the 4-6 ft interval which likely corresponds to the timing of initial TBT use in the shipyard, no more than 40 years ago. Therefore, contaminants deposited in the SY at the time the NLS was operational are likely reflected in the >6 ft sediment strata.

An evaluation of the vertical contaminant profile for Station NA17, which is the sampling station closest to the historical location of the NLS, supports the conclusion that the NLS was not a significant local source of contamination. The Station NA17 core data are provided in Figure 6A. These data show that concentrations of copper, mercury, TBT, total PAHs, and total PCBs are highest approximately 1 ft below the sediment surface and decrease with depth, reaching levels that approximate Bay background at core depths less than 5 ft. These profiles indicate that the contaminant loadings were much higher during recent periods compared with historical loadings.

These measured contaminant profiles are the mirror image of patterns that would be expected if the historical loadings, including inputs from the NLS, were significant. For example, significant loadings from NLS operations would have resulted in high CoC concentrations within the deepest core strata. A hypothetical vertical contaminant profile showing such a pattern is provided in Figure 6B. This plot was generated by assuming the same depth-integrated concentration for each CoC over the entire depth of the core as in Figure 6A, but rearranging the existing data to have the greatest concentrations appear at depth. The fact that the actual vertical profile for the Station NA17 core does not follow this hypothetical trend indicates that the most substantial contaminant loadings in the vicinity of the historical NLS location occurred after the Navy had ceased operations there.

APPORTIONMENT CALCULATION FOR THE 28TH STREET NAVAL LANDING STATION

In the absence of quantitative input data, contaminant loading from the Navy's leasehold at the 28th Street Mole Pier was calculated assuming that loadings were proportional to the relative size of the facility and the time period of the operation compared with the BAE (Southwest Marine) and NASSCO operations. This approach is an extremely conservative evaluation because it assumes that the types of contaminants associated with Navy shuttle operations were comparable to those associated with industrial (shipbuilding) operations and the amounts were proportional to the size (acreage) of the facility. Additionally, this approach ignores potential contributions from other (non-shipyard) sources.

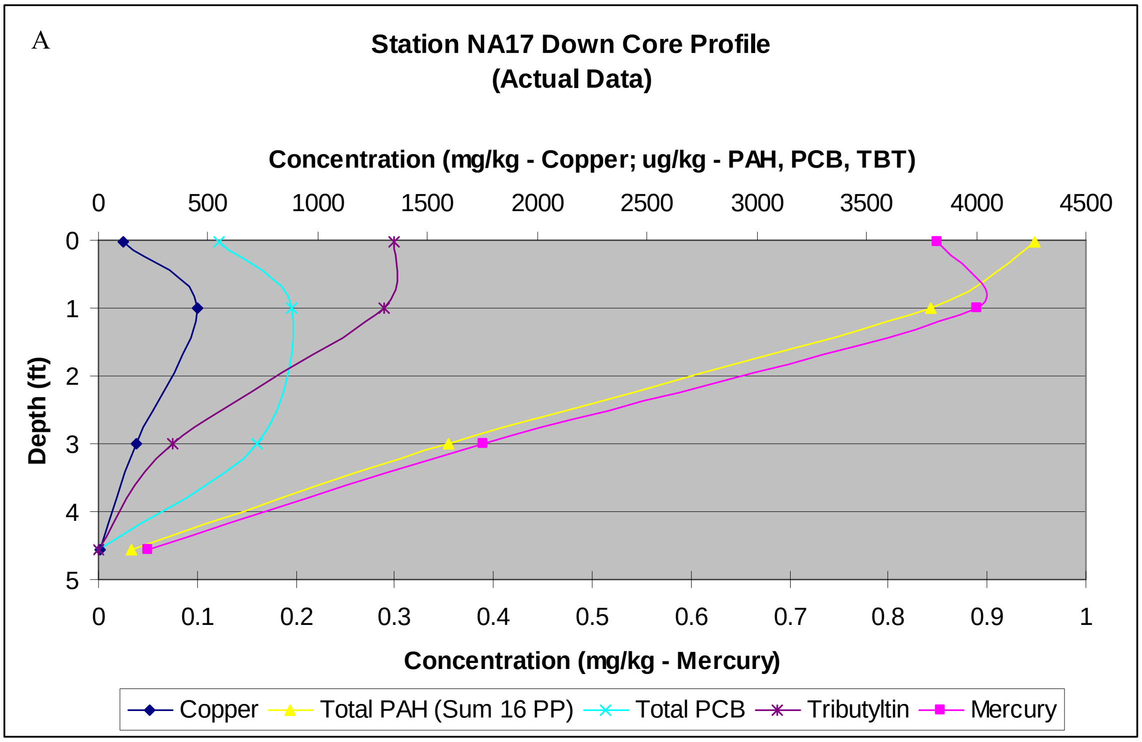
Realistically, discharges or releases to the Bay from shuttle boat operations occurring at the NLS likely consisted of infrequent, small fuel leaks or spills, flaking of rust and paint chips from vessel hulls, or trash disposal, which could have contributed petroleum hydrocarbons and metals (copper, lead, and zinc), although at much lower loadings than those associated with ship building and maintenance operations. It is also unlikely that Navy shuttle boats would be a source for PCBs to the Bay. Even though PCBs had been manufactured since 1927 and banned in 1979, there are few, if any, components of small craft that were likely to contain PCBs and, therefore, do not represent a potential input source to the Bay (CACI 2004). Nor are they a possible source of TBT which came into use 20 years after the NLS ceased operations.

The Navy's maximum potential contaminant contributions via Pathway 1 were calculated by multiplying the area (acres) and time (years) of operation for both the NLS and the boat/ship maintenance and construction operations that occurred at the site. For example, the Navy facility covered an area of 1 acre and was operated for 18 years, resulting in an 18 acre-year contribution. The two shipyard properties had contributions of 2,162 and 5,680 acre-years, respectively. Thus, the Navy's maximum possible contribution to contaminant loading at the SY is estimated as 18/(2,162+5,680+18) or ~0.2%. The results are compiled in Table 1 below.

Given the small area of use, limited level of activity, limited period of operation, absence of contamination at depth in the nearest core profile, co-association of contaminants with TBT, and unlikely utilization or release of several of these contaminants with known operations, the potential release to the CAO site from this source is likely to be much smaller than 0.2% and is considered to be negligible for all practical purposes.

Table 1. Potential contributions from Navy operations via Pathway 1 based on size and duration of site operations**.**

Facility	Start of Site Operations	End of Site Operations	Years Operational	Acres	Acre-Years	Percentage of Total
BAE	1914	2008	94	23	2162	27
NASSCO	1937	2008	71	80	5680	72
Navy	1938	1956	18	1.0	18	0.2



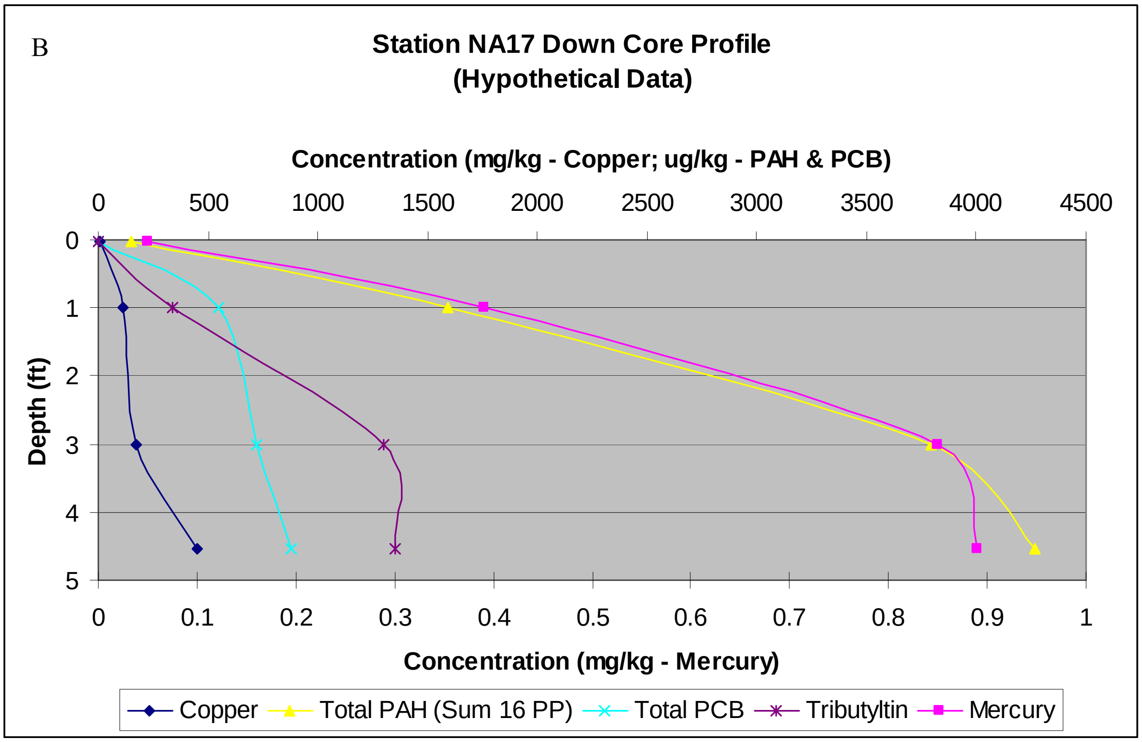


Figure 6. (A) Actual sediment core contaminant profiles for Station NA17; (B) Expected core profiles at NA17 if the 28th Street Naval Landing Station represented a primary source of contamination.

POTENTIAL SOURCE PATHWAY 2: RELEASE TO CHOLLAS CREEK WITH SUBSEQUENT TRANSPORT TO SHIPYARD CAO SITE

CAO Source Pathway 2 involves contaminant inputs from Navy storm drain discharges into Chollas Creek that are eventually deposited within the SY. Conceptually, this pathway involves a two part process: (1) stormwater is discharged from Navy-operated storm drains to Chollas Creek, and (2) Creek flows empty into San Diego Bay and suspended particles with contaminants are subsequently dispersed by currents to the SY footprint where a portion of the contaminant load settles and accumulates in bottom sediments. The CAO claims that the stormwater discharges from these outfalls have "… caused or permitted the discharge of pollutants commonly found in urban runoff to Chollas Creek and San Diego Bay, including excessive concentrations of copper, lead, and zinc in violation of waste discharge requirements."

It can also be demonstrated, as discussed below, using a combination of historical stormwater and creek discharge data, numerical modeling of creek discharges and outflow dispersions, and chemical fingerprinting that the potential magnitude from the Navy stormwater discharges into Chollas Creek to contaminant loading at the SY is negligible.

A detailed CSM for Source Pathway 2 focusing on input sources and fate pathways in the Chollas Creek area is provided in Figure 7. The primary contaminant pathways in this region are stormwater discharges to the creek and subsequent creek discharges to the bay. Secondary inputs include leaching from historic non-Navy vessel traffic as well as direct deposition from other shipbuilding and industrial operations at the 28th Street Mole Pier.

Figure 7. Conceptual site model of contaminant input and fate for potential source Pathway 2 at the Chollas Creek mouth area.

LOADING FROM THE NAVY'S STORM DRAIN SYSTEM

The historical record of discharges from the Navy-operated storm drains into Chollas Creek is incomplete. However, monitoring data collected from these storm drains in 2001, simultaneously with the City's and Department of Pesticide Regulation's mass loading stations upstream on the creek (Katz *et al*. 2001), indicated that the outfalls contribute only a small fraction of the overall watershed loading for the target CAO contaminants of concern. Indeed, the Navy contributions to the Chollas Creek watershed loadings are less than 8% for all of the CoCs. As shown in Figure 8, from the 2001 data, the Navy stormdrain discharges contribute less than 1% to the total loads for mercury and total PCBs, less than 5% to the total PAHs, and less than 8% to the copper and zinc loadings. TBT has not been monitored, but there are no known significant sources to stormwater runoff. By comparison, the RWQCB's (2008) Technical Support document for the CAO states that the Navy's stormwater discharges contributes 5% of the copper, 2% of the lead, and 4% of the zinc annual loadings associated with the Chollas Creek discharges to the Bay.

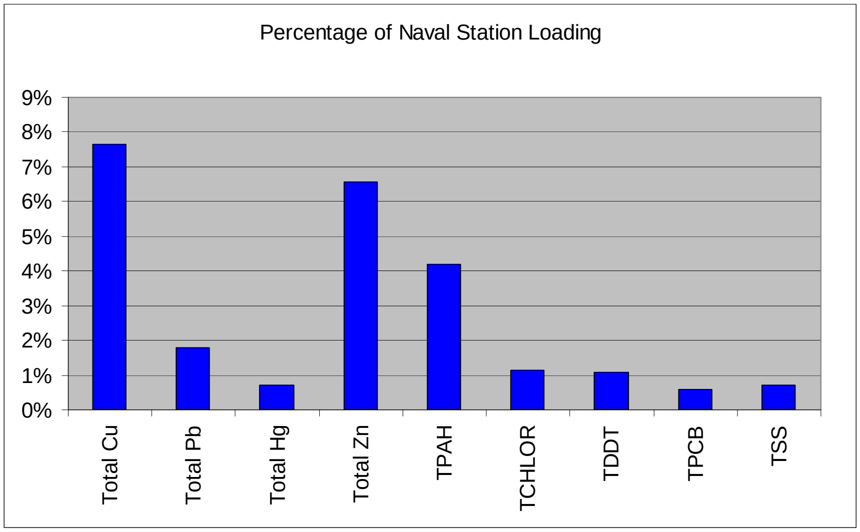


Figure 8. Relative contribution (percentage) of Navy stormwater discharges to the contaminant mass loading from Chollas Creek (Katz *et al*. 2001).

TRANSPORT

As mentioned, Source Pathway 2 requires a transport process capable of carrying contaminants discharged from the Navy outfalls into Chollas Creek and then to the SY. A number of studies and numerical modeling efforts have been conducted to characterize the hydrodynamic mixing processes and sediment deposition patterns near the mouth of Chollas Creek. Most of these efforts have focused on creek discharges following storm events.

The Navy and SCCWRP conducted a joint watershed mass loading and hydrodynamic fate modeling project for the RWQCB Mouth of Chollas Creek TMDL assessment (Chadwick *et al*. 2007 and Schiff *et al*. 2007). These studies show that a large portion of the solids loading from the creek discharge is deposited within the creek mouth area (described below). The material exiting the creek mouth consists primarily of finer grained (small diameter), clay-sized particles that are transported out into the main stem of the Bay where they are broadly dispersed by currents (Schiff *et al*. 2007).

These discharge patterns are consistent with the results obtained by storm water studies conducted by the Navy and SCCWRP in 2001 and 2000, respectively (Katz *et al*. 2001 and Schiff *et al*. 2001). Both studies show that while low salinity storm water can extend well past the Chollas Creek Channel, a large portion (roughly 90%) of the particles remained close to shore and within the pier heads near the mouth of the Creek (Figures 9 and 10).

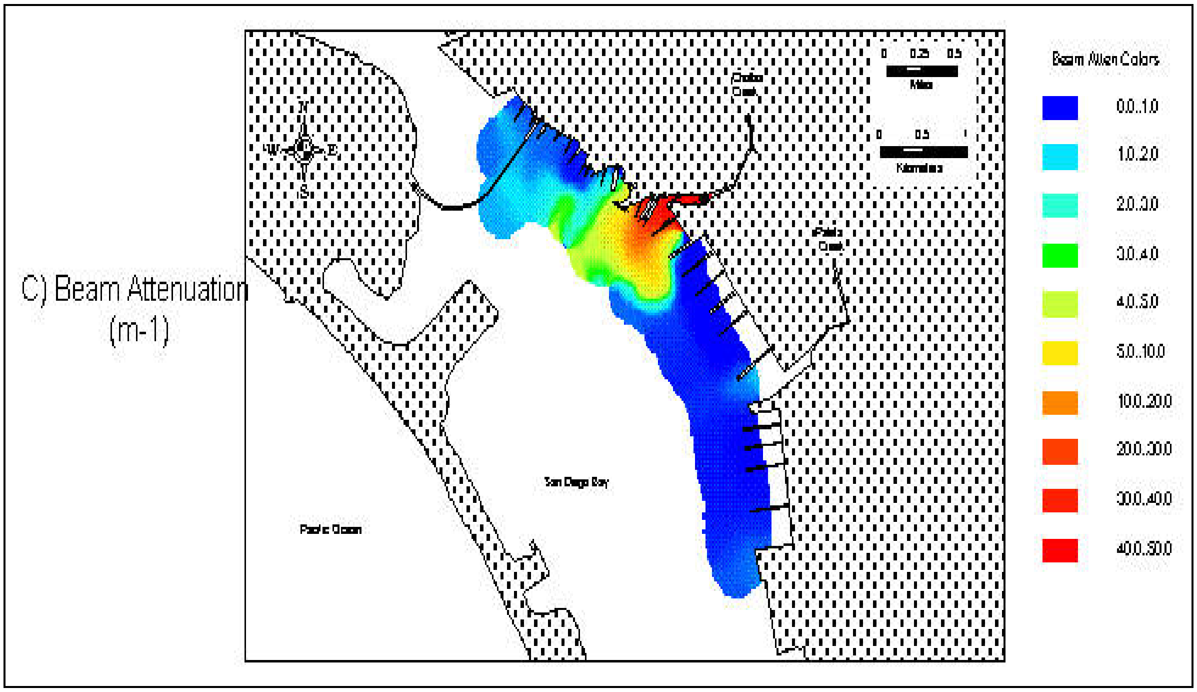


Figure 9. Spreading of stormwater-derived particles from Chollas Creek (based on relative beam attenuation data) following a storm event in 2000 (Katz *et al*. 2001).

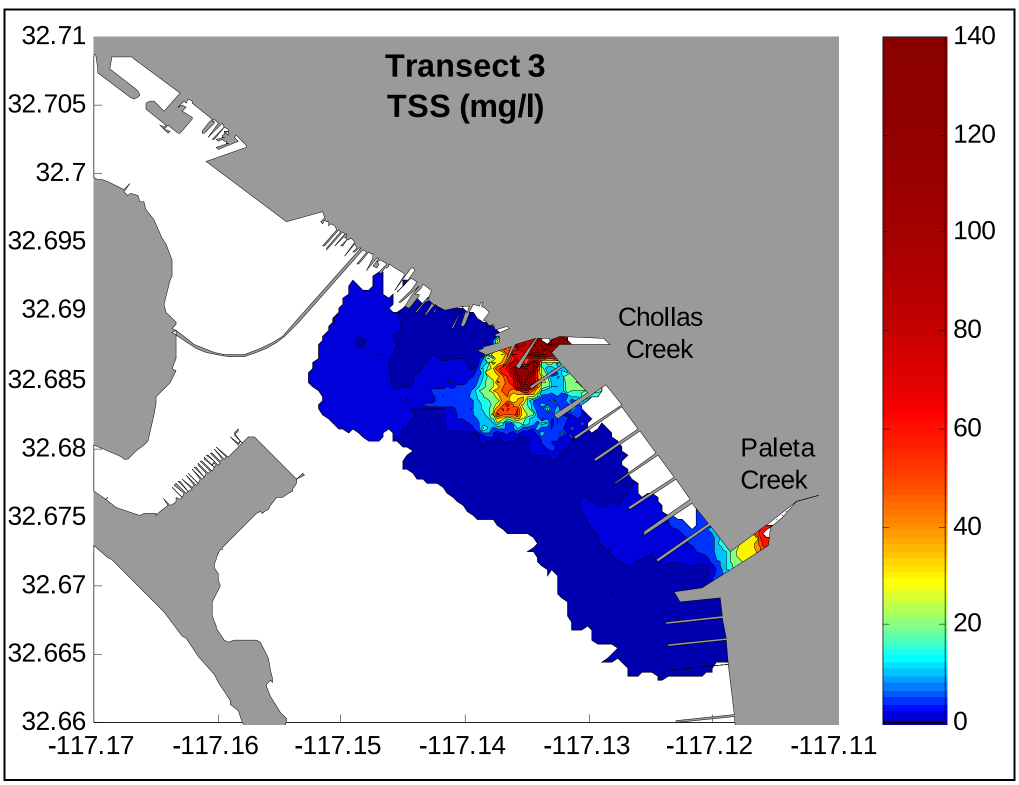


Figure 10. Dispersion of suspended particles (total suspended solids) from Chollas Creek discharges following a storm event (Katz *et al*. 2001).

Trapping efficiency describes the amount of sediment and particulate contaminants that are retained near the mouth of the creek and shoreward end of Chollas Channel relative to particles that are exported to the Bay. As mentioned, the trapping efficiency of particles varies as a function of particle size, where larger particles are selectively retained and smaller particles are kept in suspension and transported into the Bay. The trapping efficiency of different grain size components following two representative storm events are listed in Table 2. Based on numerical modeling results, the average trapping efficiencies at the Chollas Creek mouth were approximately 43 to 75% and 99% for silt and sand fractions, respectively, and about 0.2% for the clay fraction.

Sensitivity analysis indicated considerable variability in trapping efficiencies based on differences in stormwater flows that are related to storm magnitude and duration. Regardless, the modeling results showed that on average about 54% of the total particle loadings were exported to the Bay (~46% trapping efficiency) from Chollas Creek. Most of the material discharged to the Bay consists of clay-sized particles. This is important to transport analysis because smaller particles contain proportionally higher contaminant loads. Therefore, contaminant loading from the creek to the SY is affected by dispersion and fate of the smaller suspended particles.

The modeled distribution footprints for different particle size classes, and for total particle loads, from Chollas Creek are shown in Figure 11. Based on these results, 1% or less of the total particle loading from Chollas Creek is predicted to settle within the SY (Table 2), and this portion is predominantly in the triangular region to the south of 28th Street Pier. Consequently, if the Navy stormwater discharges represent between less than 1% and 8% of the mass loadings of individual contaminants from the creek, and less than 1% of the particle loadings from the creek are deposited within the SY footprint, then the estimated Navy contribution to contaminant loadings to the SY via this pathway would be less than 0.08%, assuming that contaminants are distributed equally among the different particle sizes.

Table 2. Model-predicted particle trapping efficiencies for Chollas Creek discharges following two storm events.

	Storm Event	Units	Chollas Creek			
			Clay	Silt	Sand	Total
Total Loading	2/28/2006	(kg)	32,970	46,158	30,772	109,900
	3/11/2006	(kg)	9,095	13,759	466	23,320
Trapped in Mouth	2/28/2006	(kg)	66	19,848	30,464	50,378
		(%)	0.2%	43%	99%	46%
	3/11/2006	(kg)	18	10,319	462	10,799
		(%)	0.2%	75%	99%	46%
Deposited in Shipyard Site	2/28/2006	(kg)	66	1,015	0	1,081
		(%)	0.2%	2.2%	0%	1%
	3/11/2006	(kg)	27	138	0	164
		(%)	0.3%	1.0%	0%	0.7%

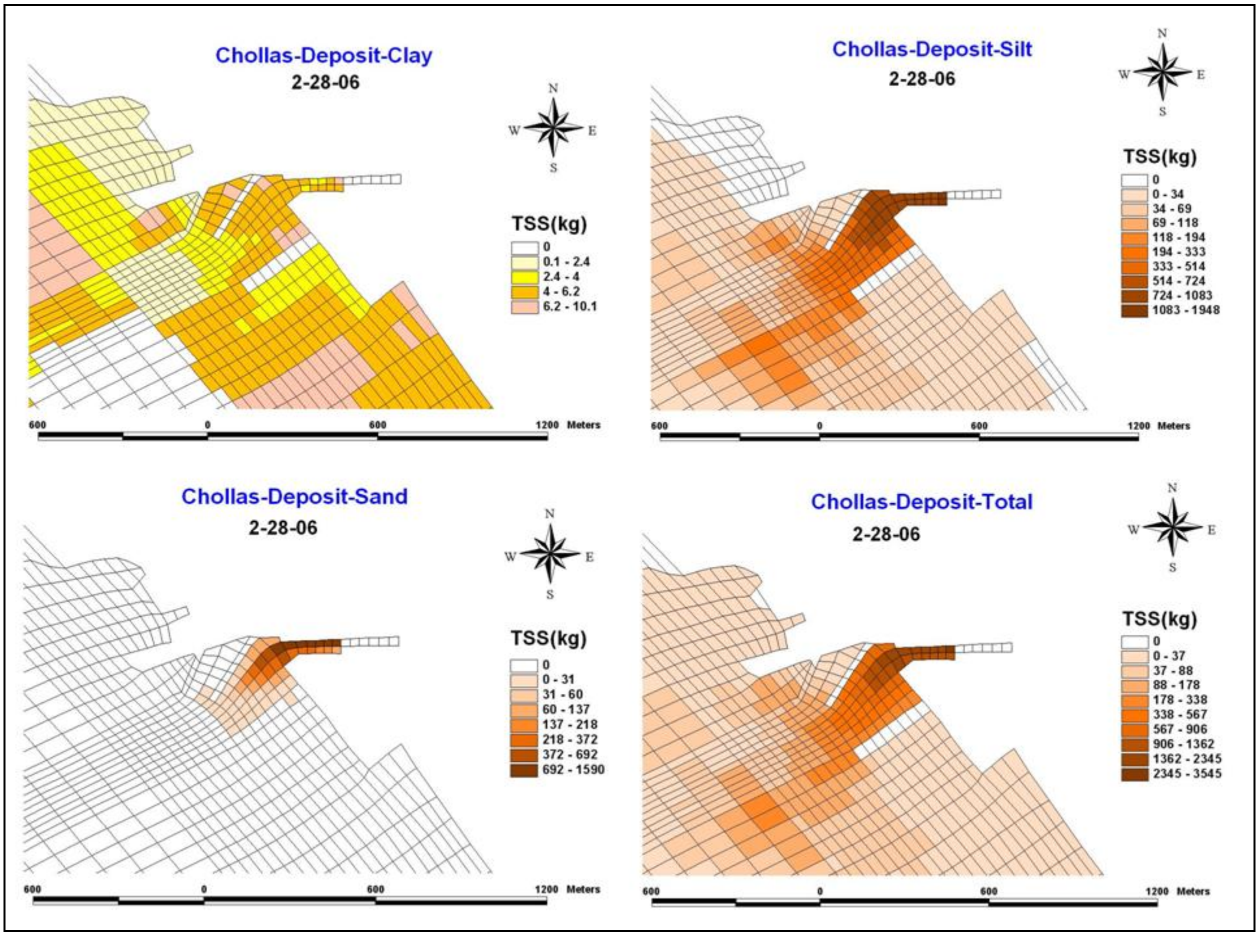


Figure 11. Model-predicted distribution footprint for particles discharged from Chollas Creek following the February 28, 2006 storm event.

SPATIAL GRADIENTS

The importance of contaminant inputs from Chollas Creek discharges relative to inputs from other sources can also be illustrated by spatial gradients in contaminant concentrations in bottom sediments. In general, spatial trends in sediment contaminant concentrations are primarily controlled by the source concentration and the depositional nature of the environment. Concentrations typically decline with distance from the source due to dilution, although localized changes in depositional conditions, such as quiescent conditions caused by reduced circulation (*e.g.*, between piers), promote settlement of the "fine" (silt/clay) particles which carry a proportionally higher contaminant mass, resulting in localized regions of elevated sediment contaminants. Conversely, bottom sediments comprising coarser grained particles, such as sands, typically have proportionally lower contaminant concentrations. Within the Chollas Creek Channel, sediment contaminant gradients generally decrease with distance away from the mouth (spatial gradients are discussed in greater detail under Pathway 3). This spatial pattern does not support the assertion that contamination from the Creek is impacting sediments at the SY.

Another way to evaluate the importance of creek discharges to SY contaminant loadings is to compare the chemical signatures of bottom sediments along the presumed "transport pathway." Figure 12 compares the ratios of two metals (cadmium and zinc) for the creek mouth sediments (SCCWRP 2005) to those in the SY sediments (Exponent 2001). If the Chollas Creek sediments represented a quantitatively important component of the SY sediments, one would expect that all data points would fall along a single trendline. However, this figure clearly shows two distinct trendlines. The trendline associated with the Chollas Creek sediments reflects the higher cadmium concentrations relative to zinc concentrations, which likely reflects the dominant stormwater loading source for cadmium. The trendline associated with the SY sediments reflects the higher zinc loadings associated with SY inputs. The distinctly different trendlines for the creek mouth sediments (and their initial upstream creek source) and SY sediments are consistent with the small creek loadings to the SY, as predicted by the dispersion model, and indicate that contributions from the Chollas Creek discharges, including the Navy stormwater discharges to the Creek, are not a significant source of contaminants to the SY.

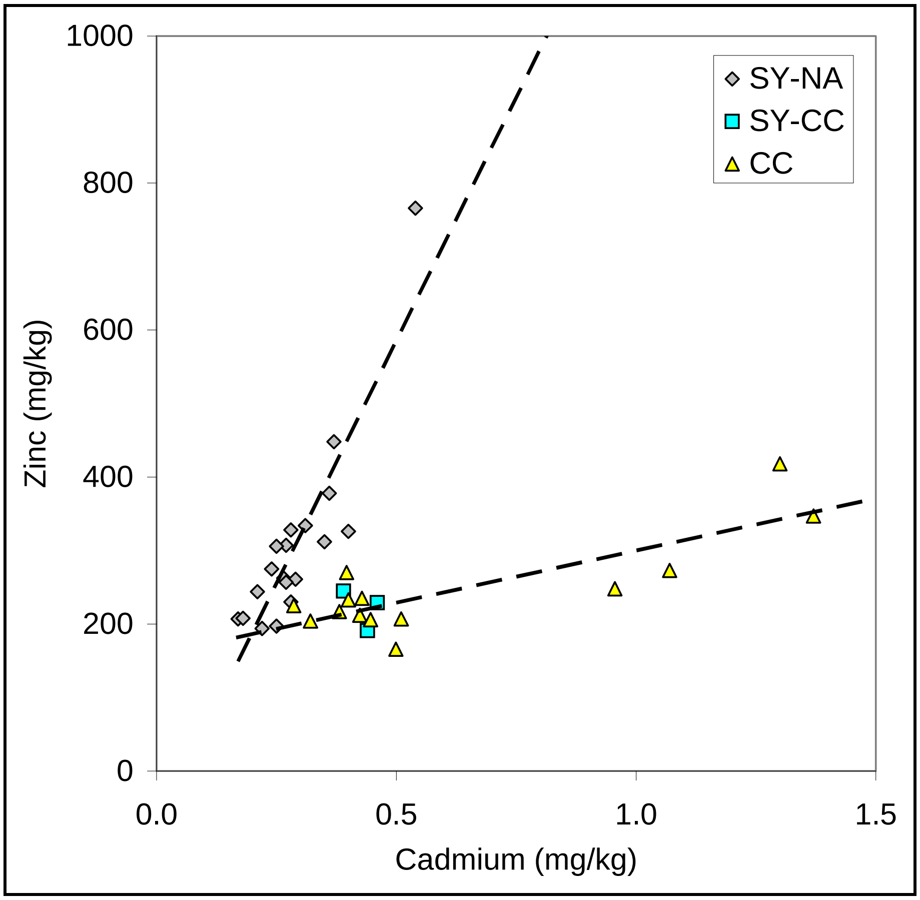


Figure 12. Example of the differences in the metal signatures (cadmium and zinc) in sediments from Chollas Creek Mouth, SY, and Reference sites (derived from data in Exponent 2001 and SCCWRP 2005).

The CAO Tech Report (RWQCB 2008) also identifies "leaching from U.S. Navy ship hull antifouling paint and cathodic protection systems [as] continuous sources of copper and zinc to San Diego Bay waters at the mouth of Chollas Creek." In fact, leaching rates of zinc from anodes were found to be about half the leaching rates of copper from hull paint (Boxall 2000). Similar to most other discharges originating on Navy/Armed Forces vessels, leachates from hull paints are regulated by the Uniform National Discharge Standards (UNDS) as an amendment of the Clean Water Act developed jointly with the U.S. Environmental Protection Agency (EPA). The purpose of the UNDS program is to provide a comprehensive system for regulating discharges incidental to the normal operation of an Armed Forces vessel.

Copper and zinc are primarily solubilized from the hull paints and anodes. Release rates for copper from antifouling hull paints are typically higher for pleasure craft (averaging 8.2 $\mu g/cm^2/day$) than for Navy vessels (3.8 $\mu g/cm^2/day$), likely due to the greater frequency of hull cleaning and re-painting on pleasure craft (Valkirs 2003). These release rates, determined using an on-the-hull dome system, are believed to be far more environmentally realistic than standard laboratory release rates. However, the specific release rates also depend on a number of factors, including the composition and age of the paint, presence of an established biofilm on the vessel hull that serves to moderate the release of copper, and water temperature (Valkirs 2003; Zirino and Seligman 2002). Nevertheless, information needed to calculate a total mass loading of copper and zinc from Navy vessels in the Chollas Creek Channel is not available.

In the dissolved state (*i.e.*, not attached to suspended particles), metals are subject to dispersion by currents to other areas of the Bay. Ionic copper, identified as the most toxic and bioavailable fraction, rapidly forms organic and inorganic complexes, thus becoming less available and less toxic to sensitive single cell and larval planktonic organisms and over time partitioning to the sediments. Eventually, all metals partition onto particulates and then settle and accumulate in bottom sediments. Recent studies (Deheyn and Latz 2006) determined that the concentrations of metals associated with suspended particulates are similar throughout the Bay, whereas sediment metal concentrations typically increase from the mouth to the back of the Bay. The spatial pattern in the sediment metal concentrations are attributable to circulation patterns and the longer residence time of waters in the back of the Bay, which contributes to a higher deposition rate for particulate metals (Chadwick *et al*. 2004).

The average copper concentration in the Chollas Creek sediments is nearly one-third of that of the SY (121 vs 322 mg/kg) and the average zinc concentration in the Chollas Creek sediments is nearly half the mean zinc concentration for the SY (247 vs 437 mg/kg). These differences in copper and zinc concentrations suggest that leachate from Navy vessels in the Chollas Creek region is not a significant source for copper and zinc in the SY sediments. Thus, overall for Pathway 2, given the small contribution of Navy sources to the Chollas Creek, the small fraction of the discharged particles that deposit to the SY area, lack of spatial gradient from the Creek toward the site, and clear differences in chemical signature, the potential release to the CAO site from this source is likely to be smaller than 0.08% and is considered to be negligible for all practical purposes.

POTENTIAL SOURCE PATHWAY 3: RELEASE FROM NAVAL BASE WITH SUBSEQUENT RESUSPENSION BY SHIPS AND TRANSPORT BY TIDE

The CAO Source Pathway 3 involves contaminant inputs from Navy operations at NBSD via storm drain or other discharges directly to the Bay with subsequent dispersion and transport into the SY footprint. Similar to Pathway 2, this pathway involves a two part process: (1) discharges or releases into the Bay within NBSD; and (2) resuspension and transport of sediment-associated contaminants to the SY. The Navy evaluated this pathway by assessing results from stormwater discharge studies; spatial patterns in sediment contaminant concentrations; sediment contaminant signatures as an indicator of source contributions; and co-occurrence of contamination with known shipyard-specific releases of TBT.

A detailed CSM for Source Pathway 3 focusing on potential contaminant inputs and fate in the NBSD area is provided in Figure 13. This model shows that the NBSD region is primarily influenced by surface runoff from the Navy base as well as discharges from Paleta Creek, adjacent stormdrains and other non-point sources. Secondary inputs also include ship hull leachates from historic Navy and commercial vessel traffic. The areas adjacent to the piers are subject to both vertical and lateral mixing caused by propeller scouring from Navy vessels, commercial vessels and tugboats.

Figure 13. Conceptual site model of contaminant input and fate for potential source Pathway 3 at the Naval Base San Diego area.

STORMWATER LOADING

The Navy conducted extensive studies of the behavior and fate of stormwater discharges within NBSD (Katz *et al*. 2006). These studies involved real-time mapping of low salinity plumes (as a surrogate for stormwater plumes) before, during, and after storm events. Representative results of this plume mapping are shown in Figure 14. The patterns demonstrate that the stormwater plumes from NBSD are limited spatially to areas along the immediate shoreline and inside the pier heads. This contrasts with plumes from the creek discharges which disperse into the main axis of the Bay.

Because sediments are a repository, or sink, for contaminants, it is reasonable to expect that contaminant inputs to the Bay from stormwater discharges at NBSD would be reflected in the spatial patterns in sediment contaminant concentrations relative to the discharge points (*e.g.*, stormwater outfalls). Further, if disturbances such as resuspension due to prop wash, with subsequent transport, were a significant source of contaminants to areas outside of the NBSD property (*e.g*., the SY) as required for Pathway 3, it would be reasonable to expect gradients of decreasing CoC concentrations from NBSD to the SY.

However, spatial patterns of sediment CoCs (Figures 15 through 18; TBT, PCBs, copper, and mercury, respectively) do not show evidence of localized inputs from NBSD or gradients of decreasing concentrations leading from NBSD to the SY. In particular, the spatial pattern for TBT in bay sediments (Figure 15) shows highly elevated concentrations within the SY, with gradients of decreasing concentrations in the direction of the NBSD. This gradient is the inverse of the pattern expected if NBSD was a source of TBT to the SY. Spatial patterns for copper concentrations exhibit small, localized hot spots near the SY properties, as well as slightly elevated concentrations (143 to 328 mg/kg) throughout larger portions of the NBSD. Patterns for sediment PCB and mercury concentrations also show elevated levels within the northern portion of the SY, with concentrations decreasing with distance from the SY shoreline. The exception to this pattern is associated with elevated concentrations of PCBs (>600 µg/kg) and mercury (>1.5 mg/kg) in the nearshore area between Piers 2 and 3 at NBSD (see Figures 16 and 18, respectively). Nevertheless, none of the CoCs exhibit concentration gradients which support migration of contaminants from NBSD to the SY via Pathway 3.

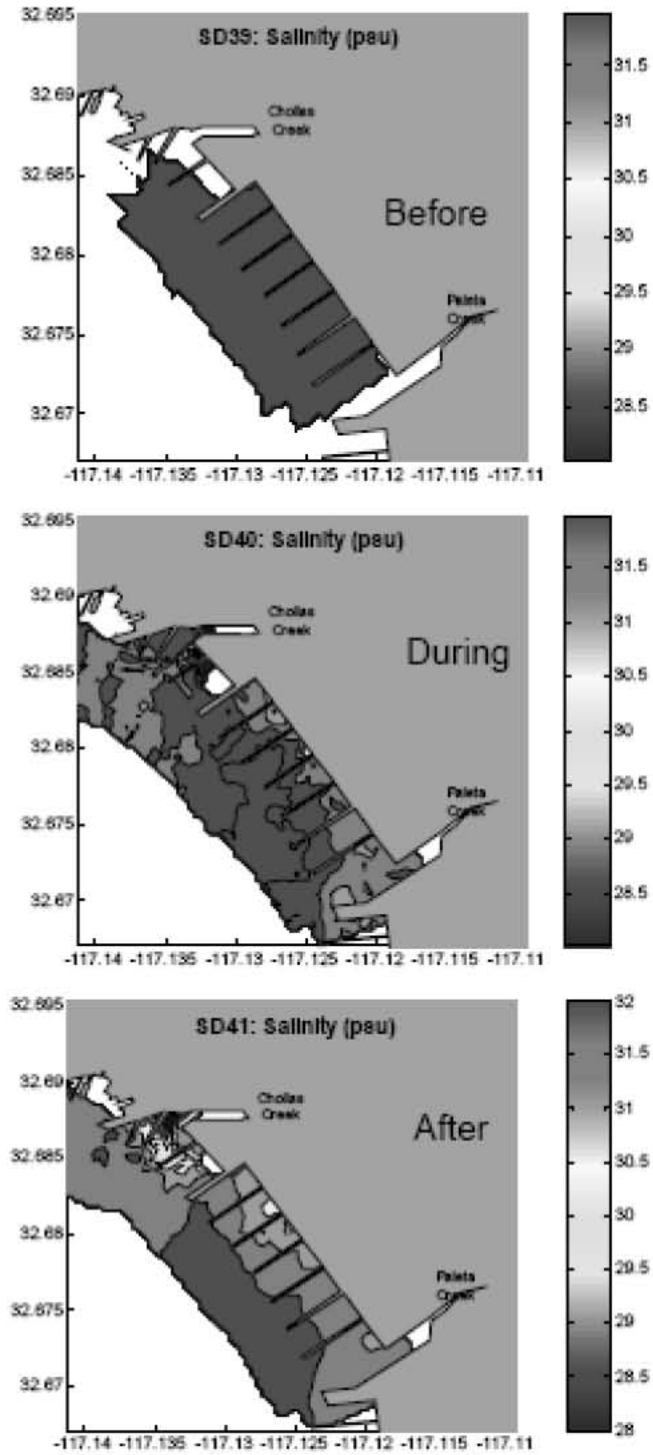


Figure 14. Stormwater plume (salinity) mapping results at Naval Base San Diego; lower salinity water is associated with stormwater runoff and creek discharges; the "after" plot shows influence of additional rainfall.

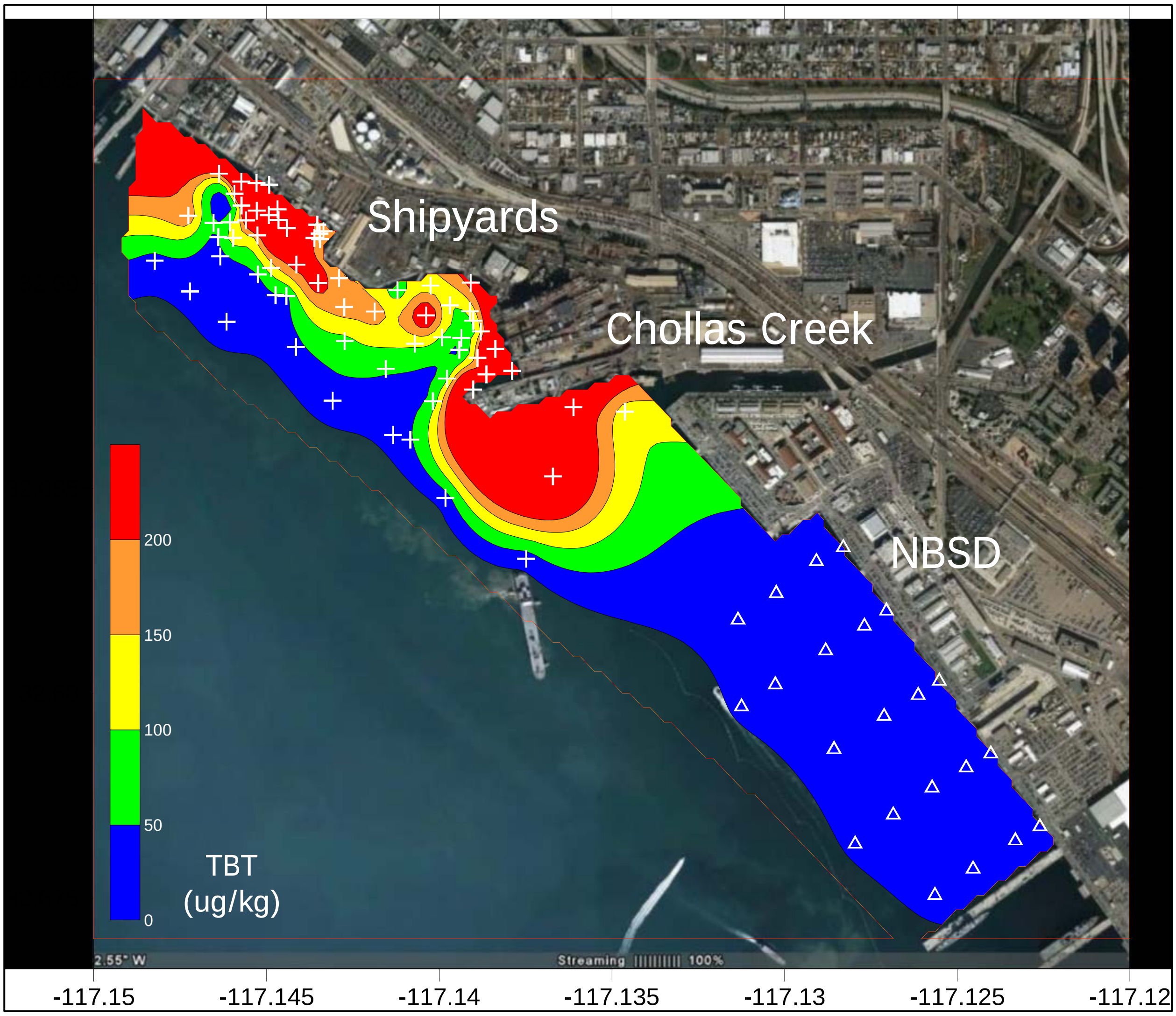


Figure 15. Spatial gradients in sediment TBT concentrations.

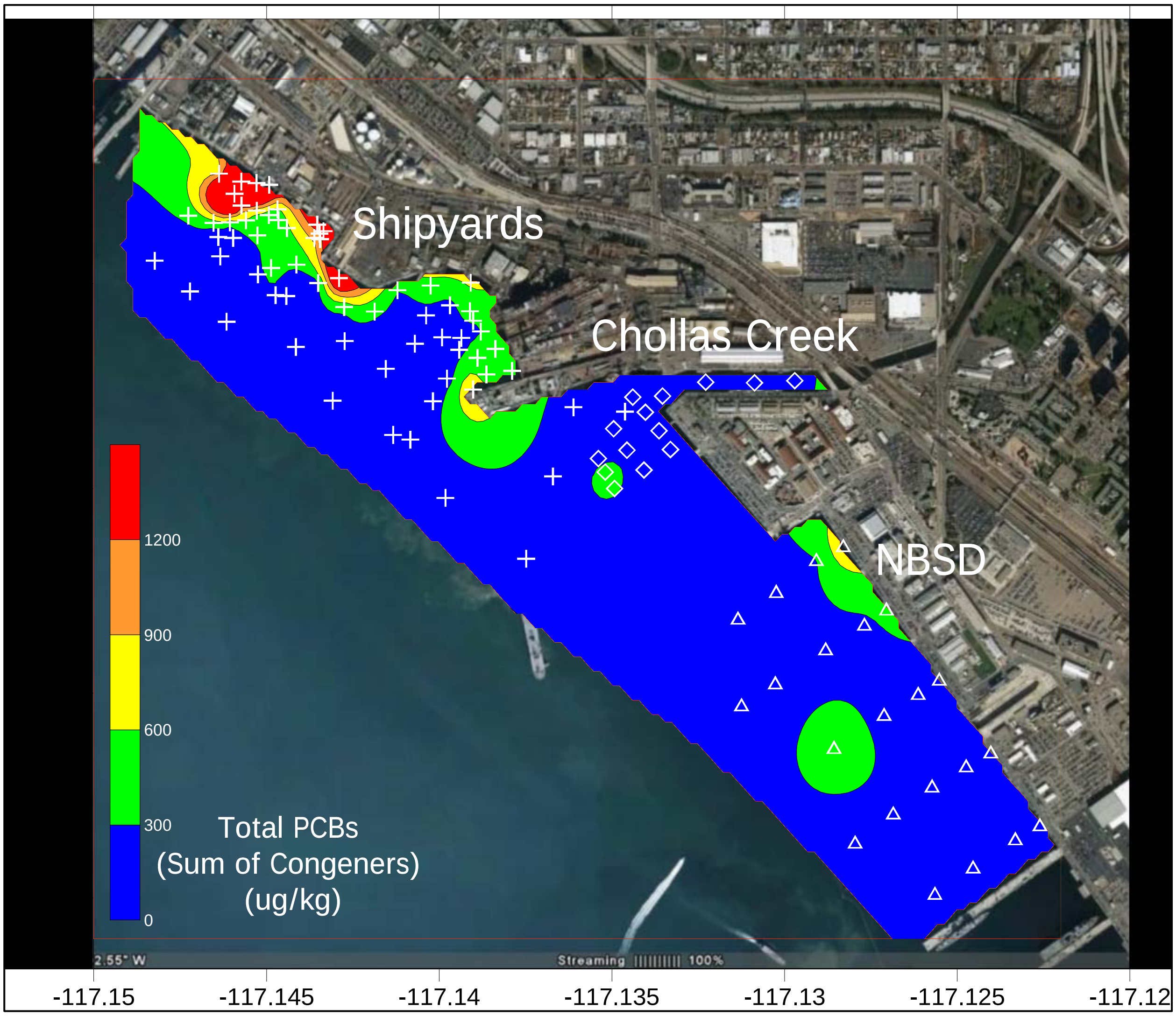


Figure 16. Spatial gradients in sediment PCB concentrations.

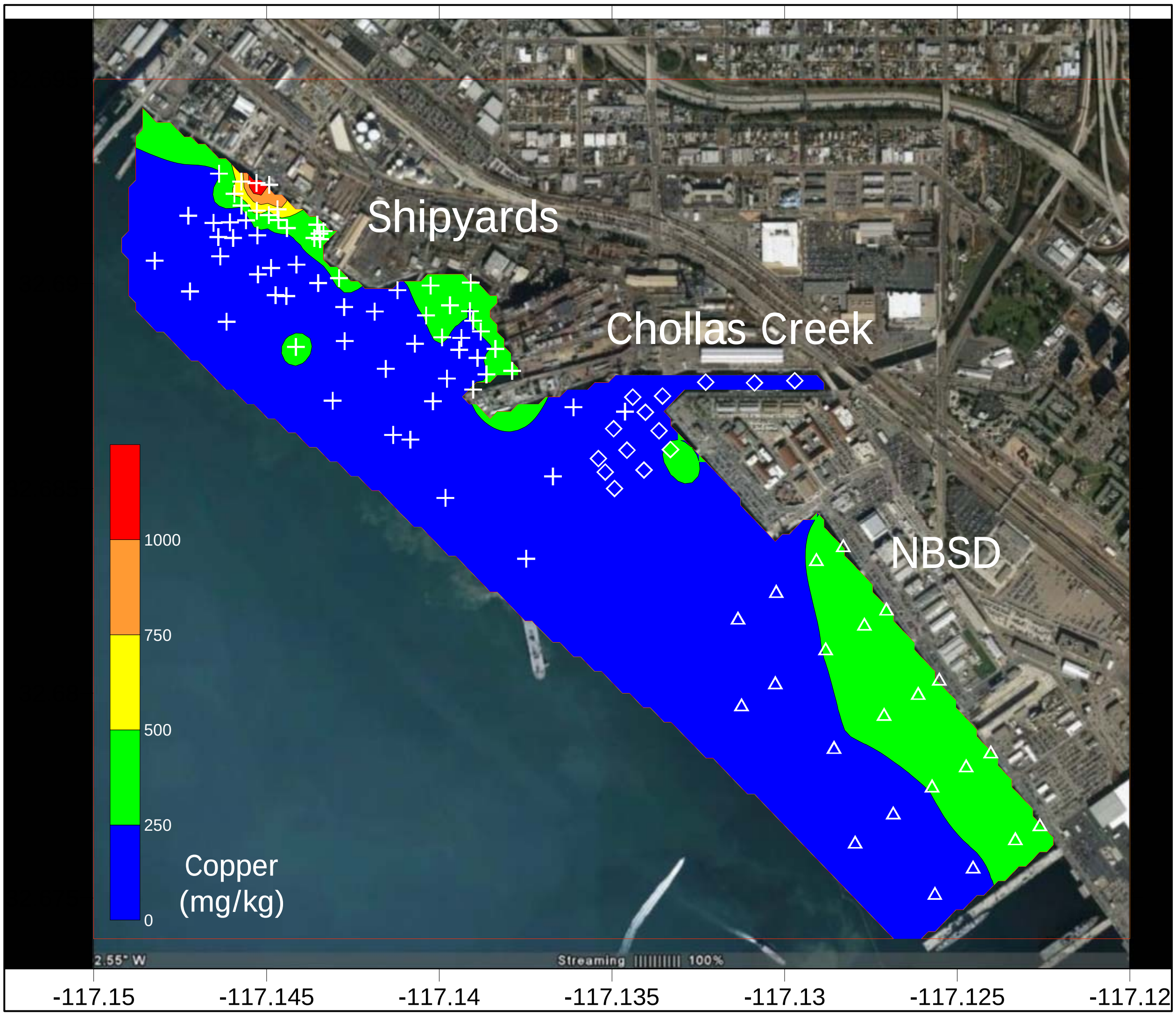


Figure 17. Spatial gradients in sediment copper concentrations.

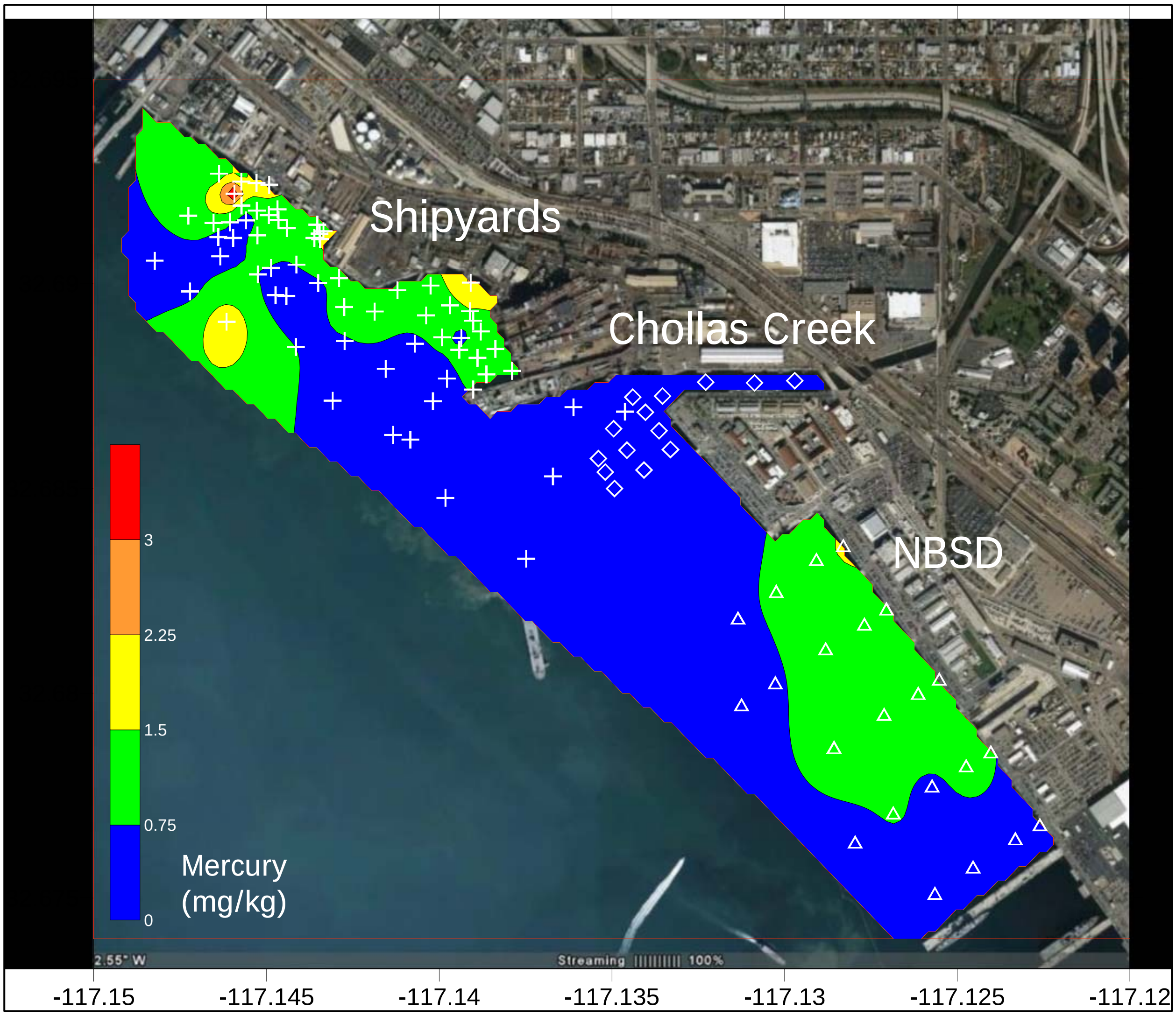


Figure 18. Spatial gradients in sediment mercury concentrations.

The relative differences in the magnitude of CoC concentrations between the SY and NBSD are also illustrated in Figure 19, which depict the distributions of TBT, PCBs, copper, mercury, and PAH concentrations. The plots of TBT indicate that concentrations in SY sediment are at least an order of magnitude higher than those at NBSD, and the NBSD concentrations are most similar to reference area concentrations. The spatial patterns for copper and mercury are generally similar, although concentrations for NBSD sediments are comparable to those at the SY. However, because the concentrations do not exhibit a continuous gradient, similar to that of TBT, it can be concluded that neither Chollas Creek nor NBSD are significant sources of these contaminants to SY sediments.

To demonstrate that these patterns are not the result of variability in sediment grain size, the data for each location were normalized to the fines content of the sediment and re-plotted in Figure 20. This normalization step was taken to separate concentration trends due to loading from trends related to depositional patterns. The trends in the normalized data remain similar in that the SY generally has the highest contaminant concentrations, and the channel region has uniformly lower concentrations than the SY (Figures 20A-E). The spatial patterns suggest that deposition from Chollas Creek may contribute PAHs to adjacent SY channel and NBSD regions (Figure 20E), though not preferentially to either area. Conversely, local elevation of non-normalized copper concentrations, seen in Figure 19C, is not observed in the normalized concentrations shown in Figure 20C, indicating that depositional characteristics, not source loading is mainly responsible for the observed trends in copper. Thus, the spatial trends in the normalized contaminant concentrations again support the conclusion that nearby regional sources are unlikely contributors of contaminants to SY sediments.

A spatial gradient analysis of sediment contaminants for the SY is shown in Figure 21A. Along the SY transect shown in Figure 22, concentrations decline from inshore to offshore, indicating that chemicals are originating from inshore areas. Note that the offshore end of the transect taken at the leaseholder boundary exhibits concentrations returning back to reference area levels. Gradients for PCB, copper, mercury, and TBT concentrations in NBSD sediments (Figure 21C) decrease steadily with distance from shore, diluting down to reference area concentrations at the channel end of the gradient. The linear rates of decline apparent from the slopes of the lines indicate that dilution forces apply equally for all chemicals. Additionally, the fines content of the sediment is relatively constant across the gradient, suggesting that settlement is occurring uniformly over the area. Because contaminant concentrations offshore of both the NBSD and the SY are the same, the results demonstrate that the NBSD is not a net source to the SY, or vice versa.

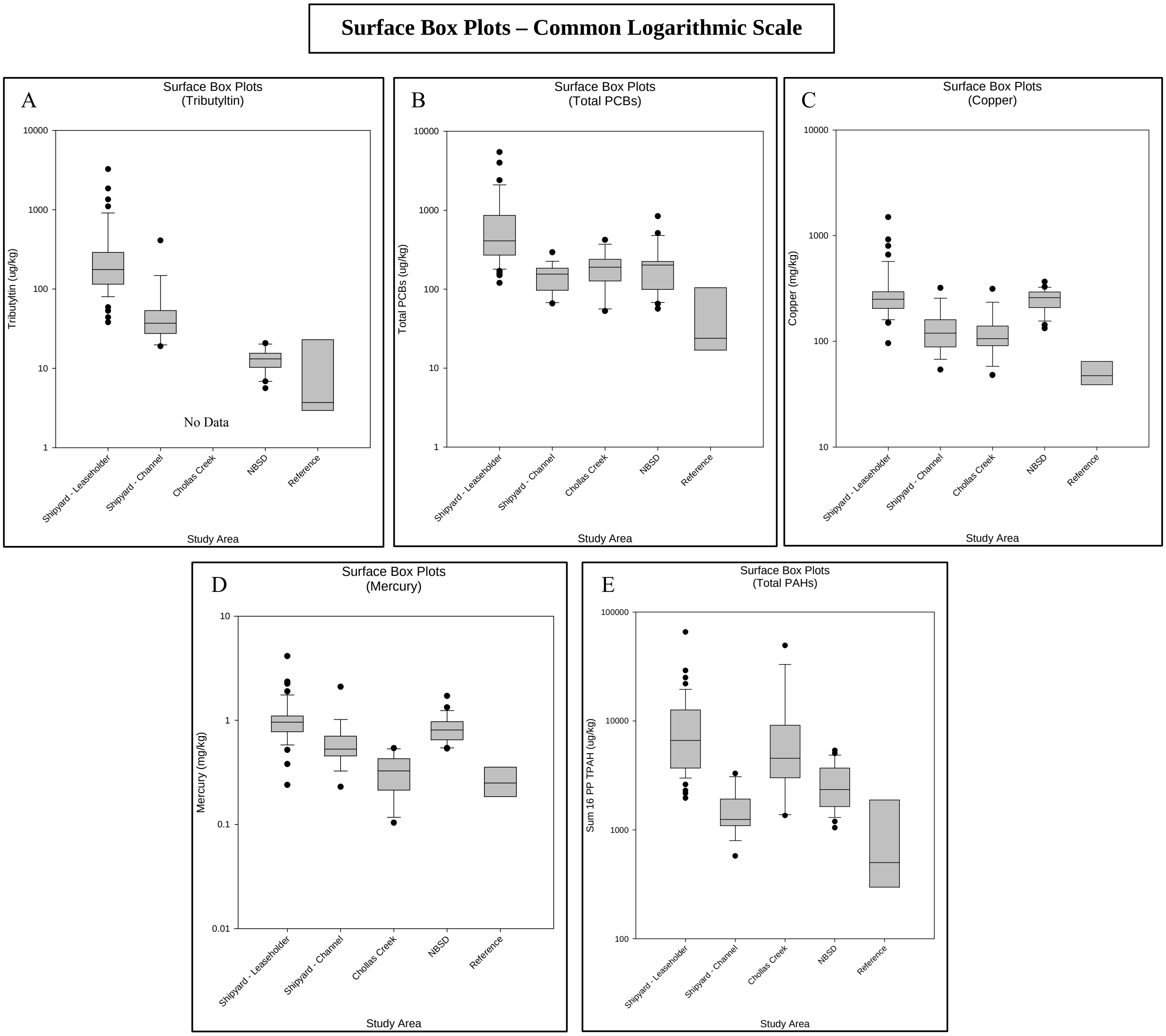


Figure 19. Box plots illustrating spatial trends in surface contaminant distributions along the Pathway 3 transect. The boxes represent 75% of the data distribution, and the vertical bars represent 90% of the data; horizontal lines in the boxes represent the mean value.

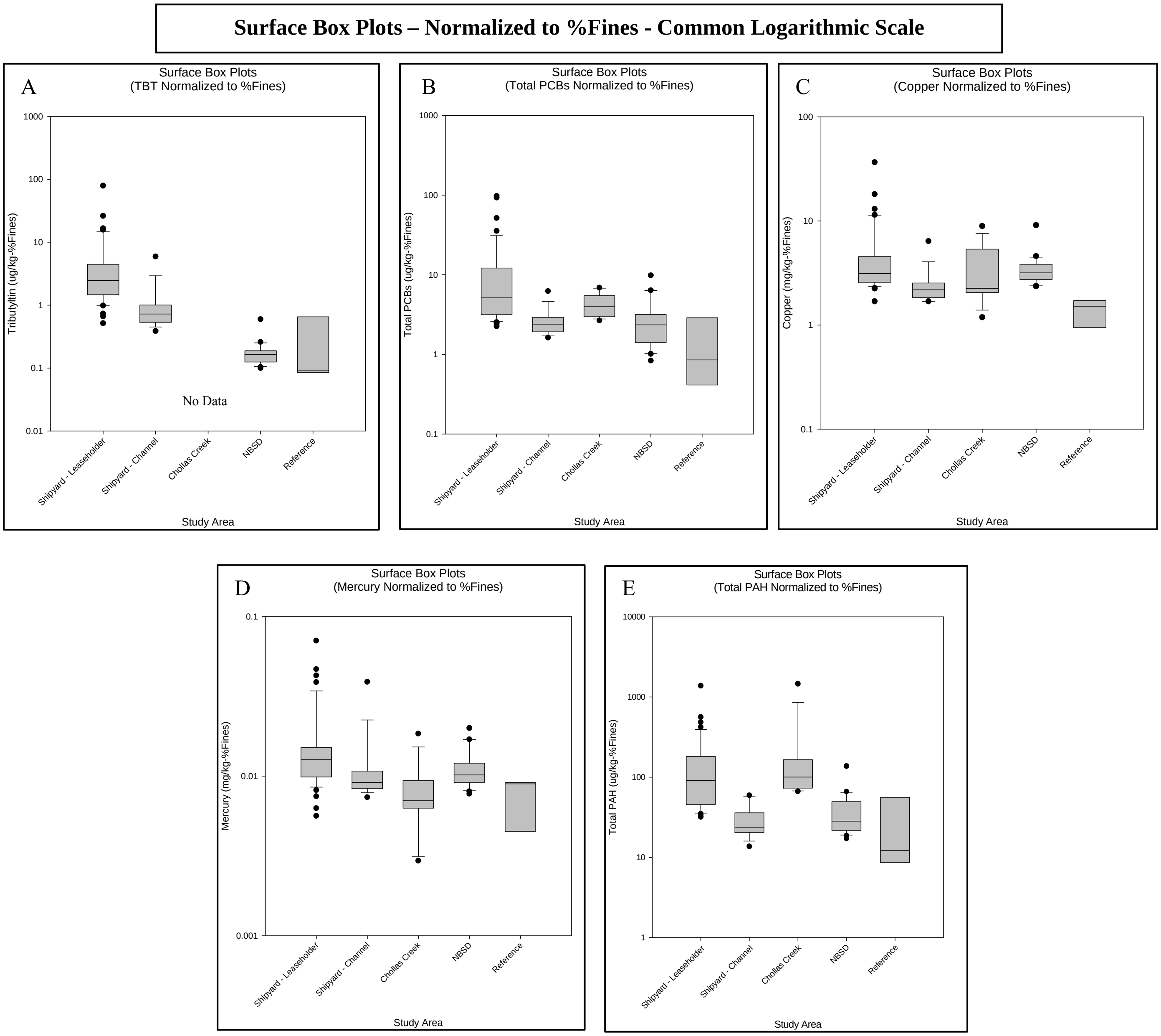


Figure 20. Box plots illustrating spatial trends in surface contaminant concentrations normalized to sediment fines along the Pathway 3 transect.

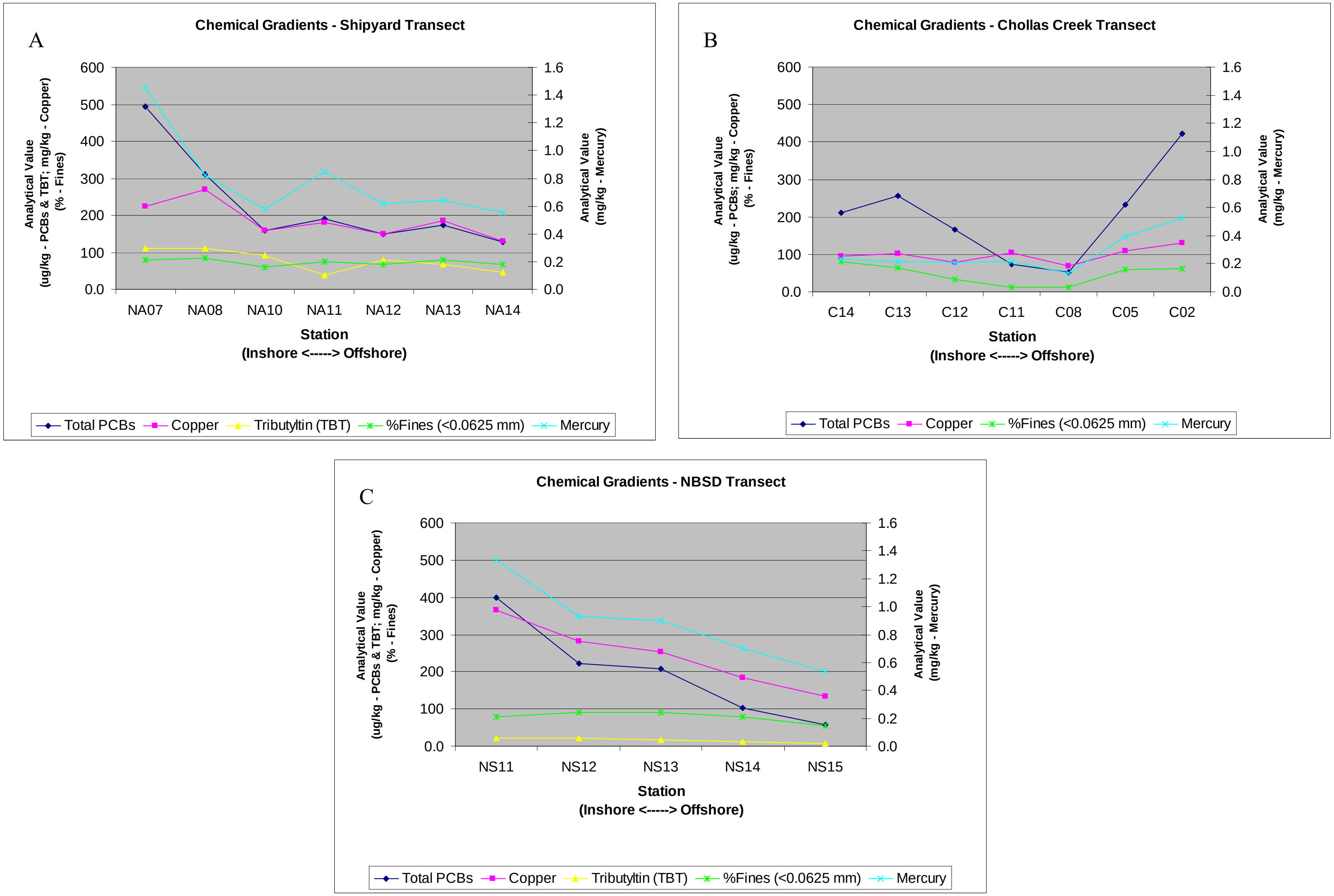


Figure 21. Spatial trends in sediment grain size and contaminant concentrations along specific transects in (A) SY, (B) Chollas Creek mouth, and (C) Naval Base San Diego.

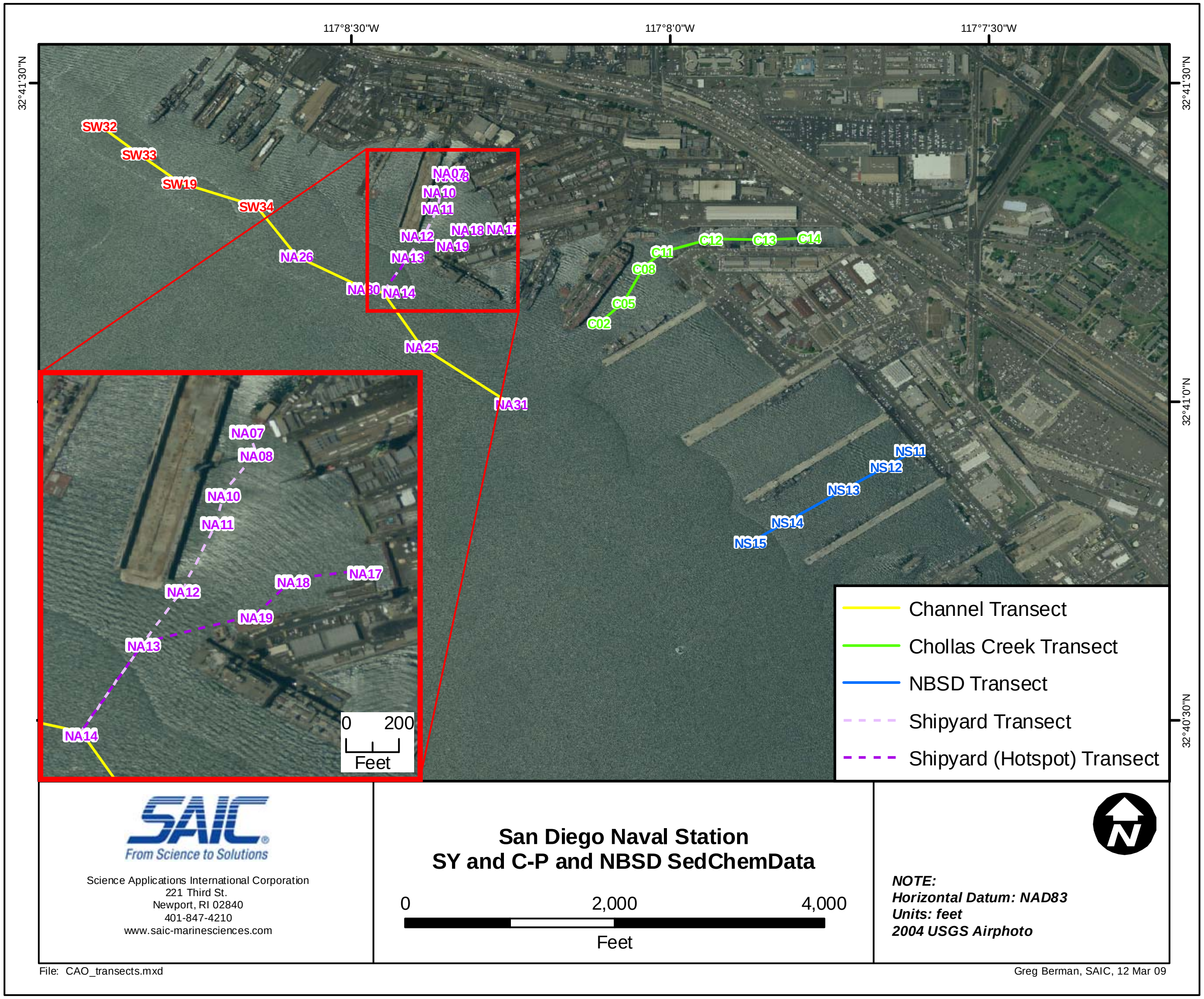


Figure 22. Sampling transects at the SY, Chollas Creek mouth, and Naval Base San Diego.

In total, none of the CoC patterns show elevated concentrations at the NBSD with decreasing concentration gradients in the direction of the SY. Instead, the CoC patterns reflect the predominant influence of SY discharges, and do not support the claim that CAO Source Pathway 3 currently or historically contributes significantly to contaminant loading at the SY.

The Navy also applied chemical fingerprinting techniques to distinguish and quantify possible input sources from Pathway 3. Chemical fingerprinting is an analytical tool used in environmental forensics that relies on differences in the compositional patterns of source inputs to apportion contributions to reservoirs such as bottom sediments or groundwater.

An important aspect of this analysis is the expectation that synthetic organotin compounds (*i.e.*, TBT) in SY sediments are from past SY sources and diffuse inputs from commercial and recreational boats within the Bay, whereas the contributions from Navy sources and pathways identified in the CAO were negligible. This is reasonable because the Navy did not implement fleet wide use of TBT-based antifouling paints on their ships. The minor exception is that between about 1984 and 1990 the Navy conducted limited studies to evaluate the efficacy and environmental risk of TBT antifouling coatings, and two test ships with TBT antifouling coatings were berthed at NBSD between deployments. However, during that time period, most commercial ocean-going vessels and pleasure craft were using TBT-based hull paints, and assessments of TBT loading found that pleasure craft were by far the biggest contributor to the total loadings to the water column in San Diego Bay. TBT antifouling coatings were banned in California in 1987 and nationally in 1988 for craft less than 25 m in length, and through the International Maritime Organization (IMO), ocean-going vessels were prohibited from being coated after 2003 and had to remove or over-coat TBT paint with a non-organotin coating by January 2008.

TBT has a high sediment/water partitioning coefficient (approximately 25,000) that favors eventual accumulation in sediments. Another important aspect of this analysis is the expectation that the environmental fate of many CoCs is similar to that of TBT. This is because most of the metal and organic CoCs have strong affinities for sediments (high partitioning coefficients), particularly finer grained sediments with a high organic carbon content. The exception is that PAHs have a comparatively lower affinity for sediments, and remobilization from sediments to the overlying water column has been shown to be important in the vicinity of the SY (Sabin *et al*. 2008).

Average TBT concentrations in the SY sediments (280 µg/kg) are 20 times higher than those in sediments adjacent to Naval Base (13 µg/kg) (Table 3). The background concentration and Alternative Cleanup Levels for TBT identified in the CAO are 22 µg/kg and 110 µg/kg, respectively (Table 3). While TBT residues are detected in sediments within the NBSD, the average value for NBSD sediments is comparable to the average background concentration. TBT residues in the NBSD sediments potentially result from dispersion of inputs from the SY properties by local currents and/or wind dispersion of particulate TBT from past spray painting and sand blasting operations at the SY properties. Because of the IMO ban on applying TBT, which came into effect in 2003, there likely has been an increase in removal of TBT coatings which may result in increased TBT loading in the form of paint dust and chips generated in the removal process. Regardless, these values support the expectation that the loading of TBT from Navy sources at NBSD is negligible.

Table 3. Average CoC concentrations in SY and NBSD sediments and corresponding background and CAO alternative cleanup levels; the background and alternative cleanup levels are from the CAO; metal concentrations are mg/kg; TBT, PCB and PCB concentrations are µg/kg.

CoC	Ave SY	Ave NBSD	Background	CAO Alternative Cleanup
Arsenic (As)	13	13	7.5	10
Copper (Cu)	287	254	121	200
Lead (Pb)	96	74	53	90
Mercury Hg)	0.92	0.85	0.57	0.7
Zinc (Zn)	394	315	192	300
TBT	280	13	22	110
PCBs	620	217	84	420
PAHs	7,765	2,741	1,907	None

Using data from the Shipyard Study (Exponent 2001), the relationships between individual CoCs in the SY sediments were investigated by correlation analyses. The results of the analyses, shown in Table 4**,** indicate that concentrations of all of the CoCs, with the exception of mercury and PAHs, are significantly correlated with TBT concentrations. The R^2 value is referred to as the coefficient of determination, and it corresponds to the magnitude of the variation of the dependent variable (non-TBT CoCs) that is explained by the variation in the independent variable (TBT). Variations in TBT concentrations explain the majority of the variation in concentrations of most SY contaminants, which implies that TBT and the other highly correlated CoCs were probably derived from the same source, or similar source materials, and that SY sources contributed the majority of the loadings to the SY sediments. Contaminants with lower correlations may derive in part from other sources or may have been released at different times, but there is no indication in the spatial patterns that these contaminants originated from the Navy.

Table 4. Correlation coefficients (R^2) between individual CoCs in the Shipyard and NBSD sediments.

	As	Cd	Cu	Hg	Pb	Zn	PAH	PCB	TBT
As	-	0.68**	0.88**	0.12	0.93**	0.99**	0.15	0.55**	0.83**
Cd		-	0.69**	0.46*	0.76**	0.69**	0.26	0.84**	0.84**
Cu			-	0.34*	0.94**	0.90**	0.22	0.64**	0.91**
Hg				-	0.36*	0.12	0.27	0.63**	0.17
Pb					-	0.93**	0.24	0.70**	0.86**
Zn						-	0.14	0.55**	0.84**
PAH							-	0.32*	0.18
PCB								-	0.50**
TBT									-

*statistically significant at $p<0.05$; **statistically significant at $p<0.01$

Given that historical use and releases of TBT from NBSD were negligible, and TBT concentrations in NBSD sediments are at background levels for the Bay, it is reasonable to conclude that loadings of TBT from Navy sources also were negligible. Further, given that variations in TBT concentrations explain approximately 70-80% of the variations in some of the other CoCs (*e.g.*, arsenic, copper, lead, zinc) it is reasonable to conclude that sources other than the Navy were primarily responsible for these loadings to the SY.

Results of principal component analysis (PCA) of PCB congener data for the SY, Chollas Creek, and NBSD sediments are shown in Figure 23. PCA is an analytical tool for evaluating compositional patterns within large and complex data sets, and can reveal relationships among parameters and sampling locations that provide insight into contaminant sources and sinks, such as spatial patterns which might be related to input sources or transport pathways. Factor scores give the positions of the samples in coordinates of the principal components, and the magnitude of scores corresponds to the extent to which individual sites reflect these attributes (*i.e.*, elevated concentrations of metals with high loadings) and the amount of information for that site explained by the factor.

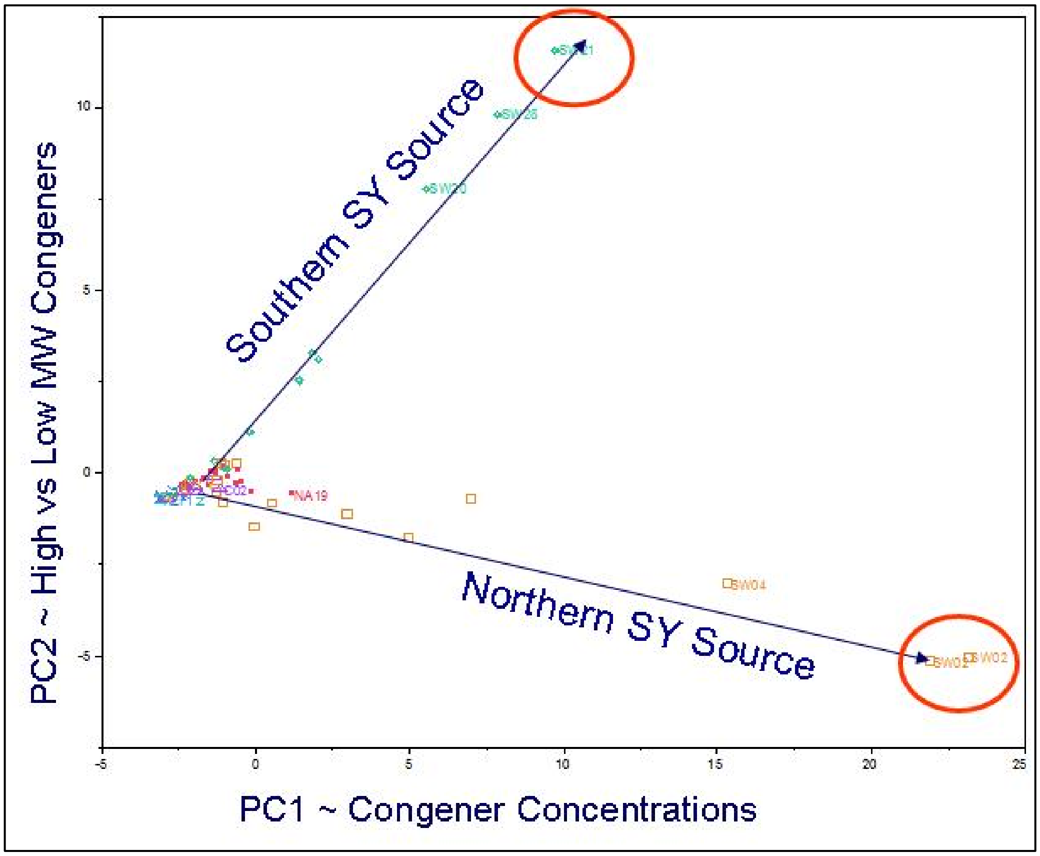


Figure 23. Results from principal component analyses of PCB congener data illustrating the primary sources of PCBs associated with the Southern and Northern SY Areas.

The distributions of the factor scores for principal components 1 and 2 (PC1 and PC2) illustrate the two main source areas (SW02 and SW21) in the inner portion of the SY. These results are consistent with the spatial pattern for sediment PCBs, shown in Figure 16. The northern SY source has been attributed in part to historical discharges in the vicinity of the MS4 storm drain SW4 and wastewater ponds, while the southern source has been attributed to shipyard activities and storm water discharges to the SY (RWQCB 2008).

Thus, overall for Pathway 3, given that stormwater releases at NBSD have been demonstrated to have a very limited spatial extent that would not reach the SY area, spatial patterns and gradients of chemicals in sediment are not consistent with transport from the NBSD area to the SY area, contamination at the SY clearly co-occurs with TBT which is a shipyard-specific contaminant that is not present at NBSD above background levels, and chemical fingerprints indicate clear differences in chemical signature between NBSD and the SY, the potential release to the SY from this Navy source is considered to be negligible for all practical purposes.

DISCUSSION AND CONCLUSIONS

Based on the information described above, the Navy concludes that none of the three pathways described in the CAO represent significant sources of contaminants to the SY.

Pathway 1. Existing information indicates that the Navy did not operate a ship maintenance facility at the 28th Street Landing facility. Instead, the Navy operated a shuttle boat facility for a period of 18 years between 1938 and 1956. The types and amounts of contaminants associated with this type of facility would have been much different from those associated with a commercial shipbuilding/maintenance operation. Using the extremely conservative assumptions that the Navy operated a ship maintenance facility, and that any discharges to the Bay from Navy operations were proportional to those of the SY operations on both an aerial coverage and duration basis, the Navy's contributions to contaminant inputs via this pathway would have been ~0.2% of the total loading associated with the NLS and two SY operations and is therefore considered to be negligible.

Pathway 2. Empirical information and computer modeling results indicate that the Navy's stormwater discharges represent between less than 1% and 8% of contaminant loading from the creek, and 1% of the particles discharged from the Creek are deposited in the SY, the estimated contribution from Navy sources to contaminant loading in the SY footprint would be less than 0.08%.

Pathway 3. Empirical information and computer modeling results indicate that direct loadings from NBSD into the Bay are minimal, not dispersed widely beyond the NBSD piers, and generally insufficient to affect sediment quality at the SY. While there are no empirical data to determine how much sediment contaminants from NBSD contribute to those in the SY sediments, assessments of spatial gradients indicate that contaminant dispersion and transport from NBSD to the SY is negligible.

The relative importance of contributions from the SY sources, associated with the TBT-arsenic-copper-lead-zinc fingerprint patterns, to the overall variance in the sediment contaminant data are further illustrated using PCA. The first four principal components of the PCA account for 92% of the total variance of the dataset. Principal components 1 and 2 (PC1 and PC2) explain 56% and 18%, respectively, of the variance, while PC3 and PC4 combined account for 17% of the variance. All other factors explain less than 5% of the variance and were not retained for further evaluation. The highest PC1 loadings were for TBT, arsenic, copper, lead, and zinc. High factor loadings imply that these CoCs contributed to and strongly influenced the principal component. The highest factor scores for PC1 correspond primarily to samples from portions of the SY close to the bulkheads between the piers. The highest loadings for PC2 were for TOC, PCBs, and mercury, while the highest loadings for PC3 and PC4 were for fines (silt and clay component of the grain size) and for PAHs, respectively. The highest factor scores for PC2 correspond to many of the same SY samples with high scores for PC1, suggesting similar input sources.

The PCA results reinforce the importance of the TBT-arsenic-copper-lead-zinc fingerprint to the overall sediment contaminant pattern, as reflected by the high proportion (56%) of the overall variance explained by PC1. PC3 reflects the spatial patterns in sediment grain size and explains

11% of the variance in the data. Because anthropogenic influences typically do not affect sediment grain size, this component reflects natural sediment deposition and accumulation patterns. PC2 and PC4 reflect different spatial distributions for PCBs, mercury, and PAHs, which might be attributable to other input sources or to environmental behavior that is different from those of the PC1 elements. For example, dissolution of PAHs from sediments to overlying water is important to the fate of PAHs in this portion of San Diego Bay (Sabin *et al*. 2008). Nevertheless, the distribution of PAHs explains less than 10% of the overall variance. Additionally, the high factor scores for PC2 associated with SY samples implies that SY sources were at least partially responsible for inputs of PCBs and mercury.

These results suggest that approximately 60% of the variance in the sediment contaminant data is attributable to SY inputs, and 10% is attributable to natural grain size patterns. The remaining variance is likely due to contributions from multiple local and watershed sources. Data to apportion the Navy's contribution to the residual variance do not exist.

In conclusion, based on information summarized above for the individual pathways, the overall contribution from Navy sources to the SY is considered to be negligible.

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Appendix C
Regulatory Agency Site Closure Concurrence Documents

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DECLARATION

SITE NAMES AND LOCATION

Naval Station San Diego

Installation Restoration Program (IRP) sites:

5 – Admiral Baker Golf Course Landscaping-Debris Landfill

7 – Former Sewage Treatment Plant

11 – French Drain

12 – Brinser Street Parking Area

San Diego, California 92136

STATEMENT OF BASIS AND PURPOSE

This No Action Remedial Action Plan (RAP)/Record of Decision (ROD) presents the selected remedy of no action for IRP Sites 5 and 11, Naval Station San Diego, San Diego, California, where investigation has shown no evidence of contamination. It also presents the selected remedy of no further action for IRP Sites 7 and 12, Naval Station San Diego, San Diego, California.

This document has been prepared in accordance with California Health & Safety Code Section (§) 25356.1 and current United States Environmental Protection Agency guidance (U.S. EPA 1999a). The selected remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP, Title 40 *Code of Federal Regulations* § 300 et seq.). The decisions for the sites are based on information contained in the administrative record. A site-specific administrative record index for each site is included as Attachment B.

The state of California (through the California Environmental Protection Agency Department of Toxic Substances Control [DTSC] and California Regional Water Quality Control Board [RWQCB] San Diego Region) concurs with the selected remedy at IRP Sites 5, 7, 11, and 12. DTSC is the state regulatory agency overseeing IRP activities, and RWQCB San Diego Region is the delegated authority for water quality issues under the IRP and Underground Storage Tanks Program. IRP Sites 5, 7, 11, and 12 are included in the IRP but are not listed on the National Priorities List. Therefore, the Department of the Navy (DON) determined that a No Action Remedial Action Plan was an appropriate decision document, stating the final remedy of no action and leading to the closure of these sites (California Health & Safety Code § 25356.1). The DON is selecting the no action remedy pursuant to the authority delegated to it by the President of the United States in Executive Order Number (Exec. Order No.) 12580.

ASSESSMENT OF THE SITES

On the basis of site histories, visual inspections, field investigations, and laboratory analyses, the DON, as the lead agency, has determined that IRP Sites 5 and 11 do not contain hazardous materials. Therefore, it follows that there is no threat to human health and the environment at IRP Sites 5 and 11. Results of investigations of these sites verify that chemicals of concern (COCs) have not been released to the soil and/or groundwater. Therefore, no CERCLA response action is required to protect public health or welfare or the environment at these sites.

On the basis of site history, visual inspections, field investigations, a thorough assessment of potential human-health and ecological risks at both sites, and a removal action at IRP Site 12, the DON, as the lead agency, has determined that no remedial action is required to protect public health or welfare or the environment at IRP Sites 7 and 12. A human-health risk assessment of IRP Site 7 shows that risk to human health from COCs is within the NCP's generally acceptable risk range, and the contaminants present in groundwater do not present an unacceptable risk to the environment. A human-health and ecological risk assessment of IRP Site 12 shows that risk to human health or the environment from COCs is within the acceptable range.

STATUTORY DETERMINATIONS

The selected remedy for IRP Sites 5, 7, 11, and 12 is no action. In selecting the no action remedy for these sites, the DON has determined that the existing condition of the sites is protective of human health and the environment and complies with federal and state requirements. Because this remedy will not result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a five-year review will not be required.

ROD DATA CERTIFICATION CHECKLIST

The Decision Summary includes the following information for IRP Sites 7 and 12:

- COCs and their respective concentrations (Section 5)
- baseline risks represented by the COCs (Section 7)

The Decision Summary includes the following information for IRP Sites 5, 7, 11, and 12:

- current and reasonably anticipated future land-use assumptions and current and potential future beneficial uses of groundwater used in the baseline risk assessment and this RAP/ROD (Section 6)
- key factors that led to selecting the remedy (Section 8)

Additional information can be found in the administrative record files for these sites.

Declaration

Signature: ______________________ Date: 08 Dec 04
Derek B. Kemp, Captain
Commanding Officer, Naval Station San Diego
United States Department of the Navy
Lead Federal Agency

Signature: ______________________ Date: 11/17/04
Mr. John E. Scandura, Chief
Southern California Operations
Office of Military Facilities
Department of Toxic Substances Control

Signature: ______________________ Date: 12/1/04
Mr. John H. Robertus
Executive Officer
California Regional Water Quality Control Board
San Diego Region

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California Regional Water Quality Control Board
San Diego Region

Terry Tamminen
Secretary for Environmental Protection

9174 Sky Park Court, Suite 100, San Diego, California 92123-4340
(858) 467-2952 • Fax (858) 571-6972
http://www.swrcb.ca.gov/rwqcb9

Arnold Schwarzenegger
Governor

March 15, 2004

In reply refer to:
SMU:30-0089.05.WALSL

Navy Region Southwest
Assistant Chief of Staff for Environmental Code N4512
33000 Nixie Way, Bldg. 50, Suite 326
San Diego, CA 92147-5110
Attn: Ms. Theresa Morley

Dear Ms. Morley:

SUBJECT: NO FURTHER ACTION
INSTALLATION RESTORATION SITE 8 - FORMER FIRE FIGHTING TRAINING FACILITY NAVAL STATION SAN DIEGO

This letter confirms the completion of a site investigation and remedial action for the installation restoration site located at the above described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the site are greatly appreciated.

Based on the information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the release is required. If you have any questions please contact me at (858) 467-2987 or John Anderson at (858) 467-2975.

Respectfully,

John H Robertus

JOHN H. ROBERTUS
Executive Officer

JHR:jpa:law:cv ltr closure sum.doc

Attachment: Case Closure Summary

Case Closure Summary

INSTALLATION RESTORATION (IR) PROGRAM

I. CASE INFORMATION

DATE: March 15, 2004

Site Name: Installation Restoration Site 8		
Site Address: Naval Station San Diego		
Responsible Party Name: Navy Region Southwest		***RP Phone Number:*** 619-524-6399
Responsible Party Address: 33000 Nixie Way, Bldg 50, San Diego, CA 92147		
Current Land Use: Parking Lot		
RWQCB File Number: 30-0089.05:walsl	***Local Case:*** NA	***RWQCB Staff:*** Laurie Walsh
Basin Number: Pueblo San Diego HU 980.00	***Basin Uses:*** None Beneficial Use Basin	

II. RELEASE AND SITE CHARACTERIZATION INFORMATION

Description of the unauthorized release (cause, release date, source[s]):

Between the late 1940's and 1996, the site was used for fire fighter training exercises by igniting jet fuel (JP-4 and JP-5), diesel, unleaded gasoline, and oil and grease on two open air concrete pads. Later, these exercises were conducted in enclosed structures. Leaking USTs (14 USTs were present at the site), various fuel lines, and spraying of fuels into open areas at the site from these exercises caused releases to the subsurface throughout this time period. These training exercises ceased in 1996 and the site was demolished in 1997.

Contaminant[s] identified and amount leaked:

An estimated 14,000 to 30,000 gallons of 60% JP-5, 10 to 15% bunker fuel range petroleum hydrocarbons (C_{19} – C_{40}), 10 to 15% diesel range petroleum hydrocarbons, and less than 3% light gasoline free-product were calculated to be floating on the site water table from the site releases.

Description of the soil/geology: The site is located entirely on fill overlying bay and intertidal mudflat sediments. Geologic materials consist primarily of hydraulic fill composed of fine to medium-grained sands interbedded with thin silt and thin clay layers. The hydraulic fill, approximately 13 to 20 feet thick, occurs above and below a wood deck (part of the quay wall support structure) that occurs at an elevation of 0 feet MLLW or approximately 12 feet below ground surface (bgs) along the Quay Wall. A clay layer, 1½ to 2 feet thick, occurs across the site at approximately –2.5 to-5.0 feet below MLLW and may represent the original (pre-fill) bay bottom. All fuel-saturated soil occurred in the sandy portions of the hydraulic fill at an elevation of 4 to 0 feet above MLLW, or 8 to 12 feet in depth along the quay wall.

Is soil contamination completely delineated (to what levels)? Yes. TPH as gasoline (not detected [ND]<10 milligrams per kilogram [mg/kg]), TPH as diesel (ND< 10 mg/kg), Benzene (ND<0.05 mg/kg), Toluene (ND<0.05 mg/kg), ethylbenzene (ND<0.05 mg/kg), total xylenes (ND<0.15 mg/kg), and naphthalene (ND<0.010 mg/kg).

Aerial extent? NORTHERN PLUME: 300 feet long along bay front (NW-SE direction) by 160 feet wide (NE direction). SOUTHERN PLUME: 300 feet long along bay front (NW-SE direction) by 280 feet wide (NE direction).

Vertical extent? NORTHERN PLUME: Depth of 10 to 13 feet below ground surface (bgs) inland and 8 to 10 feet bgs along the Quay wall. SOUTHERN PLUME: 8 to12 feet bgs.

Est. Volume of contaminated soil left on site and concentration:

NORTHERN PLUME: Approximately, 3,200 cubic yards of petroleum impacted soil with TPH as JP-5 concentration < 21,200 mg/kg and TPH as diesel of ND<10 mg/kg.

SOUTHERN PLUME: Approximately 5,900 cubic yards of petroleum impacted soil with estimated maximum concentrations of TPH as gasoline < 4,200 mg/kg, TPH as diesel concentrations < 48,000 mg/kg. Benzene <3 mg/kg, Toluene <12 mg/kg), ethylbenzene <14 mg/kg), total xylenes <30 mg/kg, and naphthalene <55 mg/kg.	
Is groundwater contamination completely delineated (to what levels)? Yes. Both Northern and Southern Plumes: TPH as gasoline (ND<500 micrograms per liter [µg/L]), TPH as diesel (ND<500 µg/L), Benzene (ND<0.5 µg/L), Toluene (ND<0.5 µg/L), ethylbenzene (ND<0.5 µg/L), total xylenes (ND<1.5 µg/L), methyl tert-butyl ether (MTBE) (ND<0.5 µg/L), tert-amyl methyl ether (TAME) (ND<1 µg/L), tert-butyl alcohol (TBA) (ND<5 µg/L), naphthalene (ND<0.10 µg/L), and total polynuclear aromatics (PNAs) (ND<15 µg/L).	
Monitoring wells installed, properly permitted? Yes	***Number of monitoring wells:*** 10
Depth to groundwater: Variable, 8 to 12 feet.	***Seasonal or tidal fluctuation:*** Yes, tidal
Groundwater flow direction: Fluctuates with tide, but overall towards San Diego Bay (Southeast).	***Gradient:*** Variable based upon tidal pressure. Average of 1.7 x 10^{-3} feet per foot.
Is groundwater or surface water impacted? Yes, groundwater has been impacted.	
Is groundwater contamination contained on site? Yes.	
Nearest receptor (Inland Surface Water, Bay, Drinking Water Wells, etc.): San Diego Bay is located 5 feet from the site.	

III. MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATION

Contaminant	Soil (mg/kg) initial	Soil (mg/kg) current	USEPA Soil Residential PRGs (mg/kg)	Water (ug/l) Initial	RWQCB Interim Guidance ug/L	Water (ug/l) current
TPH-diesel	20,000	48,000[1]	NE	965,000	NE	16,000
TPH-gasoline	490	4,200[1]	NE	44,000	NE	ND<500
TPH-JP5	58,963[2]	48,000[3]	NE	190,000	NE	ND<500
Benzene	0.089	3[1]	0.60	907	400	230
Toluene	0.48	12[1]	520	800	5,000	0.7
Ethlybenzene	0.46	14[1]	8.9	1,093	430	1.6
Xylene (total)	0.39	30[1]	270	3629	10,000	ND<1.5
Naphthalene	1.16	55[1]	56	12,200	2,350	110
PNAs	2.4	22[1]	NE	2,388	300	55
MTBE	NA	ND	62	NA	NE	5.7

ND: Non Detect
NA: Not Applicable
NE: Not Established

[1]Current soil concentrations are higher than the initial concentrations due to the large number samples collected from the excavation within the contamination zone (which could be seen clearly) as opposed to the site assessment data (soil initial value) where the location of the highest contamination was unknown.

[2] The initial TPH soil concentrations had to be converted from soil sample results presented as percent "fuel saturation" (43.3% fuel saturation). Calculation equation 5-4, Ch. 5, Page 5-47 of 2002 San Diego County SAM Manual.

[3] This concentration represents the maximum concentration of TPH as JP-5 of both the northern and southern plume. TPH as JP-5 concentration in soil post removal action for the northern plume is < 21,200 mg/kg. TPH as JP-5 concentration in soil post removal action for the southern plume is < 48,000 mg/kg.

IV. TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (include units)	Action (treatment or disposal)	Concentration (mg/kg)	Date
Soil	10,350 cubic yards	Recycling at Calendaria Environmental, Anza CA	TPH as gasoline (4,200 mg/kg), TPH as diesel (48,000 mg/kg), Benzene (3 mg/kg), Toluene (12 mg/kg), ethylbenzene (14 mg/kg), total xylenes (30 mg/kg), naphthalene (55 mg/kg),	1/28/02 to 3/15/03
Groundwater	Approximately 2,400,000 gallons 27,000 gallons	Navy Public Works Treatment Center	TPH as diesel (ND<0.5 mg/L), TPH as gasoline (0.9 mg/L), TPH as JP-5 (ND<0.5 mg/L), Benzene (60 ug/L), toluene (ND<0.5 ug/L), ethylbenzene (14 ug/L), total xylene (2 ug/L), PNAs (14 ug/L).	1997-2000 1/28/02 to 3/15/03
Free Product	Approximately 15,000 gallons 300 gallons 51 gallons	Navy Public Works Treatment Center	60% JP-5 15% bunker fuel 15% diesel range <3% light gasoline – 15,000 gallons Diesel Range organics – 300 & 51 gallons.	1997-2000 1/28/02 to 3/15/03 11/2003
Barrel(s)	NA	NA	NA	NA
Tank(s)	1,500 gallon steel, diesel, FFS-12 (Bldg 171)	Tank recycled at NAVY DRMO scrap metal yard. Permit AT3183	NA	Removed 1/04/1995 by PWC
	1,500 gallon steel, diesel, FFS-12 (Bldg 171)	Tank recycled at NAVY DRMO scrap metal yard. Permit AT3165	NA	Removed 2/13/1995 by PWC

	1,800 gallon steel, JP-5 fuel, Bldg 3196	Tank recycled at Pacific Steel and Disposal. H#01447-019	NA	Removed 7/25/1996 by Pacific Treatment
	900 gallon, steel, diesel, Bldg 171	Tank recycled at NAVY DRMO scrap metal yard. Permit AT3885	NA	Removed 7/31/1997 by PWC
Piping	NA	NA	NA	1996

V. CLOSURE

Does completed corrective action protect beneficial uses per the RWQCB Basin Plan? Yes, Adequate information has been submitted by the consultant to demonstrate that existing site conditions are protective of human health and the environment. A removal action was conducted to depths below 10 feet, greatly reducing the potential for exposure of site contaminants to human and ecological receptors. Free product was removed to the extent practicable and concentrations of contaminants remaining insitu are below the criteria established for Cleanup of Low Risk Fuel Sites (Regional Board Interim Guidance 1996) that lie within 1,000 feet of San Diego Bay.		
Should corrective action be reviewed if land use changes? Yes.		
Monitoring wells decommissioned? 29 (by mid Feb 04)	***Number decommissioned:***	***Number retained:*** 8 (TBD)
Enforcement actions taken: None		
Enforcement actions rescinded: None		

VI. Signature of Reviewer

Date: March 15, 2004

Laurie Walsh
Water Resource Control Engineer

VII. Signature of Senior Staff

Date: March 15, 2004

John P. Anderson
Senior Engineering Geologist

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STATE OF CALIFORNIA - ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, Governor
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Region 4
245 West Broadway, Suite 350
Long Beach, CA 90802-4444
Voice: (310) 590-4890
Fax: (310) 590-4870

July 17, 1995

Mr. Marty Wurbs
Navy Public Works Center
Box 368113
2730 Mckean Street, Suite 1
San Diego, California 92136-5294

Dear Mr. Wurbs:

CLOSURE PLANS: NAVY PUBLIC WORKS CENTER, NAVAL STATION, SAN DIEGO, CALIFORNIA 92136 (EPA ID NO. CA6170024289)

The California Department of Toxic Substances Control (DTSC) has reviewed the closure certification report for the PCB Container Storage area, dated January 1995. The DTSC has also reviewed the closure certification report for Building 3275, dated February 1994, with additional reports dated May 19, 1995 and June 23, 1995. Based on these reports, closure for the PCB Container Storage area and Building 3275 has been implemented in accordance with the closure plans approved by DTSC on June 30, 1993, and the reports are hereby accepted. This acceptance is not a certification that the subject facility does not pose an environmental or public health threat.

DTSC acknowledges that you have closed the waste management units in accordance with the closure plans approved by DTSC on June 30, 1993. However, this acknowledgment does not release you from any liabilities associated with past hazardous waste management practices which occurred at your facility. Pursuant to the Health and Safety Code, Section 25817, DTSC may issue an order requiring corrective action if DTSC determines that there has been a release of hazardous waste or constituents into the environment from any solid waste management units at your facility. The solid waste management units are any units or areas at a hazardous waste facility from which hazardous constituents might migrate, irrespective of whether the units or areas were intended for the management of wastes.

If you have any questions, please call Mr. Robert Romero at (310) 590-4890.

Sincerely,

Mohinder S. Sandhu, P.E., Chief
Facility Permitting Branch

cc: See next page

cc: Mr. Scott Simpson, Chief
Statewide Compliance Division
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802

Ms. Carmen Santos
Permits Section
Hazardous Waste Management Division (H-3-2)
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105

Ms. Jane Ortiz
Chief of Hazardous Materials
County of San Diego
Dept. of Environmental Health Services
P.O. Box 85261
San Diego, California 92138-5261

Mr. Richard J. Sommerville
Air Pollution Control Officer
San Diego County Air Pollution Control District
9150 Chesapeake Drive
San Diego, California 92123

Ms. Lauren M. Wasserman, Director
County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, California 92123-1666

Mr. Arthur L. Coe, Executive Officer
California Regional Water Quality Control Board
9771 Clairemont Mesa Boulevard, Suite B
San Diego, California 92124-1331

Mr. Ernest Freeman, Director
City of San Diego Planning Department
City Administration Building
202 C Street
San Diego, California 92101

Mr. Chuck Pryatel, Division Manager
San Diego County Environmental Health Services
Site Assessment and Mitigation Division
P.O. Box 85261
San Diego, California 92138-5261

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Department of Toxic Substances Control

Alan C. Lloyd, Ph.D.
Agency Secretary
Cal/EPA

Maureen F. Gorsen, Director
5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegger
Governor

March 15, 2007

Commanding Officer
Naval Base San Diego
Attention: Mr. Edward K Dias, ROPME.ED
Naval Facilities Engineering Command Southwest
1220 Pacific Highway
San Diego, California 92132-5190

FINAL REMOVAL SITE EVALUATION REPORT, INSTALLATION RESTORATION SITE 13, NAVAL BASE SAN DIEGO

Dear Mr. Dias:

The Department of Toxic Substances Control (DTSC) has completed the review of the subject document which DTSC received on September 14, 2006. DTSC also reviewed and subsequent revisions dated January 2007 and finds that the document is now complete.

The findings of the human and ecological risk assessment are that the current site conditions are suitable for the current and planned future use of the site, as stated in the report. DTSC concurs with the Navy's proposal of no further response action under the Comprehensive Environmental Response, Compensation, and Liability Act for the site.

Thank you for providing DTSC with the opportunity to work with you on this project. Should you have any questions, please contact Mr. Douglas Bautista at (714) 484 5442.

Sincerely,

John E. Scandura, Branch Chief
Office of Military Facilities
Southern California Operations Branch

cc: See next page.

cc: Commanding Officer
Naval Base San Diego
Attention: Darren Belton, ROPME.DB
Naval Facilities Engineering Command Southwest
1220 Pacific Highway
San Diego, California 92132-5190

Ms. Laurie Walsh
California Regional Water Quality Control Board,
San Diego Region 9
9174 Sky Park Court, Suite 100
San Diego, California 92123

Mr. Pete Bishop
275 Las Flores Drive
Chula Vista, California 91910-2914

Ms. Rita McIntyre
30 J Street
Chula Vista, California 91920

Mr. Jerry McNutt
522 Tallow Court
Chula Vista, California 91911-5636

Mr. Gene Mullaly
6869 Belle Glade Avenue
San Diego, California 92119

Mr. Craig Woempner
3816 Birch Street
San Diego, California 92113

Appendix D
Surface Sediment Chemistry Analytical Data

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PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	55000	mg/kg	
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	12	mg/kg	
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.5	mg/kg	
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	120	mg/kg	
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	41000	mg/kg	
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	71.8	mg/kg	
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.082	mg/kg	
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	240	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	39000	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	57000	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12902	32.68090	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	99600	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	9.8	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	17	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12902	32.68090	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.45	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.52	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	1.1	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12902	32.68090	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	207	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	220	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	240	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	43000	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12902	32.68090	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	45000	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	57000	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12902	32.68090	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	46	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	79.1	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	83.6	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.591	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12902	32.68090	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.60	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	3.3	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	300	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12902	32.68090	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	308	mg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	340	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	37000	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12460	32.67552	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	39100	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	57000	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	8.9	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	11	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.25	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.29	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12460	32.67552	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.40	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	180	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	190	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12460	32.67552	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	261	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	41000	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	48000	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12460	32.67552	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	49500	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12460	32.67552	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	37	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	39.7	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	63.8	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.17	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.481	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12460	32.67552	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.52	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	220	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	240	mg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12460	32.67552	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	321	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	48000	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	62000	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	4.3	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	7.3	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	1.5	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	3.16	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	100	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	180	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	33000	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	54000	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	91.2	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	220	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.344	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.838	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	520	mg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	630	mg/kg	
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	53000	mg/kg	
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	5.7	mg/kg	
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.2	mg/kg	
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	110	mg/kg	
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	48000	mg/kg	
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	21.4	mg/kg	
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.101	mg/kg	
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	150	mg/kg	
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	31100	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	78000	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14757	32.69323	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	121000	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	16	mg/kg	
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	23.4	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14757	32.69323	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.55	mg/kg	
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.647	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.76	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14757	32.69323	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	296	mg/kg	
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	361	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	370	mg/kg	
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	49500	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14757	32.69323	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	54100	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	72000	mg/kg	
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	48.2	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14757	32.69323	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	89	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	150	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	1.07	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14757	32.69323	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	1.17	mg/kg	
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	1.23	mg/kg	
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	434	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14757	32.69323	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	542	mg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	550	mg/kg	
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	46000	mg/kg	
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	24	mg/kg	
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.38	mg/kg	
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	290	mg/kg	
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	50000	mg/kg	
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	70.2	mg/kg	
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.893	mg/kg	
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	340	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	40000	mg/kg	
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	48800	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	57000	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12438	32.67853	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	93700	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	15	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	24	mg/kg	
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	24.1	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.73	mg/kg	
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.741	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.9	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12438	32.67853	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	1.06	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12438	32.67853	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	333	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	340	mg/kg	
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	418	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	420	mg/kg	

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Bay Protection and Toxic Cleanup Program	90022		-117.12438	32.67853	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	49600	mg/kg	
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	50100	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	57000	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	57000	mg/kg	
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	46.6	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12438	32.67853	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	58	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	75.5	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	100	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.487	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.615	mg/kg	
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.883	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12438	32.67853	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.99	mg/kg	
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	01-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	409	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	10-Nov-92	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	420	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12438	32.67853	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	432	mg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	450	mg/kg	
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	62000	mg/kg	
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	15-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	70400	mg/kg	
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	15	mg/kg	
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	15-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	23.9	mg/kg	
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.26	mg/kg	
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	15-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.452	mg/kg	
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	380	mg/kg	
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	15-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	383	mg/kg	
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	15-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	56000	mg/kg	
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	88000	mg/kg	
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	15-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	81.8	mg/kg	
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	120	mg/kg	
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.98	mg/kg	
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	15-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	1.13	mg/kg	
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	26-Jan-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	460	mg/kg	
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	15-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	487	mg/kg	
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	45800	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	64000	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14997	32.69532	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	97600	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	14.87	mg/kg	
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	20.3	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.256	mg/kg	
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	1.66	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14997	32.69532	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	2.53	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	142	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14997	32.69532	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	244	mg/kg	
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	260	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	35800	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14997	32.69532	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	36800	mg/kg	
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	38200	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	64.2	mg/kg	
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	99.4	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14997	32.69532	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	127	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.507	mg/kg	
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.829	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14997	32.69532	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.92	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	207	mg/kg	
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	730	mg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14997	32.69532	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	749	mg/kg	
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	58900	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	81400	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14862	32.69372	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	135000	mg/kg	
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	31.9	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	33.92	mg/kg	
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.822	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14862	32.69372	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.97	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	1.58	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	360	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14862	32.69372	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	369	mg/kg	
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	416	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	49700	mg/kg	
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	52500	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14862	32.69372	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	56900	mg/kg	
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	111	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	152	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14862	32.69372	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	152	mg/kg	
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.59	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14862	32.69372	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.83	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.915	mg/kg	
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	746	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	811	mg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14862	32.69372	3-Dec-96	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	1190	mg/kg	
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	68800	mg/kg	
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	102000	mg/kg	
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	18.82	mg/kg	
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	27.5	mg/kg	
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.329	mg/kg	
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.337	mg/kg	
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	352	mg/kg	
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	495	mg/kg	
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	58700	mg/kg	
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	66300	mg/kg	
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	46.3	mg/kg	
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	137	mg/kg	
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.382	mg/kg	
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	1.28	mg/kg	
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	02-Mar-94	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	443	mg/kg	
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	483	mg/kg	
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	85300	mg/kg	
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	20.95	mg/kg	
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	1.26	mg/kg	
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	531	mg/kg	
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	59200	mg/kg	
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	85.3	mg/kg	
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	1.06	mg/kg	
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	26-May-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	569	mg/kg	
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	41000	mg/kg	
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	18	mg/kg	
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.49	mg/kg	
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	320	mg/kg	
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	37000	mg/kg	
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	85.1	mg/kg	
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.721	mg/kg	
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	460	mg/kg	
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	47000	mg/kg	
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	28	mg/kg	
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	1.2	mg/kg	
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	660	mg/kg	
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	49000	mg/kg	
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	140	mg/kg	
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	1.1	mg/kg	
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	740	mg/kg	
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	58000	mg/kg	
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	6.7	mg/kg	
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.38	mg/kg	
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	53	mg/kg	
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	31000	mg/kg	
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	55.4	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.041	mg/kg	
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	180	mg/kg	
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	46000	mg/kg	
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	13	mg/kg	
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.77	mg/kg	
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	130	mg/kg	
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	37000	mg/kg	
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	61.4	mg/kg	
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.147	mg/kg	
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	240	mg/kg	
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	37000	mg/kg	
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	12	mg/kg	
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.35	mg/kg	
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	200	mg/kg	
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	40000	mg/kg	
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	38.7	mg/kg	
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.375	mg/kg	
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	260	mg/kg	
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	36000	mg/kg	
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	10	mg/kg	
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.22	mg/kg	
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	150	mg/kg	
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	40000	mg/kg	
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	39.3	mg/kg	
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.324	mg/kg	
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	04-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	200	mg/kg	
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	46000	mg/kg	
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	22	mg/kg	
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.96	mg/kg	
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	400	mg/kg	
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	59000	mg/kg	
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	85.8	mg/kg	
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.969	mg/kg	
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	420	mg/kg	
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	57000	mg/kg	
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	7.5	mg/kg	
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	1.2	mg/kg	
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	110	mg/kg	
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	45000	mg/kg	
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	250	mg/kg	
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.453	mg/kg	
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	1600	mg/kg	
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	37000	mg/kg	
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	16	mg/kg	
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.7	mg/kg	
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	320	mg/kg	
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	45000	mg/kg	
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	51	mg/kg	
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.445	mg/kg	
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	330	mg/kg	
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	46000	mg/kg	
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	16	mg/kg	
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.65	mg/kg	
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	310	mg/kg	
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	49000	mg/kg	
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	59.2	mg/kg	
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.453	mg/kg	
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	320	mg/kg	
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	45000	mg/kg	
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	9.8	mg/kg	
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	1.4	mg/kg	
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	160	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	40000	mg/kg	
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	85.5	mg/kg	
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.461	mg/kg	
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	420	mg/kg	
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	48000	mg/kg	
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	8.2	mg/kg	
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	3.07	mg/kg	
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	150	mg/kg	
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	48000	mg/kg	
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	210	mg/kg	
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	1.54	mg/kg	
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	700	mg/kg	
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	44000	mg/kg	
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	12	mg/kg	
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.49	mg/kg	
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	250	mg/kg	
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	51000	mg/kg	
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	45.1	mg/kg	
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.331	mg/kg	
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	290	mg/kg	
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Aluminum (Al)	Dry weight	46000	mg/kg	
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Arsenic (As)	Dry weight	12	mg/kg	
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Cadmium (Cd)	Dry weight	0.64	mg/kg	
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Copper (Cu)	Dry weight	300	mg/kg	
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Iron (Fe)	Dry weight	48000	mg/kg	
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Lead (Pb)	Dry weight	37.6	mg/kg	
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Mercury (Hg)	Dry weight	0.655	mg/kg	
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	17-Aug-93	Sediment	Discrete Sample	Evans&Hanson,1993Mod	Zinc (Zn)	Dry weight	260	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 21		-117.12381	32.67051	27-Apr-94	Sediment	Discrete Sample	None specified	Arsenic (As)	Concentration	0.6	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 21		-117.12381	32.67051	27-Apr-94	Sediment	Discrete Sample	None specified	Cadmium (Cd)	Concentration	0.04	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 21		-117.12381	32.67051	27-Apr-94	Sediment	Discrete Sample	None specified	Copper (Cu)	Concentration	10	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 21		-117.12381	32.67051	27-Apr-94	Sediment	Discrete Sample	None specified	Lead (Pb)	Concentration	4.2	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 21		-117.12381	32.67051	27-Apr-94	Sediment	Discrete Sample	None specified	Mercury (Hg)	Concentration	0.02	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 21		-117.12381	32.67051	27-Apr-94	Sediment	Discrete Sample	None specified	Zinc (Zn)	Concentration	20	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 22		-117.12241	32.67117	27-Apr-94	Sediment	Discrete Sample	None specified	Arsenic (As)	Concentration	1.1	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 22		-117.12241	32.67117	27-Apr-94	Sediment	Discrete Sample	None specified	Cadmium (Cd)	Concentration	ND	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 22		-117.12241	32.67117	27-Apr-94	Sediment	Discrete Sample	None specified	Copper (Cu)	Concentration	24	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 22		-117.12241	32.67117	27-Apr-94	Sediment	Discrete Sample	None specified	Lead (Pb)	Concentration	6.1	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 22		-117.12241	32.67117	27-Apr-94	Sediment	Discrete Sample	None specified	Mercury (Hg)	Concentration	0.05	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 22		-117.12241	32.67117	27-Apr-94	Sediment	Discrete Sample	None specified	Zinc (Zn)	Concentration	49	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 23		-117.12092	32.67179	27-Apr-94	Sediment	Discrete Sample	None specified	Arsenic (As)	Concentration	7.6	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 23		-117.12092	32.67179	27-Apr-94	Sediment	Discrete Sample	None specified	Cadmium (Cd)	Concentration	0.17	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 23		-117.12092	32.67179	27-Apr-94	Sediment	Discrete Sample	None specified	Copper (Cu)	Concentration	203	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 23		-117.12092	32.67179	27-Apr-94	Sediment	Discrete Sample	None specified	Lead (Pb)	Concentration	79	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 23		-117.12092	32.67179	27-Apr-94	Sediment	Discrete Sample	None specified	Mercury (Hg)	Concentration	0.69	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 23		-117.12092	32.67179	27-Apr-94	Sediment	Discrete Sample	None specified	Zinc (Zn)	Concentration	235	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 24		-117.12072	32.67168	27-Apr-94	Sediment	Discrete Sample	None specified	Arsenic (As)	Concentration	7.4	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 24		-117.12072	32.67168	27-Apr-94	Sediment	Discrete Sample	None specified	Cadmium (Cd)	Concentration	0.19	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 24		-117.12072	32.67168	27-Apr-94	Sediment	Discrete Sample	None specified	Copper (Cu)	Concentration	199	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 24		-117.12072	32.67168	27-Apr-94	Sediment	Discrete Sample	None specified	Lead (Pb)	Concentration	95	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 24		-117.12072	32.67168	27-Apr-94	Sediment	Discrete Sample	None specified	Mercury (Hg)	Concentration	1.11	mg/kg	
Draft Final Survey Report April/May, Support of Task A Environmental Impact Statement-US Naval Station	Station 24		-117.12072	32.67168	27-Apr-94	Sediment	Discrete Sample	None specified	Zinc (Zn)	Concentration	232	mg/kg	
Mouth of Chollas Creek	C01		-117.13539	32.68573	2001				Aluminum (Al)	Dry weight	73800	mg/kg	
Mouth of Chollas Creek	C01		-117.13539	32.68573	2001				Arsenic (As)	Dry weight	11.8	mg/kg	
Mouth of Chollas Creek	C01		-117.13539	32.68573	2001				Cadmium (Cd)	Dry weight	0.43	mg/kg	
Mouth of Chollas Creek	C01		-117.13539	32.68573	2001				Copper (Cu)	Dry weight	139	mg/kg	
Mouth of Chollas Creek	C01		-117.13539	32.68573	2001				Iron (Fe)	Dry weight	41000	mg/kg	
Mouth of Chollas Creek	C01		-117.13539	32.68573	2001				Lead (Pb)	Dry weight	77.3	mg/kg	
Mouth of Chollas Creek	C01		-117.13539	32.68573	2001				Mercury (Hg)	Dry weight	0.42	mg/kg	
Mouth of Chollas Creek	C01		-117.13539	32.68573	2001				Zinc (Zn)	Dry weight	235	mg/kg	
Mouth of Chollas Creek	C02		-117.13520	32.68540	2001				Aluminum (Al)	Dry weight	73000	mg/kg	
Mouth of Chollas Creek	C02		-117.13520	32.68540	2001				Arsenic (As)	Dry weight	9.4	mg/kg	
Mouth of Chollas Creek	C02		-117.13520	32.68540	2001				Cadmium (Cd)	Dry weight	0.42	mg/kg	
Mouth of Chollas Creek	C02		-117.13520	32.68540	2001				Copper (Cu)	Dry weight	130	mg/kg	
Mouth of Chollas Creek	C02		-117.13520	32.68540	2001				Iron (Fe)	Dry weight	38400	mg/kg	
Mouth of Chollas Creek	C02		-117.13520	32.68540	2001				Lead (Pb)	Dry weight	73.7	mg/kg	
Mouth of Chollas Creek	C02		-117.13520	32.68540	2001				Mercury (Hg)	Dry weight	0.53	mg/kg	
Mouth of Chollas Creek	C02		-117.13520	32.68540	2001				Zinc (Zn)	Dry weight	212	mg/kg	
Mouth of Chollas Creek	C03		-117.13493	32.68500	2001				Aluminum (Al)	Dry weight	74300	mg/kg	
Mouth of Chollas Creek	C03		-117.13493	32.68500	2001				Arsenic (As)	Dry weight	11.4	mg/kg	
Mouth of Chollas Creek	C03		-117.13493	32.68500	2001				Cadmium (Cd)	Dry weight	1.30	mg/kg	
Mouth of Chollas Creek	C03		-117.13493	32.68500	2001				Copper (Cu)	Dry weight	155	mg/kg	
Mouth of Chollas Creek	C03		-117.13493	32.68500	2001				Iron (Fe)	Dry weight	40700	mg/kg	
Mouth of Chollas Creek	C03		-117.13493	32.68500	2001				Lead (Pb)	Dry weight	148	mg/kg	
Mouth of Chollas Creek	C03		-117.13493	32.68500	2001				Mercury (Hg)	Dry weight	0.54	mg/kg	
Mouth of Chollas Creek	C03		-117.13493	32.68500	2001				Zinc (Zn)	Dry weight	418	mg/kg	
Mouth of Chollas Creek	C04		-117.13495	32.68646	2001				Aluminum (Al)	Dry weight	69400	mg/kg	
Mouth of Chollas Creek	C04		-117.13495	32.68646	2001				Arsenic (As)	Dry weight	14.9	mg/kg	
Mouth of Chollas Creek	C04		-117.13495	32.68646	2001				Cadmium (Cd)	Dry weight	0.40	mg/kg	
Mouth of Chollas Creek	C04		-117.13495	32.68646	2001				Copper (Cu)	Dry weight	97.4	mg/kg	
Mouth of Chollas Creek	C04		-117.13495	32.68646	2001				Iron (Fe)	Dry weight	33800	mg/kg	
Mouth of Chollas Creek	C04		-117.13495	32.68646	2001				Lead (Pb)	Dry weight	67.7	mg/kg	
Mouth of Chollas Creek	C04		-117.13495	32.68646	2001				Mercury (Hg)	Dry weight	0.27	mg/kg	
Mouth of Chollas Creek	C04		-117.13495	32.68646	2001				Zinc (Zn)	Dry weight	270	mg/kg	
Mouth of Chollas Creek	C05		-117.13456	32.68594	2001				Aluminum (Al)	Dry weight	75600	mg/kg	
Mouth of Chollas Creek	C05		-117.13456	32.68594	2001				Arsenic (As)	Dry weight	8.9	mg/kg	
Mouth of Chollas Creek	C05		-117.13456	32.68594	2001				Cadmium (Cd)	Dry weight	0.51	mg/kg	
Mouth of Chollas Creek	C05		-117.13456	32.68594	2001				Copper (Cu)	Dry weight	108	mg/kg	
Mouth of Chollas Creek	C05		-117.13456	32.68594	2001				Iron (Fe)	Dry weight	39000	mg/kg	
Mouth of Chollas Creek	C05		-117.13456	32.68594	2001				Lead (Pb)	Dry weight	73.3	mg/kg	
Mouth of Chollas Creek	C05		-117.13456	32.68594	2001				Mercury (Hg)	Dry weight	0.40	mg/kg	
Mouth of Chollas Creek	C05		-117.13456	32.68594	2001				Zinc (Zn)	Dry weight	207	mg/kg	
Mouth of Chollas Creek	C06		-117.13407	32.68545	2001				Aluminum (Al)	Dry weight	72300	mg/kg	
Mouth of Chollas Creek	C06		-117.13407	32.68545	2001				Arsenic (As)	Dry weight	10.1	mg/kg	
Mouth of Chollas Creek	C06		-117.13407	32.68545	2001				Cadmium (Cd)	Dry weight	0.40	mg/kg	
Mouth of Chollas Creek	C06		-117.13407	32.68545	2001				Copper (Cu)	Dry weight	141	mg/kg	
Mouth of Chollas Creek	C06		-117.13407	32.68545	2001				Iron (Fe)	Dry weight	40300	mg/kg	
Mouth of Chollas Creek	C06		-117.13407	32.68545	2001				Lead (Pb)	Dry weight	78.4	mg/kg	
Mouth of Chollas Creek	C06		-117.13407	32.68545	2001				Mercury (Hg)	Dry weight	0.43	mg/kg	
Mouth of Chollas Creek	C06		-117.13407	32.68545	2001				Zinc (Zn)	Dry weight	233	mg/kg	
Mouth of Chollas Creek	C07		-117.13439	32.68723	2001				Aluminum (Al)	Dry weight	62500	mg/kg	
Mouth of Chollas Creek	C07		-117.13439	32.68723	2001				Arsenic (As)	Dry weight	10.9	mg/kg	
Mouth of Chollas Creek	C07		-117.13439	32.68723	2001				Cadmium (Cd)	Dry weight	0.29	mg/kg	

TABLE D-1
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United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Mouth of Chollas Creek	C07		-117.13439	32.68723	2001				Copper (Cu)	Dry weight	47.9	mg/kg	
Mouth of Chollas Creek	C07		-117.13439	32.68723	2001				Iron (Fe)	Dry weight	21900	mg/kg	
Mouth of Chollas Creek	C07		-117.13439	32.68723	2001				Lead (Pb)	Dry weight	43.1	mg/kg	
Mouth of Chollas Creek	C07		-117.13439	32.68723	2001				Mercury (Hg)	Dry weight	0.10	mg/kg	
Mouth of Chollas Creek	C07		-117.13439	32.68723	2001				Zinc (Zn)	Dry weight	225	mg/kg	
Mouth of Chollas Creek	C08		-117.13403	32.68686	2001				Aluminum (Al)	Dry weight	60800	mg/kg	
Mouth of Chollas Creek	C08		-117.13403	32.68686	2001				Arsenic (As)	Dry weight	9.3	mg/kg	
Mouth of Chollas Creek	C08		-117.13403	32.68686	2001				Cadmium (Cd)	Dry weight	0.32	mg/kg	
Mouth of Chollas Creek	C08		-117.13403	32.68686	2001				Copper (Cu)	Dry weight	68	mg/kg	
Mouth of Chollas Creek	C08		-117.13403	32.68686	2001				Iron (Fe)	Dry weight	26650	mg/kg	
Mouth of Chollas Creek	C08		-117.13403	32.68686	2001				Lead (Pb)	Dry weight	41.3	mg/kg	
Mouth of Chollas Creek	C08		-117.13403	32.68686	2001				Mercury (Hg)	Dry weight	0.13	mg/kg	
Mouth of Chollas Creek	C08		-117.13403	32.68686	2001				Zinc (Zn)	Dry weight	204	mg/kg	
Mouth of Chollas Creek	C09		-117.13364	32.68641	2001				Aluminum (Al)	Dry weight	73800	mg/kg	
Mouth of Chollas Creek	C09		-117.13364	32.68641	2001				Arsenic (As)	Dry weight	9.1	mg/kg	
Mouth of Chollas Creek	C09		-117.13364	32.68641	2001				Cadmium (Cd)	Dry weight	0.45	mg/kg	
Mouth of Chollas Creek	C09		-117.13364	32.68641	2001				Copper (Cu)	Dry weight	119	mg/kg	
Mouth of Chollas Creek	C09		-117.13364	32.68641	2001				Iron (Fe)	Dry weight	37400	mg/kg	
Mouth of Chollas Creek	C09		-117.13364	32.68641	2001				Lead (Pb)	Dry weight	65.4	mg/kg	
Mouth of Chollas Creek	C09		-117.13364	32.68641	2001				Mercury (Hg)	Dry weight	0.38	mg/kg	
Mouth of Chollas Creek	C09		-117.13364	32.68641	2001				Zinc (Zn)	Dry weight	206	mg/kg	
Mouth of Chollas Creek	C10		-117.13330	32.68595	2001				Aluminum (Al)	Dry weight	73900	mg/kg	
Mouth of Chollas Creek	C10		-117.13330	32.68595	2001				Arsenic (As)	Dry weight	9.6	mg/kg	
Mouth of Chollas Creek	C10		-117.13330	32.68595	2001				Cadmium (Cd)	Dry weight	0.38	mg/kg	
Mouth of Chollas Creek	C10		-117.13330	32.68595	2001				Copper (Cu)	Dry weight	314	mg/kg	
Mouth of Chollas Creek	C10		-117.13330	32.68595	2001				Iron (Fe)	Dry weight	37700	mg/kg	
Mouth of Chollas Creek	C10		-117.13330	32.68595	2001				Lead (Pb)	Dry weight	72.3	mg/kg	
Mouth of Chollas Creek	C10		-117.13330	32.68595	2001				Mercury (Hg)	Dry weight	0.43	mg/kg	
Mouth of Chollas Creek	C10		-117.13330	32.68595	2001				Zinc (Zn)	Dry weight	217	mg/kg	
Mouth of Chollas Creek	C11		-117.13353	32.68726	2001				Aluminum (Al)	Dry weight	64800	mg/kg	
Mouth of Chollas Creek	C11		-117.13353	32.68726	2001				Arsenic (As)	Dry weight	13.1	mg/kg	
Mouth of Chollas Creek	C11		-117.13353	32.68726	2001				Cadmium (Cd)	Dry weight	1.07	mg/kg	
Mouth of Chollas Creek	C11		-117.13353	32.68726	2001				Copper (Cu)	Dry weight	104	mg/kg	
Mouth of Chollas Creek	C11		-117.13353	32.68726	2001				Iron (Fe)	Dry weight	34000	mg/kg	
Mouth of Chollas Creek	C11		-117.13353	32.68726	2001				Lead (Pb)	Dry weight	96.1	mg/kg	
Mouth of Chollas Creek	C11		-117.13353	32.68726	2001				Mercury (Hg)	Dry weight	0.22	mg/kg	
Mouth of Chollas Creek	C11		-117.13353	32.68726	2001				Zinc (Zn)	Dry weight	273	mg/kg	
Mouth of Chollas Creek	C12		-117.13229	32.68760	2001				Aluminum (Al)	Dry weight	69900	mg/kg	
Mouth of Chollas Creek	C12		-117.13229	32.68760	2001				Arsenic (As)	Dry weight	6.8	mg/kg	
Mouth of Chollas Creek	C12		-117.13229	32.68760	2001				Cadmium (Cd)	Dry weight	0.50	mg/kg	
Mouth of Chollas Creek	C12		-117.13229	32.68760	2001				Copper (Cu)	Dry weight	78.5	mg/kg	
Mouth of Chollas Creek	C12		-117.13229	32.68760	2001				Iron (Fe)	Dry weight	30900	mg/kg	
Mouth of Chollas Creek	C12		-117.13229	32.68760	2001				Lead (Pb)	Dry weight	57.6	mg/kg	
Mouth of Chollas Creek	C12		-117.13229	32.68760	2001				Mercury (Hg)	Dry weight	0.21	mg/kg	
Mouth of Chollas Creek	C12		-117.13229	32.68760	2001				Zinc (Zn)	Dry weight	166	mg/kg	
Mouth of Chollas Creek	C13		-117.13088	32.68758	2001				Aluminum (Al)	Dry weight	73400	mg/kg	
Mouth of Chollas Creek	C13		-117.13088	32.68758	2001				Arsenic (As)	Dry weight	8.9	mg/kg	
Mouth of Chollas Creek	C13		-117.13088	32.68758	2001				Cadmium (Cd)	Dry weight	0.96	mg/kg	
Mouth of Chollas Creek	C13		-117.13088	32.68758	2001				Copper (Cu)	Dry weight	103	mg/kg	
Mouth of Chollas Creek	C13		-117.13088	32.68758	2001				Iron (Fe)	Dry weight	39500	mg/kg	
Mouth of Chollas Creek	C13		-117.13088	32.68758	2001				Lead (Pb)	Dry weight	87.2	mg/kg	
Mouth of Chollas Creek	C13		-117.13088	32.68758	2001				Mercury (Hg)	Dry weight	0.22	mg/kg	
Mouth of Chollas Creek	C13		-117.13088	32.68758	2001				Zinc (Zn)	Dry weight	248	mg/kg	
Mouth of Chollas Creek	C14		-117.12971	32.68763	2001				Aluminum (Al)	Dry weight	71700	mg/kg	
Mouth of Chollas Creek	C14		-117.12971	32.68763	2001				Arsenic (As)	Dry weight	9.4	mg/kg	
Mouth of Chollas Creek	C14		-117.12971	32.68763	2001				Cadmium (Cd)	Dry weight	1.37	mg/kg	
Mouth of Chollas Creek	C14		-117.12971	32.68763	2001				Copper (Cu)	Dry weight	94.9	mg/kg	
Mouth of Chollas Creek	C14		-117.12971	32.68763	2001				Iron (Fe)	Dry weight	41900	mg/kg	
Mouth of Chollas Creek	C14		-117.12971	32.68763	2001				Lead (Pb)	Dry weight	103	mg/kg	
Mouth of Chollas Creek	C14		-117.12971	32.68763	2001				Mercury (Hg)	Dry weight	0.24	mg/kg	
Mouth of Chollas Creek	C14		-117.12971	32.68763	2001				Zinc (Zn)	Dry weight	347	mg/kg	
Mouth of Paleta Creek	P01		-117.12407	32.67153	2001				Aluminum (Al)	Dry weight	66300	mg/kg	

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Mouth of Paleta Creek	P01		-117.12407	32.67153	2001				Arsenic (As)	Dry weight	6.7	mg/kg	
Mouth of Paleta Creek	P01		-117.12407	32.67153	2001				Cadmium (Cd)	Dry weight	0.14	mg/kg	&
Mouth of Paleta Creek	P01		-117.12407	32.67153	2001				Copper (Cu)	Dry weight	80.2	mg/kg	
Mouth of Paleta Creek	P01		-117.12407	32.67153	2001				Iron (Fe)	Dry weight	31000	mg/kg	
Mouth of Paleta Creek	P01		-117.12407	32.67153	2001				Lead (Pb)	Dry weight	33.7	mg/kg	
Mouth of Paleta Creek	P01		-117.12407	32.67153	2001				Mercury (Hg)	Dry weight	0.38	mg/kg	
Mouth of Paleta Creek	P01		-117.12407	32.67153	2001				Zinc (Zn)	Dry weight	162	mg/kg	
Mouth of Paleta Creek	P02		-117.12357	32.67069	2001				Aluminum (Al)	Dry weight	81000	mg/kg	
Mouth of Paleta Creek	P02		-117.12357	32.67069	2001				Arsenic (As)	Dry weight	10.2	mg/kg	
Mouth of Paleta Creek	P02		-117.12357	32.67069	2001				Cadmium (Cd)	Dry weight	0.17	mg/kg	
Mouth of Paleta Creek	P02		-117.12357	32.67069	2001				Copper (Cu)	Dry weight	170	mg/kg	
Mouth of Paleta Creek	P02		-117.12357	32.67069	2001				Iron (Fe)	Dry weight	48800	mg/kg	
Mouth of Paleta Creek	P02		-117.12357	32.67069	2001				Lead (Pb)	Dry weight	55.2	mg/kg	
Mouth of Paleta Creek	P02		-117.12357	32.67069	2001				Mercury (Hg)	Dry weight	0.63	mg/kg	
Mouth of Paleta Creek	P02		-117.12357	32.67069	2001				Zinc (Zn)	Dry weight	261	mg/kg	
Mouth of Paleta Creek	P03		-117.12234	32.67247	2001				Aluminum (Al)	Dry weight	71000	mg/kg	
Mouth of Paleta Creek	P03		-117.12234	32.67247	2001				Arsenic (As)	Dry weight	6.8	mg/kg	
Mouth of Paleta Creek	P03		-117.12234	32.67247	2001				Cadmium (Cd)	Dry weight	0.01	mg/kg	U
Mouth of Paleta Creek	P03		-117.12234	32.67247	2001				Copper (Cu)	Dry weight	98.1	mg/kg	
Mouth of Paleta Creek	P03		-117.12234	32.67247	2001				Iron (Fe)	Dry weight	33800	mg/kg	
Mouth of Paleta Creek	P03		-117.12234	32.67247	2001				Lead (Pb)	Dry weight	36.1	mg/kg	
Mouth of Paleta Creek	P03		-117.12234	32.67247	2001				Mercury (Hg)	Dry weight	0.35	mg/kg	
Mouth of Paleta Creek	P03		-117.12234	32.67247	2001				Zinc (Zn)	Dry weight	165	mg/kg	
Mouth of Paleta Creek	P04		-117.12177	32.67158	2001				Aluminum (Al)	Dry weight	83300	mg/kg	
Mouth of Paleta Creek	P04		-117.12177	32.67158	2001				Arsenic (As)	Dry weight	10.0	mg/kg	
Mouth of Paleta Creek	P04		-117.12177	32.67158	2001				Cadmium (Cd)	Dry weight	0.07	mg/kg	J
Mouth of Paleta Creek	P04		-117.12177	32.67158	2001				Copper (Cu)	Dry weight	203	mg/kg	
Mouth of Paleta Creek	P04		-117.12177	32.67158	2001				Iron (Fe)	Dry weight	53400	mg/kg	
Mouth of Paleta Creek	P04		-117.12177	32.67158	2001				Lead (Pb)	Dry weight	64.1	mg/kg	
Mouth of Paleta Creek	P04		-117.12177	32.67158	2001				Mercury (Hg)	Dry weight	0.65	mg/kg	
Mouth of Paleta Creek	P04		-117.12177	32.67158	2001				Zinc (Zn)	Dry weight	274	mg/kg	
Mouth of Paleta Creek	P05		-117.12123	32.67089	2001				Aluminum (Al)	Dry weight	83400	mg/kg	
Mouth of Paleta Creek	P05		-117.12123	32.67089	2001				Arsenic (As)	Dry weight	10.9	mg/kg	
Mouth of Paleta Creek	P05		-117.12123	32.67089	2001				Cadmium (Cd)	Dry weight	0.10	mg/kg	
Mouth of Paleta Creek	P05		-117.12123	32.67089	2001				Copper (Cu)	Dry weight	227	mg/kg	
Mouth of Paleta Creek	P05		-117.12123	32.67089	2001				Iron (Fe)	Dry weight	56300	mg/kg	
Mouth of Paleta Creek	P05		-117.12123	32.67089	2001				Lead (Pb)	Dry weight	72.8	mg/kg	
Mouth of Paleta Creek	P05		-117.12123	32.67089	2001				Mercury (Hg)	Dry weight	0.71	mg/kg	
Mouth of Paleta Creek	P05		-117.12123	32.67089	2001				Zinc (Zn)	Dry weight	294	mg/kg	
Mouth of Paleta Creek	P06		-117.12091	32.67321	2001				Aluminum (Al)	Dry weight	80500	mg/kg	
Mouth of Paleta Creek	P06		-117.12091	32.67321	2001				Arsenic (As)	Dry weight	11.3	mg/kg	
Mouth of Paleta Creek	P06		-117.12091	32.67321	2001				Cadmium (Cd)	Dry weight	0.18	mg/kg	
Mouth of Paleta Creek	P06		-117.12091	32.67321	2001				Copper (Cu)	Dry weight	247	mg/kg	
Mouth of Paleta Creek	P06		-117.12091	32.67321	2001				Iron (Fe)	Dry weight	52100	mg/kg	
Mouth of Paleta Creek	P06		-117.12091	32.67321	2001				Lead (Pb)	Dry weight	68.3	mg/kg	
Mouth of Paleta Creek	P06		-117.12091	32.67321	2001				Mercury (Hg)	Dry weight	0.72	mg/kg	
Mouth of Paleta Creek	P06		-117.12091	32.67321	2001				Zinc (Zn)	Dry weight	287	mg/kg	
Mouth of Paleta Creek	P07		-117.12023	32.67243	2001				Aluminum (Al)	Dry weight	81400	mg/kg	
Mouth of Paleta Creek	P07		-117.12023	32.67243	2001				Arsenic (As)	Dry weight	11.3	mg/kg	
Mouth of Paleta Creek	P07		-117.12023	32.67243	2001				Cadmium (Cd)	Dry weight	0.13	mg/kg	
Mouth of Paleta Creek	P07		-117.12023	32.67243	2001				Copper (Cu)	Dry weight	237	mg/kg	
Mouth of Paleta Creek	P07		-117.12023	32.67243	2001				Iron (Fe)	Dry weight	54100	mg/kg	
Mouth of Paleta Creek	P07		-117.12023	32.67243	2001				Lead (Pb)	Dry weight	73	mg/kg	
Mouth of Paleta Creek	P07		-117.12023	32.67243	2001				Mercury (Hg)	Dry weight	0.76	mg/kg	
Mouth of Paleta Creek	P07		-117.12023	32.67243	2001				Zinc (Zn)	Dry weight	288	mg/kg	
Mouth of Paleta Creek	P08		-117.11969	32.67164	2001				Aluminum (Al)	Dry weight	76200	mg/kg	
Mouth of Paleta Creek	P08		-117.11969	32.67164	2001				Arsenic (As)	Dry weight	6.0	mg/kg	
Mouth of Paleta Creek	P08		-117.11969	32.67164	2001				Cadmium (Cd)	Dry weight	0.09	mg/kg	
Mouth of Paleta Creek	P08		-117.11969	32.67164	2001				Copper (Cu)	Dry weight	106	mg/kg	
Mouth of Paleta Creek	P08		-117.11969	32.67164	2001				Iron (Fe)	Dry weight	42800	mg/kg	
Mouth of Paleta Creek	P08		-117.11969	32.67164	2001				Lead (Pb)	Dry weight	42.4	mg/kg	
Mouth of Paleta Creek	P08		-117.11969	32.67164	2001				Mercury (Hg)	Dry weight	0.44	mg/kg	

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Mouth of Paleta Creek	P08		-117.11969	32.67164	2001				Zinc (Zn)	Dry weight	184	mg/kg	
Mouth of Paleta Creek	P09		-117.11840	32.67236	2001				Aluminum (Al)	Dry weight	75900	mg/kg	
Mouth of Paleta Creek	P09		-117.11840	32.67236	2001				Arsenic (As)	Dry weight	2.8	mg/kg	
Mouth of Paleta Creek	P09		-117.11840	32.67236	2001				Cadmium (Cd)	Dry weight	0.01	mg/kg	U
Mouth of Paleta Creek	P09		-117.11840	32.67236	2001				Copper (Cu)	Dry weight	22.1	mg/kg	
Mouth of Paleta Creek	P09		-117.11840	32.67236	2001				Iron (Fe)	Dry weight	41900	mg/kg	
Mouth of Paleta Creek	P09		-117.11840	32.67236	2001				Lead (Pb)	Dry weight	11.3	mg/kg	
Mouth of Paleta Creek	P09		-117.11840	32.67236	2001				Mercury (Hg)	Dry weight	0.068	mg/kg	
Mouth of Paleta Creek	P09		-117.11840	32.67236	2001				Zinc (Zn)	Dry weight	89	mg/kg	
Mouth of Paleta Creek	P10		-117.11840	32.67197	2001				Aluminum (Al)	Dry weight	73000	mg/kg	
Mouth of Paleta Creek	P10		-117.11840	32.67197	2001				Arsenic (As)	Dry weight	5.4	mg/kg	
Mouth of Paleta Creek	P10		-117.11840	32.67197	2001				Cadmium (Cd)	Dry weight	0.35	mg/kg	
Mouth of Paleta Creek	P10		-117.11840	32.67197	2001				Copper (Cu)	Dry weight	105	mg/kg	
Mouth of Paleta Creek	P10		-117.11840	32.67197	2001				Iron (Fe)	Dry weight	41600	mg/kg	
Mouth of Paleta Creek	P10		-117.11840	32.67197	2001				Lead (Pb)	Dry weight	44.4	mg/kg	
Mouth of Paleta Creek	P10		-117.11840	32.67197	2001				Mercury (Hg)	Dry weight	0.304	mg/kg	
Mouth of Paleta Creek	P10		-117.11840	32.67197	2001				Zinc (Zn)	Dry weight	242	mg/kg	
Mouth of Paleta Creek	P11		-117.11822	32.67265	2001				Aluminum (Al)	Dry weight	74750	mg/kg	
Mouth of Paleta Creek	P11		-117.11822	32.67265	2001				Arsenic (As)	Dry weight	6.5	mg/kg	
Mouth of Paleta Creek	P11		-117.11822	32.67265	2001				Cadmium (Cd)	Dry weight	1.39	mg/kg	
Mouth of Paleta Creek	P11		-117.11822	32.67265	2001				Copper (Cu)	Dry weight	127	mg/kg	
Mouth of Paleta Creek	P11		-117.11822	32.67265	2001				Iron (Fe)	Dry weight	42400	mg/kg	
Mouth of Paleta Creek	P11		-117.11822	32.67265	2001				Lead (Pb)	Dry weight	116.0	mg/kg	
Mouth of Paleta Creek	P11		-117.11822	32.67265	2001				Mercury (Hg)	Dry weight	1.08	mg/kg	
Mouth of Paleta Creek	P11		-117.11822	32.67265	2001				Zinc (Zn)	Dry weight	304	mg/kg	
Mouth of Paleta Creek	P12		-117.11770	32.67232	2001				Aluminum (Al)	Dry weight	79200	mg/kg	
Mouth of Paleta Creek	P12		-117.11770	32.67232	2001				Arsenic (As)	Dry weight	5.9	mg/kg	
Mouth of Paleta Creek	P12		-117.11770	32.67232	2001				Cadmium (Cd)	Dry weight	0.20	mg/kg	
Mouth of Paleta Creek	P12		-117.11770	32.67232	2001				Copper (Cu)	Dry weight	134	mg/kg	
Mouth of Paleta Creek	P12		-117.11770	32.67232	2001				Iron (Fe)	Dry weight	44500	mg/kg	
Mouth of Paleta Creek	P12		-117.11770	32.67232	2001				Lead (Pb)	Dry weight	52.3	mg/kg	
Mouth of Paleta Creek	P12		-117.11770	32.67232	2001				Mercury (Hg)	Dry weight	0.34	mg/kg	
Mouth of Paleta Creek	P12		-117.11770	32.67232	2001				Zinc (Zn)	Dry weight	180	mg/kg	
Mouth of Paleta Creek	P13		-117.11733	32.67306	2001				Aluminum (Al)	Dry weight	71700	mg/kg	
Mouth of Paleta Creek	P13		-117.11733	32.67306	2001				Arsenic (As)	Dry weight	4.2	mg/kg	
Mouth of Paleta Creek	P13		-117.11733	32.67306	2001				Cadmium (Cd)	Dry weight	0.17	mg/kg	
Mouth of Paleta Creek	P13		-117.11733	32.67306	2001				Copper (Cu)	Dry weight	71.9	mg/kg	
Mouth of Paleta Creek	P13		-117.11733	32.67306	2001				Iron (Fe)	Dry weight	28700	mg/kg	
Mouth of Paleta Creek	P13		-117.11733	32.67306	2001				Lead (Pb)	Dry weight	40.7	mg/kg	
Mouth of Paleta Creek	P13		-117.11733	32.67306	2001				Mercury (Hg)	Dry weight	0.25	mg/kg	
Mouth of Paleta Creek	P13		-117.11733	32.67306	2001				Zinc (Zn)	Dry weight	174	mg/kg	
Mouth of Paleta Creek	P14		-117.11709	32.67268	2001				Aluminum (Al)	Dry weight	80200	mg/kg	
Mouth of Paleta Creek	P14		-117.11709	32.67268	2001				Arsenic (As)	Dry weight	6.6	mg/kg	
Mouth of Paleta Creek	P14		-117.11709	32.67268	2001				Cadmium (Cd)	Dry weight	0.57	mg/kg	
Mouth of Paleta Creek	P14		-117.11709	32.67268	2001				Copper (Cu)	Dry weight	138	mg/kg	
Mouth of Paleta Creek	P14		-117.11709	32.67268	2001				Iron (Fe)	Dry weight	43100	mg/kg	
Mouth of Paleta Creek	P14		-117.11709	32.67268	2001				Lead (Pb)	Dry weight	67.2	mg/kg	
Mouth of Paleta Creek	P14		-117.11709	32.67268	2001				Mercury (Hg)	Dry weight	0.46	mg/kg	
Mouth of Paleta Creek	P14		-117.11709	32.67268	2001				Zinc (Zn)	Dry weight	246	mg/kg	
Mouth of Paleta Creek	P15		-117.11669	32.67342	2001				Aluminum (Al)	Dry weight	77400	mg/kg	
Mouth of Paleta Creek	P15		-117.11669	32.67342	2001				Arsenic (As)	Dry weight	7.9	mg/kg	
Mouth of Paleta Creek	P15		-117.11669	32.67342	2001				Cadmium (Cd)	Dry weight	1.59	mg/kg	
Mouth of Paleta Creek	P15		-117.11669	32.67342	2001				Copper (Cu)	Dry weight	157	mg/kg	
Mouth of Paleta Creek	P15		-117.11669	32.67342	2001				Iron (Fe)	Dry weight	44500	mg/kg	
Mouth of Paleta Creek	P15		-117.11669	32.67342	2001				Lead (Pb)	Dry weight	159.1	mg/kg	
Mouth of Paleta Creek	P15		-117.11669	32.67342	2001				Mercury (Hg)	Dry weight	0.61	mg/kg	
Mouth of Paleta Creek	P15		-117.11669	32.67342	2001				Zinc (Zn)	Dry weight	374	mg/kg	
Mouth of Paleta Creek	P16		-117.11642	32.67305	2001				Aluminum (Al)	Dry weight	78400	mg/kg	
Mouth of Paleta Creek	P16		-117.11642	32.67305	2001				Arsenic (As)	Dry weight	7.6	mg/kg	
Mouth of Paleta Creek	P16		-117.11642	32.67305	2001				Cadmium (Cd)	Dry weight	0.89	mg/kg	
Mouth of Paleta Creek	P16		-117.11642	32.67305	2001				Copper (Cu)	Dry weight	181	mg/kg	
Mouth of Paleta Creek	P16		-117.11642	32.67305	2001				Iron (Fe)	Dry weight	47700	mg/kg	

TABLE D-1
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United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Mouth of Paleta Creek	P16		-117.11642	32.67305	2001				Lead (Pb)	Dry weight	91.4	mg/kg	
Mouth of Paleta Creek	P16		-117.11642	32.67305	2001				Mercury (Hg)	Dry weight	0.56	mg/kg	
Mouth of Paleta Creek	P16		-117.11642	32.67305	2001				Zinc (Zn)	Dry weight	314	mg/kg	
Mouth of Paleta Creek	P17		-117.11601	32.67376	2001				Aluminum (Al)	Dry weight	72800	mg/kg	
Mouth of Paleta Creek	P17		-117.11601	32.67376	2001				Arsenic (As)	Dry weight	19.8	mg/kg	
Mouth of Paleta Creek	P17		-117.11601	32.67376	2001				Cadmium (Cd)	Dry weight	1.27	mg/kg	
Mouth of Paleta Creek	P17		-117.11601	32.67376	2001				Copper (Cu)	Dry weight	157	mg/kg	
Mouth of Paleta Creek	P17		-117.11601	32.67376	2001				Iron (Fe)	Dry weight	40200	mg/kg	
Mouth of Paleta Creek	P17		-117.11601	32.67376	2001				Lead (Pb)	Dry weight	102.8	mg/kg	
Mouth of Paleta Creek	P17		-117.11601	32.67376	2001				Mercury (Hg)	Dry weight	0.6	mg/kg	
Mouth of Paleta Creek	P17		-117.11601	32.67376	2001				Zinc (Zn)	Dry weight	370	mg/kg	
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008			ICP-OES	Aluminum (Al)	Dry weight	79100	mg/kg	
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008			ICP-MS	Arsenic (As)	Dry weight	16.9	mg/kg	
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.541	mg/kg	
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008			ICP-OES	Copper (Cu)	Dry weight	366	mg/kg	
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008			ICP-OES	Iron (Fe)	Dry weight	50000	mg/kg	
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008			ICP-MS	Lead (Pb)	Dry weight	102	mg/kg	
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008			CVAA	Mercury (Hg)	Dry weight	1.33	mg/kg	
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008			ICP-OES	Zinc (Zn)	Dry weight	482	mg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008			ICP-OES	Aluminum (Al)	Dry weight	79300	mg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008			ICP-MS	Arsenic (As)	Dry weight	14.8	mg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.288	mg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008			ICP-OES	Copper (Cu)	Dry weight	282	mg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008			ICP-OES	Iron (Fe)	Dry weight	52400	mg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008			ICP-MS	Lead (Pb)	Dry weight	82.2	mg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008			CVAA	Mercury (Hg)	Dry weight	0.929	mg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008			ICP-OES	Zinc (Zn)	Dry weight	335	mg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008			ICP-OES	Aluminum (Al)	Dry weight	81100	mg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008			ICP-MS	Arsenic (As)	Dry weight	14.8	mg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.205	mg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008			ICP-OES	Copper (Cu)	Dry weight	254	mg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008			ICP-OES	Iron (Fe)	Dry weight	52200	mg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008			ICP-MS	Lead (Pb)	Dry weight	73.8	mg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008			CVAA	Mercury (Hg)	Dry weight	0.897	mg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008			ICP-OES	Zinc (Zn)	Dry weight	315	mg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008			ICP-OES	Aluminum (Al)	Dry weight	76900	mg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008			ICP-MS	Arsenic (As)	Dry weight	12.4	mg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.187	mg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008			ICP-OES	Copper (Cu)	Dry weight	185	mg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008			ICP-OES	Iron (Fe)	Dry weight	45600	mg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008			ICP-MS	Lead (Pb)	Dry weight	61.4	mg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008			CVAA	Mercury (Hg)	Dry weight	0.699	mg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008			ICP-OES	Zinc (Zn)	Dry weight	261	mg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008			ICP-OES	Aluminum (Al)	Dry weight	75900	mg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008			ICP-MS	Arsenic (As)	Dry weight	9.65	mg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.143	mg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008			ICP-OES	Copper (Cu)	Dry weight	133	mg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008			ICP-OES	Iron (Fe)	Dry weight	38500	mg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008			ICP-MS	Lead (Pb)	Dry weight	47.9	mg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008			CVAA	Mercury (Hg)	Dry weight	0.536	mg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008			ICP-OES	Zinc (Zn)	Dry weight	200	mg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008			ICP-OES	Aluminum (Al)	Dry weight	77400	mg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008			ICP-MS	Arsenic (As)	Dry weight	14.2	mg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.396	mg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008			ICP-OES	Copper (Cu)	Dry weight	317	mg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008			ICP-OES	Iron (Fe)	Dry weight	48100	mg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008			ICP-MS	Lead (Pb)	Dry weight	81.8	mg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008			CVAA	Mercury (Hg)	Dry weight	1.03	mg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008			ICP-OES	Zinc (Zn)	Dry weight	353	mg/kg	
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008			ICP-OES	Aluminum (Al)	Dry weight	78100	mg/kg	
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008			ICP-MS	Arsenic (As)	Dry weight	15.5	mg/kg	
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.343	mg/kg	

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NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008			ICP-OES	Copper (Cu)	Dry weight	328	mg/kg	
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008			ICP-OES	Iron (Fe)	Dry weight	50500	mg/kg	
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008			ICP-MS	Lead (Pb)	Dry weight	82.5	mg/kg	
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008			CVAA	Mercury (Hg)	Dry weight	0.975	mg/kg	
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008			ICP-OES	Zinc (Zn)	Dry weight	364	mg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008			ICP-OES	Aluminum (Al)	Dry weight	78800	mg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008			ICP-MS	Arsenic (As)	Dry weight	12.1	mg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.418	mg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008			ICP-OES	Copper (Cu)	Dry weight	275	mg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008			ICP-OES	Iron (Fe)	Dry weight	43600	mg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008			ICP-MS	Lead (Pb)	Dry weight	84.1	mg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008			CVAA	Mercury (Hg)	Dry weight	1.03	mg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008			ICP-OES	Zinc (Zn)	Dry weight	320	mg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008			ICP-OES	Aluminum (Al)	Dry weight	79100	mg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008			ICP-MS	Arsenic (As)	Dry weight	12.8	mg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.288	mg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008			ICP-OES	Copper (Cu)	Dry weight	241	mg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008			ICP-OES	Iron (Fe)	Dry weight	48900	mg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008			ICP-MS	Lead (Pb)	Dry weight	73.6	mg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008			CVAA	Mercury (Hg)	Dry weight	0.970	mg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008			ICP-OES	Zinc (Zn)	Dry weight	311	mg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008			ICP-OES	Aluminum (Al)	Dry weight	74500	mg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008			ICP-MS	Arsenic (As)	Dry weight	13.6	mg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.354	mg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008			ICP-OES	Copper (Cu)	Dry weight	277	mg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008			ICP-OES	Iron (Fe)	Dry weight	43500	mg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008			ICP-MS	Lead (Pb)	Dry weight	73.9	mg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008			CVAA	Mercury (Hg)	Dry weight	0.755	mg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008			ICP-OES	Zinc (Zn)	Dry weight	342	mg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008			ICP-OES	Aluminum (Al)	Dry weight	79300	mg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008			ICP-MS	Arsenic (As)	Dry weight	13.6	mg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.267	mg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008			ICP-OES	Copper (Cu)	Dry weight	316	mg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008			ICP-OES	Iron (Fe)	Dry weight	51000	mg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008			ICP-MS	Lead (Pb)	Dry weight	75.4	mg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008			CVAA	Mercury (Hg)	Dry weight	0.906	mg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008			ICP-OES	Zinc (Zn)	Dry weight	338	mg/kg	
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008			ICP-OES	Aluminum (Al)	Dry weight	81000	mg/kg	
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008			ICP-MS	Arsenic (As)	Dry weight	5.28	mg/kg	
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.189	mg/kg	
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008			ICP-OES	Copper (Cu)	Dry weight	47.8	mg/kg	
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008			ICP-OES	Iron (Fe)	Dry weight	24400	mg/kg	
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008			ICP-MS	Lead (Pb)	Dry weight	27.8	mg/kg	
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008			CVAA	Mercury (Hg)	Dry weight	0.282	mg/kg	
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008			ICP-OES	Zinc (Zn)	Dry weight	114	mg/kg	
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008			ICP-OES	Aluminum (Al)	Dry weight	62900	mg/kg	
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008			ICP-MS	Arsenic (As)	Dry weight	6.06	mg/kg	
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.125	mg/kg	
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008			ICP-OES	Copper (Cu)	Dry weight	69.0	mg/kg	
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008			ICP-OES	Iron (Fe)	Dry weight	28200	mg/kg	
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008			ICP-MS	Lead (Pb)	Dry weight	30.7	mg/kg	
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008			CVAA	Mercury (Hg)	Dry weight	0.280	mg/kg	
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008			ICP-OES	Zinc (Zn)	Dry weight	127	mg/kg	
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008			ICP-OES	Aluminum (Al)	Dry weight	78000	mg/kg	
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008			ICP-MS	Arsenic (As)	Dry weight	10.7	mg/kg	
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.252	mg/kg	
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008			ICP-OES	Copper (Cu)	Dry weight	255	mg/kg	
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008			ICP-OES	Iron (Fe)	Dry weight	42000	mg/kg	
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008			ICP-MS	Lead (Pb)	Dry weight	62.7	mg/kg	
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008			CVAA	Mercury (Hg)	Dry weight	0.657	mg/kg	
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008			ICP-OES	Zinc (Zn)	Dry weight	262	mg/kg	
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008			ICP-OES	Aluminum (Al)	Dry weight	78500	mg/kg	

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United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008			ICP-MS	Arsenic (As)	Dry weight	10.6	mg/kg	
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.669	mg/kg	
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008			ICP-OES	Copper (Cu)	Dry weight	197	mg/kg	
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008			ICP-OES	Iron (Fe)	Dry weight	42100	mg/kg	
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008			ICP-MS	Lead (Pb)	Dry weight	63.2	mg/kg	
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008			CVAA	Mercury (Hg)	Dry weight	0.793	mg/kg	
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008			ICP-OES	Zinc (Zn)	Dry weight	308	mg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008			ICP-OES	Aluminum (Al)	Dry weight	76800	mg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008			ICP-MS	Arsenic (As)	Dry weight	9.43	mg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.286	mg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008			ICP-OES	Copper (Cu)	Dry weight	143	mg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008			ICP-OES	Iron (Fe)	Dry weight	39100	mg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008			ICP-MS	Lead (Pb)	Dry weight	48.1	mg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008			CVAA	Mercury (Hg)	Dry weight	0.549	mg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008			ICP-OES	Zinc (Zn)	Dry weight	205	mg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008			ICP-OES	Aluminum (Al)	Dry weight	74200	mg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008			ICP-MS	Arsenic (As)	Dry weight	16.3	mg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008			ICP/MS	Cadmium (Cd)	Dry weight	1.26	mg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008			ICP-OES	Copper (Cu)	Dry weight	290	mg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008			ICP-OES	Iron (Fe)	Dry weight	40100	mg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008			ICP-MS	Lead (Pb)	Dry weight	98.7	mg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008			CVAA	Mercury (Hg)	Dry weight	0.542	mg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008			ICP-OES	Zinc (Zn)	Dry weight	410	mg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008			ICP-OES	Aluminum (Al)	Dry weight	80800	mg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008			ICP-MS	Arsenic (As)	Dry weight	12.6	mg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.280	mg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008			ICP-OES	Copper (Cu)	Dry weight	292	mg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008			ICP-OES	Iron (Fe)	Dry weight	48000	mg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008			ICP-MS	Lead (Pb)	Dry weight	68.8	mg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008			CVAA	Mercury (Hg)	Dry weight	0.688	mg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008			ICP-OES	Zinc (Zn)	Dry weight	327	mg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008			ICP-OES	Aluminum (Al)	Dry weight	77900	mg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008			ICP-MS	Arsenic (As)	Dry weight	10.2	mg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.201	mg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008			ICP-OES	Copper (Cu)	Dry weight	235	mg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008			ICP-OES	Iron (Fe)	Dry weight	44700	mg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008			ICP-MS	Lead (Pb)	Dry weight	59.2	mg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008			CVAA	Mercury (Hg)	Dry weight	0.567	mg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008			ICP-OES	Zinc (Zn)	Dry weight	271	mg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008			ICP-OES	Aluminum (Al)	Dry weight	79000	mg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008			ICP-MS	Arsenic (As)	Dry weight	10.8	mg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.145	mg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008			ICP-OES	Copper (Cu)	Dry weight	231	mg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008			ICP-OES	Iron (Fe)	Dry weight	46100	mg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008			ICP-MS	Lead (Pb)	Dry weight	65.1	mg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008			CVAA	Mercury (Hg)	Dry weight	0.628	mg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008			ICP-OES	Zinc (Zn)	Dry weight	276	mg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008			ICP-OES	Aluminum (Al)	Dry weight	79900	mg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008			ICP-MS	Arsenic (As)	Dry weight	17.8	mg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.518	mg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008			ICP-OES	Copper (Cu)	Dry weight	297	mg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008			ICP-OES	Iron (Fe)	Dry weight	49800	mg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008			ICP-MS	Lead (Pb)	Dry weight	103	mg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008			CVAA	Mercury (Hg)	Dry weight	1.71	mg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008			ICP-OES	Zinc (Zn)	Dry weight	394	mg/kg	
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008			ICP-OES	Aluminum (Al)	Dry weight	78700	mg/kg	
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008			ICP-MS	Arsenic (As)	Dry weight	16.1	mg/kg	
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.168	mg/kg	
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008			ICP-OES	Copper (Cu)	Dry weight	262	mg/kg	
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008			ICP-OES	Iron (Fe)	Dry weight	52200	mg/kg	
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008			ICP-MS	Lead (Pb)	Dry weight	77.2	mg/kg	
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008			CVAA	Mercury (Hg)	Dry weight	0.934	mg/kg	

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PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008			ICP-OES	Zinc (Zn)	Dry weight	308	mg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008			ICP-OES	Aluminum (Al)	Dry weight	72700	mg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008			ICP-MS	Arsenic (As)	Dry weight	14.4	mg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.272	mg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008			ICP-OES	Copper (Cu)	Dry weight	212	mg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008			ICP-OES	Iron (Fe)	Dry weight	46000	mg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008			ICP-MS	Lead (Pb)	Dry weight	89.7	mg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008			CVAA	Mercury (Hg)	Dry weight	0.822	mg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008			ICP-OES	Zinc (Zn)	Dry weight	282	mg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008			ICP-OES	Aluminum (Al)	Dry weight	76100	mg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008			ICP-MS	Arsenic (As)	Dry weight	11.9	mg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008			ICP/MS	Cadmium (Cd)	Dry weight	0.158	mg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008			ICP-OES	Copper (Cu)	Dry weight	188	mg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008			ICP-OES	Iron (Fe)	Dry weight	45400	mg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008			ICP-MS	Lead (Pb)	Dry weight	61.3	mg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008			CVAA	Mercury (Hg)	Dry weight	0.668	mg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008			ICP-OES	Zinc (Zn)	Dry weight	260	mg/kg	
PRISM 2002	P17-1		-117.11592	32.67371	2002			AES	Aluminum (Al)	Dry weight	65060	mg/kg	
PRISM 2002	P17-1		-117.11592	32.67371	2002			ICP-MS	Arsenic (As)	Dry weight	12.2	mg/kg	
PRISM 2002	P17-1		-117.11592	32.67371	2002			ICP-MS	Cadmium (Cd)	Dry weight	1.48	mg/kg	
PRISM 2002	P17-1		-117.11592	32.67371	2002			AES	Copper (Cu)	Dry weight	125	mg/kg	
PRISM 2002	P17-1		-117.11592	32.67371	2002			AES	Iron (Fe)	Dry weight	35351	mg/kg	
PRISM 2002	P17-1		-117.11592	32.67371	2002			ICP-MS	Lead (Pb)	Dry weight	91.8	mg/kg	
PRISM 2002	P17-1		-117.11592	32.67371	2002			CVAF	Mercury (Hg)	Dry weight	0.329	mg/kg	
PRISM 2002	P17-1		-117.11592	32.67371	2002			AES	Zinc (Zn)	Dry weight	306	mg/kg	
PRISM 2002	P17-2		-117.11586	32.67368	2002			AES	Aluminum (Al)	Dry weight	66067	mg/kg	
PRISM 2002	P17-2		-117.11586	32.67368	2002			ICP-MS	Arsenic (As)	Dry weight	10.2	mg/kg	
PRISM 2002	P17-2		-117.11586	32.67368	2002			ICP-MS	Cadmium (Cd)	Dry weight	1.38	mg/kg	
PRISM 2002	P17-2		-117.11586	32.67368	2002			AES	Copper (Cu)	Dry weight	138	mg/kg	
PRISM 2002	P17-2		-117.11586	32.67368	2002			AES	Iron (Fe)	Dry weight	35123	mg/kg	
PRISM 2002	P17-2		-117.11586	32.67368	2002			ICP-MS	Lead (Pb)	Dry weight	101	mg/kg	
PRISM 2002	P17-2		-117.11586	32.67368	2002			CVAF	Mercury (Hg)	Dry weight	0.326	mg/kg	
PRISM 2002	P17-2		-117.11586	32.67368	2002			AES	Zinc (Zn)	Dry weight	414	mg/kg	
PRISM 2002	P17-3		-117.11595	32.67365	2002			AES	Aluminum (Al)	Dry weight	66140	mg/kg	
PRISM 2002	P17-3		-117.11595	32.67365	2002			ICP-MS	Arsenic (As)	Dry weight	8.92	mg/kg	
PRISM 2002	P17-3		-117.11595	32.67365	2002			ICP-MS	Cadmium (Cd)	Dry weight	1.46	mg/kg	
PRISM 2002	P17-3		-117.11595	32.67365	2002			AES	Copper (Cu)	Dry weight	122	mg/kg	
PRISM 2002	P17-3		-117.11595	32.67365	2002			AES	Iron (Fe)	Dry weight	36620	mg/kg	
PRISM 2002	P17-3		-117.11595	32.67365	2002			ICP-MS	Lead (Pb)	Dry weight	110	mg/kg	
PRISM 2002	P17-3		-117.11595	32.67365	2002			CVAF	Mercury (Hg)	Dry weight	0.355	mg/kg	
PRISM 2002	P17-3		-117.11595	32.67365	2002			AES	Zinc (Zn)	Dry weight	329	mg/kg	
PRISM 2002	PO4-1		-117.12164	32.67153	2002			AES	Aluminum (Al)	Dry weight	65595	mg/kg	
PRISM 2002	PO4-1		-117.12164	32.67153	2002			ICP-MS	Arsenic (As)	Dry weight	12.9	mg/kg	
PRISM 2002	PO4-1		-117.12164	32.67153	2002			ICP-MS	Cadmium (Cd)	Dry weight	1.20	mg/kg	
PRISM 2002	PO4-1		-117.12164	32.67153	2002			AES	Copper (Cu)	Dry weight	92.8	mg/kg	
PRISM 2002	PO4-1		-117.12164	32.67153	2002			AES	Iron (Fe)	Dry weight	32427	mg/kg	
PRISM 2002	PO4-1		-117.12164	32.67153	2002			ICP-MS	Lead (Pb)	Dry weight	45.7	mg/kg	
PRISM 2002	PO4-1		-117.12164	32.67153	2002			CVAF	Mercury (Hg)	Dry weight	0.391	mg/kg	
PRISM 2002	PO4-1		-117.12164	32.67153	2002			AES	Zinc (Zn)	Dry weight	174	mg/kg	
PRISM 2002	PO4-2		-117.12154	32.67152	2002			AES	Aluminum (Al)	Dry weight	74997	mg/kg	
PRISM 2002	PO4-2		-117.12154	32.67152	2002			ICP-MS	Arsenic (As)	Dry weight	14.6	mg/kg	
PRISM 2002	PO4-2		-117.12154	32.67152	2002			ICP-MS	Cadmium (Cd)	Dry weight	0.652	mg/kg	J
PRISM 2002	PO4-2		-117.12154	32.67152	2002			AES	Copper (Cu)	Dry weight	179	mg/kg	
PRISM 2002	PO4-2		-117.12154	32.67152	2002			AES	Iron (Fe)	Dry weight	46734	mg/kg	
PRISM 2002	PO4-2		-117.12154	32.67152	2002			ICP-MS	Lead (Pb)	Dry weight	68.9	mg/kg	
PRISM 2002	PO4-2		-117.12154	32.67152	2002			CVAF	Mercury (Hg)	Dry weight	0.652	mg/kg	
PRISM 2002	PO4-2		-117.12154	32.67152	2002			AES	Zinc (Zn)	Dry weight	273	mg/kg	
PRISM 2002	PO4-3		-117.12162	32.67160	2002			AES	Aluminum (Al)	Dry weight	72390	mg/kg	
PRISM 2002	PO4-3		-117.12162	32.67160	2002			ICP-MS	Arsenic (As)	Dry weight	16.3	mg/kg	
PRISM 2002	PO4-3		-117.12162	32.67160	2002			ICP-MS	Cadmium (Cd)	Dry weight	0.268	mg/kg	J
PRISM 2002	PO4-3		-117.12162	32.67160	2002			AES	Copper (Cu)	Dry weight	167	mg/kg	
PRISM 2002	PO4-3		-117.12162	32.67160	2002			AES	Iron (Fe)	Dry weight	44505	mg/kg	

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
PRISM 2002	PO4-3		-117.12162	32.67160	2002			ICP-MS	Lead (Pb)	Dry weight	61.0	mg/kg	
PRISM 2002	PO4-3		-117.12162	32.67160	2002			CVAF	Mercury (Hg)	Dry weight	0.607	mg/kg	
PRISM 2002	PO4-3		-117.12162	32.67160	2002			AES	Zinc (Zn)	Dry weight	242	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S01		-117.12499	32.67971	1993-2009		Grab		Arsenic (As)	Dry weight	13.0	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S01		-117.12499	32.67971	1993-2009		Grab		Cadmium (Cd)	Dry weight	1.5	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S01		-117.12499	32.67971	1993-2009		Grab		Copper (Cu)	Dry weight	378.9	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S01		-117.12499	32.67971	1993-2009		Grab		Lead (Pb)	Dry weight	130.3	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S01		-117.12499	32.67971	1993-2009		Grab		Mercury (Hg)	Dry weight	1.3	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S01		-117.12499	32.67971	1993-2009		Grab		Zinc (Zn)	Dry weight	448.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S02		-117.12803	32.67751	1993-2009		Grab		Arsenic (As)	Dry weight	9.2	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S02		-117.12803	32.67751	1993-2009		Grab		Cadmium (Cd)	Dry weight	1.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S02		-117.12803	32.67751	1993-2009		Grab		Copper (Cu)	Dry weight	44.9	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S02		-117.12803	32.67751	1993-2009		Grab		Lead (Pb)	Dry weight	250.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S02		-117.12803	32.67751	1993-2009		Grab		Mercury (Hg)	Dry weight	1.0	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S02		-117.12803	32.67751	1993-2009		Grab		Zinc (Zn)	Dry weight	326.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S03		-117.12660	32.67837	1993-2009		Grab		Arsenic (As)	Dry weight	8.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S03		-117.12660	32.67837	1993-2009		Grab		Cadmium (Cd)	Dry weight	1.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S03		-117.12660	32.67837	1993-2009		Grab		Copper (Cu)	Dry weight	293.2	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S03		-117.12660	32.67837	1993-2009		Grab		Lead (Pb)	Dry weight	177.7	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S03		-117.12660	32.67837	1993-2009		Grab		Mercury (Hg)	Dry weight	1.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S03		-117.12660	32.67837	1993-2009		Grab		Zinc (Zn)	Dry weight	319.5	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S04		-117.12463	32.67929	1993-2009		Grab		Arsenic (As)	Dry weight	12.7	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S04		-117.12463	32.67929	1993-2009		Grab		Cadmium (Cd)	Dry weight	5.8	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S04		-117.12463	32.67929	1993-2009		Grab		Copper (Cu)	Dry weight	456.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S04		-117.12463	32.67929	1993-2009		Grab		Lead (Pb)	Dry weight	97.4	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S04		-117.12463	32.67929	1993-2009		Grab		Mercury (Hg)	Dry weight	0.9	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S04		-117.12463	32.67929	1993-2009		Grab		Zinc (Zn)	Dry weight	411.3	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S06		-117.12496	32.67818	1993-2009		Grab		Arsenic (As)	Dry weight	10.4	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S06		-117.12496	32.67818	1993-2009		Grab		Cadmium (Cd)	Dry weight	1.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S06		-117.12496	32.67818	1993-2009		Grab		Copper (Cu)	Dry weight	351.6	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S06		-117.12496	32.67818	1993-2009		Grab		Lead (Pb)	Dry weight	72.4	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S06		-117.12496	32.67818	1993-2009		Grab		Mercury (Hg)	Dry weight	0.8	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S06		-117.12496	32.67818	1993-2009		Grab		Zinc (Zn)	Dry weight	306.1	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	STD-GVD-S01		-117.12425	32.67877	1993-2009		Grab		Arsenic (As)	Dry weight	14.5	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	STD-GVD-S01		-117.12425	32.67877	1993-2009		Grab		Cadmium (Cd)	Dry weight	1.2	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	STD-GVD-S01		-117.12425	32.67877	1993-2009		Grab		Copper (Cu)	Dry weight	415.3	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	STD-GVD-S01		-117.12425	32.67877	1993-2009		Grab		Lead (Pb)	Dry weight	80.5	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	STD-GVD-S01		-117.12425	32.67877	1993-2009		Grab		Mercury (Hg)	Dry weight	0.8	mg/kg	
PWC Graving Dock Naval Station NPDES Permit	STD-GVD-S01		-117.12425	32.67877	1993-2009		Grab		Zinc (Zn)	Dry weight	385.9	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	Crecelius,1993X	Arsenic (As)	Dry weight	11.9	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	GFAA	Cadmium (Cd)	Dry weight	0.69	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Copper (Cu)	Dry weight	220	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Iron (Fe)	Dry weight	41700	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Lead (Pb)	Dry weight	97.9	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	CVAF	Mercury (Hg)	Dry weight	1.29	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Zinc (Zn)	Dry weight	386	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Arsenic (As)	Dry weight	18.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Arsenic (As)	Dry weight	20	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	GFAA	Cadmium (Cd)	Dry weight	0.74	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	GFAA	Cadmium (Cd)	Dry weight	0.97	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Copper (Cu)	Dry weight	214	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Copper (Cu)	Dry weight	314	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Iron (Fe)	Dry weight	44600	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Iron (Fe)	Dry weight	45400	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Lead (Pb)	Dry weight	122	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Lead (Pb)	Dry weight	170	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	CVAF	Mercury (Hg)	Dry weight	1.04	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	CVAF	Mercury (Hg)	Dry weight	1.18	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Zinc (Zn)	Dry weight	499	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-1R		-117.12985	32.67933	16-Jun-95	Sediment	Discrete Sample	XRF	Zinc (Zn)	Dry weight	564	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB1-S-R2		-117.12985	32.67933	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	14.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB1-S-R2		-117.12985	32.67933	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	1.56	mg/kg	

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Sediment Quality Characterization Naval Station San Diego	NSB1-S-R2		-117.12985	32.67933	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	270	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB1-S-R2		-117.12985	32.67933	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	45700	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB1-S-R2		-117.12985	32.67933	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	90.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB1-S-R2		-117.12985	32.67933	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	1.168	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB1-S-R2		-117.12985	32.67933	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	579	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-2		-117.13298	32.67208	16-Jun-95	Sediment	Discrete Sample	XRF	Arsenic (As)	Dry weight	7.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-2		-117.13298	32.67208	16-Jun-95	Sediment	Discrete Sample	GFAA	Cadmium (Cd)	Dry weight	0.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-2		-117.13298	32.67208	16-Jun-95	Sediment	Discrete Sample	XRF	Copper (Cu)	Dry weight	83.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-2		-117.13298	32.67208	16-Jun-95	Sediment	Discrete Sample	XRF	Iron (Fe)	Dry weight	29400	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-2		-117.13298	32.67208	16-Jun-95	Sediment	Discrete Sample	XRF	Lead (Pb)	Dry weight	38.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-2		-117.13298	32.67208	16-Jun-95	Sediment	Discrete Sample	CVAF	Mercury (Hg)	Dry weight	0.482	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-2		-117.13298	32.67208	16-Jun-95	Sediment	Discrete Sample	XRF	Zinc (Zn)	Dry weight	161	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Arsenic (As)	Dry weight	22.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Arsenic (As)	Dry weight	29.9	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	GFAA	Cadmium (Cd)	Dry weight	1.33	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	GFAA	Cadmium (Cd)	Dry weight	9.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Copper (Cu)	Dry weight	485	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Copper (Cu)	Dry weight	521	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Iron (Fe)	Dry weight	45400	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Iron (Fe)	Dry weight	53600	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Lead (Pb)	Dry weight	153	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Lead (Pb)	Dry weight	154	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	1.32	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	CVAF	Mercury (Hg)	Dry weight	1.41	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Zinc (Zn)	Dry weight	641	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-3		-117.12535	32.67990	16-Jun-95	Sediment	Discrete Sample	XRF	Zinc (Zn)	Dry weight	680	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB3-S-R2		-117.12535	32.67990	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	36.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB3-S-R2		-117.12535	32.67990	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB3-S-R2		-117.12535	32.67990	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	308	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB3-S-R2		-117.12535	32.67990	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	43700	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB3-S-R2		-117.12535	32.67990	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	99.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB3-S-R2		-117.12535	32.67990	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.567	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB3-S-R2		-117.12535	32.67990	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	410	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-4		-117.12483	32.67208	07-Aug-95	Sediment	Discrete Sample	XRF	Arsenic (As)	Dry weight	13.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-4		-117.12483	32.67208	07-Aug-95	Sediment	Discrete Sample	GFAA	Cadmium (Cd)	Dry weight	0.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-4		-117.12483	32.67208	07-Aug-95	Sediment	Discrete Sample	XRF	Copper (Cu)	Dry weight	180	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-4		-117.12483	32.67208	07-Aug-95	Sediment	Discrete Sample	XRF	Iron (Fe)	Dry weight	46800	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-4		-117.12483	32.67208	07-Aug-95	Sediment	Discrete Sample	XRF	Lead (Pb)	Dry weight	56.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-4		-117.12483	32.67208	07-Aug-95	Sediment	Discrete Sample	CVAF	Mercury (Hg)	Dry weight	0.516	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-4		-117.12483	32.67208	07-Aug-95	Sediment	Discrete Sample	XRF	Zinc (Zn)	Dry weight	280	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB4-S-R2		-117.12483	32.67208	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	10.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB4-S-R2		-117.12483	32.67208	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB4-S-R2		-117.12483	32.67208	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	174	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB4-S-R2		-117.12483	32.67208	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	46000	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB4-S-R2		-117.12483	32.67208	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	53.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB4-S-R2		-117.12483	32.67208	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.472	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB4-S-R2		-117.12483	32.67208	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	277	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-5		-117.11657	32.67333	12-Jul-95	Sediment	Discrete Sample	XRF	Arsenic (As)	Dry weight	8.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-5		-117.11657	32.67333	12-Jul-95				Cadmium (Cd)		1.36		
Sediment Quality Characterization Naval Station San Diego	NSB-5		-117.11657	32.67333	12-Jul-95	Sediment	Discrete Sample	XRF	Copper (Cu)	Dry weight	159	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-5		-117.11657	32.67333	12-Jul-95	Sediment	Discrete Sample	XRF	Iron (Fe)	Dry weight	43200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-5		-117.11657	32.67333	12-Jul-95	Sediment	Discrete Sample	XRF	Lead (Pb)	Dry weight	120	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-5		-117.11657	32.67333	12-Jul-95	Sediment	Discrete Sample	CVAF	Mercury (Hg)	Dry weight	0.596	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-5		-117.11657	32.67333	12-Jul-95	Sediment	Discrete Sample	XRF	Zinc (Zn)	Dry weight	404	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB5-S-R2		-117.11657	32.67363	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	7.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB5-S-R2		-117.11657	32.67363	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	1.06	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB5-S-R2		-117.11657	32.67363	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	123	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB5-S-R2		-117.11657	32.67363	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	33300	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB5-S-R2		-117.11657	32.67363	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	94.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB5-S-R2		-117.11657	32.67363	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.32	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB5-S-R2		-117.11657	32.67363	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	313	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-10S		-117.12100	32.66338	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	8.7	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Sediment Quality Characterization Naval Station San Diego	NSB-R2-10S		-117.12100	32.66338	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.39	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-10S		-117.12100	32.66338	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	239	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-10S		-117.12100	32.66338	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	56300	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-10S		-117.12100	32.66338	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	61.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-10S		-117.12100	32.66338	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.542	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-10S		-117.12100	32.66338	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	288	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-11S		-117.12345	32.66325	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	10.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-11S		-117.12345	32.66325	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-11S		-117.12345	32.66325	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	141	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-11S		-117.12345	32.66325	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	45800	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-11S		-117.12345	32.66325	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	33.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-11S		-117.12345	32.66325	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.318	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-11S		-117.12345	32.66325	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	193	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-13S		-117.12142	32.66532	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	9.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-13S		-117.12142	32.66532	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-13S		-117.12142	32.66532	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	308	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-13S		-117.12142	32.66532	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	60200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-13S		-117.12142	32.66532	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	87	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-13S		-117.12142	32.66532	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.892	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-13S		-117.12142	32.66532	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	355	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-14S		-117.11962	32.66688	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	10.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-14S		-117.11962	32.66688	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.94	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-14S		-117.11962	32.66688	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	376	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-14S		-117.11962	32.66688	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	59700	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-14S		-117.11962	32.66688	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	120.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-14S		-117.11962	32.66688	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.91	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-14S		-117.11962	32.66688	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	397	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-15S		-117.12173	32.66675	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	8.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-15S		-117.12173	32.66675	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.69	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-15S		-117.12173	32.66675	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	292	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-15S		-117.12173	32.66675	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	59200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-15S		-117.12173	32.66675	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	82.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-15S		-117.12173	32.66675	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.914	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-15S		-117.12173	32.66675	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	355	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-16S		-117.12393	32.66662	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	7.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-16S		-117.12393	32.66662	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	1.34	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-16S		-117.12393	32.66662	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	69.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-16S		-117.12393	32.66662	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	61800	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-16S		-117.12393	32.66662	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	40.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-16S		-117.12393	32.66662	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.727	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-16S		-117.12393	32.66662	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	192	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-17S		-117.11987	32.66840	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	10.6	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-17S		-117.11987	32.66840	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.65	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-17S		-117.11987	32.66840	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	400	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-17S		-117.11987	32.66840	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	64000	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-17S		-117.11987	32.66840	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	93	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-17S		-117.11987	32.66840	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.827	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-17S		-117.11987	32.66840	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	431	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-18S		-117.12182	32.66833	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	14.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-18S		-117.12182	32.66833	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.46	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-18S		-117.12182	32.66833	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	378	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-18S		-117.12182	32.66833	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	62300	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-18S		-117.12182	32.66833	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	86.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-18S		-117.12182	32.66833	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.785	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-18S		-117.12182	32.66833	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	392	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-19S		-117.12377	32.66820	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	12.6	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-19S		-117.12377	32.66820	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.33	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-19S		-117.12377	32.66820	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	223	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-19S		-117.12377	32.66820	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	60200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-19S		-117.12377	32.66820	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	78.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-19S		-117.12377	32.66820	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.632	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-19S		-117.12377	32.66820	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	368	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Sediment Quality Characterization Naval Station San Diego	NSB-R2-20S		-117.11758	32.67262	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	3.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-20S		-117.11758	32.67262	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.25	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-20S		-117.11758	32.67262	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	33	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-20S		-117.11758	32.67262	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	17700	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-20S		-117.11758	32.67262	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	28.6	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-20S		-117.11758	32.67262	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.124	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-20S		-117.11758	32.67262	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	78.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-21S		-117.11922	32.67172	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	10.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-21S		-117.11922	32.67172	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.82	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-21S		-117.11922	32.67172	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	198	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-21S		-117.11922	32.67172	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	49500	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-21S		-117.11922	32.67172	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	85.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-21S		-117.11922	32.67172	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.484	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-21S		-117.11922	32.67172	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	501	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-22S		-117.12108	32.67048	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	12.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-22S		-117.12108	32.67048	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.47	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-22S		-117.12108	32.67048	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	249	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-22S		-117.12108	32.67048	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	0.00542	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-22S		-117.12108	32.67048	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	88.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-22S		-117.12108	32.67048	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.615	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-22S		-117.12108	32.67048	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	327	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-23S		-117.12368	32.67007	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	9.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-23S		-117.12368	32.67007	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.41	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-23S		-117.12368	32.67007	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	181	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-23S		-117.12368	32.67007	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	51900	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-23S		-117.12368	32.67007	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	64.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-23S		-117.12368	32.67007	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.598	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-23S		-117.12368	32.67007	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	276	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-24S		-117.12043	32.67350	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	9.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-24S		-117.12043	32.67350	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.64	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-24S		-117.12043	32.67350	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	186	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-24S		-117.12043	32.67350	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	42300	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-24S		-117.12043	32.67350	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	81.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-24S		-117.12043	32.67350	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.556	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-24S		-117.12043	32.67350	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	249	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-25S		-117.12238	32.67240	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	8.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-25S		-117.12238	32.67240	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.23	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-25S		-117.12238	32.67240	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	109	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-25S		-117.12238	32.67240	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	33200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-25S		-117.12238	32.67240	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	41.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-25S		-117.12238	32.67240	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.29	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-25S		-117.12238	32.67240	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	152	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-26S		-117.12198	32.67530	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	13.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-26S		-117.12198	32.67530	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.68	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-26S		-117.12198	32.67530	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	309	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-26S		-117.12198	32.67530	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	52200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-26S		-117.12198	32.67530	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	70.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-26S		-117.12198	32.67530	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.619	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-26S		-117.12198	32.67530	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	335	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-27S		-117.12353	32.67433	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	7.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-27S		-117.12353	32.67433	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-27S		-117.12353	32.67433	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	173	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-27S		-117.12353	32.67433	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	37500	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-27S		-117.12353	32.67433	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	40.6	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-27S		-117.12353	32.67433	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.3422	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-27S		-117.12353	32.67433	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	181	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-28S		-117.12557	32.67317	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	6.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-28S		-117.12557	32.67317	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.65	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-28S		-117.12557	32.67317	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	68.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-28S		-117.12557	32.67317	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	32000	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-28S		-117.12557	32.67317	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	32.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-28S		-117.12557	32.67317	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.266	mg/kg	

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Sediment Quality Characterization Naval Station San Diego	NSB-R2-28S		-117.12557	32.67317	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	136	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-29S		-117.12345	32.67708	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	12.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-29S		-117.12345	32.67708	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.92	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-29S		-117.12345	32.67708	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	396	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-29S		-117.12345	32.67708	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	52300	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-29S		-117.12345	32.67708	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	87.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-29S		-117.12345	32.67708	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.841	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-29S		-117.12345	32.67708	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	372	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-30S		-117.12492	32.67633	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	9.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-30S		-117.12492	32.67633	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.87	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-30S		-117.12492	32.67633	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	282	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-30S		-117.12492	32.67633	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	47900	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-30S		-117.12492	32.67633	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	74.6	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-30S		-117.12492	32.67633	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.659	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-30S		-117.12492	32.67633	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	295	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-31S		-117.12670	32.67508	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	7.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-31S		-117.12670	32.67508	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-31S		-117.12670	32.67508	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	94.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-31S		-117.12670	32.67508	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	32300	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-31S		-117.12670	32.67508	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	36.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-31S		-117.12670	32.67508	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.298	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-31S		-117.12670	32.67508	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	155	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-32S		-117.12890	32.67640	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	7.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-32S		-117.12890	32.67640	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.39	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-32S		-117.12890	32.67640	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	84.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-32S		-117.12890	32.67640	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	33000	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-32S		-117.12890	32.67640	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	43.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-32S		-117.12890	32.67640	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.401	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-32S		-117.12890	32.67640	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	367	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-33S		-117.13257	32.67440	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	11.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-33S		-117.13257	32.67440	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.46	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-33S		-117.13257	32.67440	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	126	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-33S		-117.13257	32.67440	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	47500	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-33S		-117.13257	32.67440	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	75	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-33S		-117.13257	32.67440	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.919	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-33S		-117.13257	32.67440	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	261	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-34S		-117.13777	32.67143	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	6.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-34S		-117.13777	32.67143	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.24	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-34S		-117.13777	32.67143	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	63.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-34S		-117.13777	32.67143	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	28300	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-34S		-117.13777	32.67143	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	38.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-34S		-117.13777	32.67143	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-34S		-117.13777	32.67143	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	142	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-35S		-117.12630	32.68073	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	18	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-35S		-117.12630	32.68073	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	2.02	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-35S		-117.12630	32.68073	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	438	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-35S		-117.12630	32.68073	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	55000	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-35S		-117.12630	32.68073	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	134.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-35S		-117.12630	32.68073	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	1.437	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-35S		-117.12630	32.68073	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	366	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-36S		-117.12955	32.67875	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	14.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-36S		-117.12955	32.67875	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	2.87	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-36S		-117.12955	32.67875	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	303	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-36S		-117.12955	32.67875	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	36800	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-36S		-117.12955	32.67875	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	130.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-36S		-117.12955	32.67875	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.602	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-36S		-117.12955	32.67875	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	486	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-37S		-117.12777	32.67992	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	11.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-37S		-117.12777	32.67992	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.57	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-37S		-117.12777	32.67992	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	208	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-37S		-117.12777	32.67992	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	49100	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-37S		-117.12777	32.67992	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	80.6	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Sediment Quality Characterization Naval Station San Diego	NSB-R2-37S		-117.12777	32.67992	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.653	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-37S		-117.12777	32.67992	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	342	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-38S		-117.12922	32.68397	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	15.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-38S		-117.12922	32.68397	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	4.93	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-38S		-117.12922	32.68397	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	532	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-38S		-117.12922	32.68397	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	51200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-38S		-117.12922	32.68397	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	209.4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-38S		-117.12922	32.68397	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	6.123	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-38S		-117.12922	32.68397	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	425	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-39S		-117.13077	32.68295	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	10.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-39S		-117.13077	32.68295	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.65	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-39S		-117.13077	32.68295	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	255	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-39S		-117.13077	32.68295	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	34200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-39S		-117.13077	32.68295	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	66.6	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-39S		-117.13077	32.68295	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.538	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-39S		-117.13077	32.68295	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	169	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-40S		-117.13272	32.68192	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	12.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-40S		-117.13272	32.68192	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	1.14	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-40S		-117.13272	32.68192	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	221	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-40S		-117.13272	32.68192	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	32000	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-40S		-117.13272	32.68192	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	90.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-40S		-117.13272	32.68192	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.911	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-40S		-117.13272	32.68192	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	225	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-41S		-117.13192	32.68480	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	15.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-41S		-117.13192	32.68480	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.47	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-41S		-117.13192	32.68480	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	274	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-41S		-117.13192	32.68480	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	51200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-41S		-117.13192	32.68480	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	96	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-41S		-117.13192	32.68480	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.866	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-41S		-117.13192	32.68480	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	348	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-42S		-117.13418	32.68357	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	9.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-42S		-117.13418	32.68357	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.15	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-42S		-117.13418	32.68357	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	103	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-42S		-117.13418	32.68357	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	34700	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-42S		-117.13418	32.68357	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	54	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-42S		-117.13418	32.68357	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.291	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-42S		-117.13418	32.68357	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	162	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-43S		-117.13330	32.68612	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	13.9	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-43S		-117.13330	32.68612	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.64	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-43S		-117.13330	32.68612	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	222	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-43S		-117.13330	32.68612	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	47800	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-43S		-117.13330	32.68612	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	106.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-43S		-117.13330	32.68612	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.617	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-43S		-117.13330	32.68612	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	367	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-44S		-117.13272	32.68763	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	16.6	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-44S		-117.13272	32.68763	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	1.59	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-44S		-117.13272	32.68763	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	141	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-44S		-117.13272	32.68763	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	50200	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-44S		-117.13272	32.68763	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	156.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-44S		-117.13272	32.68763	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.272	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-44S		-117.13272	32.68763	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	448	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-45S		-117.13442	32.68722	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	12.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-45S		-117.13442	32.68722	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.68	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-45S		-117.13442	32.68722	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	140	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-45S		-117.13442	32.68722	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	37000	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-45S		-117.13442	32.68722	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	80.2	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-45S		-117.13442	32.68722	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.25	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-45S		-117.13442	32.68722	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	290	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-46S		-117.14477	32.68667	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	4	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-46S		-117.14477	32.68667	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.08	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-46S		-117.14477	32.68667	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	18.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-46S		-117.14477	32.68667	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	17800	mg/kg	

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Sediment Quality Characterization Naval Station San Diego	NSB-R2-46S		-117.14477	32.68667	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	20.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-46S		-117.14477	32.68667	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.175	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-46S		-117.14477	32.68667	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	60	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-47S		-117.14215	32.68838	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	12.9	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-47S		-117.14215	32.68838	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.28	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-47S		-117.14215	32.68838	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	244	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-47S		-117.14215	32.68838	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	52300	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-47S		-117.14215	32.68838	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	100.7	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-47S		-117.14215	32.68838	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.751	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-47S		-117.14215	32.68838	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	357	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-48S		-117.14737	32.69162	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	14.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-48S		-117.14737	32.69162	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.31	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-48S		-117.14737	32.69162	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	268	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-48S		-117.14737	32.69162	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	49100	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-48S		-117.14737	32.69162	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	101.5	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-48S		-117.14737	32.69162	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.83	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-48S		-117.14737	32.69162	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	348	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-5S		-117.12060	32.65870	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	7.9	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-5S		-117.12060	32.65870	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.43	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-5S		-117.12060	32.65870	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	337	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-5S		-117.12060	32.65870	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	57000	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-5S		-117.12060	32.65870	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	61.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-5S		-117.12060	32.65870	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.44	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-5S		-117.12060	32.65870	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	289	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-6S		-117.11888	32.66138	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	6.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-6S		-117.11888	32.66138	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.45	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-6S		-117.11888	32.66138	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	161	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-6S		-117.11888	32.66138	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	61100	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-6S		-117.11888	32.66138	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	39.6	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-6S		-117.11888	32.66138	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.301	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-6S		-117.11888	32.66138	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	201	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-7S		-117.12100	32.66132	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	10.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-7S		-117.12100	32.66132	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.33	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-7S		-117.12100	32.66132	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	240	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-7S		-117.12100	32.66132	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	56000	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-7S		-117.12100	32.66132	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	57.6	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-7S		-117.12100	32.66132	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.468	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-7S		-117.12100	32.66132	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	285	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-8S		-117.12328	32.66110	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	9.1	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-8S		-117.12328	32.66110	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.19	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-8S		-117.12328	32.66110	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	174	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-8S		-117.12328	32.66110	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	54300	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-8S		-117.12328	32.66110	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	50.8	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-8S		-117.12328	32.66110	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.375	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-8S		-117.12328	32.66110	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	236	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-9S		-117.11913	32.66345	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Arsenic (As)	Dry weight	10.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-9S		-117.11913	32.66345	03-Sep-97	Sediment	Discrete Sample	Perkin5100	Cadmium (Cd)	Dry weight	0.75	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-9S		-117.11913	32.66345	03-Sep-97	Sediment	Discrete Sample	FAAS	Copper (Cu)	Dry weight	657	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-9S		-117.11913	32.66345	03-Sep-97	Sediment	Discrete Sample	FAAS	Iron (Fe)	Dry weight	53700	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-9S		-117.11913	32.66345	03-Sep-97	Sediment	Discrete Sample	FAAS	Lead (Pb)	Dry weight	65.3	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-9S		-117.11913	32.66345	03-Sep-97	Sediment	Discrete Sample	CVAA	Mercury (Hg)	Dry weight	0.604	mg/kg	
Sediment Quality Characterization Naval Station San Diego	NSB-R2-9S		-117.11913	32.66345	03-Sep-97	Sediment	Discrete Sample	FAAS	Zinc (Zn)	Dry weight	345	mg/kg	
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	9/12/2002				Arsenic (As)	Dry weight	3	mg/kg	
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	9/12/2002				Cadmium (Cd)	Dry weight	0.08	mg/kg	
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	9/12/2002				Copper (Cu)	Dry weight	34	mg/kg	
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	9/12/2002				Lead (Pb)	Dry weight	13	mg/kg	
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	9/12/2002				Mercury (Hg)	Dry weight	0.18	mg/kg	
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	9/12/2002				Zinc (Zn)	Dry weight	70	mg/kg	
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	9/12/2002				Arsenic (As)	Dry weight	3.8	mg/kg	
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	9/12/2002				Cadmium (Cd)	Dry weight	0.12	mg/kg	
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	9/12/2002				Copper (Cu)	Dry weight	58	mg/kg	
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	9/12/2002				Lead (Pb)	Dry weight	18	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	9/12/2002				Mercury (Hg)	Dry weight	0.2	mg/kg	
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	9/12/2002				Zinc (Zn)	Dry weight	110	mg/kg	
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	9/9/2002				Arsenic (As)	Dry weight	5.1	mg/kg	
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	9/9/2002				Cadmium (Cd)	Dry weight	0.084	mg/kg	
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	9/9/2002				Copper (Cu)	Dry weight	57	mg/kg	
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	9/9/2002				Lead (Pb)	Dry weight	29	mg/kg	
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	9/9/2002				Mercury (Hg)	Dry weight	0.27	mg/kg	J
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	9/9/2002				Zinc (Zn)	Dry weight	91	mg/kg	J
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	9/14/2002				Arsenic (As)	Dry weight	9.4	mg/kg	
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	8/11/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	9/14/2002				Cadmium (Cd)	Dry weight	0.21	mg/kg	
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	8/11/2001				Cadmium (Cd)	Dry weight	0.26	mg/kg	
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	8/11/2001				Copper (Cu)	Dry weight	210	mg/kg	
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	9/14/2002				Copper (Cu)	Dry weight	290	mg/kg	
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	9/14/2002				Lead (Pb)	Dry weight	79	mg/kg	
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	8/11/2001				Lead (Pb)	Dry weight	88	mg/kg	J
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	8/11/2001				Mercury (Hg)	Dry weight	0.95	mg/kg	
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	9/14/2002				Mercury (Hg)	Dry weight	1.1	mg/kg	J
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	8/11/2001				Zinc (Zn)	Dry weight	260	mg/kg	
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	9/14/2002				Zinc (Zn)	Dry weight	330	mg/kg	
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	8/11/2001				Arsenic (As)	Dry weight	10	mg/kg	
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	8/11/2001				Cadmium (Cd)	Dry weight	0.21	mg/kg	
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	8/11/2001				Copper (Cu)	Dry weight	170	mg/kg	
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	8/11/2001				Lead (Pb)	Dry weight	76	mg/kg	J
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	8/11/2001				Mercury (Hg)	Dry weight	0.7	mg/kg	
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	8/11/2001				Zinc (Zn)	Dry weight	240	mg/kg	
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	8/11/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	8/11/2001				Cadmium (Cd)	Dry weight	0.29	mg/kg	
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	8/11/2001				Copper (Cu)	Dry weight	220	mg/kg	
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	8/11/2001				Lead (Pb)	Dry weight	94	mg/kg	J
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	8/11/2001				Mercury (Hg)	Dry weight	1.1	mg/kg	
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	8/11/2001				Zinc (Zn)	Dry weight	260	mg/kg	
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	8/11/2001				Arsenic (As)	Dry weight	12	mg/kg	
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	8/11/2001				Cadmium (Cd)	Dry weight	0.27	mg/kg	
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	8/11/2001				Copper (Cu)	Dry weight	260	mg/kg	
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	8/11/2001				Lead (Pb)	Dry weight	93	mg/kg	J
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	8/11/2001				Mercury (Hg)	Dry weight	1.1	mg/kg	
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	8/11/2001				Zinc (Zn)	Dry weight	310	mg/kg	
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	8/13/2001				Arsenic (As)	Dry weight	9.5	mg/kg	
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	8/13/2001				Cadmium (Cd)	Dry weight	0.17	mg/kg	
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	8/13/2001				Copper (Cu)	Dry weight	170	mg/kg	
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	8/13/2001				Lead (Pb)	Dry weight	65	mg/kg	
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	8/13/2001				Mercury (Hg)	Dry weight	0.61	mg/kg	
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	8/13/2001				Zinc (Zn)	Dry weight	210	mg/kg	J
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	9/8/2002				Arsenic (As)	Dry weight	10	mg/kg	
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	8/9/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	9/8/2002				Cadmium (Cd)	Dry weight	0.25	mg/kg	
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	8/9/2001				Cadmium (Cd)	Dry weight	0.28	mg/kg	
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	9/8/2002				Copper (Cu)	Dry weight	380	mg/kg	
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	8/9/2001				Copper (Cu)	Dry weight	410	mg/kg	
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	8/9/2001				Lead (Pb)	Dry weight	130	mg/kg	
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	9/8/2002				Lead (Pb)	Dry weight	130	mg/kg	
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	9/8/2002				Mercury (Hg)	Dry weight	1.5	mg/kg	J
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	8/9/2001				Mercury (Hg)	Dry weight	3.2	mg/kg	
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	8/9/2001				Zinc (Zn)	Dry weight	330	mg/kg	J
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	9/8/2002				Zinc (Zn)	Dry weight	340	mg/kg	J
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	8/8/2001				Arsenic (As)	Dry weight	15	mg/kg	
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	8/8/2001				Cadmium (Cd)	Dry weight	0.27	mg/kg	
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	8/8/2001				Copper (Cu)	Dry weight	210	mg/kg	J
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	8/8/2001				Lead (Pb)	Dry weight	90	mg/kg	
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	8/8/2001				Mercury (Hg)	Dry weight	1.5	mg/kg	
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	8/8/2001				Zinc (Zn)	Dry weight	240	mg/kg	J

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	8/14/2001				Arsenic (As)	Dry weight	18	mg/kg	
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	8/14/2001				Cadmium (Cd)	Dry weight	0.31	mg/kg	
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	8/14/2001				Copper (Cu)	Dry weight	270	mg/kg	J
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	8/14/2001				Lead (Pb)	Dry weight	96	mg/kg	
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	8/14/2001				Mercury (Hg)	Dry weight	0.82	mg/kg	
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	8/14/2001				Zinc (Zn)	Dry weight	330	mg/kg	J
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	8/14/2001				Arsenic (As)	Dry weight	13	mg/kg	
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	8/14/2001				Cadmium (Cd)	Dry weight	0.4	mg/kg	
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	8/14/2001				Copper (Cu)	Dry weight	260	mg/kg	J
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	8/14/2001				Lead (Pb)	Dry weight	97	mg/kg	
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	8/14/2001				Mercury (Hg)	Dry weight	1.2	mg/kg	
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	8/14/2001				Zinc (Zn)	Dry weight	330	mg/kg	J
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	8/14/2001				Arsenic (As)	Dry weight	6.9	mg/kg	
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	8/14/2001				Cadmium (Cd)	Dry weight	0.22	mg/kg	
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	8/14/2001				Copper (Cu)	Dry weight	160	mg/kg	J
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	8/14/2001				Lead (Pb)	Dry weight	59	mg/kg	
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	8/14/2001				Mercury (Hg)	Dry weight	0.58	mg/kg	
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	8/14/2001				Zinc (Zn)	Dry weight	190	mg/kg	J
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	8/9/2001				Arsenic (As)	Dry weight	9.3	mg/kg	
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	8/9/2001				Cadmium (Cd)	Dry weight	0.28	mg/kg	
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	8/9/2001				Copper (Cu)	Dry weight	180	mg/kg	
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	8/9/2001				Lead (Pb)	Dry weight	73	mg/kg	
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	8/9/2001				Mercury (Hg)	Dry weight	0.85	mg/kg	
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	8/9/2001				Zinc (Zn)	Dry weight	230	mg/kg	J
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	8/10/2001				Arsenic (As)	Dry weight	9.5	mg/kg	
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	8/10/2001				Cadmium (Cd)	Dry weight	0.18	mg/kg	U
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	8/10/2001				Copper (Cu)	Dry weight	150	mg/kg	
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	8/10/2001				Lead (Pb)	Dry weight	59	mg/kg	J
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	8/10/2001				Mercury (Hg)	Dry weight	0.62	mg/kg	
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	8/10/2001				Zinc (Zn)	Dry weight	210	mg/kg	
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	9/11/2002				Arsenic (As)	Dry weight	9.5	mg/kg	J
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	8/11/2001				Arsenic (As)	Dry weight	12	mg/kg	
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	9/11/2002				Cadmium (Cd)	Dry weight	0.23	mg/kg	
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	8/11/2001				Cadmium (Cd)	Dry weight	0.24	mg/kg	
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	8/11/2001				Copper (Cu)	Dry weight	170	mg/kg	
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	9/11/2002				Copper (Cu)	Dry weight	200	mg/kg	
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	9/11/2002				Lead (Pb)	Dry weight	71	mg/kg	
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	8/11/2001				Lead (Pb)	Dry weight	79	mg/kg	J
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	9/11/2002				Mercury (Hg)	Dry weight	0.6	mg/kg	
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	8/11/2001				Mercury (Hg)	Dry weight	0.69	mg/kg	
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	8/11/2001				Zinc (Zn)	Dry weight	280	mg/kg	
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	9/11/2002				Zinc (Zn)	Dry weight	310	mg/kg	
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	8/14/2001				Arsenic (As)	Dry weight	9	mg/kg	
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	8/14/2001				Cadmium (Cd)	Dry weight	0.25	mg/kg	
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	8/14/2001				Copper (Cu)	Dry weight	130	mg/kg	J
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	8/14/2001				Lead (Pb)	Dry weight	66	mg/kg	
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	8/14/2001				Mercury (Hg)	Dry weight	0.55	mg/kg	
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	8/14/2001				Zinc (Zn)	Dry weight	200	mg/kg	J
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	8/12/2001				Arsenic (As)	Dry weight	12	mg/kg	
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	8/12/2001				Cadmium (Cd)	Dry weight	0.25	mg/kg	
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	8/12/2001				Copper (Cu)	Dry weight	250	mg/kg	
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	8/12/2001				Lead (Pb)	Dry weight	83	mg/kg	J
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	8/12/2001				Mercury (Hg)	Dry weight	0.98	mg/kg	
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	8/12/2001				Zinc (Zn)	Dry weight	310	mg/kg	
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	9/8/2002				Arsenic (As)	Dry weight	10	mg/kg	
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	8/12/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	8/12/2001				Cadmium (Cd)	Dry weight	0.35	mg/kg	
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	9/8/2002				Cadmium (Cd)	Dry weight	0.41	mg/kg	
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	9/8/2002				Copper (Cu)	Dry weight	250	mg/kg	
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	8/12/2001				Copper (Cu)	Dry weight	260	mg/kg	
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	9/8/2002				Lead (Pb)	Dry weight	91	mg/kg	
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	8/12/2001				Lead (Pb)	Dry weight	93	mg/kg	J

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	9/8/2002				Mercury (Hg)	Dry weight	0.97	mg/kg	J
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	8/12/2001				Mercury (Hg)	Dry weight	1.1	mg/kg	
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	8/12/2001				Zinc (Zn)	Dry weight	310	mg/kg	
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	9/8/2002				Zinc (Zn)	Dry weight	330	mg/kg	J
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	9/8/2002				Arsenic (As)	Dry weight	13	mg/kg	
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	8/12/2001				Arsenic (As)	Dry weight	16	mg/kg	
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	9/8/2002				Cadmium (Cd)	Dry weight	0.27	mg/kg	
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	8/12/2001				Cadmium (Cd)	Dry weight	0.54	mg/kg	
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	9/8/2002				Copper (Cu)	Dry weight	360	mg/kg	
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	8/12/2001				Copper (Cu)	Dry weight	660	mg/kg	
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	9/8/2002				Lead (Pb)	Dry weight	100	mg/kg	
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	8/12/2001				Lead (Pb)	Dry weight	130	mg/kg	J
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	9/8/2002				Mercury (Hg)	Dry weight	0.76	mg/kg	J
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	8/12/2001				Mercury (Hg)	Dry weight	0.93	mg/kg	
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	9/8/2002				Zinc (Zn)	Dry weight	470	mg/kg	J
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	8/12/2001				Zinc (Zn)	Dry weight	770	mg/kg	
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	8/14/2001				Arsenic (As)	Dry weight	14	mg/kg	
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	8/14/2001				Cadmium (Cd)	Dry weight	0.36	mg/kg	
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	8/14/2001				Copper (Cu)	Dry weight	230	mg/kg	J
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	8/14/2001				Lead (Pb)	Dry weight	97	mg/kg	
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	8/14/2001				Mercury (Hg)	Dry weight	0.79	mg/kg	
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	8/14/2001				Zinc (Zn)	Dry weight	380	mg/kg	J
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	8/12/2001				Arsenic (As)	Dry weight	14	mg/kg	
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	8/12/2001				Cadmium (Cd)	Dry weight	0.37	mg/kg	
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	8/12/2001				Copper (Cu)	Dry weight	270	mg/kg	
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	8/12/2001				Lead (Pb)	Dry weight	100	mg/kg	J
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	8/12/2001				Mercury (Hg)	Dry weight	0.78	mg/kg	
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	8/12/2001				Zinc (Zn)	Dry weight	450	mg/kg	
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	8/10/2001				Arsenic (As)	Dry weight	6.6	mg/kg	
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	8/10/2001				Cadmium (Cd)	Dry weight	0.44	mg/kg	
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	8/10/2001				Copper (Cu)	Dry weight	96	mg/kg	
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	8/10/2001				Lead (Pb)	Dry weight	53	mg/kg	J
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	8/10/2001				Mercury (Hg)	Dry weight	0.24	mg/kg	
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	8/10/2001				Zinc (Zn)	Dry weight	190	mg/kg	
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	8/14/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	8/14/2001				Cadmium (Cd)	Dry weight	0.39	mg/kg	
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	8/14/2001				Copper (Cu)	Dry weight	150	mg/kg	J
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	8/14/2001				Lead (Pb)	Dry weight	83	mg/kg	
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	8/14/2001				Mercury (Hg)	Dry weight	0.51	mg/kg	
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	8/14/2001				Zinc (Zn)	Dry weight	250	mg/kg	J
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	8/14/2001				Arsenic (As)	Dry weight	8.5	mg/kg	
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	8/14/2001				Cadmium (Cd)	Dry weight	0.46	mg/kg	
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	8/14/2001				Copper (Cu)	Dry weight	150	mg/kg	J
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	8/14/2001				Lead (Pb)	Dry weight	95	mg/kg	
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	8/14/2001				Mercury (Hg)	Dry weight	0.38	mg/kg	
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	8/14/2001				Zinc (Zn)	Dry weight	230	mg/kg	J
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	9/8/2002				Arsenic (As)	Dry weight	12	mg/kg	
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	9/8/2002				Cadmium (Cd)	Dry weight	0.26	mg/kg	
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	9/8/2002				Copper (Cu)	Dry weight	350	mg/kg	
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	9/8/2002				Lead (Pb)	Dry weight	120	mg/kg	
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	9/8/2002				Mercury (Hg)	Dry weight	1.1	mg/kg	
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	9/8/2002				Zinc (Zn)	Dry weight	430	mg/kg	J
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	9/8/2002				Arsenic (As)	Dry weight	9.6	mg/kg	
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	9/8/2002				Cadmium (Cd)	Dry weight	0.2	mg/kg	
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	9/8/2002				Copper (Cu)	Dry weight	200	mg/kg	
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	9/8/2002				Lead (Pb)	Dry weight	88	mg/kg	
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	9/8/2002				Mercury (Hg)	Dry weight	0.9	mg/kg	J
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	9/8/2002				Zinc (Zn)	Dry weight	280	mg/kg	J
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	9/9/2002				Arsenic (As)	Dry weight	6	mg/kg	
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	9/9/2002				Cadmium (Cd)	Dry weight	0.11	mg/kg	
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	9/9/2002				Copper (Cu)	Dry weight	85	mg/kg	
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	9/9/2002				Lead (Pb)	Dry weight	41	mg/kg	

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PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	9/9/2002				Mercury (Hg)	Dry weight	0.42	mg/kg	J
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	9/9/2002				Zinc (Zn)	Dry weight	130	mg/kg	J
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	9/11/2002				Arsenic (As)	Dry weight	6.2	mg/kg	J
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	9/11/2002				Cadmium (Cd)	Dry weight	0.11	mg/kg	
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	9/11/2002				Copper (Cu)	Dry weight	80	mg/kg	
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	9/11/2002				Lead (Pb)	Dry weight	41	mg/kg	
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	9/11/2002				Mercury (Hg)	Dry weight	0.48	mg/kg	
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	9/11/2002				Zinc (Zn)	Dry weight	140	mg/kg	
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	10/2/2002				Arsenic (As)	Dry weight	13	mg/kg	
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	10/2/2002				Cadmium (Cd)	Dry weight	0.29	mg/kg	
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	10/2/2002				Copper (Cu)	Dry weight	390	mg/kg	
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	10/2/2002				Lead (Pb)	Dry weight	110	mg/kg	
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	10/2/2002				Mercury (Hg)	Dry weight	1.2	mg/kg	
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	10/2/2002				Zinc (Zn)	Dry weight	500	mg/kg	
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	10/2/2002				Arsenic (As)	Dry weight	10	mg/kg	
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	10/2/2002				Cadmium (Cd)	Dry weight	0.31	mg/kg	
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	10/2/2002				Copper (Cu)	Dry weight	290	mg/kg	
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	10/2/2002				Lead (Pb)	Dry weight	84	mg/kg	
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	10/2/2002				Mercury (Hg)	Dry weight	0.89	mg/kg	
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	10/2/2002				Zinc (Zn)	Dry weight	390	mg/kg	
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	9/11/2002				Arsenic (As)	Dry weight	6.9	mg/kg	J
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	9/11/2002				Cadmium (Cd)	Dry weight	0.14	mg/kg	
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	9/11/2002				Copper (Cu)	Dry weight	110	mg/kg	
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	9/11/2002				Lead (Pb)	Dry weight	56	mg/kg	
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	9/11/2002				Mercury (Hg)	Dry weight	0.55	mg/kg	
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	9/11/2002				Zinc (Zn)	Dry weight	170	mg/kg	
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	9/11/2002				Arsenic (As)	Dry weight	7.5	mg/kg	J
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	9/11/2002				Cadmium (Cd)	Dry weight	0.22	mg/kg	
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	9/11/2002				Copper (Cu)	Dry weight	140	mg/kg	
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	9/11/2002				Lead (Pb)	Dry weight	59	mg/kg	
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	9/11/2002				Mercury (Hg)	Dry weight	0.71	mg/kg	
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	9/11/2002				Zinc (Zn)	Dry weight	170	mg/kg	
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	9/9/2002				Arsenic (As)	Dry weight	5.3	mg/kg	
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	9/9/2002				Cadmium (Cd)	Dry weight	0.13	mg/kg	
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	9/9/2002				Copper (Cu)	Dry weight	71	mg/kg	
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	9/9/2002				Lead (Pb)	Dry weight	34	mg/kg	
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	9/9/2002				Mercury (Hg)	Dry weight	0.35	mg/kg	J
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	9/9/2002				Zinc (Zn)	Dry weight	110	mg/kg	J
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	9/14/2002				Arsenic (As)	Dry weight	12	mg/kg	
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	8/6/2001				Arsenic (As)	Dry weight	15	mg/kg	
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	9/14/2002				Cadmium (Cd)	Dry weight	0.67	mg/kg	
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	8/6/2001				Cadmium (Cd)	Dry weight	0.75	mg/kg	
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	9/14/2002				Copper (Cu)	Dry weight	500	mg/kg	
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	8/6/2001				Copper (Cu)	Dry weight	620	mg/kg	J
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	9/14/2002				Lead (Pb)	Dry weight	120	mg/kg	
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	8/6/2001				Lead (Pb)	Dry weight	170	mg/kg	
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	8/6/2001				Mercury (Hg)	Dry weight	1.4	mg/kg	
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	9/14/2002				Mercury (Hg)	Dry weight	1.5	mg/kg	J
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	9/14/2002				Zinc (Zn)	Dry weight	430	mg/kg	
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	8/6/2001				Zinc (Zn)	Dry weight	610	mg/kg	J
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	9/14/2002				Arsenic (As)	Dry weight	13	mg/kg	
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	8/6/2001				Arsenic (As)	Dry weight	16	mg/kg	
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	8/6/2001				Cadmium (Cd)	Dry weight	2.5	mg/kg	
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	9/14/2002				Cadmium (Cd)	Dry weight	3.8	mg/kg	
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	8/6/2001				Copper (Cu)	Dry weight	570	mg/kg	J
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	9/14/2002				Copper (Cu)	Dry weight	610	mg/kg	
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	9/14/2002				Lead (Pb)	Dry weight	150	mg/kg	
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	8/6/2001				Lead (Pb)	Dry weight	170	mg/kg	
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	8/6/2001				Mercury (Hg)	Dry weight	3.9	mg/kg	
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	9/14/2002				Mercury (Hg)	Dry weight	5.4	mg/kg	J
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	8/6/2001				Zinc (Zn)	Dry weight	550	mg/kg	J
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	9/14/2002				Zinc (Zn)	Dry weight	620	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
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United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	8/7/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	8/7/2001				Cadmium (Cd)	Dry weight	0.7	mg/kg	
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	8/7/2001				Copper (Cu)	Dry weight	190	mg/kg	J
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	8/7/2001				Lead (Pb)	Dry weight	79	mg/kg	
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	8/7/2001				Mercury (Hg)	Dry weight	1.2	mg/kg	
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	8/7/2001				Zinc (Zn)	Dry weight	230	mg/kg	J
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	9/10/2002				Arsenic (As)	Dry weight	50	mg/kg	J
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	8/7/2001				Arsenic (As)	Dry weight	96	mg/kg	
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	9/10/2002				Cadmium (Cd)	Dry weight	1.5	mg/kg	
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	8/7/2001				Cadmium (Cd)	Dry weight	2.4	mg/kg	
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	9/10/2002				Copper (Cu)	Dry weight	1,100	mg/kg	
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	8/7/2001				Copper (Cu)	Dry weight	1,900	mg/kg	J
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	9/10/2002				Lead (Pb)	Dry weight	380	mg/kg	
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	8/7/2001				Lead (Pb)	Dry weight	480	mg/kg	
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	8/7/2001				Mercury (Hg)	Dry weight	1.2	mg/kg	
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	9/10/2002				Mercury (Hg)	Dry weight	2.3	mg/kg	
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	9/10/2002				Zinc (Zn)	Dry weight	2,300	mg/kg	
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	8/7/2001				Zinc (Zn)	Dry weight	4,600	mg/kg	J
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	8/6/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	8/6/2001				Cadmium (Cd)	Dry weight	0.86	mg/kg	
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	8/6/2001				Copper (Cu)	Dry weight	230	mg/kg	J
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	8/6/2001				Lead (Pb)	Dry weight	120	mg/kg	
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	8/6/2001				Mercury (Hg)	Dry weight	0.96	mg/kg	
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	8/6/2001				Zinc (Zn)	Dry weight	280	mg/kg	J
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	8/6/2001				Arsenic (As)	Dry weight	15	mg/kg	
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	8/6/2001				Cadmium (Cd)	Dry weight	0.85	mg/kg	
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	8/6/2001				Copper (Cu)	Dry weight	170	mg/kg	J
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	8/6/2001				Lead (Pb)	Dry weight	81	mg/kg	
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	8/6/2001				Mercury (Hg)	Dry weight	0.75	mg/kg	
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	8/6/2001				Zinc (Zn)	Dry weight	280	mg/kg	J
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	8/6/2001				Arsenic (As)	Dry weight	8.1	mg/kg	
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	8/6/2001				Cadmium (Cd)	Dry weight	0.19	mg/kg	
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	8/6/2001				Copper (Cu)	Dry weight	150	mg/kg	J
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	8/6/2001				Lead (Pb)	Dry weight	57	mg/kg	
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	8/6/2001				Mercury (Hg)	Dry weight	0.52	mg/kg	
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	8/6/2001				Zinc (Zn)	Dry weight	170	mg/kg	J
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	9/13/2002				Arsenic (As)	Dry weight	22	mg/kg	
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	8/8/2001				Arsenic (As)	Dry weight	26	mg/kg	
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	8/8/2001				Cadmium (Cd)	Dry weight	0.67	mg/kg	
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	9/13/2002				Cadmium (Cd)	Dry weight	0.79	mg/kg	
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	9/13/2002				Copper (Cu)	Dry weight	840	mg/kg	
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	8/8/2001				Copper (Cu)	Dry weight	1,000	mg/kg	J
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	9/13/2002				Lead (Pb)	Dry weight	200	mg/kg	
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	8/8/2001				Lead (Pb)	Dry weight	250	mg/kg	
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	9/13/2002				Mercury (Hg)	Dry weight	2	mg/kg	
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	8/8/2001				Mercury (Hg)	Dry weight	2.5	mg/kg	
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	9/13/2002				Zinc (Zn)	Dry weight	800	mg/kg	
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	8/8/2001				Zinc (Zn)	Dry weight	860	mg/kg	J
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	8/6/2001				Arsenic (As)	Dry weight	27	mg/kg	
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	8/6/2001				Cadmium (Cd)	Dry weight	1.1	mg/kg	
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	8/6/2001				Copper (Cu)	Dry weight	660	mg/kg	J
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	8/6/2001				Lead (Pb)	Dry weight	220	mg/kg	
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	8/6/2001				Mercury (Hg)	Dry weight	0.96	mg/kg	
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	8/6/2001				Zinc (Zn)	Dry weight	1,200	mg/kg	J
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	8/6/2001				Arsenic (As)	Dry weight	13	mg/kg	
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	8/6/2001				Cadmium (Cd)	Dry weight	0.87	mg/kg	
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	8/6/2001				Copper (Cu)	Dry weight	160	mg/kg	J
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	8/6/2001				Lead (Pb)	Dry weight	79	mg/kg	
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	8/6/2001				Mercury (Hg)	Dry weight	0.58	mg/kg	
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	8/6/2001				Zinc (Zn)	Dry weight	360	mg/kg	J
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	8/13/2001				Arsenic (As)	Dry weight	9.6	mg/kg	
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	8/13/2001				Cadmium (Cd)	Dry weight	0.24	mg/kg	

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PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	8/13/2001				Copper (Cu)	Dry weight	170	mg/kg	
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	8/13/2001				Lead (Pb)	Dry weight	74	mg/kg	
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	8/13/2001				Mercury (Hg)	Dry weight	0.75	mg/kg	
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	8/13/2001				Zinc (Zn)	Dry weight	240	mg/kg	J
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	9/10/2002				Arsenic (As)	Dry weight	7.1	mg/kg	J
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	8/7/2001				Arsenic (As)	Dry weight	7.7	mg/kg	
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	9/10/2002				Cadmium (Cd)	Dry weight	0.12	mg/kg	
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	8/7/2001				Cadmium (Cd)	Dry weight	0.16	mg/kg	
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	9/10/2002				Copper (Cu)	Dry weight	99	mg/kg	
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	8/7/2001				Copper (Cu)	Dry weight	140	mg/kg	J
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	9/10/2002				Lead (Pb)	Dry weight	48	mg/kg	
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	8/7/2001				Lead (Pb)	Dry weight	56	mg/kg	
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	9/10/2002				Mercury (Hg)	Dry weight	0.5	mg/kg	
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	8/7/2001				Mercury (Hg)	Dry weight	0.55	mg/kg	
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	9/10/2002				Zinc (Zn)	Dry weight	150	mg/kg	
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	8/7/2001				Zinc (Zn)	Dry weight	170	mg/kg	J
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	8/9/2001				Arsenic (As)	Dry weight	15	mg/kg	
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	8/9/2001				Cadmium (Cd)	Dry weight	0.42	mg/kg	
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	8/9/2001				Copper (Cu)	Dry weight	800	mg/kg	
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	8/9/2001				Lead (Pb)	Dry weight	93	mg/kg	
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	8/9/2001				Mercury (Hg)	Dry weight	0.86	mg/kg	
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	8/9/2001				Zinc (Zn)	Dry weight	580	mg/kg	J
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	8/10/2001				Arsenic (As)	Dry weight	10	mg/kg	
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	8/10/2001				Cadmium (Cd)	Dry weight	0.31	mg/kg	
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	8/10/2001				Copper (Cu)	Dry weight	280	mg/kg	
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	8/10/2001				Lead (Pb)	Dry weight	88	mg/kg	
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	8/10/2001				Mercury (Hg)	Dry weight	1	mg/kg	
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	8/10/2001				Zinc (Zn)	Dry weight	300	mg/kg	J
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	8/10/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	8/10/2001				Cadmium (Cd)	Dry weight	0.45	mg/kg	
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	8/10/2001				Copper (Cu)	Dry weight	230	mg/kg	
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	8/10/2001				Lead (Pb)	Dry weight	90	mg/kg	
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	8/10/2001				Mercury (Hg)	Dry weight	0.9	mg/kg	
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	8/10/2001				Zinc (Zn)	Dry weight	290	mg/kg	J
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	8/10/2001				Arsenic (As)	Dry weight	12	mg/kg	
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	8/10/2001				Cadmium (Cd)	Dry weight	0.66	mg/kg	
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	8/10/2001				Copper (Cu)	Dry weight	430	mg/kg	
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	8/10/2001				Lead (Pb)	Dry weight	97	mg/kg	
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	8/10/2001				Mercury (Hg)	Dry weight	1	mg/kg	
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	8/10/2001				Zinc (Zn)	Dry weight	370	mg/kg	J
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	8/13/2001				Arsenic (As)	Dry weight	12	mg/kg	
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	8/13/2001				Cadmium (Cd)	Dry weight	0.37	mg/kg	
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	8/13/2001				Copper (Cu)	Dry weight	270	mg/kg	
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	8/13/2001				Lead (Pb)	Dry weight	93	mg/kg	
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	8/13/2001				Mercury (Hg)	Dry weight	0.98	mg/kg	
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	8/13/2001				Zinc (Zn)	Dry weight	310	mg/kg	J
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	8/13/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	8/13/2001				Cadmium (Cd)	Dry weight	0.33	mg/kg	
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	8/13/2001				Copper (Cu)	Dry weight	220	mg/kg	
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	8/13/2001				Lead (Pb)	Dry weight	86	mg/kg	
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	8/13/2001				Mercury (Hg)	Dry weight	0.75	mg/kg	
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	8/13/2001				Zinc (Zn)	Dry weight	280	mg/kg	J
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	8/7/2001				Arsenic (As)	Dry weight	7.1	mg/kg	
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	8/7/2001				Cadmium (Cd)	Dry weight	0.15	mg/kg	
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	8/7/2001				Copper (Cu)	Dry weight	110	mg/kg	J
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	8/7/2001				Lead (Pb)	Dry weight	51	mg/kg	
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	8/7/2001				Mercury (Hg)	Dry weight	2.1	mg/kg	
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	8/7/2001				Zinc (Zn)	Dry weight	150	mg/kg	J
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	8/15/2001				Arsenic (As)	Dry weight	14	mg/kg	
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	8/15/2001				Cadmium (Cd)	Dry weight	0.41	mg/kg	
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	8/15/2001				Copper (Cu)	Dry weight	290	mg/kg	J
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	8/15/2001				Lead (Pb)	Dry weight	110	mg/kg	

TABLE D-1
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United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	8/15/2001				Mercury (Hg)	Dry weight	0.99	mg/kg	
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	8/15/2001				Zinc (Zn)	Dry weight	390	mg/kg	J
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	8/9/2001				Arsenic (As)	Dry weight	11	mg/kg	
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	8/9/2001				Cadmium (Cd)	Dry weight	0.51	mg/kg	
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	8/9/2001				Copper (Cu)	Dry weight	260	mg/kg	
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	8/9/2001				Lead (Pb)	Dry weight	120	mg/kg	
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	8/9/2001				Mercury (Hg)	Dry weight	1.4	mg/kg	
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	8/9/2001				Zinc (Zn)	Dry weight	330	mg/kg	J
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	8/15/2001				Arsenic (As)	Dry weight	13	mg/kg	
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	8/15/2001				Cadmium (Cd)	Dry weight	0.35	mg/kg	
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	8/15/2001				Copper (Cu)	Dry weight	260	mg/kg	J
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	8/15/2001				Lead (Pb)	Dry weight	110	mg/kg	
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	8/15/2001				Mercury (Hg)	Dry weight	1.1	mg/kg	
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	8/15/2001				Zinc (Zn)	Dry weight	310	mg/kg	J
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	8/15/2001				Arsenic (As)	Dry weight	15	mg/kg	
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	8/15/2001				Cadmium (Cd)	Dry weight	0.37	mg/kg	
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	8/15/2001				Copper (Cu)	Dry weight	280	mg/kg	J
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	8/15/2001				Lead (Pb)	Dry weight	110	mg/kg	
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	8/15/2001				Mercury (Hg)	Dry weight	1	mg/kg	
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	8/15/2001				Zinc (Zn)	Dry weight	330	mg/kg	J
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	8/8/2001				Arsenic (As)	Dry weight	10	mg/kg	
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	9/10/2002				Arsenic (As)	Dry weight	10	mg/kg	J
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	9/10/2002				Cadmium (Cd)	Dry weight	0.26	mg/kg	
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	8/8/2001				Cadmium (Cd)	Dry weight	0.39	mg/kg	
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	8/8/2001				Copper (Cu)	Dry weight	260	mg/kg	J
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	9/10/2002				Copper (Cu)	Dry weight	340	mg/kg	
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	9/10/2002				Lead (Pb)	Dry weight	80	mg/kg	
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	8/8/2001				Lead (Pb)	Dry weight	96	mg/kg	
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	8/8/2001				Mercury (Hg)	Dry weight	1.6	mg/kg	
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	9/10/2002				Mercury (Hg)	Dry weight	2.2	mg/kg	
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	8/8/2001				Zinc (Zn)	Dry weight	260	mg/kg	J
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	9/10/2002				Zinc (Zn)	Dry weight	340	mg/kg	
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	9/10/2002				Arsenic (As)	Dry weight	10	mg/kg	J
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	8/15/2001				Arsenic (As)	Dry weight	13	mg/kg	
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	9/10/2002				Cadmium (Cd)	Dry weight	0.24	mg/kg	
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	8/15/2001				Cadmium (Cd)	Dry weight	0.47	mg/kg	
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	8/15/2001				Copper (Cu)	Dry weight	230	mg/kg	J
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	9/10/2002				Copper (Cu)	Dry weight	230	mg/kg	
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	9/10/2002				Lead (Pb)	Dry weight	78	mg/kg	
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	8/15/2001				Lead (Pb)	Dry weight	93	mg/kg	
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	9/10/2002				Mercury (Hg)	Dry weight	0.75	mg/kg	
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	8/15/2001				Mercury (Hg)	Dry weight	0.8	mg/kg	
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	9/10/2002				Zinc (Zn)	Dry weight	320	mg/kg	
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	8/15/2001				Zinc (Zn)	Dry weight	370	mg/kg	J
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	8/8/2001				Arsenic (As)	Dry weight	9	mg/kg	
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	8/8/2001				Cadmium (Cd)	Dry weight	0.14	mg/kg	
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	8/8/2001				Copper (Cu)	Dry weight	120	mg/kg	J
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	8/8/2001				Lead (Pb)	Dry weight	58	mg/kg	
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	8/8/2001				Mercury (Hg)	Dry weight	0.43	mg/kg	
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	8/8/2001				Zinc (Zn)	Dry weight	160	mg/kg	J
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	8/13/2001				Arsenic (As)	Dry weight	10	mg/kg	
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	8/13/2001				Cadmium (Cd)	Dry weight	0.27	mg/kg	
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	8/13/2001				Copper (Cu)	Dry weight	210	mg/kg	
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	8/13/2001				Lead (Pb)	Dry weight	80	mg/kg	
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	8/13/2001				Mercury (Hg)	Dry weight	0.68	mg/kg	
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	8/13/2001				Zinc (Zn)	Dry weight	250	mg/kg	J
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	9/11/2002				Arsenic (As)	Dry weight	13	mg/kg	J
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	8/11/2001				Arsenic (As)	Dry weight	15	mg/kg	
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	9/11/2002				Cadmium (Cd)	Dry weight	0.27	mg/kg	
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	8/11/2001				Cadmium (Cd)	Dry weight	0.36	mg/kg	
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	9/11/2002				Copper (Cu)	Dry weight	260	mg/kg	
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	8/11/2001				Copper (Cu)	Dry weight	270	mg/kg	

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PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	8/11/2001				Lead (Pb)	Dry weight	100	mg/kg	J
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	9/11/2002				Lead (Pb)	Dry weight	100	mg/kg	
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	9/11/2002				Mercury (Hg)	Dry weight	0.77	mg/kg	
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	8/11/2001				Mercury (Hg)	Dry weight	0.98	mg/kg	
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	8/11/2001				Zinc (Zn)	Dry weight	310	mg/kg	
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	9/11/2002				Zinc (Zn)	Dry weight	350	mg/kg	
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	9/9/2002				Arsenic (As)	Dry weight	8.3	mg/kg	
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	9/9/2002				Cadmium (Cd)	Dry weight	0.49	mg/kg	
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	9/9/2002				Copper (Cu)	Dry weight	220	mg/kg	
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	9/9/2002				Lead (Pb)	Dry weight	72	mg/kg	
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	9/9/2002				Mercury (Hg)	Dry weight	0.93	mg/kg	J
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	9/9/2002				Zinc (Zn)	Dry weight	230	mg/kg	J
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	9/14/2002				Arsenic (As)	Dry weight	8.9	mg/kg	
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	9/14/2002				Cadmium (Cd)	Dry weight	0.23	mg/kg	
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	9/14/2002				Copper (Cu)	Dry weight	240	mg/kg	
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	9/14/2002				Lead (Pb)	Dry weight	72	mg/kg	
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	9/14/2002				Mercury (Hg)	Dry weight	1.1	mg/kg	J
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	9/14/2002				Zinc (Zn)	Dry weight	300	mg/kg	
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	9/11/2002				Arsenic (As)	Dry weight	4	mg/kg	J
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	9/11/2002				Cadmium (Cd)	Dry weight	0.064	mg/kg	
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	9/11/2002				Copper (Cu)	Dry weight	54	mg/kg	
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	9/11/2002				Lead (Pb)	Dry weight	21	mg/kg	
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	9/11/2002				Mercury (Hg)	Dry weight	0.23	mg/kg	
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	9/11/2002				Zinc (Zn)	Dry weight	80	mg/kg	
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	9/9/2002				Arsenic (As)	Dry weight	9.4	mg/kg	J
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	9/9/2002				Cadmium (Cd)	Dry weight	0.064	mg/kg	
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	9/9/2002				Copper (Cu)	Dry weight	92	mg/kg	
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	9/9/2002				Lead (Pb)	Dry weight	57	mg/kg	
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	9/9/2002				Mercury (Hg)	Dry weight	0.51	mg/kg	J
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	9/9/2002				Zinc (Zn)	Dry weight	160	mg/kg	J
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	9/11/2002				Arsenic (As)	Dry weight	10	mg/kg	J
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	9/11/2002				Cadmium (Cd)	Dry weight	0.065	mg/kg	
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	9/11/2002				Copper (Cu)	Dry weight	100	mg/kg	
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	9/11/2002				Lead (Pb)	Dry weight	58	mg/kg	
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	9/11/2002				Mercury (Hg)	Dry weight	0.53	mg/kg	
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	9/11/2002				Zinc (Zn)	Dry weight	170	mg/kg	
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	9/11/2002				Arsenic (As)	Dry weight	8.3	mg/kg	J
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	9/11/2002				Cadmium (Cd)	Dry weight	0.21	mg/kg	
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	9/11/2002				Copper (Cu)	Dry weight	320	mg/kg	
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	9/11/2002				Lead (Pb)	Dry weight	99	mg/kg	
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	9/11/2002				Mercury (Hg)	Dry weight	0.75	mg/kg	
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	9/11/2002				Zinc (Zn)	Dry weight	310	mg/kg	
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	11/7/2002				Arsenic (As)	Dry weight	9.9	mg/kg	
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	11/7/2002				Cadmium (Cd)	Dry weight	0.21	mg/kg	
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	11/7/2002				Copper (Cu)	Dry weight	240	mg/kg	J
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	11/7/2002				Lead (Pb)	Dry weight	79	mg/kg	
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	11/7/2002				Mercury (Hg)	Dry weight	0.75	mg/kg	
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	11/7/2002				Zinc (Zn)	Dry weight	300	mg/kg	J
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A1		-117.13132	32.68768	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	13000	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A1		-117.13132	32.68768	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	4.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A1		-117.13132	32.68768	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A1		-117.13132	32.68768	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	30.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A1		-117.13132	32.68768	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	18500.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A1		-117.13132	32.68768	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	64.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A1		-117.13132	32.68768	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.2	mg/kg	U

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Studies Supporting an Environmental Risk Assessment of San Diego Bay	A1		-117.13132	32.68768	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	134.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A2		-117.13527	32.68512	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	16100	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A2		-117.13527	32.68512	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	8.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A2		-117.13527	32.68512	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A2		-117.13527	32.68512	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	117.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A2		-117.13527	32.68512	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	22900.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A2		-117.13527	32.68512	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	197.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A2		-117.13527	32.68512	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.5	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A2		-117.13527	32.68512	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	206.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A3		-117.13870	32.68230	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	15900	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A3		-117.13870	32.68230	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	6.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A3		-117.13870	32.68230	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A3		-117.13870	32.68230	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	90.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A3		-117.13870	32.68230	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	21300.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A3		-117.13870	32.68230	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	35.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A3		-117.13870	32.68230	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.4	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A3		-117.13870	32.68230	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	135.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A4		-117.14152	32.68038	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	10500	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A4		-117.14152	32.68038	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	4.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A4		-117.14152	32.68038	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A4		-117.14152	32.68038	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	51.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A4		-117.14152	32.68038	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	13600.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A4		-117.14152	32.68038	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	25.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A4		-117.14152	32.68038	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.4	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A4		-117.14152	32.68038	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	97.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A5		-117.14532	32.67830	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	5280	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A5		-117.14532	32.67830	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	2.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A5		-117.14532	32.67830	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A5		-117.14532	32.67830	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	30.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A5		-117.14532	32.67830	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	6950.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A5		-117.14532	32.67830	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	20.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A5		-117.14532	32.67830	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.2	mg/kg	U

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A5		-117.14532	32.67830	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	60.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B1		-117.12735	32.68203	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	29600	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B1		-117.12735	32.68203	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	16.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B1		-117.12735	32.68203	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B1		-117.12735	32.68203	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	486.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B1		-117.12735	32.68203	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	42100.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B1		-117.12735	32.68203	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	120.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B1		-117.12735	32.68203	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	1.5	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B1		-117.12735	32.68203	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	444.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B2		-117.13043	32.68017	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	16800	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B2		-117.13043	32.68017	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	2.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B2		-117.13043	32.68017	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B2		-117.13043	32.68017	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	41.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B2		-117.13043	32.68017	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	20300.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B2		-117.13043	32.68017	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	20.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B2		-117.13043	32.68017	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.2	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B2		-117.13043	32.68017	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	69.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B3		-117.13297	32.67897	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	31500	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B3		-117.13297	32.67897	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	8.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B3		-117.13297	32.67897	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	2.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B3		-117.13297	32.67897	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	162.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B3		-117.13297	32.67897	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	36000.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B3		-117.13297	32.67897	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	82.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B3		-117.13297	32.67897	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	2.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B3		-117.13297	32.67897	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	313.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B4		-117.13623	32.67748	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	19800	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B4		-117.13623	32.67748	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	7.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B4		-117.13623	32.67748	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B4		-117.13623	32.67748	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	98.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B4		-117.13623	32.67748	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	25000.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B4		-117.13623	32.67748	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	42.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B4		-117.13623	32.67748	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.5	mg/kg	

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United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B4		-117.13623	32.67748	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	162.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B5		-117.14030	32.67472	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	8490	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B5		-117.14030	32.67472	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	3.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B5		-117.14030	32.67472	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B5		-117.14030	32.67472	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	44.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B5		-117.14030	32.67472	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	11300.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B5		-117.14030	32.67472	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	20.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B5		-117.14030	32.67472	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.2	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B5		-117.14030	32.67472	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	91.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C1		-117.11612	32.67360	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	15400	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C1		-117.11612	32.67360	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	6.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C1		-117.11612	32.67360	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C1		-117.11612	32.67360	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	156.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C1		-117.11612	32.67360	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	23000.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C1		-117.11612	32.67360	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	102.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C1		-117.11612	32.67360	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.4	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C1		-117.11612	32.67360	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	516.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C2		-117.12350	32.67100	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	12700	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C2		-117.12350	32.67100	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	2.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C2		-117.12350	32.67100	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C2		-117.12350	32.67100	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	30.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C2		-117.12350	32.67100	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	18500.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C2		-117.12350	32.67100	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	20.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C2		-117.12350	32.67100	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.2	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C2		-117.12350	32.67100	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	58.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C3		-117.12570	32.66970	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	17600	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C3		-117.12570	32.66970	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	5.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C3		-117.12570	32.66970	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C3		-117.12570	32.66970	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	87.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C3		-117.12570	32.66970	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	24400.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C3		-117.12570	32.66970	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	26.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C3		-117.12570	32.66970	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.3	mg/kg	

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PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C3		-117.12570	32.66970	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	124.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C4		-117.12833	32.66902	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	30800	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C4		-117.12833	32.66902	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	7.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C4		-117.12833	32.66902	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C4		-117.12833	32.66902	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	161.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C4		-117.12833	32.66902	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	37100.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C4		-117.12833	32.66902	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	57.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C4		-117.12833	32.66902	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.7	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C4		-117.12833	32.66902	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	227.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C5		-117.13482	32.66693	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	8030	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C5		-117.13482	32.66693	01-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	6.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C5		-117.13482	32.66693	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C5		-117.13482	32.66693	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	46.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C5		-117.13482	32.66693	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	11000.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C5		-117.13482	32.66693	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	20.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C5		-117.13482	32.66693	01-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.2	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C5		-117.13482	32.66693	01-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	91.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D1		-117.11945	32.66533	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	29900	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D1		-117.11945	32.66533	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	9.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D1		-117.11945	32.66533	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D1		-117.11945	32.66533	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	358.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D1		-117.11945	32.66533	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	41700.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D1		-117.11945	32.66533	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	68.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D1		-117.11945	32.66533	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	1.5	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D1		-117.11945	32.66533	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	330.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D2		-117.12350	32.66507	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	35800	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D2		-117.12350	32.66507	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	6.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D2		-117.12350	32.66507	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D2		-117.12350	32.66507	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	89.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D2		-117.12350	32.66507	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	42500.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D2		-117.12350	32.66507	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	41.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D2		-117.12350	32.66507	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	1.2	mg/kg	

TABLE D-1
Inorganic Parameters in Surface Sediment
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D2		-117.12350	32.66507	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	191.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D3		-117.12522	32.66495	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	18800	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D3		-117.12522	32.66495	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	7.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D3		-117.12522	32.66495	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D3		-117.12522	32.66495	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	129.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D3		-117.12522	32.66495	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	26700.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D3		-117.12522	32.66495	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	34.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D3		-117.12522	32.66495	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.5	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D3		-117.12522	32.66495	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	161.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D4		-117.12718	32.66412	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	10400	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D4		-117.12718	32.66412	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	8.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D4		-117.12718	32.66412	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D4		-117.12718	32.66412	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	60.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D4		-117.12718	32.66412	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	13700.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D4		-117.12718	32.66412	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	20.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D4		-117.12718	32.66412	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.2	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D4		-117.12718	32.66412	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	94.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D5		-117.13388	32.66387	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	7170	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D5		-117.13388	32.66387	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	6.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D5		-117.13388	32.66387	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D5		-117.13388	32.66387	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	36.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D5		-117.13388	32.66387	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	9350.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D5		-117.13388	32.66387	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	21.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D5		-117.13388	32.66387	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.2	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D5		-117.13388	32.66387	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	74.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E1		-117.11863	32.65910	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	22300	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E1		-117.11863	32.65910	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	8.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E1		-117.11863	32.65910	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E1		-117.11863	32.65910	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	371.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E1		-117.11863	32.65910	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	33100.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E1		-117.11863	32.65910	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	74.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E1		-117.11863	32.65910	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	1.0	mg/kg	

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PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E1		-117.11863	32.65910	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	313.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E2		-117.12270	32.65808	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	33100	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E2		-117.12270	32.65808	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	8.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E2		-117.12270	32.65808	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E2		-117.12270	32.65808	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	400.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E2		-117.12270	32.65808	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	38600.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E2		-117.12270	32.65808	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	42.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E2		-117.12270	32.65808	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.4	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E2		-117.12270	32.65808	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	244.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E3		-117.12465	32.65753	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	26700	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E3		-117.12465	32.65753	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	6.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E3		-117.12465	32.65753	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E3		-117.12465	32.65753	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	188.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E3		-117.12465	32.65753	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	33300.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E3		-117.12465	32.65753	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	36.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E3		-117.12465	32.65753	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.4	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E3		-117.12465	32.65753	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	189.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E4		-117.12708	32.65775	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	28900	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E4		-117.12708	32.65775	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	7.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E4		-117.12708	32.65775	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E4		-117.12708	32.65775	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	185.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E4		-117.12708	32.65775	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	36100.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E4		-117.12708	32.65775	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	42.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E4		-117.12708	32.65775	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.5	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E4		-117.12708	32.65775	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	222.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E5		-117.13218	32.65643	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Aluminum (Al)	Dry weight	16800	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E5		-117.13218	32.65643	02-Jul-93	Sediment	Discrete Sample	EPA7060	Arsenic (As)	Dry weight	5.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E5		-117.13218	32.65643	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Cadmium (Cd)	Dry weight	1.0	mg/kg	U
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E5		-117.13218	32.65643	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Copper (Cu)	Dry weight	73.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E5		-117.13218	32.65643	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Iron (Fe)	Dry weight	21100.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E5		-117.13218	32.65643	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Lead (Pb)	Dry weight	26.0	mg/kg	
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E5		-117.13218	32.65643	02-Jul-93	Sediment	Discrete Sample	EPA7471Mercury	Mercury (Hg)	Dry weight	0.3	mg/kg	

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E5		-117.13218	32.65643	02-Jul-93	Sediment	Discrete Sample	EPA6010ICP	Zinc (Zn)	Dry weight	137.0	mg/kg	
Upstream Paleta Creek	IR-PAC14		-117.11505	32.67480	2004			ICP/OES	Aluminum (Al)	Dry weight	71227	mg/kg	
Upstream Paleta Creek	IR-PAC14		-117.11505	32.67480	2004			ICP/MS	Arsenic (As)	Dry weight	13.3	mg/kg	
Upstream Paleta Creek	IR-PAC14		-117.11505	32.67480	2004			ICP-MS	Cadmium (Cd)	Dry weight	1.15	mg/kg	
Upstream Paleta Creek	IR-PAC14		-117.11505	32.67480	2004			ICP/OES	Copper (Cu)	Dry weight	211	mg/kg	
Upstream Paleta Creek	IR-PAC14		-117.11505	32.67480	2004			ICP/OES	Iron (Fe)	Dry weight	40749	mg/kg	
Upstream Paleta Creek	IR-PAC14		-117.11505	32.67480	2004			ICP/OES	Lead (Pb)	Dry weight	140	mg/kg	
Upstream Paleta Creek	IR-PAC14		-117.11505	32.67480	2004			CVAF	Mercury (Hg)	Dry weight	0.338	mg/kg	
Upstream Paleta Creek	IR-PAC14		-117.11505	32.67480	2004			ICP/OES	Zinc (Zn)	Dry weight	482	mg/kg	
Upstream Paleta Creek	IR-PAC17		-117.11485	32.67513	2004			ICP/OES	Aluminum (Al)	Dry weight	67156	mg/kg	
Upstream Paleta Creek	IR-PAC17		-117.11485	32.67513	2004			ICP/MS	Arsenic (As)	Dry weight	7.16	mg/kg	
Upstream Paleta Creek	IR-PAC17		-117.11485	32.67513	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.989	mg/kg	
Upstream Paleta Creek	IR-PAC17		-117.11485	32.67513	2004			ICP/OES	Copper (Cu)	Dry weight	93.0	mg/kg	
Upstream Paleta Creek	IR-PAC17		-117.11485	32.67513	2004			ICP/OES	Iron (Fe)	Dry weight	28575	mg/kg	
Upstream Paleta Creek	IR-PAC17		-117.11485	32.67513	2004			ICP/OES	Lead (Pb)	Dry weight	120	mg/kg	
Upstream Paleta Creek	IR-PAC17		-117.11485	32.67513	2004			CVAF	Mercury (Hg)	Dry weight	0.324	mg/kg	
Upstream Paleta Creek	IR-PAC17		-117.11485	32.67513	2004			ICP/OES	Zinc (Zn)	Dry weight	288	mg/kg	
Upstream Paleta Creek	IR-PAC29		-117.11427	32.67568	2004			ICP/OES	Aluminum (Al)	Dry weight	64404	mg/kg	
Upstream Paleta Creek	IR-PAC29		-117.11427	32.67568	2004			ICP/MS	Arsenic (As)	Dry weight	7.08	mg/kg	
Upstream Paleta Creek	IR-PAC29		-117.11427	32.67568	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.784	mg/kg	
Upstream Paleta Creek	IR-PAC29		-117.11427	32.67568	2004			ICP/OES	Copper (Cu)	Dry weight	65.0	mg/kg	
Upstream Paleta Creek	IR-PAC29		-117.11427	32.67568	2004			ICP/OES	Iron (Fe)	Dry weight	29238	mg/kg	
Upstream Paleta Creek	IR-PAC29		-117.11427	32.67568	2004			ICP/OES	Lead (Pb)	Dry weight	82.3	mg/kg	
Upstream Paleta Creek	IR-PAC29		-117.11427	32.67568	2004			CVAF	Mercury (Hg)	Dry weight	0.324	mg/kg	
Upstream Paleta Creek	IR-PAC29		-117.11427	32.67568	2004			ICP/OES	Zinc (Zn)	Dry weight	232	mg/kg	
Upstream Paleta Creek	IR-PAC3		-117.11562	32.67443	2004			ICP/OES	Aluminum (Al)	Dry weight	54500	mg/kg	
Upstream Paleta Creek	IR-PAC3		-117.11562	32.67443	2004			ICP/MS	Arsenic (As)	Dry weight	4.28	mg/kg	
Upstream Paleta Creek	IR-PAC3		-117.11562	32.67443	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.276	mg/kg	
Upstream Paleta Creek	IR-PAC3		-117.11562	32.67443	2004			ICP/OES	Copper (Cu)	Dry weight	18.1	mg/kg	
Upstream Paleta Creek	IR-PAC3		-117.11562	32.67443	2004			ICP/OES	Iron (Fe)	Dry weight	8910	mg/kg	
Upstream Paleta Creek	IR-PAC3		-117.11562	32.67443	2004			ICP/OES	Lead (Pb)	Dry weight	38.3	mg/kg	
Upstream Paleta Creek	IR-PAC3		-117.11562	32.67443	2004			CVAF	Mercury (Hg)	Dry weight	0.0643	mg/kg	
Upstream Paleta Creek	IR-PAC3		-117.11562	32.67443	2004			ICP/OES	Zinc (Zn)	Dry weight	144	mg/kg	
Upstream Paleta Creek	IR-PAC38		-117.11380	32.67605	2004			ICP/OES	Aluminum (Al)	Dry weight	61732	mg/kg	
Upstream Paleta Creek	IR-PAC38		-117.11380	32.67605	2004			ICP/MS	Arsenic (As)	Dry weight	4.43	mg/kg	
Upstream Paleta Creek	IR-PAC38		-117.11380	32.67605	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.603	mg/kg	
Upstream Paleta Creek	IR-PAC38		-117.11380	32.67605	2004			ICP/OES	Copper (Cu)	Dry weight	50.2	mg/kg	
Upstream Paleta Creek	IR-PAC38		-117.11380	32.67605	2004			ICP/OES	Iron (Fe)	Dry weight	22265	mg/kg	
Upstream Paleta Creek	IR-PAC38		-117.11380	32.67605	2004			ICP/OES	Lead (Pb)	Dry weight	87.6	mg/kg	
Upstream Paleta Creek	IR-PAC38		-117.11380	32.67605	2004			CVAF	Mercury (Hg)	Dry weight	0.101	mg/kg	
Upstream Paleta Creek	IR-PAC38		-117.11380	32.67605	2004			ICP/OES	Zinc (Zn)	Dry weight	267	mg/kg	
Upstream Paleta Creek	IR-PAC41		-117.11173	32.67665	2004			ICP/OES	Aluminum (Al)	Dry weight	67838	mg/kg	
Upstream Paleta Creek	IR-PAC41		-117.11173	32.67665	2004			ICP/MS	Arsenic (As)	Dry weight	6.60	mg/kg	
Upstream Paleta Creek	IR-PAC41		-117.11173	32.67665	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.733	mg/kg	
Upstream Paleta Creek	IR-PAC41		-117.11173	32.67665	2004			ICP/OES	Copper (Cu)	Dry weight	57.8	mg/kg	
Upstream Paleta Creek	IR-PAC41		-117.11173	32.67665	2004			ICP/OES	Iron (Fe)	Dry weight	27572	mg/kg	
Upstream Paleta Creek	IR-PAC41		-117.11173	32.67665	2004			ICP/OES	Lead (Pb)	Dry weight	107	mg/kg	
Upstream Paleta Creek	IR-PAC41		-117.11173	32.67665	2004			CVAF	Mercury (Hg)	Dry weight	0.157	mg/kg	
Upstream Paleta Creek	IR-PAC41		-117.11173	32.67665	2004			ICP/OES	Zinc (Zn)	Dry weight	220	mg/kg	
Upstream Paleta Creek	IR-PAC49		-117.11215	32.68297	2004			ICP/OES	Aluminum (Al)	Dry weight	64532	mg/kg	
Upstream Paleta Creek	IR-PAC49		-117.11215	32.68297	2004			ICP/MS	Arsenic (As)	Dry weight	4.70	mg/kg	
Upstream Paleta Creek	IR-PAC49		-117.11215	32.68297	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.317	mg/kg	
Upstream Paleta Creek	IR-PAC49		-117.11215	32.68297	2004			ICP/OES	Copper (Cu)	Dry weight	18.1	mg/kg	
Upstream Paleta Creek	IR-PAC49		-117.11215	32.68297	2004			ICP/OES	Iron (Fe)	Dry weight	20640	mg/kg	
Upstream Paleta Creek	IR-PAC49		-117.11215	32.68297	2004			ICP/OES	Lead (Pb)	Dry weight	27.6	mg/kg	
Upstream Paleta Creek	IR-PAC49		-117.11215	32.68297	2004			CVAF	Mercury (Hg)	Dry weight	0.0344	mg/kg	
Upstream Paleta Creek	IR-PAC49		-117.11215	32.68297	2004			ICP/OES	Zinc (Zn)	Dry weight	104	mg/kg	
Upstream Paleta Creek	IR-PAC55		-117.11468	32.67508	2004			ICP/OES	Aluminum (Al)	Dry weight	69683	mg/kg	
Upstream Paleta Creek	IR-PAC55		-117.11468	32.67508	2004			ICP/MS	Arsenic (As)	Dry weight	8.79	mg/kg	
Upstream Paleta Creek	IR-PAC55		-117.11468	32.67508	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.867	mg/kg	
Upstream Paleta Creek	IR-PAC55		-117.11468	32.67508	2004			ICP/OES	Copper (Cu)	Dry weight	136	mg/kg	

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	MEASUREMENT_METHOD	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Upstream Paleta Creek	IR-PAC55		-117.11468	32.67508	2004			ICP/OES	Iron (Fe)	Dry weight	27702	mg/kg	
Upstream Paleta Creek	IR-PAC55		-117.11468	32.67508	2004			ICP/OES	Lead (Pb)	Dry weight	104	mg/kg	
Upstream Paleta Creek	IR-PAC55		-117.11468	32.67508	2004			CVAF	Mercury (Hg)	Dry weight	0.274	mg/kg	
Upstream Paleta Creek	IR-PAC55		-117.11468	32.67508	2004			ICP/OES	Zinc (Zn)	Dry weight	362	mg/kg	
Upstream Paleta Creek	IR-PAC56		-117.11060	32.68375	2004			ICP/OES	Aluminum (Al)	Dry weight	57515	mg/kg	
Upstream Paleta Creek	IR-PAC56		-117.11060	32.68375	2004			ICP/MS	Arsenic (As)	Dry weight	4.06	mg/kg	
Upstream Paleta Creek	IR-PAC56		-117.11060	32.68375	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.288	mg/kg	
Upstream Paleta Creek	IR-PAC56		-117.11060	32.68375	2004			ICP/OES	Copper (Cu)	Dry weight	15.8	mg/kg	
Upstream Paleta Creek	IR-PAC56		-117.11060	32.68375	2004			ICP/OES	Iron (Fe)	Dry weight	19702	mg/kg	
Upstream Paleta Creek	IR-PAC56		-117.11060	32.68375	2004			ICP/OES	Lead (Pb)	Dry weight	25.9	mg/kg	
Upstream Paleta Creek	IR-PAC56		-117.11060	32.68375	2004			CVAF	Mercury (Hg)	Dry weight	0.0331	mg/kg	
Upstream Paleta Creek	IR-PAC56		-117.11060	32.68375	2004			ICP/OES	Zinc (Zn)	Dry weight	95.1	mg/kg	
Upstream Paleta Creek	IR-PAC60		-117.11529	32.67467	2004			ICP/OES	Aluminum (Al)	Dry weight	65466	mg/kg	
Upstream Paleta Creek	IR-PAC60		-117.11529	32.67467	2004			ICP/MS	Arsenic (As)	Dry weight	7.24	mg/kg	
Upstream Paleta Creek	IR-PAC60		-117.11529	32.67467	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.912	mg/kg	
Upstream Paleta Creek	IR-PAC60		-117.11529	32.67467	2004			ICP/OES	Copper (Cu)	Dry weight	82.2	mg/kg	
Upstream Paleta Creek	IR-PAC60		-117.11529	32.67467	2004			ICP/OES	Iron (Fe)	Dry weight	28749	mg/kg	
Upstream Paleta Creek	IR-PAC60		-117.11529	32.67467	2004			ICP/OES	Lead (Pb)	Dry weight	67.6	mg/kg	
Upstream Paleta Creek	IR-PAC60		-117.11529	32.67467	2004			CVAF	Mercury (Hg)	Dry weight	0.138	mg/kg	
Upstream Paleta Creek	IR-PAC60		-117.11529	32.67467	2004			ICP/OES	Zinc (Zn)	Dry weight	277	mg/kg	
Upstream Paleta Creek	IR-PAC61		-117.11532	32.67483	2004			ICP/OES	Aluminum (Al)	Dry weight	50424	mg/kg	
Upstream Paleta Creek	IR-PAC61		-117.11532	32.67483	2004			ICP/MS	Arsenic (As)	Dry weight	3.97	mg/kg	
Upstream Paleta Creek	IR-PAC61		-117.11532	32.67483	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.163	mg/kg	
Upstream Paleta Creek	IR-PAC61		-117.11532	32.67483	2004			ICP/OES	Copper (Cu)	Dry weight	1143	mg/kg	
Upstream Paleta Creek	IR-PAC61		-117.11532	32.67483	2004			ICP/OES	Iron (Fe)	Dry weight	9914	mg/kg	
Upstream Paleta Creek	IR-PAC61		-117.11532	32.67483	2004			ICP/OES	Lead (Pb)	Dry weight	126	mg/kg	
Upstream Paleta Creek	IR-PAC61		-117.11532	32.67483	2004			CVAF	Mercury (Hg)	Dry weight	0.0397	mg/kg	
Upstream Paleta Creek	IR-PAC61		-117.11532	32.67483	2004			ICP/OES	Zinc (Zn)	Dry weight	57.5	mg/kg	
Upstream Paleta Creek	IR-PAC63		-117.11397	32.67595	2004			ICP/OES	Aluminum (Al)	Dry weight	69777	mg/kg	
Upstream Paleta Creek	IR-PAC63		-117.11397	32.67595	2004			ICP/MS	Arsenic (As)	Dry weight	8.67	mg/kg	
Upstream Paleta Creek	IR-PAC63		-117.11397	32.67595	2004			ICP-MS	Cadmium (Cd)	Dry weight	1.04	mg/kg	
Upstream Paleta Creek	IR-PAC63		-117.11397	32.67595	2004			ICP/OES	Copper (Cu)	Dry weight	245	mg/kg	
Upstream Paleta Creek	IR-PAC63		-117.11397	32.67595	2004			ICP/OES	Iron (Fe)	Dry weight	42361	mg/kg	
Upstream Paleta Creek	IR-PAC63		-117.11397	32.67595	2004			ICP/OES	Lead (Pb)	Dry weight	83.7	mg/kg	
Upstream Paleta Creek	IR-PAC63		-117.11397	32.67595	2004			CVAF	Mercury (Hg)	Dry weight	0.0793	mg/kg	
Upstream Paleta Creek	IR-PAC63		-117.11397	32.67595	2004			ICP/OES	Zinc (Zn)	Dry weight	909	mg/kg	
Upstream Paleta Creek	IR-PAC65		-117.11433	32.67560	2004			ICP/OES	Aluminum (Al)	Dry weight	65282	mg/kg	
Upstream Paleta Creek	IR-PAC65		-117.11433	32.67560	2004			ICP/MS	Arsenic (As)	Dry weight	8.71	mg/kg	
Upstream Paleta Creek	IR-PAC65		-117.11433	32.67560	2004			ICP-MS	Cadmium (Cd)	Dry weight	3.01	mg/kg	
Upstream Paleta Creek	IR-PAC65		-117.11433	32.67560	2004			ICP/OES	Copper (Cu)	Dry weight	152	mg/kg	
Upstream Paleta Creek	IR-PAC65		-117.11433	32.67560	2004			ICP/OES	Iron (Fe)	Dry weight	37950	mg/kg	
Upstream Paleta Creek	IR-PAC65		-117.11433	32.67560	2004			ICP/OES	Lead (Pb)	Dry weight	310	mg/kg	
Upstream Paleta Creek	IR-PAC65		-117.11433	32.67560	2004			CVAF	Mercury (Hg)	Dry weight	0.216	mg/kg	
Upstream Paleta Creek	IR-PAC65		-117.11433	32.67560	2004			ICP/OES	Zinc (Zn)	Dry weight	987	mg/kg	
Upstream Paleta Creek	IR-PAC7		-117.11538	32.67470	2004			ICP/OES	Aluminum (Al)	Dry weight	67396	mg/kg	
Upstream Paleta Creek	IR-PAC7		-117.11538	32.67470	2004			ICP/MS	Arsenic (As)	Dry weight	6.20	mg/kg	
Upstream Paleta Creek	IR-PAC7		-117.11538	32.67470	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.486	mg/kg	
Upstream Paleta Creek	IR-PAC7		-117.11538	32.67470	2004			ICP/OES	Copper (Cu)	Dry weight	60.2	mg/kg	
Upstream Paleta Creek	IR-PAC7		-117.11538	32.67470	2004			ICP/OES	Iron (Fe)	Dry weight	26196	mg/kg	
Upstream Paleta Creek	IR-PAC7		-117.11538	32.67470	2004			ICP/OES	Lead (Pb)	Dry weight	65.0	mg/kg	
Upstream Paleta Creek	IR-PAC7		-117.11538	32.67470	2004			CVAF	Mercury (Hg)	Dry weight	0.143	mg/kg	
Upstream Paleta Creek	IR-PAC7		-117.11538	32.67470	2004			ICP/OES	Zinc (Zn)	Dry weight	159	mg/kg	
Upstream Paleta Creek	IR-PAC71		-117.11008	32.68398	2004			ICP/OES	Aluminum (Al)	Dry weight	50492	mg/kg	
Upstream Paleta Creek	IR-PAC71		-117.11008	32.68398	2004			ICP/MS	Arsenic (As)	Dry weight	3.76	mg/kg	
Upstream Paleta Creek	IR-PAC71		-117.11008	32.68398	2004			ICP-MS	Cadmium (Cd)	Dry weight	0.229	mg/kg	
Upstream Paleta Creek	IR-PAC71		-117.11008	32.68398	2004			ICP/OES	Copper (Cu)	Dry weight	16.5	mg/kg	
Upstream Paleta Creek	IR-PAC71		-117.11008	32.68398	2004			ICP/OES	Iron (Fe)	Dry weight	12523	mg/kg	
Upstream Paleta Creek	IR-PAC71		-117.11008	32.68398	2004			ICP/OES	Lead (Pb)	Dry weight	48.7	mg/kg	
Upstream Paleta Creek	IR-PAC71		-117.11008	32.68398	2004			CVAF	Mercury (Hg)	Dry weight	0.0288	mg/kg	
Upstream Paleta Creek	IR-PAC71		-117.11008	32.68398	2004			ICP/OES	Zinc (Zn)	Dry weight	82.0	mg/kg	

TABLE D-2
Butyltins in Surface Sediment Samples
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	04-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	10-Nov-92	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.15	µg/kg	
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	90007		-117.12902	32.68090	03-Dec-96	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.050	µg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	10-Nov-92	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.12	µg/kg	
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	90008		-117.12460	32.67552	03-Dec-96	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.057	µg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	10-Nov-92	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.09	µg/kg	
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	26-Jan-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	1.38	µg/kg	
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	01-Mar-94	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.795	µg/kg	
Bay Protection and Toxic Cleanup Program	90020		-117.14757	32.69323	03-Dec-96	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.640	µg/kg	
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	04-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	10-Nov-92	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.24	µg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	04-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	01-Mar-94	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.0927	µg/kg	
Bay Protection and Toxic Cleanup Program	90022		-117.12438	32.67853	03-Dec-96	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.136	µg/kg	
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	26-Jan-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.74	µg/kg	
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	15-Mar-94	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	6.21	µg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	26-May-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.34	µg/kg	
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	02-Mar-94	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.364	µg/kg	
Bay Protection and Toxic Cleanup Program	93178		-117.14997	32.69532	03-Dec-96	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.177	µg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	26-May-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.246	µg/kg	
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	02-Mar-94	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.559	µg/kg	
Bay Protection and Toxic Cleanup Program	93179		-117.14862	32.69372	03-Dec-96	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.367	µg/kg	
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	26-May-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.958	µg/kg	
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	02-Mar-94	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.766	µg/kg	
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	26-May-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.206	µg/kg	
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	04-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	04-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	04-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	04-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	04-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	04-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	17-Aug-93	Sediment	Discrete Sample	Sloan,C.A.,	Tributyltin (TBT)	Dry weight	0.013	µg/kg	U
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008				Dibutyltin (DBT)	Dry weight	15.7	µg/kg	
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008				Monobutyltin (MBT)	Dry weight	1.29	µg/kg	J
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS11		-117.12710	32.68197	2008				Tributyltin (TBT)	Dry weight	20.79	µg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008				Dibutyltin (DBT)	Dry weight	15.47	µg/kg	
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008				Monobutyltin (MBT)	Dry weight	1.54	µg/kg	J
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS12		-117.12771	32.68165	2008				Tributyltin (TBT)	Dry weight	20.67	µg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008				Dibutyltin (DBT)	Dry weight	14.36	µg/kg	
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008				Monobutyltin (MBT)	Dry weight	2.01	µg/kg	J
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS13		-117.12879	32.68104	2008				Tributyltin (TBT)	Dry weight	16.82	µg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008				Dibutyltin (DBT)	Dry weight	9.83	µg/kg	
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008				Monobutyltin (MBT)	Dry weight	1.73	µg/kg	J
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS14		-117.13030	32.68021	2008				Tributyltin (TBT)	Dry weight	11.87	µg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008				Dibutyltin (DBT)	Dry weight	7.46	µg/kg	
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008				Monobutyltin (MBT)	Dry weight	2.17	µg/kg	J

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS15		-117.13122	32.67967	2008				Tributyltin (TBT)	Dry weight	6.88	µg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008				Dibutyltin (DBT)	Dry weight	13.97	µg/kg	
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008				Monobutyltin (MBT)	Dry weight	1.65	µg/kg	J
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS16		-117.12577	32.68018	2008				Tributyltin (TBT)	Dry weight	14.6	µg/kg	
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008				Dibutyltin (DBT)	Dry weight	12.4	µg/kg	
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008				Monobutyltin (MBT)	Dry weight	1.32	µg/kg	J
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS17		-117.12631	32.67986	2008				Tributyltin (TBT)	Dry weight	16.16	µg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008				Dibutyltin (DBT)	Dry weight	14.83	µg/kg	
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008				Monobutyltin (MBT)	Dry weight	1.93	µg/kg	J
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS18		-117.12715	32.67947	2008				Tributyltin (TBT)	Dry weight	14.37	µg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008				Dibutyltin (DBT)	Dry weight	11.2	µg/kg	
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008				Monobutyltin (MBT)	Dry weight	1.23	µg/kg	J
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS19		-117.12857	32.67865	2008				Tributyltin (TBT)	Dry weight	11.01	µg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008				Dibutyltin (DBT)	Dry weight	13.35	µg/kg	
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008				Monobutyltin (MBT)	Dry weight	1.93	µg/kg	J
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS21		-117.12426	32.67845	2008				Tributyltin (TBT)	Dry weight	13.26	µg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008				Dibutyltin (DBT)	Dry weight	12.67	µg/kg	
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008				Monobutyltin (MBT)	Dry weight	1.69	µg/kg	J
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS22		-117.12487	32.67811	2008				Tributyltin (TBT)	Dry weight	11.94	µg/kg	
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008				Dibutyltin (DBT)	Dry weight	3.43	µg/kg	J
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008				Monobutyltin (MBT)	Dry weight	2.17	µg/kg	J
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008				Tributyltin (TBT)	Dry weight	1.59	µg/kg	J
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008				Dibutyltin (DBT)	Dry weight	6.76	µg/kg	
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008				Monobutyltin (MBT)	Dry weight	2.45	µg/kg	J
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008				Tributyltin (TBT)	Dry weight	4.61	µg/kg	J
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008				Dibutyltin (DBT)	Dry weight	10.67	µg/kg	
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008				Monobutyltin (MBT)	Dry weight	2	µg/kg	J
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS23		-117.12571	32.67761	2008				Tributyltin (TBT)	Dry weight	6.84	µg/kg	
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008				Dibutyltin (DBT)	Dry weight	16.94	µg/kg	
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008				Monobutyltin (MBT)	Dry weight	2.75	µg/kg	J
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS24		-117.12689	32.67705	2008				Tributyltin (TBT)	Dry weight	13.1	µg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008				Dibutyltin (DBT)	Dry weight	7.42	µg/kg	
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008				Monobutyltin (MBT)	Dry weight	1.95	µg/kg	J
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS25		-117.12798	32.67632	2008				Tributyltin (TBT)	Dry weight	5.61	µg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008				Dibutyltin (DBT)	Dry weight	13.65	µg/kg	
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008				Monobutyltin (MBT)	Dry weight	2.24	µg/kg	J
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS26		-117.12261	32.67669	2008				Tributyltin (TBT)	Dry weight	19.05	µg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008				Dibutyltin (DBT)	Dry weight	10.02	µg/kg	
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008				Monobutyltin (MBT)	Dry weight	1.33	µg/kg	J
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS27		-117.12326	32.67639	2008				Tributyltin (TBT)	Dry weight	10.69	µg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008				Dibutyltin (DBT)	Dry weight	8.26	µg/kg	
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008				Monobutyltin (MBT)	Dry weight	2.03	µg/kg	J
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008				Tributyltin (TBT)	Dry weight	9.07	µg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008				Dibutyltin (DBT)	Dry weight	8.76	µg/kg	
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008				Monobutyltin (MBT)	Dry weight	1.73	µg/kg	J
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008				Tributyltin (TBT)	Dry weight	8.8	µg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008				Dibutyltin (DBT)	Dry weight	11.59	µg/kg	
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008				Monobutyltin (MBT)	Dry weight	1.45	µg/kg	J
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS6		-117.12836	32.68356	2008				Tributyltin (TBT)	Dry weight	15.28	µg/kg	
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008				Dibutyltin (DBT)	Dry weight	8.27	µg/kg	
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008				Monobutyltin (MBT)	Dry weight	1.26	µg/kg	J
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS7		-117.12912	32.68321	2008				Tributyltin (TBT)	Dry weight	13.6	µg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008				Dibutyltin (DBT)	Dry weight	9.19	µg/kg	
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008				Monobutyltin (MBT)	Dry weight	1.35	µg/kg	J
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008				Tributyltin (TBT)	Dry weight	11.06	µg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008				Dibutyltin (DBT)	Dry weight	13.03	µg/kg	
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008				Monobutyltin (MBT)	Dry weight	2.49	µg/kg	J
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008				Tetrabutyltin (TTBT)	Dry weight	0.96	µg/kg	U
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008				Tributyltin (TBT)	Dry weight	13.81	µg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S01		-117.12499	32.67971	1993-2009		Grab		Tributyltin (TBT)	Dry weight	37.1	µg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S02		-117.12803	32.67751	1993-2009		Grab		Tributyltin (TBT)	Dry weight	46.3	µg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S03		-117.12660	32.67837	1993-2009		Grab		Tributyltin (TBT)	Dry weight	23.4	µg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S04		-117.12463	32.67929	1993-2009		Grab		Tributyltin (TBT)	Dry weight	37.7	µg/kg	
PWC Graving Dock Naval Station NPDES Permit	GVD-S06		-117.12496	32.67818	1993-2009		Grab		Tributyltin (TBT)	Dry weight	29.5	µg/kg	
PWC Graving Dock Naval Station NPDES Permit	STD-GVD-S01		-117.12425	32.67877	1993-2009		Grab		Tributyltin (TBT)	Dry weight	33.8	µg/kg	
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	12-Sep-02				Dibutyltin (DBT)	Dry weight	5.6	µg/kg	J
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	12-Sep-02				Monobutyltin (MBT)	Dry weight	3.2	µg/kg	J
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	12-Sep-02				Tetrabutyltin (TTBT)	Dry weight	1.4	µg/kg	U
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	12-Sep-02				Tributyltin (TBT)	Dry weight	1.9	µg/kg	
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	12-Sep-02				Dibutyltin (DBT)	Dry weight	5	µg/kg	J
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	12-Sep-02				Monobutyltin (MBT)	Dry weight	1.6	µg/kg	UJ
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	12-Sep-02				Tetrabutyltin (TTBT)	Dry weight	1.6	µg/kg	U
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	12-Sep-02				Tributyltin (TBT)	Dry weight	2.6	µg/kg	J
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	09-Sep-02				Dibutyltin (DBT)	Dry weight	14	µg/kg	
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	09-Sep-02				Monobutyltin (MBT)	Dry weight	3.5	µg/kg	
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	09-Sep-02				Tetrabutyltin (TTBT)	Dry weight	1.7	µg/kg	U
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	09-Sep-02				Tributyltin (TBT)	Dry weight	11	µg/kg	
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	11-Aug-01				Dibutyltin (DBT)	Dry weight	210	µg/kg	
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	11-Aug-01				Monobutyltin (MBT)	Dry weight	29	µg/kg	
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	11-Aug-01				Tetrabutyltin (TTBT)	Dry weight	7.2	µg/kg	
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	11-Aug-01				Tributyltin (TBT)	Dry weight	210	µg/kg	
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	14-Sep-02				Dibutyltin (DBT)	Dry weight	100	µg/kg	
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	14-Sep-02				Monobutyltin (MBT)	Dry weight	22	µg/kg	J
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	14-Sep-02				Tetrabutyltin (TTBT)	Dry weight	4.6	µg/kg	J
Shipyard Sediment Site	NA01	SD0136	-117.14275	32.68943	14-Sep-02				Tributyltin (TBT)	Dry weight	99	µg/kg	J
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	11-Aug-01				Dibutyltin (DBT)	Dry weight	94	µg/kg	
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	11-Aug-01				Monobutyltin (MBT)	Dry weight	38	µg/kg	
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	11-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.9	µg/kg	U
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	11-Aug-01				Tributyltin (TBT)	Dry weight	82	µg/kg	
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	11-Aug-01				Dibutyltin (DBT)	Dry weight	200	µg/kg	
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	11-Aug-01				Monobutyltin (MBT)	Dry weight	32	µg/kg	
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	11-Aug-01				Tetrabutyltin (TTBT)	Dry weight	5	µg/kg	
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	11-Aug-01				Tributyltin (TBT)	Dry weight	180	µg/kg	
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	11-Aug-01				Dibutyltin (DBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	11-Aug-01				Monobutyltin (MBT)	Dry weight	20	µg/kg	
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	11-Aug-01				Tetrabutyltin (TTBT)	Dry weight	5.9	µg/kg	U
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	11-Aug-01				Tributyltin (TBT)	Dry weight	300	µg/kg	
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	13-Aug-01				Dibutyltin (DBT)	Dry weight	110	µg/kg	
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	13-Aug-01				Monobutyltin (MBT)	Dry weight	18	µg/kg	
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	13-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.4	µg/kg	U
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	13-Aug-01				Tributyltin (TBT)	Dry weight	110	µg/kg	
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	09-Aug-01				Dibutyltin (DBT)	Dry weight	97	µg/kg	
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	09-Aug-01				Monobutyltin (MBT)	Dry weight	23	µg/kg	

TABLE D-2
Butyltins in Surface Sediment Samples
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	09-Aug-01				Tetrabutyltin (TTBT)	Dry weight	3.7	µg/kg	
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	09-Aug-01				Tributyltin (TBT)	Dry weight	180	µg/kg	
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	08-Sep-02				Dibutyltin (DBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	08-Sep-02				Monobutyltin (MBT)	Dry weight	34	µg/kg	
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	08-Sep-02				Tetrabutyltin (TTBT)	Dry weight	5.2	µg/kg	
Shipyard Sediment Site	NA06	SD0101	-117.13909	32.69003	08-Sep-02				Tributyltin (TBT)	Dry weight	270	µg/kg	J
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	08-Aug-01				Dibutyltin (DBT)	Dry weight	84	µg/kg	
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	08-Aug-01				Monobutyltin (MBT)	Dry weight	16	µg/kg	
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	08-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.7	µg/kg	U
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	08-Aug-01				Tributyltin (TBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	14-Aug-01				Dibutyltin (DBT)	Dry weight	110	µg/kg	
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	14-Aug-01				Monobutyltin (MBT)	Dry weight	26	µg/kg	
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	14-Aug-01				Tetrabutyltin (TTBT)	Dry weight	3.2	µg/kg	U
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	14-Aug-01				Tributyltin (TBT)	Dry weight	110	µg/kg	
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	14-Aug-01				Dibutyltin (DBT)	Dry weight	110	µg/kg	
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	14-Aug-01				Monobutyltin (MBT)	Dry weight	25	µg/kg	
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	14-Aug-01				Tetrabutyltin (TTBT)	Dry weight	3.3	µg/kg	U
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	14-Aug-01				Tributyltin (TBT)	Dry weight	120	µg/kg	
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	14-Aug-01				Dibutyltin (DBT)	Dry weight	74	µg/kg	
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	14-Aug-01				Monobutyltin (MBT)	Dry weight	16	µg/kg	
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	14-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.2	µg/kg	U
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	14-Aug-01				Tributyltin (TBT)	Dry weight	91	µg/kg	
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	09-Aug-01				Dibutyltin (DBT)	Dry weight	26	µg/kg	J
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	09-Aug-01				Monobutyltin (MBT)	Dry weight	4.9	µg/kg	J
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	09-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.6	µg/kg	UJ
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	09-Aug-01				Tributyltin (TBT)	Dry weight	38	µg/kg	J
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	10-Aug-01				Dibutyltin (DBT)	Dry weight	54	µg/kg	
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	10-Aug-01				Monobutyltin (MBT)	Dry weight	7.9	µg/kg	
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	10-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.4	µg/kg	U
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	10-Aug-01				Tributyltin (TBT)	Dry weight	80	µg/kg	
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	11-Aug-01				Dibutyltin (DBT)	Dry weight	80	µg/kg	
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	11-Aug-01				Monobutyltin (MBT)	Dry weight	18	µg/kg	
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	11-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.8	µg/kg	U
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	11-Aug-01				Tributyltin (TBT)	Dry weight	69	µg/kg	
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	11-Sep-02				Dibutyltin (DBT)	Dry weight	57	µg/kg	
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	11-Sep-02				Monobutyltin (MBT)	Dry weight	6.9	µg/kg	
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	11-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.7	µg/kg	U
Shipyard Sediment Site	NA13	SD0120	-117.14018	32.68713	11-Sep-02				Tributyltin (TBT)	Dry weight	67	µg/kg	
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	14-Aug-01				Dibutyltin (DBT)	Dry weight	56	µg/kg	
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	14-Aug-01				Monobutyltin (MBT)	Dry weight	13	µg/kg	
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	14-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.3	µg/kg	U
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	14-Aug-01				Tributyltin (TBT)	Dry weight	45	µg/kg	
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	12-Aug-01				Dibutyltin (DBT)	Dry weight	420	µg/kg	
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	12-Aug-01				Monobutyltin (MBT)	Dry weight	88	µg/kg	
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	12-Aug-01				Tetrabutyltin (TTBT)	Dry weight	14	µg/kg	
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	12-Aug-01				Tributyltin (TBT)	Dry weight	670	µg/kg	
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	12-Aug-01				Dibutyltin (DBT)	Dry weight	200	µg/kg	
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	12-Aug-01				Monobutyltin (MBT)	Dry weight	25	µg/kg	
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	12-Aug-01				Tetrabutyltin (TTBT)	Dry weight	4.1	µg/kg	
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	12-Aug-01				Tributyltin (TBT)	Dry weight	190	µg/kg	
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	08-Sep-02				Dibutyltin (DBT)	Dry weight	160	µg/kg	
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	08-Sep-02				Monobutyltin (MBT)	Dry weight	19	µg/kg	
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	08-Sep-02				Tetrabutyltin (TTBT)	Dry weight	4.4	µg/kg	
Shipyard Sediment Site	NA16	SD0099	-117.13889	32.68819	08-Sep-02				Tributyltin (TBT)	Dry weight	170	µg/kg	
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	12-Aug-01				Dibutyltin (DBT)	Dry weight	520	µg/kg	
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	12-Aug-01				Monobutyltin (MBT)	Dry weight	75	µg/kg	
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	12-Aug-01				Tetrabutyltin (TTBT)	Dry weight	15	µg/kg	U
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	12-Aug-01				Tributyltin (TBT)	Dry weight	1,000	µg/kg	
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	08-Sep-02				Dibutyltin (DBT)	Dry weight	220	µg/kg	
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	08-Sep-02				Monobutyltin (MBT)	Dry weight	30	µg/kg	U
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	08-Sep-02				Tetrabutyltin (TTBT)	Dry weight	30	µg/kg	U

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	NA17	SD0097	-117.13789	32.68787	08-Sep-02				Tributyltin (TBT)	Dry weight	1,700	µg/kg	
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	14-Aug-01				Dibutyltin (DBT)	Dry weight	160	µg/kg	
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	14-Aug-01				Monobutyltin (MBT)	Dry weight	37	µg/kg	
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	14-Aug-01				Tetrabutyltin (TTBT)	Dry weight	5.6	µg/kg	
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	14-Aug-01				Tributyltin (TBT)	Dry weight	210	µg/kg	
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	12-Aug-01				Dibutyltin (DBT)	Dry weight	320	µg/kg	
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	12-Aug-01				Monobutyltin (MBT)	Dry weight	58	µg/kg	
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	12-Aug-01				Tetrabutyltin (TTBT)	Dry weight	14	µg/kg	U
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	12-Aug-01				Tributyltin (TBT)	Dry weight	570	µg/kg	
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	10-Aug-01				Dibutyltin (DBT)	Dry weight	160	µg/kg	
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	10-Aug-01				Monobutyltin (MBT)	Dry weight	23	µg/kg	
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	10-Aug-01				Tetrabutyltin (TTBT)	Dry weight	7.2	µg/kg	
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	10-Aug-01				Tributyltin (TBT)	Dry weight	280	µg/kg	
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	14-Aug-01				Dibutyltin (DBT)	Dry weight	220	µg/kg	
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	14-Aug-01				Monobutyltin (MBT)	Dry weight	70	µg/kg	
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	14-Aug-01				Tetrabutyltin (TTBT)	Dry weight	8.8	µg/kg	
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	14-Aug-01				Tributyltin (TBT)	Dry weight	410	µg/kg	
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	14-Aug-01				Dibutyltin (DBT)	Dry weight	77	µg/kg	
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	14-Aug-01				Monobutyltin (MBT)	Dry weight	6.9	µg/kg	J
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	14-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.2	µg/kg	J
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	14-Aug-01				Tributyltin (TBT)	Dry weight	120	µg/kg	
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	08-Sep-02				Dibutyltin (DBT)	Dry weight	76	µg/kg	
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	08-Sep-02				Monobutyltin (MBT)	Dry weight	13	µg/kg	
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	08-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.8	µg/kg	U
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	08-Sep-02				Tributyltin (TBT)	Dry weight	120	µg/kg	
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	08-Sep-02				Dibutyltin (DBT)	Dry weight	73	µg/kg	
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	08-Sep-02				Monobutyltin (MBT)	Dry weight	15	µg/kg	
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	08-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.5	µg/kg	U
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	08-Sep-02				Tributyltin (TBT)	Dry weight	59	µg/kg	
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	09-Sep-02				Dibutyltin (DBT)	Dry weight	31	µg/kg	
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	09-Sep-02				Monobutyltin (MBT)	Dry weight	4.3	µg/kg	
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	09-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.1	µg/kg	U
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	09-Sep-02				Tributyltin (TBT)	Dry weight	25	µg/kg	
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	11-Sep-02				Dibutyltin (DBT)	Dry weight	31	µg/kg	
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	11-Sep-02				Monobutyltin (MBT)	Dry weight	5	µg/kg	
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	11-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.2	µg/kg	U
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	11-Sep-02				Tributyltin (TBT)	Dry weight	37	µg/kg	
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	02-Oct-02				Dibutyltin (DBT)	Dry weight	91	µg/kg	
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	02-Oct-02				Monobutyltin (MBT)	Dry weight	37	µg/kg	
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	02-Oct-02				Tetrabutyltin (TTBT)	Dry weight	3.9	µg/kg	U
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	02-Oct-02				Tributyltin (TBT)	Dry weight	100	µg/kg	
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	02-Oct-02				Dibutyltin (DBT)	Dry weight	87	µg/kg	
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	02-Oct-02				Monobutyltin (MBT)	Dry weight	32	µg/kg	
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	02-Oct-02				Tetrabutyltin (TTBT)	Dry weight	3.5	µg/kg	U
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	02-Oct-02				Tributyltin (TBT)	Dry weight	90	µg/kg	
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	11-Sep-02				Dibutyltin (DBT)	Dry weight	67	µg/kg	
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	11-Sep-02				Monobutyltin (MBT)	Dry weight	8	µg/kg	
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	11-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.5	µg/kg	U
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	11-Sep-02				Tributyltin (TBT)	Dry weight	58	µg/kg	
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	11-Sep-02				Dibutyltin (DBT)	Dry weight	33	µg/kg	
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	11-Sep-02				Monobutyltin (MBT)	Dry weight	4.5	µg/kg	
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	11-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.2	µg/kg	U
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	11-Sep-02				Tributyltin (TBT)	Dry weight	22	µg/kg	
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	09-Sep-02				Dibutyltin (DBT)	Dry weight	22	µg/kg	
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	09-Sep-02				Monobutyltin (MBT)	Dry weight	3.5	µg/kg	
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	09-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2	µg/kg	U
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	09-Sep-02				Tributyltin (TBT)	Dry weight	20	µg/kg	J
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	06-Aug-01				Dibutyltin (DBT)	Dry weight	290	µg/kg	
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	06-Aug-01				Monobutyltin (MBT)	Dry weight	51	µg/kg	J
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	06-Aug-01				Tetrabutyltin (TTBT)	Dry weight	12	µg/kg	
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	06-Aug-01				Tributyltin (TBT)	Dry weight	520	µg/kg	

TABLE D-2
Butyltins in Surface Sediment Samples
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	14-Sep-02				Dibutyltin (DBT)	Dry weight	230	µg/kg	J
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	14-Sep-02				Monobutyltin (MBT)	Dry weight	65	µg/kg	J
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	14-Sep-02				Tetrabutyltin (TTBT)	Dry weight	26	µg/kg	U
Shipyard Sediment Site	SW01	SD0137	-117.14573	32.69249	14-Sep-02				Tributyltin (TBT)	Dry weight	380	µg/kg	
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	06-Aug-01				Dibutyltin (DBT)	Dry weight	170	µg/kg	
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	06-Aug-01				Monobutyltin (MBT)	Dry weight	16	µg/kg	
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	06-Aug-01				Tetrabutyltin (TTBT)	Dry weight	5.1	µg/kg	
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	06-Aug-01				Tributyltin (TBT)	Dry weight	220	µg/kg	
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	14-Sep-02				Dibutyltin (DBT)	Dry weight	49	µg/kg	J
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	14-Sep-02				Monobutyltin (MBT)	Dry weight	27	µg/kg	UJ
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	14-Sep-02				Tetrabutyltin (TTBT)	Dry weight	27	µg/kg	U
Shipyard Sediment Site	SW02	SD0138	-117.14593	32.69219	14-Sep-02				Tributyltin (TBT)	Dry weight	69	µg/kg	J
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	07-Aug-01				Dibutyltin (DBT)	Dry weight	57	µg/kg	
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	07-Aug-01				Monobutyltin (MBT)	Dry weight	12	µg/kg	
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	07-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.7	µg/kg	U
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	07-Aug-01				Tributyltin (TBT)	Dry weight	53	µg/kg	
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	07-Aug-01				Dibutyltin (DBT)	Dry weight	960	µg/kg	
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	07-Aug-01				Monobutyltin (MBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	07-Aug-01				Tetrabutyltin (TTBT)	Dry weight	61	µg/kg	
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	07-Aug-01				Tributyltin (TBT)	Dry weight	2,800	µg/kg	
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	10-Sep-02				Dibutyltin (DBT)	Dry weight	1,000	µg/kg	
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	10-Sep-02				Monobutyltin (MBT)	Dry weight	300	µg/kg	U
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	10-Sep-02				Tetrabutyltin (TTBT)	Dry weight	300	µg/kg	U
Shipyard Sediment Site	SW04	SD0112	-117.14529	32.69246	10-Sep-02				Tributyltin (TBT)	Dry weight	3,700	µg/kg	J
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	06-Aug-01				Dibutyltin (DBT)	Dry weight	140	µg/kg	
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	06-Aug-01				Monobutyltin (MBT)	Dry weight	26	µg/kg	
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	06-Aug-01				Tetrabutyltin (TTBT)	Dry weight	3.8	µg/kg	
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	06-Aug-01				Tributyltin (TBT)	Dry weight	170	µg/kg	
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	06-Aug-01				Dibutyltin (DBT)	Dry weight	65	µg/kg	
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	06-Aug-01				Monobutyltin (MBT)	Dry weight	11	µg/kg	
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	06-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.8	µg/kg	U
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	06-Aug-01				Tributyltin (TBT)	Dry weight	100	µg/kg	
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	06-Aug-01				Dibutyltin (DBT)	Dry weight	48	µg/kg	
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	06-Aug-01				Monobutyltin (MBT)	Dry weight	8.7	µg/kg	
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	06-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.3	µg/kg	U
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	06-Aug-01				Tributyltin (TBT)	Dry weight	44	µg/kg	
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	08-Aug-01				Dibutyltin (DBT)	Dry weight	1,000	µg/kg	
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	08-Aug-01				Monobutyltin (MBT)	Dry weight	160	µg/kg	
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	08-Aug-01				Tetrabutyltin (TTBT)	Dry weight	65	µg/kg	U
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	08-Aug-01				Tributyltin (TBT)	Dry weight	1,900	µg/kg	
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	13-Sep-02				Dibutyltin (DBT)	Dry weight	960	µg/kg	
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	13-Sep-02				Monobutyltin (MBT)	Dry weight	240	µg/kg	J
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	13-Sep-02				Tetrabutyltin (TTBT)	Dry weight	39	µg/kg	U
Shipyard Sediment Site	SW08	SD0133	-117.14492	32.69242	13-Sep-02				Tributyltin (TBT)	Dry weight	1,800	µg/kg	J
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	06-Aug-01				Dibutyltin (DBT)	Dry weight	500	µg/kg	
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	06-Aug-01				Monobutyltin (MBT)	Dry weight	58	µg/kg	
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	06-Aug-01				Tetrabutyltin (TTBT)	Dry weight	19	µg/kg	
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	06-Aug-01				Tributyltin (TBT)	Dry weight	910	µg/kg	
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	06-Aug-01				Dibutyltin (DBT)	Dry weight	99	µg/kg	J
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	06-Aug-01				Monobutyltin (MBT)	Dry weight	19	µg/kg	
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	06-Aug-01				Tetrabutyltin (TTBT)	Dry weight	8.7	µg/kg	J
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	06-Aug-01				Tributyltin (TBT)	Dry weight	250	µg/kg	
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	13-Aug-01				Dibutyltin (DBT)	Dry weight	120	µg/kg	
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	13-Aug-01				Monobutyltin (MBT)	Dry weight	29	µg/kg	
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	13-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.8	µg/kg	J
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	13-Aug-01				Tributyltin (TBT)	Dry weight	140	µg/kg	
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	07-Aug-01				Dibutyltin (DBT)	Dry weight	48	µg/kg	
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	07-Aug-01				Monobutyltin (MBT)	Dry weight	15	µg/kg	
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	07-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.3	µg/kg	U
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	07-Aug-01				Tributyltin (TBT)	Dry weight	31	µg/kg	
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	10-Sep-02				Dibutyltin (DBT)	Dry weight	42	µg/kg	

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United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	10-Sep-02				Monobutyltin (MBT)	Dry weight	6.5	µg/kg	
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	10-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.3	µg/kg	U
Shipyard Sediment Site	SW12	SD0111	-117.14634	32.69067	10-Sep-02				Tributyltin (TBT)	Dry weight	41	µg/kg	
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	09-Aug-01				Dibutyltin (DBT)	Dry weight	200	µg/kg	
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	09-Aug-01				Monobutyltin (MBT)	Dry weight	44	µg/kg	
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	09-Aug-01				Tetrabutyltin (TTBT)	Dry weight	30	µg/kg	U
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	09-Aug-01				Tributyltin (TBT)	Dry weight	790	µg/kg	
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	10-Aug-01				Dibutyltin (DBT)	Dry weight	120	µg/kg	
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	10-Aug-01				Monobutyltin (MBT)	Dry weight	31	µg/kg	
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	10-Aug-01				Tetrabutyltin (TTBT)	Dry weight	13	µg/kg	U
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	10-Aug-01				Tributyltin (TBT)	Dry weight	450	µg/kg	
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	10-Aug-01				Dibutyltin (DBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	10-Aug-01				Monobutyltin (MBT)	Dry weight	37	µg/kg	
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	10-Aug-01				Tetrabutyltin (TTBT)	Dry weight	4.7	µg/kg	J
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	10-Aug-01				Tributyltin (TBT)	Dry weight	170	µg/kg	
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	10-Aug-01				Dibutyltin (DBT)	Dry weight	460	µg/kg	
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	10-Aug-01				Monobutyltin (MBT)	Dry weight	71	µg/kg	
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	10-Aug-01				Tetrabutyltin (TTBT)	Dry weight	24	µg/kg	U
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	10-Aug-01				Tributyltin (TBT)	Dry weight	1,100	µg/kg	
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	13-Aug-01				Dibutyltin (DBT)	Dry weight	240	µg/kg	
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	13-Aug-01				Monobutyltin (MBT)	Dry weight	47	µg/kg	
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	13-Aug-01				Tetrabutyltin (TTBT)	Dry weight	30	µg/kg	U
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	13-Aug-01				Tributyltin (TBT)	Dry weight	440	µg/kg	
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	13-Aug-01				Dibutyltin (DBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	13-Aug-01				Monobutyltin (MBT)	Dry weight	27	µg/kg	
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	13-Aug-01				Tetrabutyltin (TTBT)	Dry weight	4.1	µg/kg	J
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	13-Aug-01				Tributyltin (TBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	07-Aug-01				Dibutyltin (DBT)	Dry weight	37	µg/kg	
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	07-Aug-01				Monobutyltin (MBT)	Dry weight	15	µg/kg	
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	07-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.1	µg/kg	U
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	07-Aug-01				Tributyltin (TBT)	Dry weight	37	µg/kg	
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	15-Aug-01				Dibutyltin (DBT)	Dry weight	110	µg/kg	
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	15-Aug-01				Monobutyltin (MBT)	Dry weight	27	µg/kg	
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	15-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.5	µg/kg	U
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	15-Aug-01				Tributyltin (TBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	09-Aug-01				Dibutyltin (DBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	09-Aug-01				Monobutyltin (MBT)	Dry weight	27	µg/kg	
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	09-Aug-01				Tetrabutyltin (TTBT)	Dry weight	3.7	µg/kg	
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	09-Aug-01				Tributyltin (TBT)	Dry weight	170	µg/kg	
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	15-Aug-01				Dibutyltin (DBT)	Dry weight	160	µg/kg	
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	15-Aug-01				Monobutyltin (MBT)	Dry weight	34	µg/kg	
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	15-Aug-01				Tetrabutyltin (TTBT)	Dry weight	3.3	µg/kg	J
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	15-Aug-01				Tributyltin (TBT)	Dry weight	190	µg/kg	
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	15-Aug-01				Dibutyltin (DBT)	Dry weight	160	µg/kg	
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	15-Aug-01				Monobutyltin (MBT)	Dry weight	32	µg/kg	
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	15-Aug-01				Tetrabutyltin (TTBT)	Dry weight	4.2	µg/kg	
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	15-Aug-01				Tributyltin (TBT)	Dry weight	210	µg/kg	
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	08-Aug-01				Dibutyltin (DBT)	Dry weight	150	µg/kg	
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	08-Aug-01				Monobutyltin (MBT)	Dry weight	21	µg/kg	
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	08-Aug-01				Tetrabutyltin (TTBT)	Dry weight	3.4	µg/kg	U
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	08-Aug-01				Tributyltin (TBT)	Dry weight	170	µg/kg	
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	10-Sep-02				Dibutyltin (DBT)	Dry weight	120	µg/kg	
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	10-Sep-02				Monobutyltin (MBT)	Dry weight	13	µg/kg	
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	10-Sep-02				Tetrabutyltin (TTBT)	Dry weight	3.7	µg/kg	
Shipyard Sediment Site	SW24	SD0113	-117.14345	32.69109	10-Sep-02				Tributyltin (TBT)	Dry weight	160	µg/kg	
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	15-Aug-01				Dibutyltin (DBT)	Dry weight	220	µg/kg	
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	15-Aug-01				Monobutyltin (MBT)	Dry weight	61	µg/kg	
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	15-Aug-01				Tetrabutyltin (TTBT)	Dry weight	25	µg/kg	U
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	15-Aug-01				Tributyltin (TBT)	Dry weight	370	µg/kg	
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	10-Sep-02				Dibutyltin (DBT)	Dry weight	76	µg/kg	
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	10-Sep-02				Monobutyltin (MBT)	Dry weight	15	µg/kg	

TABLE D-2
Butyltins in Surface Sediment Samples
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	10-Sep-02				Tetrabutyltin (TTBT)	Dry weight	3	µg/kg	U
Shipyard Sediment Site	SW25	SD0114	-117.14413	32.69047	10-Sep-02				Tributyltin (TBT)	Dry weight	91	µg/kg	J
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	08-Aug-01				Dibutyltin (DBT)	Dry weight	46	µg/kg	
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	08-Aug-01				Monobutyltin (MBT)	Dry weight	11	µg/kg	
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	08-Aug-01				Tetrabutyltin (TTBT)	Dry weight	2.3	µg/kg	U
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	08-Aug-01				Tributyltin (TBT)	Dry weight	49	µg/kg	
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	13-Aug-01				Dibutyltin (DBT)	Dry weight	150	µg/kg	
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	13-Aug-01				Monobutyltin (MBT)	Dry weight	35	µg/kg	
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	13-Aug-01				Tetrabutyltin (TTBT)	Dry weight	9.6	µg/kg	
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	13-Aug-01				Tributyltin (TBT)	Dry weight	250	µg/kg	
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	11-Aug-01				Dibutyltin (DBT)	Dry weight	160	µg/kg	
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	11-Aug-01				Monobutyltin (MBT)	Dry weight	40	µg/kg	
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	11-Aug-01				Tetrabutyltin (TTBT)	Dry weight	7.7	µg/kg	
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	11-Aug-01				Tributyltin (TBT)	Dry weight	180	µg/kg	
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	11-Sep-02				Dibutyltin (DBT)	Dry weight	110	µg/kg	
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	11-Sep-02				Monobutyltin (MBT)	Dry weight	12	µg/kg	
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	11-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.9	µg/kg	U
Shipyard Sediment Site	SW28	SD0121	-117.14290	32.69014	11-Sep-02				Tributyltin (TBT)	Dry weight	120	µg/kg	J
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	09-Sep-02				Dibutyltin (DBT)	Dry weight	130	µg/kg	
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	09-Sep-02				Monobutyltin (MBT)	Dry weight	8.9	µg/kg	
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	09-Sep-02				Tetrabutyltin (TTBT)	Dry weight	8.8	µg/kg	
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	09-Sep-02				Tributyltin (TBT)	Dry weight	190	µg/kg	
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	14-Sep-02				Dibutyltin (DBT)	Dry weight	110	µg/kg	
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	14-Sep-02				Monobutyltin (MBT)	Dry weight	26	µg/kg	J
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	14-Sep-02				Tetrabutyltin (TTBT)	Dry weight	9.2	µg/kg	J
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	14-Sep-02				Tributyltin (TBT)	Dry weight	200	µg/kg	
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	11-Sep-02				Dibutyltin (DBT)	Dry weight	30	µg/kg	
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	11-Sep-02				Monobutyltin (MBT)	Dry weight	9.3	µg/kg	J
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	11-Sep-02				Tetrabutyltin (TTBT)	Dry weight	1.7	µg/kg	U
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	11-Sep-02				Tributyltin (TBT)	Dry weight	36	µg/kg	J
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	09-Sep-02				Dibutyltin (DBT)	Dry weight	26	µg/kg	
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	09-Sep-02				Monobutyltin (MBT)	Dry weight	13	µg/kg	
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	09-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.9	µg/kg	U
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	09-Sep-02				Tributyltin (TBT)	Dry weight	30	µg/kg	
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	11-Sep-02				Dibutyltin (DBT)	Dry weight	24	µg/kg	
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	11-Sep-02				Monobutyltin (MBT)	Dry weight	16	µg/kg	
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	11-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.9	µg/kg	U
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	11-Sep-02				Tributyltin (TBT)	Dry weight	19	µg/kg	J
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	11-Sep-02				Dibutyltin (DBT)	Dry weight	49	µg/kg	
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	11-Sep-02				Monobutyltin (MBT)	Dry weight	9.3	µg/kg	
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	11-Sep-02				Tetrabutyltin (TTBT)	Dry weight	2.3	µg/kg	U
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	11-Sep-02				Tributyltin (TBT)	Dry weight	38	µg/kg	
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	07-Nov-02				Dibutyltin (DBT)	Dry weight	48	µg/kg	
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	07-Nov-02				Monobutyltin (MBT)	Dry weight	17	µg/kg	
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	07-Nov-02				Tetrabutyltin (TTBT)	Dry weight	3.2	µg/kg	U
Shipyard Sediment Site	SW36	SD0180	-117.14525	32.69023	07-Nov-02				Tributyltin (TBT)	Dry weight	49	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-19	Rep 1	-117.13969	32.68856	23-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	46	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-19	Rep 1	-117.13969	32.68856	23-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	0	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-19	Rep 1	-117.13969	32.68856	23-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	64	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-21	Rep 1	-117.13222	32.68403	23-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	230	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-21	Rep 1	-117.13222	32.68403	23-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	48	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-21	Rep 1	-117.13222	32.68403	23-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	180	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-33	Rep 1	-117.13192	32.67367	22-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	56	µg/kg	

TABLE D-2
Butyltins in Surface Sediment Samples
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-33	Rep 1	-117.13192	32.67367	22-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	0	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-33	Rep 1	-117.13192	32.67367	22-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	36	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	22-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	230	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	22-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	34	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	22-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	170	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	27-Oct-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	0	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	27-Oct-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	0	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	27-Oct-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	8	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	31-Jan-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	150	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	31-Jan-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	34	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	31-Jan-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	42	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	28-Apr-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	140	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	28-Apr-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	57	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	28-Apr-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	42	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	18-Aug-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	140	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	18-Aug-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	75	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	18-Aug-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	41	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	30-Oct-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	150	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	30-Oct-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	72	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	30-Oct-89	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	48	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	08-Feb-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	93	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	08-Feb-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	42	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	08-Feb-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	53	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	30-Apr-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	63	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	30-Apr-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	61	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	30-Apr-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	35	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	20-Jul-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	73	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	20-Jul-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	58	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	20-Jul-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	43	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	16-Oct-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	120	µg/kg	

TABLE D-2
Butyltins in Surface Sediment Samples
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	SAMPLE_MEDIUM	TYPE	D	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	16-Oct-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	62	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	16-Oct-90	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	33	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	15-Apr-92	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	96	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	15-Apr-92	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	160	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-38A	Rep 1	-117.12403	32.67181	15-Apr-92	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	40	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-42	Rep 1	-117.12583	32.65653	22-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Dibutyltin (DBT)	Dry weight	100	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-42	Rep 1	-117.12583	32.65653	22-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Monobutyltin (MBT)	Dry weight	0	µg/kg	
U.S. Navy Statutory Monitoring of Tributyltin in Selected Harbors	SD-42	Rep 1	-117.12583	32.65653	22-Feb-88	Sediment	Discrete Sample	Stallard,M,etal.1989	Tributyltin (TBT)	Dry weight	40	µg/kg	

TABLE D-3
High-Molecular-Weight Polynuclear Aromatic Hydrocarbons (HPAHs) in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	TOTAL HPAH (µg/kg dry wt)
Bay Protection and Toxic Cleanup Program	90006		-117.13417	32.68667	08/04/93	6608
Bay Protection and Toxic Cleanup Program	90007		-117.12889	32.68028	11/10/92	5889
Bay Protection and Toxic Cleanup Program	90007		-117.12917	32.68117	08/17/93	10175
Bay Protection and Toxic Cleanup Program	90007		-117.12902	32.68090	12/03/96	7694
Bay Protection and Toxic Cleanup Program	90008		-117.12556	32.67417	11/10/92	8332
Bay Protection and Toxic Cleanup Program	90008		-117.12517	32.67383	08/17/93	8071
Bay Protection and Toxic Cleanup Program	90008		-117.12460	32.67552	12/03/96	6359
Bay Protection and Toxic Cleanup Program	90009		-117.11694	32.67250	11/10/92	6326
Bay Protection and Toxic Cleanup Program	90009		-117.11700	32.67233	08/17/93	4310
Bay Protection and Toxic Cleanup Program	90010		-117.11900	32.65800	08/17/93	925
Bay Protection and Toxic Cleanup Program	90020		-117.14667	32.69278	01/26/93	15924
Bay Protection and Toxic Cleanup Program	90020	Rep 1	-117.14757	32.69200	03/01/94	13200
Bay Protection and Toxic Cleanup Program	90020		-117.14757	32.69323	12/03/96	14972
Bay Protection and Toxic Cleanup Program	90021		-117.14617	32.69200	08/04/93	10461
Bay Protection and Toxic Cleanup Program	90022		-117.12389	32.67833	11/10/92	23242
Bay Protection and Toxic Cleanup Program	90022		-117.12500	32.67900	08/04/93	25960
Bay Protection and Toxic Cleanup Program	90022	Rep 1	-117.12528	32.67889	03/01/94	23523
Bay Protection and Toxic Cleanup Program	90022		-117.12438	32.67853	12/03/96	12697
Bay Protection and Toxic Cleanup Program	90030		-117.14194	32.68972	01/26/93	28833
Bay Protection and Toxic Cleanup Program	90030	Rep 1	-117.14306	32.68944	03/15/94	12590
Bay Protection and Toxic Cleanup Program	93133		-117.12867	32.67300	04/06/93	5579
Bay Protection and Toxic Cleanup Program	93178		-117.14967	32.69417	05/26/93	8602
Bay Protection and Toxic Cleanup Program	93178	Rep 1	-117.14967	32.69483	03/02/94	7721
Bay Protection and Toxic Cleanup Program	93178		-117.14997	32.69532	12/03/96	7329
Bay Protection and Toxic Cleanup Program	93179		-117.14850	32.69383	05/26/93	12904
Bay Protection and Toxic Cleanup Program	93179	Rep 1	-117.14900	32.69400	03/02/94	17035
Bay Protection and Toxic Cleanup Program	93179		-117.14862	32.69372	12/03/96	24056
Bay Protection and Toxic Cleanup Program	93181		-117.13967	32.68983	05/26/93	5423
Bay Protection and Toxic Cleanup Program	93181	Rep 1	-117.14017	32.68983	03/02/94	4985
Bay Protection and Toxic Cleanup Program	93184		-117.12617	32.68017	05/26/93	14525
Bay Protection and Toxic Cleanup Program	93210		-117.14667	32.69317	08/04/93	7458
Bay Protection and Toxic Cleanup Program	93211		-117.14583	32.69283	08/04/93	15500
Bay Protection and Toxic Cleanup Program	93212		-117.13350	32.68767	08/04/93	3916
Bay Protection and Toxic Cleanup Program	93213		-117.13433	32.68733	08/04/93	6359
Bay Protection and Toxic Cleanup Program	93214		-117.12517	32.67450	08/04/93	10745
Bay Protection and Toxic Cleanup Program	93215		-117.12617	32.67600	08/04/93	7020
Bay Protection and Toxic Cleanup Program	93223		-117.13000	32.68050	08/17/93	11836
Bay Protection and Toxic Cleanup Program	93224		-117.12917	32.67933	08/17/93	1001

TABLE D-3
High-Molecular-Weight Polynuclear Aromatic Hydrocarbons (HPAHs) in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	TOTAL HPAH (µg/kg dry wt)
Bay Protection and Toxic Cleanup Program	93225		-117.12233	32.67600	08/17/93	18749
Bay Protection and Toxic Cleanup Program	93226		-117.12367	32.67667	08/17/93	16804
Bay Protection and Toxic Cleanup Program	93227		-117.11633	32.67367	08/17/93	10725
Bay Protection and Toxic Cleanup Program	93228		-117.11617	32.67317	08/17/93	9067
Bay Protection and Toxic Cleanup Program	93229		-117.11883	32.65967	08/17/93	40769
Bay Protection and Toxic Cleanup Program	93230		-117.11883	32.65933	08/17/93	6297
Mouth of Chollas Creek	C01		-117.13539	32.68573	2001	2184
Mouth of Chollas Creek	C02		-117.13520	32.68540	2001	2050
Mouth of Chollas Creek	C03		-117.13493	32.68500	2001	2660
Mouth of Chollas Creek	C04		-117.13495	32.68646	2001	1787
Mouth of Chollas Creek	C05		-117.13456	32.68594	2001	1913
Mouth of Chollas Creek	C06		-117.13407	32.68545	2001	2306
Mouth of Chollas Creek	C07		-117.13439	32.68723	2001	772
Mouth of Chollas Creek	C08		-117.13403	32.68686	2001	775
Mouth of Chollas Creek	C09		-117.13364	32.68641	2001	6020
Mouth of Chollas Creek	C10		-117.13330	32.68595	2001	2560
Mouth of Chollas Creek	C11		-117.13353	32.68726	2001	1013
Mouth of Chollas Creek	C12		-117.13229	32.68760	2001	36060
Mouth of Chollas Creek	C13		-117.13088	32.68758	2001	11600
Mouth of Chollas Creek	C14		-117.12971	32.68763	2001	5194
Mouth of Paleta Creek	P01		-117.12407	32.67153	2001	432
Mouth of Paleta Creek	P02		-117.12357	32.67069	2001	1504
Mouth of Paleta Creek	P03		-117.12234	32.67247	2001	808
Mouth of Paleta Creek	P04		-117.12177	32.67158	2001	1329
Mouth of Paleta Creek	P05		-117.12123	32.67089	2001	2170
Mouth of Paleta Creek	P06		-117.12091	32.67321	2001	2110
Mouth of Paleta Creek	P07		-117.12023	32.67243	2001	1870
Mouth of Paleta Creek	P08		-117.11969	32.67164	2001	2870
Mouth of Paleta Creek	P09		-117.11840	32.67236	2001	108
Mouth of Paleta Creek	P10		-117.11840	32.67197	2001	1326
Mouth of Paleta Creek	P11		-117.11822	32.67265	2001	5540
Mouth of Paleta Creek	P12		-117.11770	32.67232	2001	3470
Mouth of Paleta Creek	P13		-117.11733	32.67306	2001	645
Mouth of Paleta Creek	P14		-117.11709	32.67268	2001	2810
Mouth of Paleta Creek	P15		-117.11669	32.67342	2001	5440
Mouth of Paleta Creek	P16		-117.11642	32.67305	2001	3940
Mouth of Paleta Creek	P17		-117.11601	32.67376	2001	4440
NAVSTA TMDL 2008	NS2233		-117.15174	32.68581	2008	176

TABLE D-3
High-Molecular-Weight Polynuclear Aromatic Hydrocarbons (HPAHs) in Surface Sediment Samples
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United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	TOTAL HPAH (µg/kg dry wt)
NAVSTA TMDL 2008	NS2258		-117.13212	32.67601	2008	195
NAVSTA TMDL 2008	NS28		-117.12454	32.67569	2008	634
NAVSTA TMDL 2008	NS29		-117.12566	32.67511	2008	644
NAVSTA TMDL 2008	NS8		-117.13032	32.68249	2008	1081
NAVSTA TMDL 2008	NS9		-117.13138	32.68181	2008	689
PRISM 2002	P04-1		-117.12164	32.67153	01/15/02	966
PRISM 2002	P04-2		-117.12154	32.67152	01/15/02	1314
PRISM 2002	P04-3		-117.12162	32.67160	01/15/02	1559
PRISM 2002	P17-1		-117.11592	32.67371	01/09/02	8162
PRISM 2002	P17-2		-117.11586	32.67368	01/09/02	4539
PRISM 2002	P17-3		-117.11595	32.67365	01/09/02	4117
PWC Graving Dock Naval Station NPDES Permit	GVD-S03		-117.12660	32.67837	2004-2009	1,030
PWC Graving Dock Naval Station NPDES Permit	GVD-S04		-117.12463	32.67929	2004-2009	1,662
PWC Graving Dock Naval Station NPDES Permit	STD-GVD-S01		-117.12425	32.67877	2004-2009	1,556
Sediment Quality Characterization Naval Station San Diego	NSB1-S-R2		-117.12985	32.67933	09/02/97	86800
Sediment Quality Characterization Naval Station San Diego	NSB3-S-R2		-117.12535	32.67990	09/02/97	70280
Sediment Quality Characterization Naval Station San Diego	NSB-4		-117.12483	32.67208	08/07/95	62138
Sediment Quality Characterization Naval Station San Diego	NSB4-S-R2		-117.12483	32.67208	09/02/97	24480
Sediment Quality Characterization Naval Station San Diego	NSB-5		-117.11657	32.67333	07/12/95	8943
Sediment Quality Characterization Naval Station San Diego	NSB5-S-R2		-117.11657	32.67363	09/03/97	31400
Sediment Quality Characterization Naval Station San Diego	NSB-R2-10S		-117.12100	32.66338	09/03/97	4560
Sediment Quality Characterization Naval Station San Diego	NSB-R2-11S		-117.12345	32.66325	09/03/97	1642
Sediment Quality Characterization Naval Station San Diego	NSB-R2-13S		-117.12142	32.66532	09/03/97	5850
Sediment Quality Characterization Naval Station San Diego	NSB-R2-14S		-117.11962	32.66688	09/03/97	7180
Sediment Quality Characterization Naval Station San Diego	NSB-R2-15S		-117.12173	32.66675	09/03/97	4960
Sediment Quality Characterization Naval Station San Diego	NSB-R2-16S		-117.12393	32.66662	09/03/97	487
Sediment Quality Characterization Naval Station San Diego	NSB-R2-17S		-117.11987	32.66840	09/03/97	7740
Sediment Quality Characterization Naval Station San Diego	NSB-R2-18S		-117.12182	32.66833	09/03/97	6530
Sediment Quality Characterization Naval Station San Diego	NSB-R2-19S		-117.12377	32.66820	09/03/97	4300
Sediment Quality Characterization Naval Station San Diego	NSB-R2-20S		-117.11758	32.67262	09/03/97	1148
Sediment Quality Characterization Naval Station San Diego	NSB-R2-21S		-117.11922	32.67172	09/03/97	4520
Sediment Quality Characterization Naval Station San Diego	NSB-R2-22S		-117.12108	32.67048	09/03/97	5250
Sediment Quality Characterization Naval Station San Diego	NSB-R2-23S		-117.12368	32.67007	09/03/97	2750
Sediment Quality Characterization Naval Station San Diego	NSB-R2-24S		-117.12043	32.67350	09/03/97	3200
Sediment Quality Characterization Naval Station San Diego	NSB-R2-25S		-117.12238	32.67240	09/03/97	1680
Sediment Quality Characterization Naval Station San Diego	NSB-R2-26S		-117.12198	32.67530	09/03/97	7810
Sediment Quality Characterization Naval Station San Diego	NSB-R2-27S		-117.12353	32.67433	09/03/97	3250
Sediment Quality Characterization Naval Station San Diego	NSB-R2-28S		-117.12557	32.67317	09/03/97	567

TABLE D-3
High-Molecular-Weight Polynuclear Aromatic Hydrocarbons (HPAHs) in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	TOTAL HPAH (µg/kg dry wt)
Sediment Quality Characterization Naval Station San Diego	NSB-R2-29S		-117.12345	32.67708	09/03/97	7580
Sediment Quality Characterization Naval Station San Diego	NSB-R2-30S		-117.12492	32.67633	09/03/97	9110
Sediment Quality Characterization Naval Station San Diego	NSB-R2-31S		-117.12670	32.67508	09/03/97	1066
Sediment Quality Characterization Naval Station San Diego	NSB-R2-32S		-117.12890	32.67640	09/03/97	1048
Sediment Quality Characterization Naval Station San Diego	NSB-R2-33S		-117.13257	32.67440	09/03/97	818
Sediment Quality Characterization Naval Station San Diego	NSB-R2-34S		-117.13777	32.67143	09/03/97	258
Sediment Quality Characterization Naval Station San Diego	NSB-R2-35S		-117.12630	32.68073	09/03/97	9920
Sediment Quality Characterization Naval Station San Diego	NSB-R2-36S		-117.12955	32.67875	09/03/97	9040
Sediment Quality Characterization Naval Station San Diego	NSB-R2-37S		-117.12777	32.67992	09/03/97	8310
Sediment Quality Characterization Naval Station San Diego	NSB-R2-38S		-117.12922	32.68397	09/03/97	23580
Sediment Quality Characterization Naval Station San Diego	NSB-R2-39S		-117.13077	32.68295	09/03/97	5090
Sediment Quality Characterization Naval Station San Diego	NSB-R2-40S		-117.13272	32.68192	09/03/97	5680
Sediment Quality Characterization Naval Station San Diego	NSB-R2-41S		-117.13192	32.68480	09/03/97	6490
Sediment Quality Characterization Naval Station San Diego	NSB-R2-42S		-117.13418	32.68357	09/03/97	1297
Sediment Quality Characterization Naval Station San Diego	NSB-R2-43S		-117.13330	32.68612	09/03/97	5320
Sediment Quality Characterization Naval Station San Diego	NSB-R2-44S		-117.13272	32.68763	09/03/97	9270
Sediment Quality Characterization Naval Station San Diego	NSB-R2-45S		-117.13442	32.68722	09/03/97	3910
Sediment Quality Characterization Naval Station San Diego	NSB-R2-46S		-117.14477	32.68667	09/03/97	128.4
Sediment Quality Characterization Naval Station San Diego	NSB-R2-47S		-117.14215	32.68838	09/03/97	2920
Sediment Quality Characterization Naval Station San Diego	NSB-R2-48S		-117.14737	32.69162	09/03/97	6260
Sediment Quality Characterization Naval Station San Diego	NSB-R2-5S		-117.12060	32.65870	09/03/97	1205
Sediment Quality Characterization Naval Station San Diego	NSB-R2-6S		-117.11888	32.66138	09/03/97	1956
Sediment Quality Characterization Naval Station San Diego	NSB-R2-7S		-117.12100	32.66132	09/03/97	2740
Sediment Quality Characterization Naval Station San Diego	NSB-R2-8S		-117.12328	32.66110	09/03/97	1289
Sediment Quality Characterization Naval Station San Diego	NSB-R2-9S		-117.11913	32.66345	09/03/97	4480
Shipyard Sediment Site	2241	SD0128	-117.13648	32.67027	09/12/02	54
Shipyard Sediment Site	2244	SD0126	-117.13182	32.65972	09/12/02	96
Shipyard Sediment Site	2265	SD0107	-117.14030	32.68388	09/09/02	111
Shipyard Sediment Site	NA01	SD0030	-117.14275	32.68943	08/11/01	4440
Shipyard Sediment Site	NA02	SD0033	-117.14274	32.68860	08/11/01	1611
Shipyard Sediment Site	NA03	SD0032	-117.14187	32.68932	08/11/01	3280
Shipyard Sediment Site	NA04	SD0035	-117.14038	32.68923	08/11/01	1702
Shipyard Sediment Site	NA05	SD0044	-117.14071	32.68853	08/13/01	1440
Shipyard Sediment Site	NA06	SD0020	-117.13909	32.69003	08/09/01	2429
Shipyard Sediment Site	NA07	SD0017	-117.13911	32.68933	08/08/01	2690
Shipyard Sediment Site	NA08	SD0055	-117.13902	32.68910	08/14/01	1838
Shipyard Sediment Site	NA09	SD0054	-117.13880	32.68883	08/14/01	1404
Shipyard Sediment Site	NA10	SD0056	-117.13936	32.68868	08/14/01	869

TABLE D-3
High-Molecular-Weight Polynuclear Aromatic Hydrocarbons (HPAHs) in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	TOTAL HPAH (µg/kg dry wt)
Shipyard Sediment Site	NA11	SD0021	-117.13942	32.68839	08/09/01	1526
Shipyard Sediment Site	NA12	SD0027	-117.13978	32.68768	08/10/01	1084
Shipyard Sediment Site	NA13	SD0036	-117.14018	32.68713	08/11/01	838
Shipyard Sediment Site	NA14	SD0051	-117.14084	32.68619	08/14/01	656
Shipyard Sediment Site	NA15	SD0037	-117.13837	32.68841	08/12/01	1660
Shipyard Sediment Site	NA16	SD0038	-117.13889	32.68819	08/12/01	1947
Shipyard Sediment Site	NA17	SD0039	-117.13789	32.68787	08/12/01	2225
Shipyard Sediment Site	NA18	SD0053	-117.13863	32.68778	08/14/01	1209
Shipyard Sediment Site	NA19	SD0042	-117.13902	32.68742	08/12/01	1426
Shipyard Sediment Site	NA20	SD0028	-117.13611	32.68698	08/10/01	1707
Shipyard Sediment Site	NA21	SD0050	-117.13671	32.68529	08/14/01	1223
Shipyard Sediment Site	NA22	SD0052	-117.13462	32.68688	08/14/01	1930
Shipyard Sediment Site	NA23	SD0095	-117.14025	32.68995	09/08/02	1905
Shipyard Sediment Site	NA24	SD0094	-117.14121	32.68984	09/08/02	1081
Shipyard Sediment Site	NA25	SD0106	-117.13982	32.68477	09/09/02	576
Shipyard Sediment Site	NA26	SD0116	-117.14308	32.68714	09/11/02	446
Shipyard Sediment Site	NA27	SD0301	-117.13969	32.68947	10/02/02	1547
Shipyard Sediment Site	NA28	SD0300	-117.13992	32.68869	10/02/02	1881
Shipyard Sediment Site	NA29	SD0119	-117.14155	32.68792	09/11/02	978
Shipyard Sediment Site	NA30	SD0115	-117.14134	32.68631	09/11/02	519
Shipyard Sediment Site	NA31	SD0105	-117.13748	32.68328	09/09/02	279
Shipyard Sediment Site	SW01	SD0001	-117.14573	32.69249	08/06/01	6250
Shipyard Sediment Site	SW02	SD0005	-117.14593	32.69219	08/06/01	10130
Shipyard Sediment Site	SW03	SD0009	-117.14653	32.69148	08/07/01	3790
Shipyard Sediment Site	SW04	SD0012	-117.14529	32.69246	08/07/01	8730
Shipyard Sediment Site	SW05	SD0003	-117.14572	32.69191	08/06/01	8610
Shipyard Sediment Site	SW06	SD0002	-117.14606	32.69150	08/06/01	8730
Shipyard Sediment Site	SW07	SD0004	-117.14640	32.69114	08/06/01	2273
Shipyard Sediment Site	SW08	SD0016	-117.14492	32.69242	08/08/01	16650
Shipyard Sediment Site	SW09	SD0007	-117.14528	32.69178	08/06/01	11590
Shipyard Sediment Site	SW10	SD0008	-117.14559	32.69155	08/06/01	12000
Shipyard Sediment Site	SW11	SD0048	-117.14597	32.69112	08/13/01	4450
Shipyard Sediment Site	SW12	SD0010	-117.14634	32.69067	08/07/01	1797
Shipyard Sediment Site	SW13	SD0022	-117.14468	32.69182	08/09/01	7930
Shipyard Sediment Site	SW14	SD0024	-117.14493	32.69167	08/10/01	4730
Shipyard Sediment Site	SW15	SD0023	-117.14527	32.69118	08/10/01	4810
Shipyard Sediment Site	SW16	SD0025	-117.14465	32.69155	08/10/01	2720
Shipyard Sediment Site	SW17	SD0047	-117.14441	32.69136	08/13/01	6000

TABLE D-3
High-Molecular-Weight Polynuclear Aromatic Hydrocarbons (HPAHs) in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	TOTAL HPAH (µg/kg dry wt)
Shipyard Sediment Site	SW18	SD0046	-117.14487	32.69038	08/13/01	4840
Shipyard Sediment Site	SW19	SD0011	-117.14616	32.68907	08/07/01	620
Shipyard Sediment Site	SW20	SD0059	-117.14353	32.69144	08/15/01	6290
Shipyard Sediment Site	SW21	SD0019	-117.14335	32.69128	08/09/01	5190
Shipyard Sediment Site	SW22	SD0060	-117.14346	32.69122	08/15/01	6730
Shipyard Sediment Site	SW23	SD0058	-117.14362	32.69112	08/15/01	6330
Shipyard Sediment Site	SW24	SD0015	-117.14345	32.69109	08/08/01	37400
Shipyard Sediment Site	SW25	SD0057	-117.14413	32.69047	08/15/01	5940
Shipyard Sediment Site	SW26	SD0014	-117.14474	32.68972	08/08/01	870
Shipyard Sediment Site	SW27	SD0045	-117.14351	32.69002	08/13/01	7760
Shipyard Sediment Site	SW28	SD0029	-117.14290	32.69014	08/11/01	12330
Shipyard Sediment Site	SW29	SD0110	-117.14638	32.69269	09/09/02	2675
Shipyard Sediment Site	SW30	SD0135	-117.14727	32.69166	09/14/02	2820
Shipyard Sediment Site	SW31	SD0122	-117.14443	32.68970	09/11/02	609
Shipyard Sediment Site	SW32	SD0108	-117.14824	32.69056	09/09/02	469
Shipyard Sediment Site	SW33	SD0118	-117.14722	32.68981	09/11/02	548
Shipyard Sediment Site	SW34	SD0117	-117.14415	32.68846	09/11/02	752
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A1		-117.13132	32.68768	07/01/93	3964
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A2		-117.13527	32.68512	07/01/93	1180
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A3		-117.13870	32.68230	07/01/93	632
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A4		-117.14152	32.68038	07/01/93	334
Studies Supporting an Environmental Risk Assessment of San Diego Bay	A5		-117.14532	32.67830	07/01/93	133
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B1		-117.12735	32.68203	07/01/93	7840
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B2		-117.13043	32.68017	07/01/93	573
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B3		-117.13297	32.67897	07/01/93	982
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B4		-117.13623	32.67748	07/01/93	742
Studies Supporting an Environmental Risk Assessment of San Diego Bay	B5		-117.14030	32.67472	07/01/93	204
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C1		-117.11612	32.67360	07/01/93	4620
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C2		-117.12350	32.67100	07/01/93	114
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C3		-117.12570	32.66970	07/01/93	465
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C4		-117.12833	32.66902	07/01/93	504
Studies Supporting an Environmental Risk Assessment of San Diego Bay	C5		-117.13482	32.66693	07/01/93	92
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D1		-117.11945	32.66533	07/02/93	6740
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D2		-117.12350	32.66507	07/02/93	770
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D3		-117.12522	32.66495	07/02/93	425
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D4		-117.12718	32.66412	07/02/93	192
Studies Supporting an Environmental Risk Assessment of San Diego Bay	D5		-117.13388	32.66387	07/02/93	93
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E1		-117.11863	32.65910	07/02/93	2596

TABLE D-3
High-Molecular-Weight Polynuclear Aromatic Hydrocarbons (HPAHs) in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	TOTAL HPAH (µg/kg dry wt)
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E2		-117.12270	32.65808	07/02/93	654
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E3		-117.12465	32.65753	07/02/93	368
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E4		-117.12708	32.65775	07/02/93	337
Studies Supporting an Environmental Risk Assessment of San Diego Bay	E5		-117.13218	32.65643	07/02/93	84
Upstream Paleta Creek	IR-PAC14		-117.11505	32.67480	2004	3089
Upstream Paleta Creek	IR-PAC17		-117.11485	32.67513	2004	1732
Upstream Paleta Creek	IR-PAC29		-117.11427	32.67568	2004	847
Upstream Paleta Creek	IR-PAC3		-117.11562	32.67443	2004	918
Upstream Paleta Creek	IR-PAC38		-117.11380	32.67605	2004	890
Upstream Paleta Creek	IR-PAC41		-117.11173	32.67665	2004	1049
Upstream Paleta Creek	IR-PAC49		-117.11215	32.68297	2004	399
Upstream Paleta Creek	IR-PAC55		-117.11468	32.67508	2004	1899
Upstream Paleta Creek	IR-PAC56		-117.11060	32.68375	2004	767
Upstream Paleta Creek	IR-PAC60		-117.11529	32.67467	2004	1261
Upstream Paleta Creek	IR-PAC61		-117.11532	32.67483	2004	407
Upstream Paleta Creek	IR-PAC63		-117.11397	32.67595	2004	1191
Upstream Paleta Creek	IR-PAC65		-117.11433	32.67560	2004	2295
Upstream Paleta Creek	IR-PAC7		-117.11538	32.67470	2004	919
Upstream Paleta Creek	IR-PAC71		-117.11008	32.68398	2004	264

TABLE D-4
Total Polychlorinated Biphenyl (PCB) Congeners in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_DATE	X_COORDINATE	Y_COORDINATE	Total PCB Congeners (µg/kg dry wt)
Bay Protection and Toxic Cleanup Program	90007	11/10/92	-117.12889	32.68028	777
Bay Protection and Toxic Cleanup Program	90008	11/10/92	-117.12556	32.67417	138
Bay Protection and Toxic Cleanup Program	90009	11/10/92	-117.11694	32.67250	978
Bay Protection and Toxic Cleanup Program	90022	11/10/92	-117.12389	32.67833	403
Bay Protection and Toxic Cleanup Program	90020	01/26/93	-117.14667	32.69278	988
Bay Protection and Toxic Cleanup Program	90030	01/26/93	-117.14194	32.68972	533
Bay Protection and Toxic Cleanup Program	93133	04/06/93	-117.12867	32.67300	114
Bay Protection and Toxic Cleanup Program	93178	05/26/93	-117.14967	32.69417	681
Bay Protection and Toxic Cleanup Program	93179	05/26/93	-117.14850	32.69383	784
Bay Protection and Toxic Cleanup Program	93181	05/26/93	-117.13967	32.68983	385
Bay Protection and Toxic Cleanup Program	93184	05/26/93	-117.12617	32.68017	687
Bay Protection and Toxic Cleanup Program	90006	08/04/93	-117.13417	32.68667	145
Bay Protection and Toxic Cleanup Program	90021	08/04/93	-117.14617	32.69200	213
Bay Protection and Toxic Cleanup Program	90022	08/04/93	-117.12500	32.67900	438
Bay Protection and Toxic Cleanup Program	93210	08/04/93	-117.14667	32.69317	1752
Bay Protection and Toxic Cleanup Program	93211	08/04/93	-117.14583	32.69283	1988
Bay Protection and Toxic Cleanup Program	93212	08/04/93	-117.13350	32.68767	75
Bay Protection and Toxic Cleanup Program	93213	08/04/93	-117.13433	32.68733	164
Bay Protection and Toxic Cleanup Program	93214	08/04/93	-117.12517	32.67450	124
Bay Protection and Toxic Cleanup Program	93215	08/04/93	-117.12617	32.67600	143
Bay Protection and Toxic Cleanup Program	90007	08/17/93	-117.12917	32.68117	435
Bay Protection and Toxic Cleanup Program	90008	08/17/93	-117.12517	32.67383	138
Bay Protection and Toxic Cleanup Program	90009	08/17/93	-117.11700	32.67233	271
Bay Protection and Toxic Cleanup Program	90010	08/17/93	-117.11900	32.65800	46
Bay Protection and Toxic Cleanup Program	93223	08/17/93	-117.13000	32.68050	512
Bay Protection and Toxic Cleanup Program	93224	08/17/93	-117.12917	32.67933	185
Bay Protection and Toxic Cleanup Program	93225	08/17/93	-117.12233	32.67600	272
Bay Protection and Toxic Cleanup Program	93226	08/17/93	-117.12367	32.67667	278
Bay Protection and Toxic Cleanup Program	93227	08/17/93	-117.11633	32.67367	340
Bay Protection and Toxic Cleanup Program	93228	08/17/93	-117.11617	32.67317	811
Bay Protection and Toxic Cleanup Program	93229	08/17/93	-117.11883	32.65967	141
Bay Protection and Toxic Cleanup Program	93230	08/17/93	-117.11883	32.65933	152
Bay Protection and Toxic Cleanup Program	90020	03/01/94	-117.14757	32.69200	835
Bay Protection and Toxic Cleanup Program	90022	03/01/94	-117.12528	32.67889	350
Bay Protection and Toxic Cleanup Program	93178	03/02/94	-117.14967	32.69483	995
Bay Protection and Toxic Cleanup Program	93179	03/02/94	-117.14900	32.69400	842
Bay Protection and Toxic Cleanup Program	93181	03/02/94	-117.14017	32.68983	498

TABLE D-4
Total Polychlorinated Biphenyl (PCB) Congeners in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_DATE	X_COORDINATE	Y_COORDINATE	Total PCB Congeners (µg/kg dry wt)
Bay Protection and Toxic Cleanup Program	90030	03/15/94	-117.14306	32.68944	579
Bay Protection and Toxic Cleanup Program	90007	12/03/96	-117.129017	32.68090	268
Bay Protection and Toxic Cleanup Program	90008	12/03/96	-117.124600	32.67552	141
Bay Protection and Toxic Cleanup Program	90020	12/03/96	-117.147567	32.69323	2544
Bay Protection and Toxic Cleanup Program	90022	12/03/96	-117.124383	32.67853	343
Bay Protection and Toxic Cleanup Program	93178	12/03/96	-117.149967	32.69532	1555
Bay Protection and Toxic Cleanup Program	93179	12/03/96	-117.148617	32.69372	1118
Mouth of Chollas Creek	C01	2001	-117.13539	32.68573	190
Mouth of Chollas Creek	C02	2001	-117.13520	32.68540	422
Mouth of Chollas Creek	C03	2001	-117.13493	32.68500	320
Mouth of Chollas Creek	C04	2001	-117.13495	32.68646	145
Mouth of Chollas Creek	C05	2001	-117.13456	32.68594	234
Mouth of Chollas Creek	C06	2001	-117.13407	32.68545	190
Mouth of Chollas Creek	C07	2001	-117.13439	32.68723	60
Mouth of Chollas Creek	C08	2001	-117.13403	32.68686	53
Mouth of Chollas Creek	C09	2001	-117.13364	32.68641	154
Mouth of Chollas Creek	C10	2001	-117.13330	32.68595	202
Mouth of Chollas Creek	C11	2001	-117.13353	32.68726	74
Mouth of Chollas Creek	C12	2001	-117.13229	32.68760	167
Mouth of Chollas Creek	C13	2001	-117.13088	32.68758	255
Mouth of Chollas Creek	C14	2001	-117.12971	32.68763	212
Mouth of Paleta Creek	P01	2001	-117.12407	32.67153	40
Mouth of Paleta Creek	P02	2001	-117.12357	32.67069	79
Mouth of Paleta Creek	P03	2001	-117.12234	32.67247	51
Mouth of Paleta Creek	P04	2001	-117.12177	32.67158	102
Mouth of Paleta Creek	P05	2001	-117.12123	32.67089	752
Mouth of Paleta Creek	P06	2001	-117.12091	32.67321	122
Mouth of Paleta Creek	P07	2001	-117.12023	32.67243	114
Mouth of Paleta Creek	P08	2001	-117.11969	32.67164	81
Mouth of Paleta Creek	P09	2001	-117.11840	32.67236	10
Mouth of Paleta Creek	P10	2001	-117.11840	32.67197	72
Mouth of Paleta Creek	P11	2001	-117.11822	32.67265	369
Mouth of Paleta Creek	P12	2001	-117.11770	32.67232	129
Mouth of Paleta Creek	P13	2001	-117.11733	32.67306	53
Mouth of Paleta Creek	P14	2001	-117.11709	32.67268	196
Mouth of Paleta Creek	P15	2001	-117.11669	32.67342	374
Mouth of Paleta Creek	P16	2001	-117.11642	32.67305	192

TABLE D-4
Total Polychlorinated Biphenyl (PCB) Congeners in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_DATE	X_COORDINATE	Y_COORDINATE	Total PCB Congeners (µg/kg dry wt)
Mouth of Paleta Creek	P17	2001	-117.11601	32.67376	189
NAVSTA TMDL 2008	NS2233	2008	-117.15174	32.68581	20
NAVSTA TMDL 2008	NS11	2008	-117.12710	32.68197	400
NAVSTA TMDL 2008	NS12	2008	-117.12771	32.68165	221
NAVSTA TMDL 2008	NS13	2008	-117.12879	32.68104	209
NAVSTA TMDL 2008	NS14	2008	-117.13030	32.68021	102
NAVSTA TMDL 2008	NS15	2008	-117.13122	32.67967	57
NAVSTA TMDL 2008	NS16	2008	-117.12577	32.68018	201
NAVSTA TMDL 2008	NS17	2008	-117.12631	32.67986	212
NAVSTA TMDL 2008	NS18	2008	-117.12715	32.67947	217
NAVSTA TMDL 2008	NS19	2008	-117.12857	32.67865	513
NAVSTA TMDL 2008	NS21	2008	-117.12426	32.67845	234
NAVSTA TMDL 2008	NS22	2008	-117.12487	32.67811	172
NAVSTA TMDL 2008	NS2258	2008	-117.13212	32.67601	27
NAVSTA TMDL 2008	NS23	2008	-117.12571	32.67761	131
NAVSTA TMDL 2008	NS24	2008	-117.12689	32.67705	207
NAVSTA TMDL 2008	NS25	2008	-117.12798	32.67632	81
NAVSTA TMDL 2008	NS26	2008	-117.12261	32.67669	203
NAVSTA TMDL 2008	NS27	2008	-117.12326	32.67639	123
NAVSTA TMDL 2008	NS28	2008	-117.12454	32.67569	74
NAVSTA TMDL 2008	NS29	2008	-117.12566	32.67511	65
NAVSTA TMDL 2008	NS6	2008	-117.12836	32.68356	842
NAVSTA TMDL 2008	NS7	2008	-117.12912	32.68321	277
NAVSTA TMDL 2008	NS8	2008	-117.13032	32.68249	152
NAVSTA TMDL 2008	NS9	2008	-117.13138	32.68181	92
Sediment Quality Characterization Naval Station San Diego	NSB1-S-R2		-117.12985	32.67933	161
Sediment Quality Characterization Naval Station San Diego	NSB3-S-R2		-117.12535	32.67990	263
Sediment Quality Characterization Naval Station San Diego	NSB4-S-R2		-117.12483	32.67208	134
Sediment Quality Characterization Naval Station San Diego	NSB5-S-R2		-117.11657	32.67363	156
Sediment Quality Characterization Naval Station San Diego	NSB-R2-10S		-117.12100	32.66338	185
Sediment Quality Characterization Naval Station San Diego	NSB-R2-11S		-117.12345	32.66325	97
Sediment Quality Characterization Naval Station San Diego	NSB-R2-13S		-117.12142	32.66532	256
Sediment Quality Characterization Naval Station San Diego	NSB-R2-14S		-117.11962	32.66688	268
Sediment Quality Characterization Naval Station San Diego	NSB-R2-15S		-117.12173	32.66675	222
Sediment Quality Characterization Naval Station San Diego	NSB-R2-16S		-117.12393	32.66662	39
Sediment Quality Characterization Naval Station San Diego	NSB-R2-17S		-117.11987	32.66840	241
Sediment Quality Characterization Naval Station San Diego	NSB-R2-18S		-117.12182	32.66833	331

TABLE D-4
Total Polychlorinated Biphenyl (PCB) Congeners in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_DATE	X_COORDINATE	Y_COORDINATE	Total PCB Congeners (µg/kg dry wt)
Sediment Quality Characterization Naval Station San Diego	NSB-R2-19S		-117.12377	32.66820	160
Sediment Quality Characterization Naval Station San Diego	NSB-R2-20S		-117.11758	32.67262	78
Sediment Quality Characterization Naval Station San Diego	NSB-R2-21S		-117.11922	32.67172	240
Sediment Quality Characterization Naval Station San Diego	NSB-R2-22S		-117.12108	32.67048	217
Sediment Quality Characterization Naval Station San Diego	NSB-R2-23S		-117.12368	32.67007	156
Sediment Quality Characterization Naval Station San Diego	NSB-R2-24S		-117.12043	32.67350	206
Sediment Quality Characterization Naval Station San Diego	NSB-R2-25S		-117.12238	32.67240	93
Sediment Quality Characterization Naval Station San Diego	NSB-R2-26S		-117.12198	32.67530	262
Sediment Quality Characterization Naval Station San Diego	NSB-R2-27S		-117.12353	32.67433	128
Sediment Quality Characterization Naval Station San Diego	NSB-R2-28S		-117.12557	32.67317	117
Sediment Quality Characterization Naval Station San Diego	NSB-R2-29S		-117.12345	32.67708	320
Sediment Quality Characterization Naval Station San Diego	NSB-R2-30S		-117.12492	32.67633	241
Sediment Quality Characterization Naval Station San Diego	NSB-R2-31S		-117.12670	32.67508	92
Sediment Quality Characterization Naval Station San Diego	NSB-R2-32S		-117.12890	32.67640	116
Sediment Quality Characterization Naval Station San Diego	NSB-R2-33S		-117.13257	32.67440	224
Sediment Quality Characterization Naval Station San Diego	NSB-R2-34S		-117.13777	32.67143	53
Sediment Quality Characterization Naval Station San Diego	NSB-R2-35S		-117.12630	32.68073	545
Sediment Quality Characterization Naval Station San Diego	NSB-R2-36S		-117.12955	32.67875	554
Sediment Quality Characterization Naval Station San Diego	NSB-R2-37S		-117.12777	32.67992	233
Sediment Quality Characterization Naval Station San Diego	NSB-R2-38S		-117.12922	32.68397	1948
Sediment Quality Characterization Naval Station San Diego	NSB-R2-39S		-117.13272	32.68192	168
Sediment Quality Characterization Naval Station San Diego	NSB-R2-40S		-117.13272	32.68192	260
Sediment Quality Characterization Naval Station San Diego	NSB-R2-41S		-117.13192	32.68480	177
Sediment Quality Characterization Naval Station San Diego	NSB-R2-42S		-117.13418	32.68357	81
Sediment Quality Characterization Naval Station San Diego	NSB-R2-43S		-117.13330	32.68612	213
Sediment Quality Characterization Naval Station San Diego	NSB-R2-44S		-117.13272	32.68763	188
Sediment Quality Characterization Naval Station San Diego	NSB-R2-45S		-117.13442	32.68722	154
Sediment Quality Characterization Naval Station San Diego	NSB-R2-46S		-117.14477	32.68667	16
Sediment Quality Characterization Naval Station San Diego	NSB-R2-47S		-117.14215	32.68838	205
Sediment Quality Characterization Naval Station San Diego	NSB-R2-48S		-117.14737	32.69162	384
Sediment Quality Characterization Naval Station San Diego	NSB-R2-5S		-117.12060	32.65870	131
Sediment Quality Characterization Naval Station San Diego	NSB-R2-6S		-117.11888	32.66138	123
Sediment Quality Characterization Naval Station San Diego	NSB-R2-7S		-117.12100	32.66132	163
Sediment Quality Characterization Naval Station San Diego	NSB-R2-8S		-117.12328	32.66110	114
Sediment Quality Characterization Naval Station San Diego	NSB-R2-9S		-117.11913	32.66345	234
Shipyard Sediment Site	2241		-117.13648	32.67027	14
Shipyard Sediment Site	2244		-117.13182	32.65972	25

TABLE D-4
Total Polychlorinated Biphenyl (PCB) Congeners in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_DATE	X_COORDINATE	Y_COORDINATE	Total PCB Congeners (µg/kg dry wt)
Shipyard Sediment Site	2265		-117.14030	32.68388	38
Shipyard Sediment Site	NA01		-117.14275	32.68943	380
Shipyard Sediment Site	NA02		-117.14274	32.68860	208
Shipyard Sediment Site	NA03		-117.14187	32.68932	370
Shipyard Sediment Site	NA04		-117.14038	32.68923	250
Shipyard Sediment Site	NA05		-117.14071	32.68853	180
Shipyard Sediment Site	NA06		-117.13909	32.69003	640
Shipyard Sediment Site	NA07		-117.13911	32.68933	460
Shipyard Sediment Site	NA08		-117.13902	32.68910	310
Shipyard Sediment Site	NA09		-117.13880	32.68883	290
Shipyard Sediment Site	NA10		-117.13936	32.68868	160
Shipyard Sediment Site	NA11		-117.13942	32.68839	190
Shipyard Sediment Site	NA12		-117.13978	32.68768	150
Shipyard Sediment Site	NA13		-117.14018	32.68713	173
Shipyard Sediment Site	NA14		-117.14084	32.68619	128
Shipyard Sediment Site	NA15		-117.13837	32.68841	340
Shipyard Sediment Site	NA16		-117.13889	32.68819	590
Shipyard Sediment Site	NA17		-117.13789	32.68787	550
Shipyard Sediment Site	NA18		-117.13863	32.68778	350
Shipyard Sediment Site	NA19		-117.13902	32.68742	990
Shipyard Sediment Site	NA20		-117.13611	32.68698	120
Shipyard Sediment Site	NA21		-117.13671	32.68529	177
Shipyard Sediment Site	NA22		-117.13462	32.68688	180
Shipyard Sediment Site	NA24		-117.14121	32.68984	290
Shipyard Sediment Site	NA25		-117.13982	32.68477	83
Shipyard Sediment Site	NA26		-117.14308	32.68714	180
Shipyard Sediment Site	NA27		-117.13969	32.68947	210
Shipyard Sediment Site	NA28		-117.13992	32.68869	180
Shipyard Sediment Site	NA29		-117.14155	32.68792	190
Shipyard Sediment Site	NA30		-117.14134	32.68631	100
Shipyard Sediment Site	NA31		-117.13748	32.68328	68
Shipyard Sediment Site	SW01		-117.14573	32.69249	1,600
Shipyard Sediment Site	SW02		-117.14593	32.69219	5,600
Shipyard Sediment Site	SW03		-117.14653	32.69148	410
Shipyard Sediment Site	SW04		-117.14529	32.69246	4,000
Shipyard Sediment Site	SW05		-117.14572	32.69191	1,200
Shipyard Sediment Site	SW06		-117.14606	32.69150	380

TABLE D-4
Total Polychlorinated Biphenyl (PCB) Congeners in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_DATE	X_COORDINATE	Y_COORDINATE	Total PCB Congeners (µg/kg dry wt)
Shipyard Sediment Site	SW07		-117.14640	32.69114	170
Shipyard Sediment Site	SW08		-117.14492	32.69242	2,100
Shipyard Sediment Site	SW09		-117.14528	32.69178	710
Shipyard Sediment Site	SW10		-117.14559	32.69155	610
Shipyard Sediment Site	SW11		-117.14597	32.69112	200
Shipyard Sediment Site	SW12		-117.14634	32.69067	155
Shipyard Sediment Site	SW13		-117.14468	32.69182	490
Shipyard Sediment Site	SW14		-117.14493	32.69167	400
Shipyard Sediment Site	SW15		-117.14527	32.69118	380
Shipyard Sediment Site	SW16		-117.14465	32.69155	430
Shipyard Sediment Site	SW17		-117.14441	32.69136	540
Shipyard Sediment Site	SW18		-117.14487	32.69038	440
Shipyard Sediment Site	SW19		-117.14616	32.68907	94
Shipyard Sediment Site	SW20		-117.14353	32.69144	1,600
Shipyard Sediment Site	SW21		-117.14335	32.69128	2,400
Shipyard Sediment Site	SW22		-117.14346	32.69122	900
Shipyard Sediment Site	SW23		-117.14362	32.69112	1,000
Shipyard Sediment Site	SW24		-117.14345	32.69109	950
Shipyard Sediment Site	SW25		-117.14413	32.69047	350
Shipyard Sediment Site	SW26		-117.14474	32.68972	293
Shipyard Sediment Site	SW27		-117.14351	32.69002	200
Shipyard Sediment Site	SW28		-117.14290	32.69014	2,100
Shipyard Sediment Site	SW29		-117.14638	32.69269	820
Shipyard Sediment Site	SW30		-117.14727	32.69166	380
Shipyard Sediment Site	SW31		-117.14443	32.68970	66
Shipyard Sediment Site	SW32		-117.14824	32.69056	160
Shipyard Sediment Site	SW33		-117.14722	32.68981	100
Shipyard Sediment Site	SW34		-117.14415	32.68846	130
Shipyard Sediment Site	SW36		-117.14525	32.69023	200
Upstream Paleta Creek	IR-PAC65	2004	-117.11433	32.67560	249
Upstream Paleta Creek	IR-PAC55	2004	-117.11468	32.67508	227
Upstream Paleta Creek	IR-PAC17	2004	-117.11485	32.67513	150
Upstream Paleta Creek	IR-PAC29	2004	-117.11427	32.67568	124
Upstream Paleta Creek	IR-PAC14	2004	-117.11505	32.67480	105
Upstream Paleta Creek	IR-PAC60	2004	-117.11529	32.67467	93
Upstream Paleta Creek	IR-PAC41	2004	-117.11173	32.67665	68
Upstream Paleta Creek	IR-PAC3	2004	-117.11562	32.67443	68

TABLE D-4
Total Polychlorinated Biphenyl (PCB) Congeners in Surface Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_DATE	X_COORDINATE	Y_COORDINATE	Total PCB Congeners (µg/kg dry wt)
Upstream Paleta Creek	IR-PAC61	2004	-117.11532	32.67483	40
Upstream Paleta Creek	IR-PAC63	2004	-117.11397	32.67595	38
Upstream Paleta Creek	IR-PAC38	2004	-117.11380	32.67605	37
Upstream Paleta Creek	IR-PAC7	2004	-117.11538	32.67470	35
Upstream Paleta Creek	IR-PAC49	2004	-117.11215	32.68297	3.4
Upstream Paleta Creek	IR-PAC71	2004	-117.11008	32.68398	2.7
Upstream Paleta Creek	IR-PAC56	2004	-117.11060	32.68375	2.3

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Appendix E
Supporting Information for Calculation of Surface-Weighted Average Concentrations

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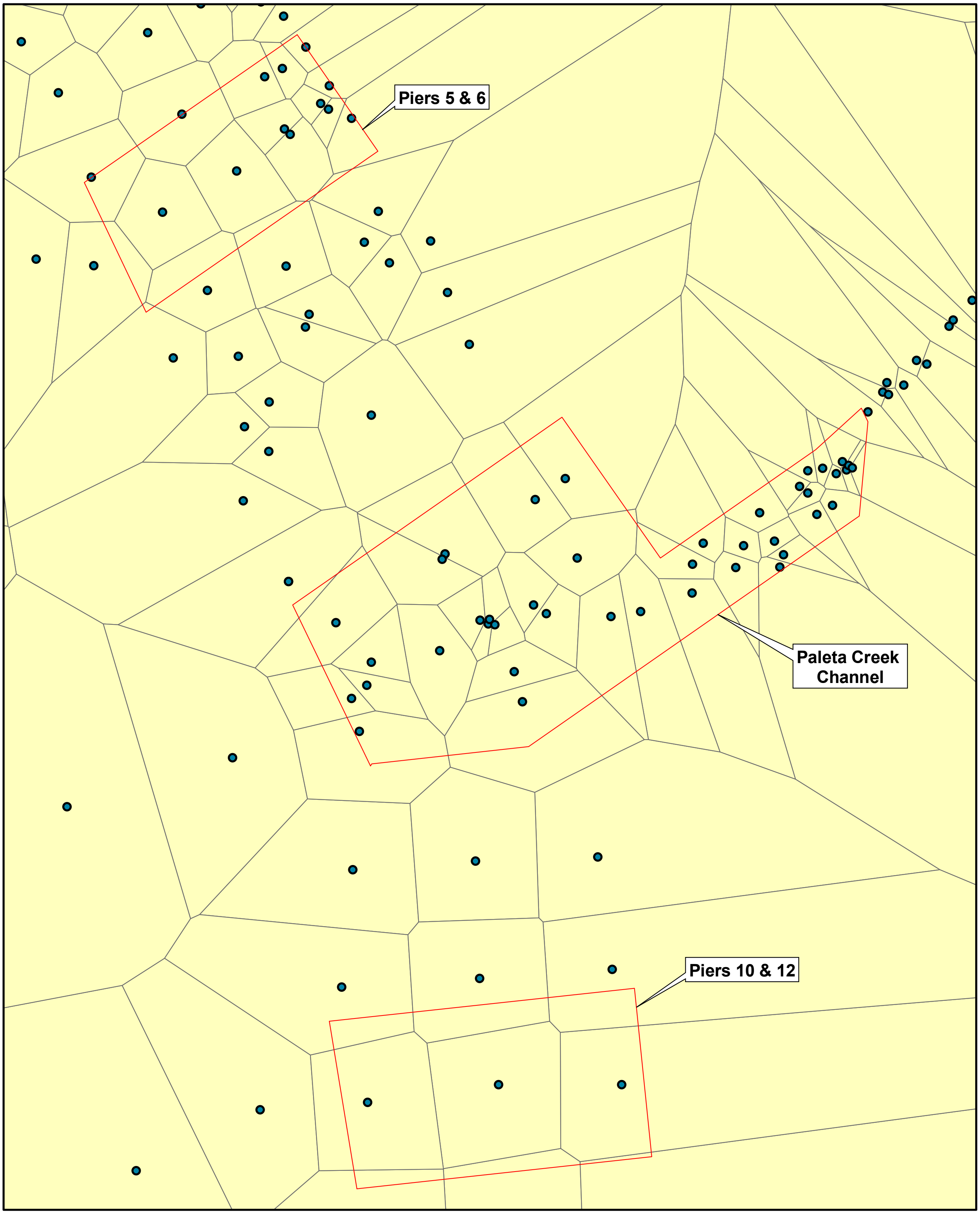


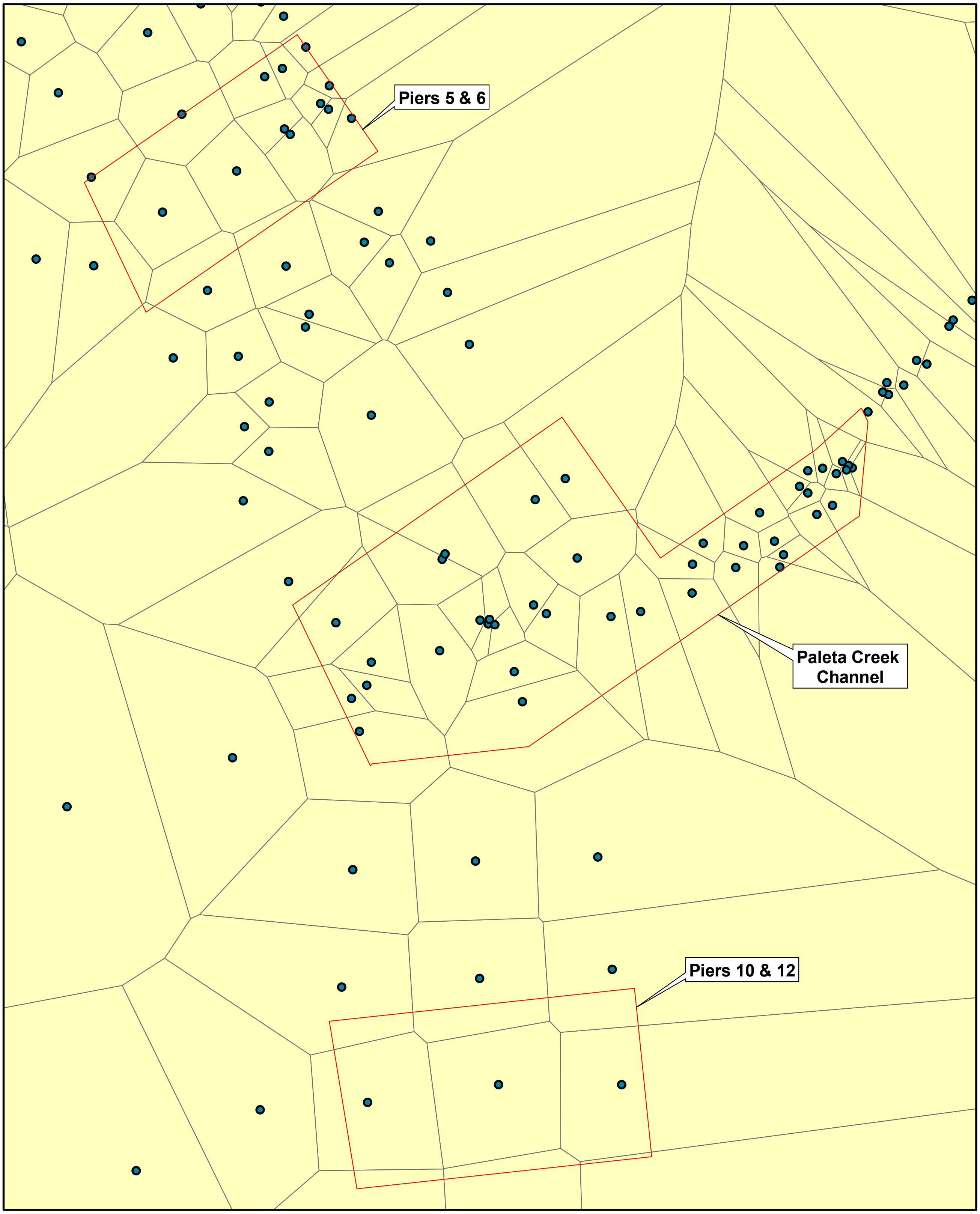
LEGEND

- Copper Sample Points
- Copper Thiessen Polygons
- Areas of Interest Adjacent to IRP Sites

N

0 325 650
Feet

FIGURE E-1
Copper - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

Mercury Sample Points

Mercury Thiessen Polygons

Areas of Interest Adjacent to IRP Sites

N

0 325 650

Feet

FIGURE E-2

Mercury - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations

Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint

United States Naval Base San Diego, California

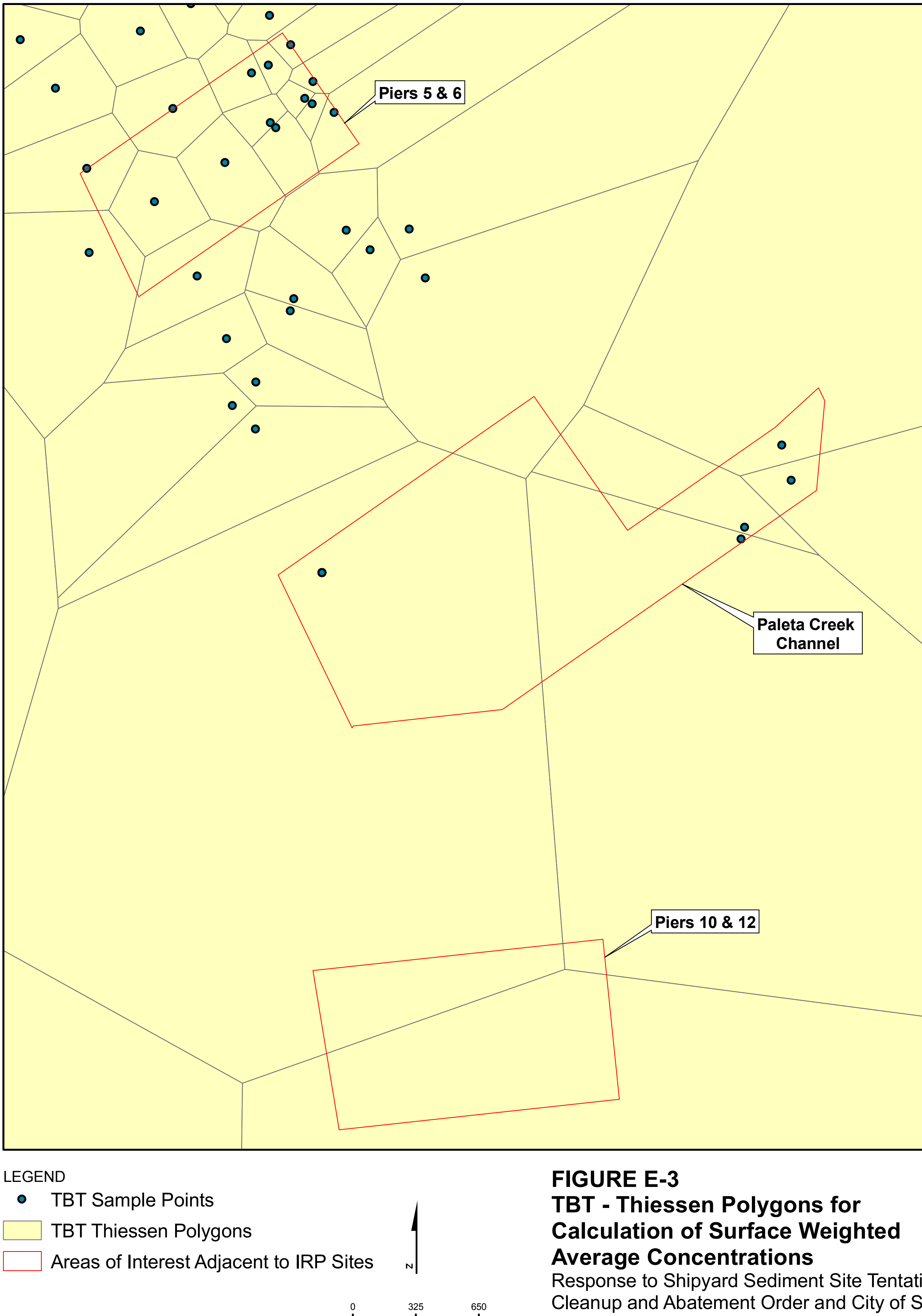
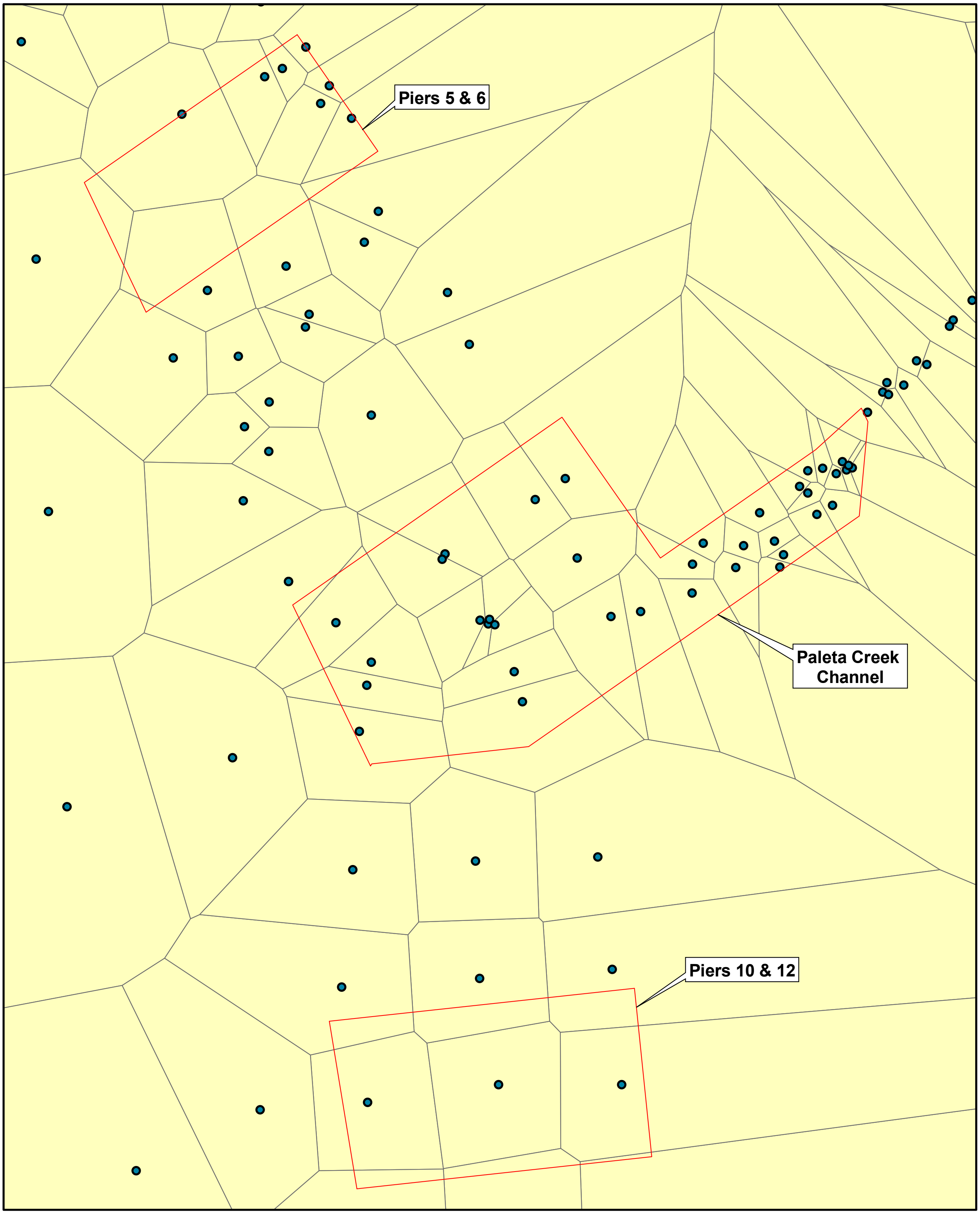


FIGURE E-3
TBT - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



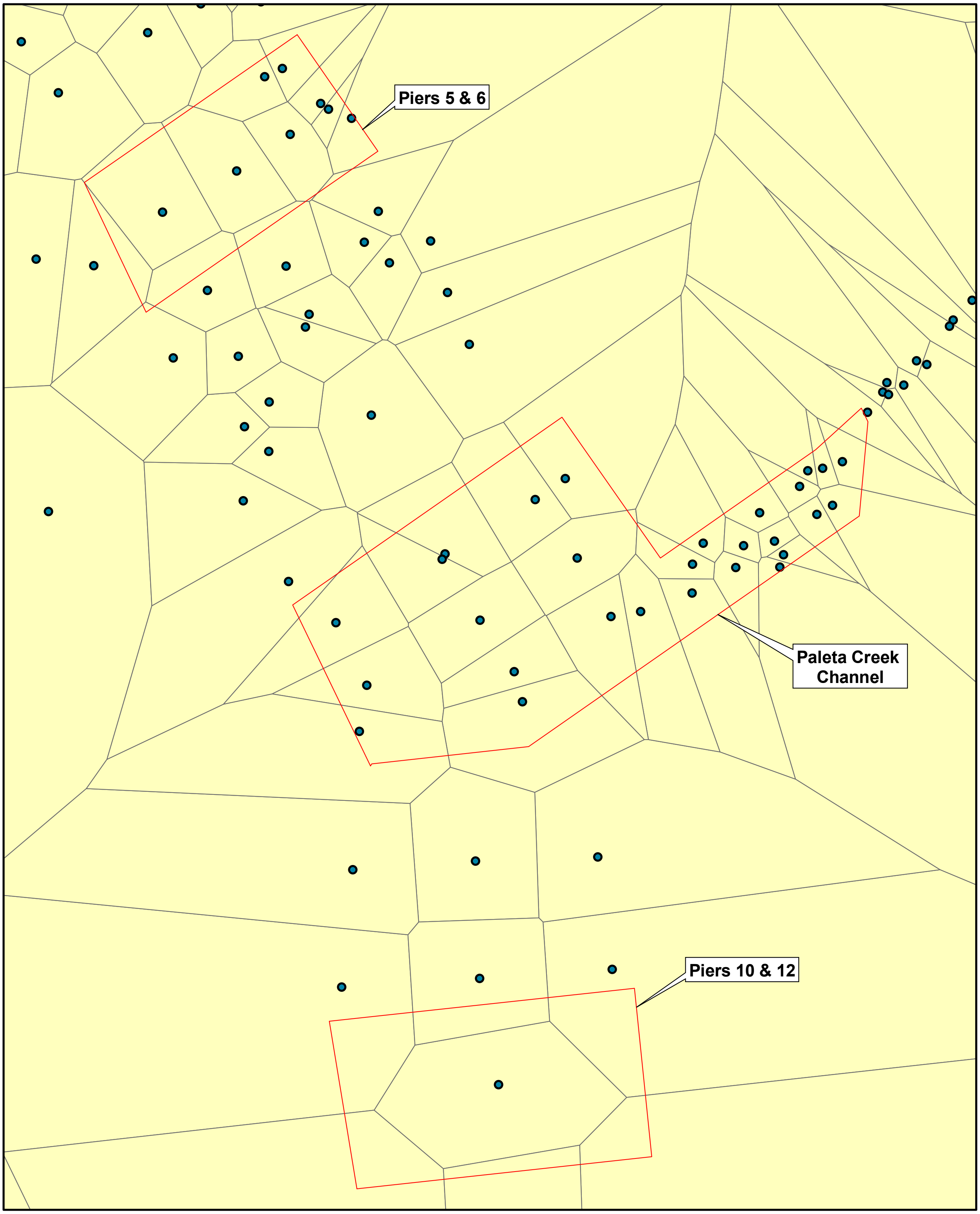
LEGEND

- HPAH Sample Points
- HPAH Thiessen Polygons
- Areas of Interest Adjacent to IRP Sites

N

0 325 650
Feet

FIGURE E-4
HPAH - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

- PCB Sample Points
- PCB Thiessen Polygons
- Areas of Interest Adjacent to IRP Sites

N

0 325 650
Feet

FIGURE E-5
PCB - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

\\ICONIA\PROJECTS\US_NAVY\388185_NBSD\GIS\SHIPYARDSEDIMENTSITE\MAPFILES\COC_MAPS\RESPONSEREPORT_FIG_E5_PCB.MXD SWOLFSKI 6/22/2010 15:13:30

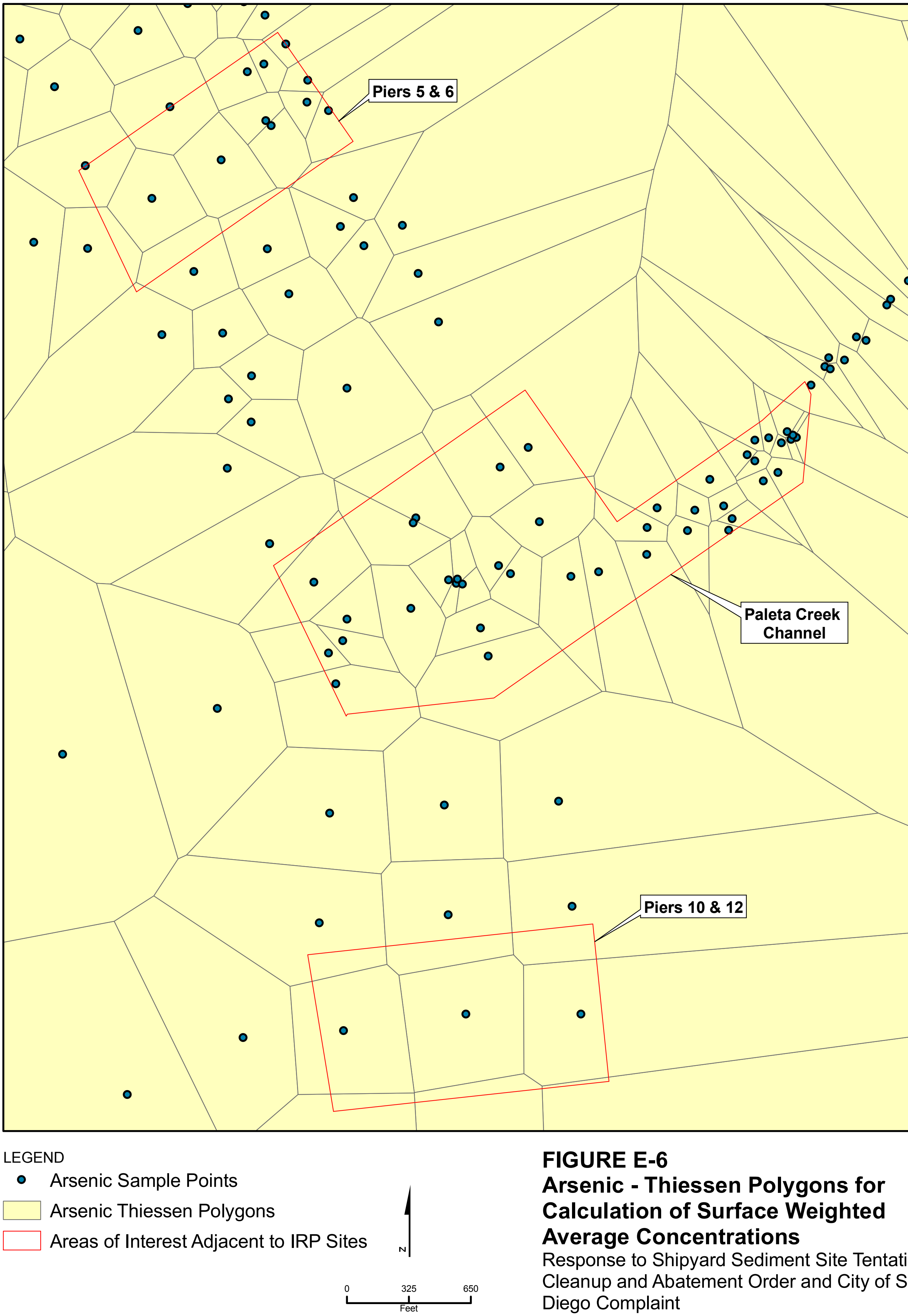


FIGURE E-6
Arsenic - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

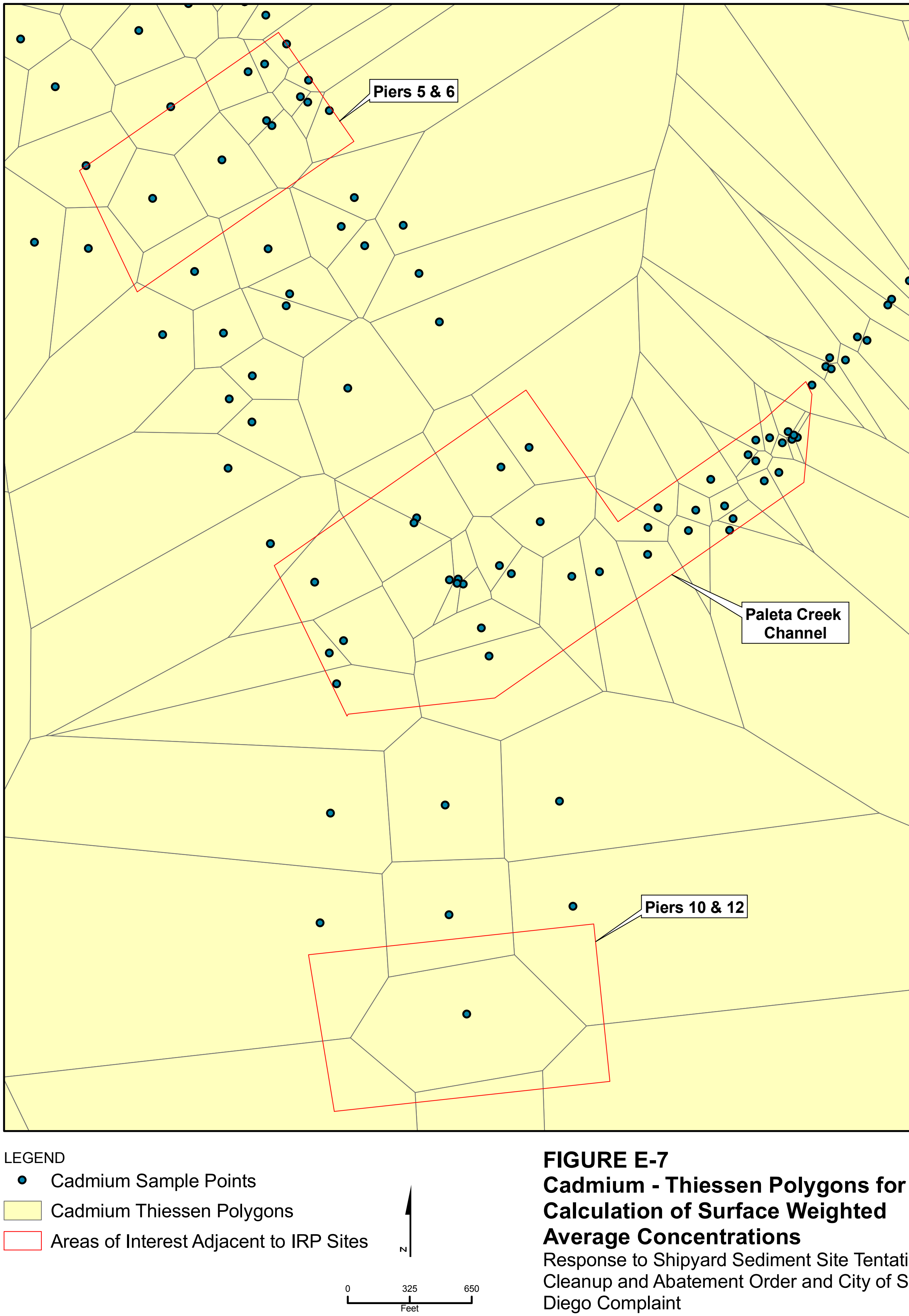
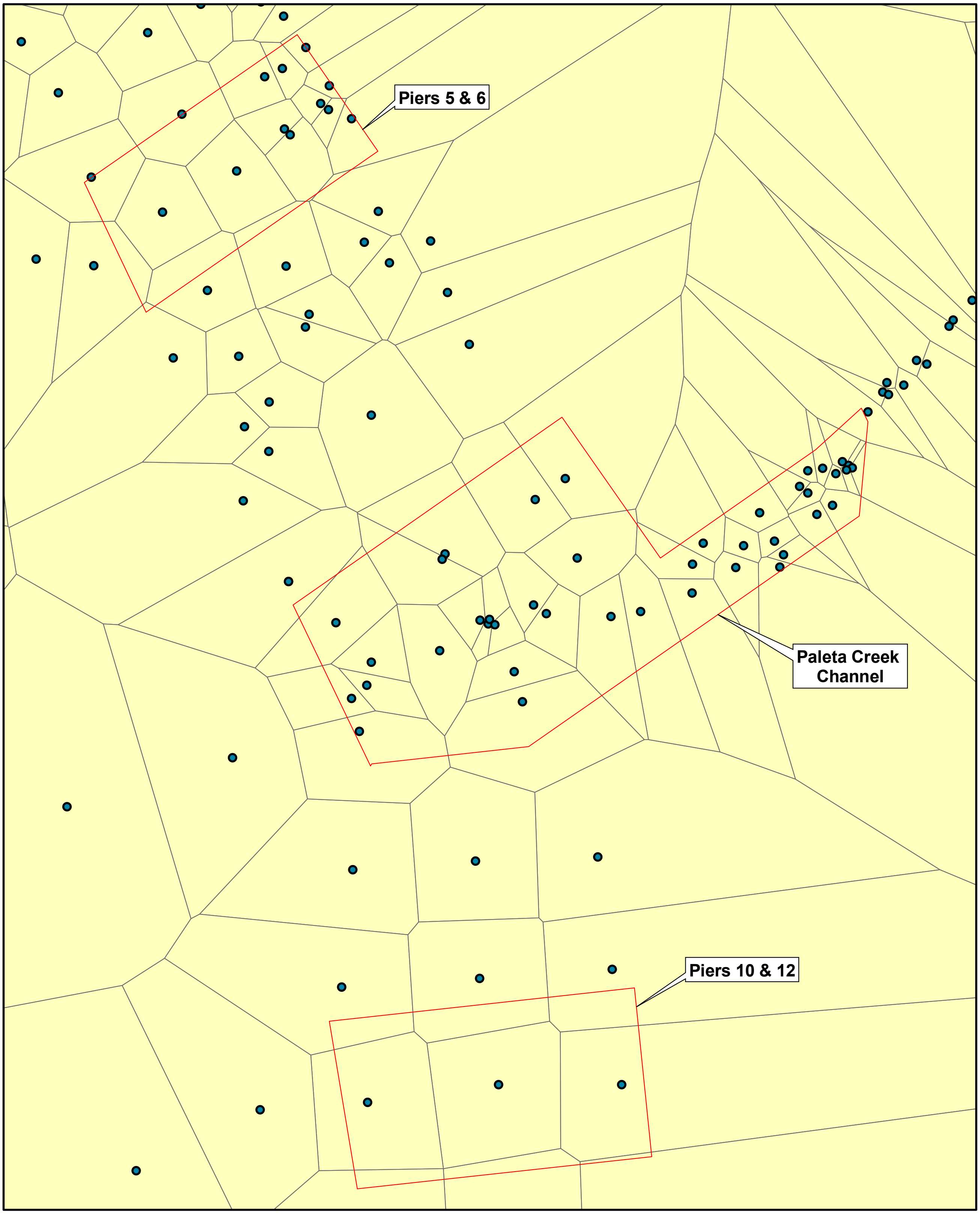


FIGURE E-7
Cadmium - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



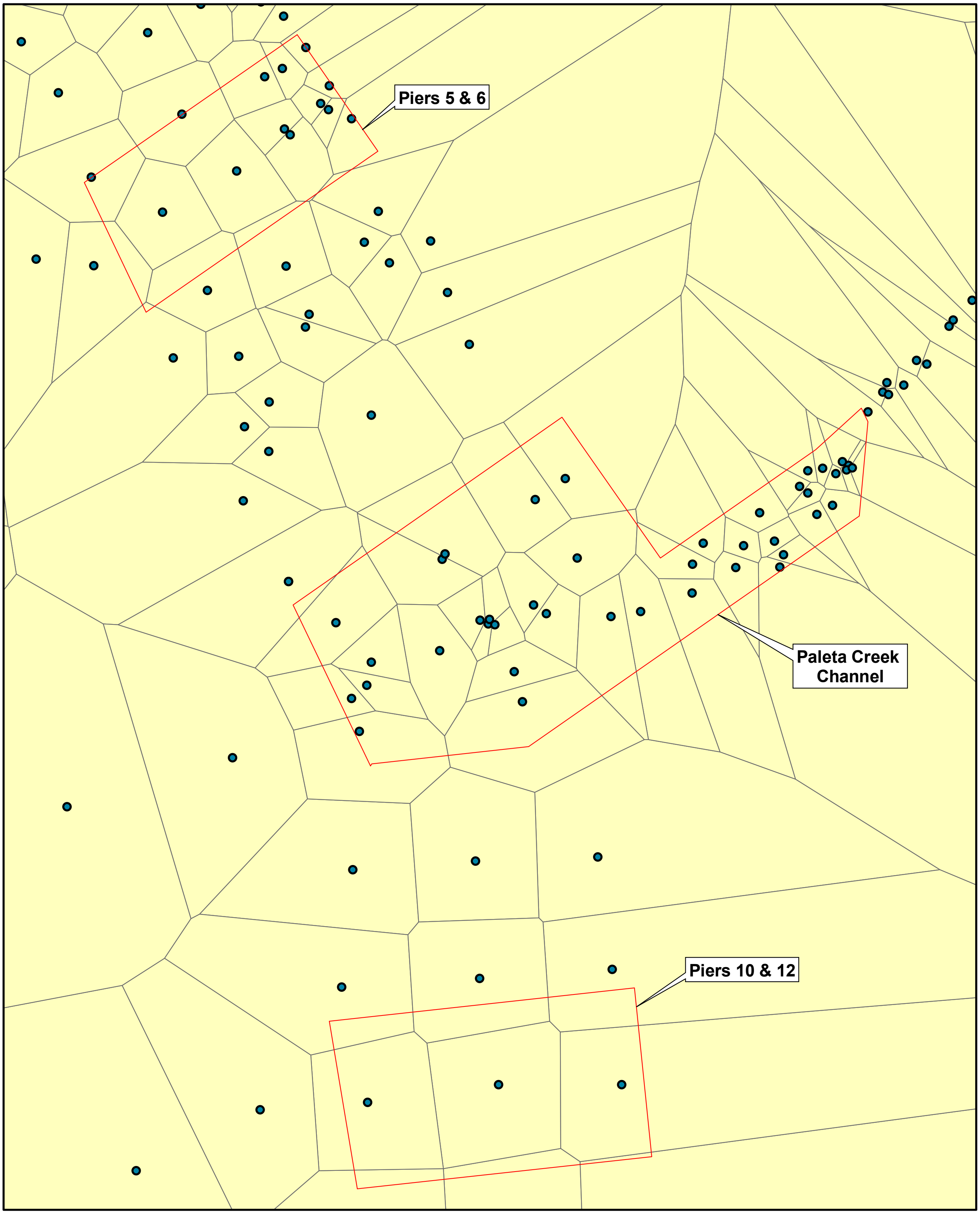
LEGEND

- Lead Sample Points
- Lead Thiessen Polygons
- Areas of Interest Adjacent to IRP Sites

N

0 325 650
Feet

FIGURE E-8
Lead - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

- Zinc Sample Points
- Zinc Thiessen Polygons
- Areas of Interest Adjacent to IRP Sites

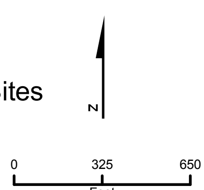
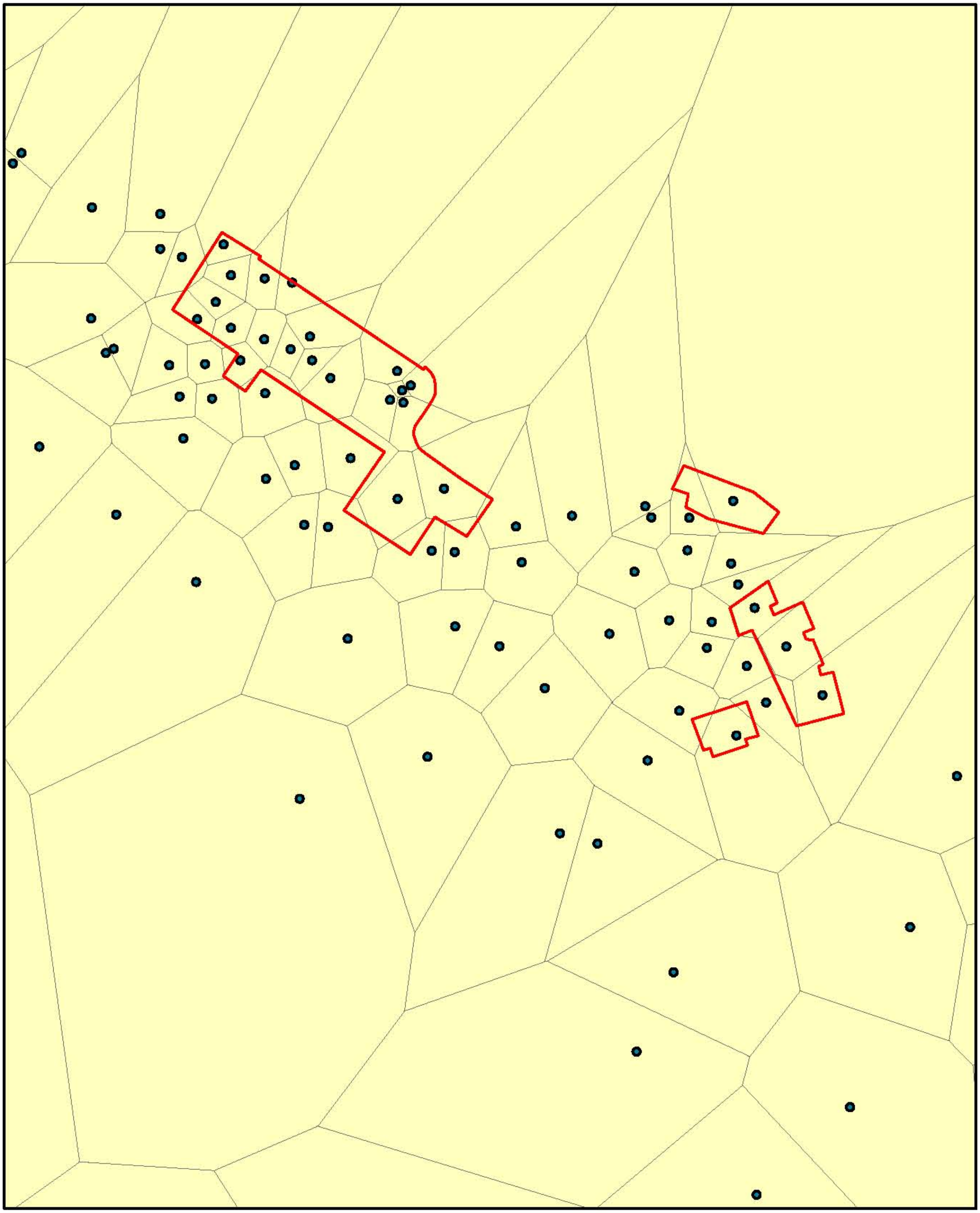


FIGURE E-9
Zinc - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

\\ICONIA\PROJECTS\US_NAVY\388185_NBSD\GIS\SHIPYARDSEDIMENTSITE\MAPFILES\COC_MAPS\RESPONSEREPORT_FIG_E9_ZINC.MXD SWOLFSKI 6/22/2010 15:16:04



LEGEND

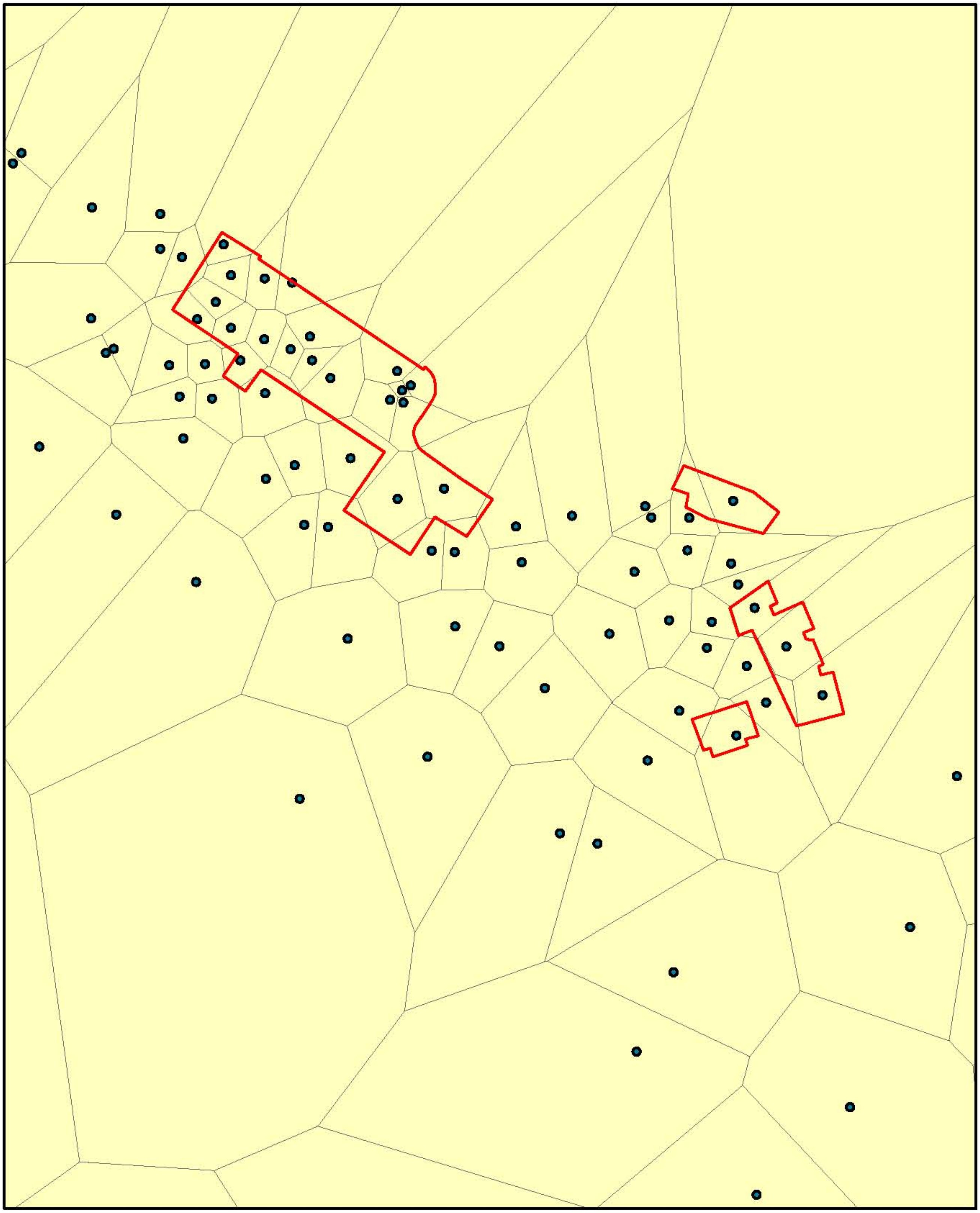
- Copper Sample Points
- Copper Thiessen Polygons
- Shipyard Sediment Site Proposed Remediation Footprint

N

0 270 540
Feet

FIGURE E-10
Copper - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

\\ICONIA\PROJECTS\US_NAVY\388185_NBSD\GIS\SHIPYARDSEDIMENTSITE\MAPFILES\COC_MAPS\RESPONSEREPORT_FIG_E10_COPPER.MXD SWOLFSKI 6/22/2010 15:35:05



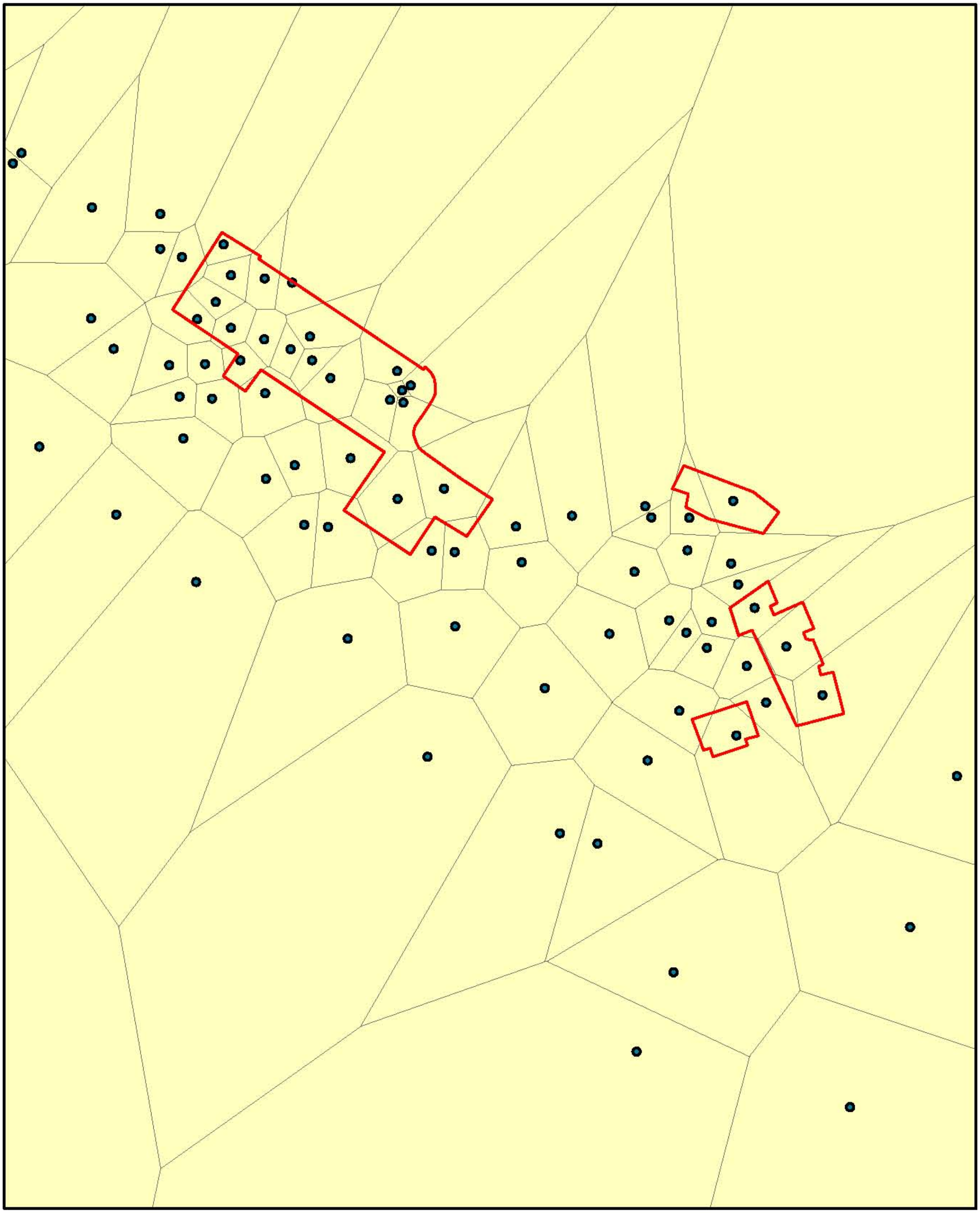
LEGEND

- Mercury Sample Points
- Mercury Thiessen Polygons
- Shipyard Sediment Site Proposed Remediation Footprint

N

0 270 540
Feet

FIGURE E-11
Mercury - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California



LEGEND

- TBT Sample Points
- TBT Thiessen Polygons
- Shipyard Sediment Site Proposed Remediation Footprint

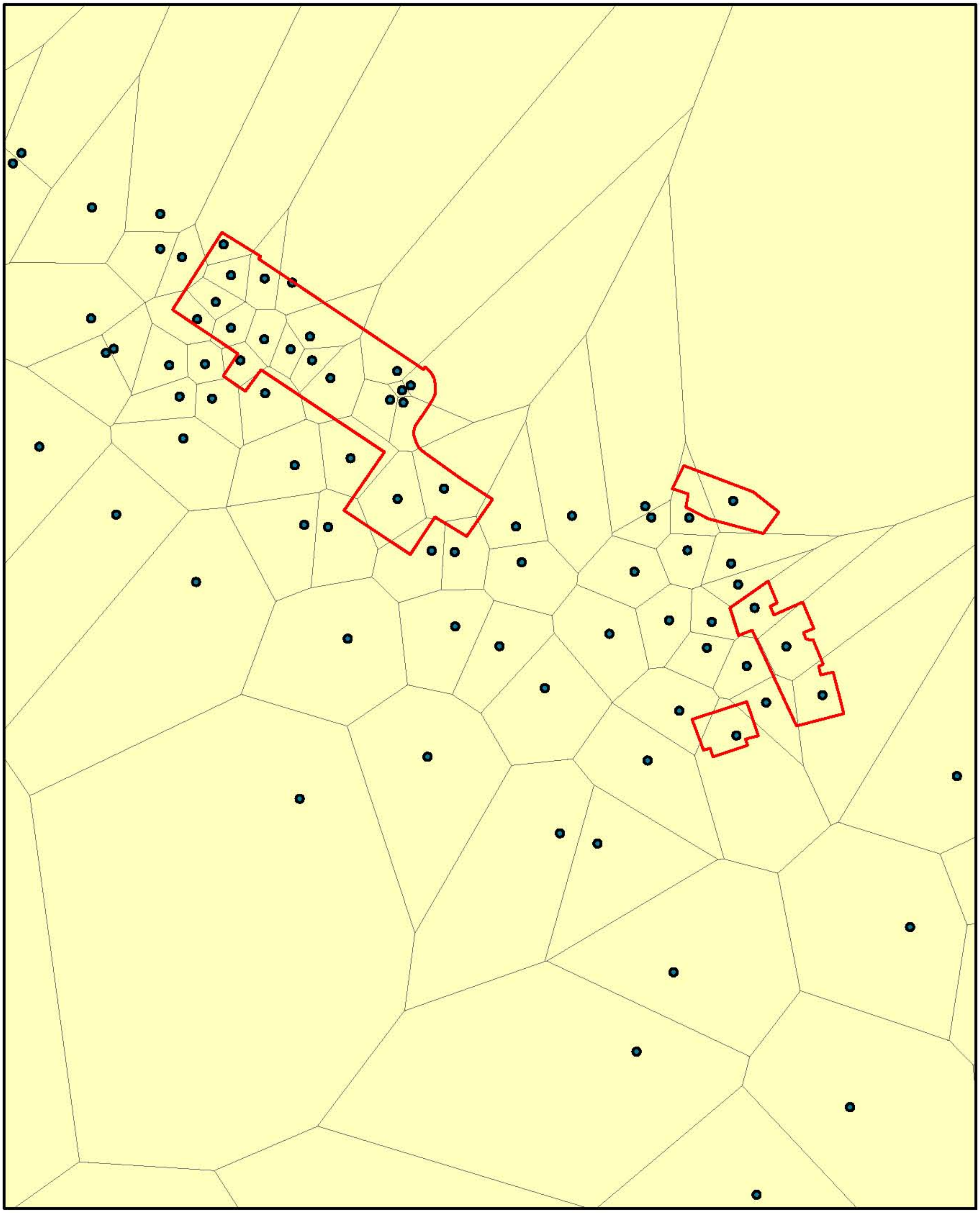
N

0 270 540
Feet

FIGURE E-12
TBT - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations

Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint

United States Naval Base San Diego, California



LEGEND

HPAH Sample Points

HPAH Thiessen Polygons

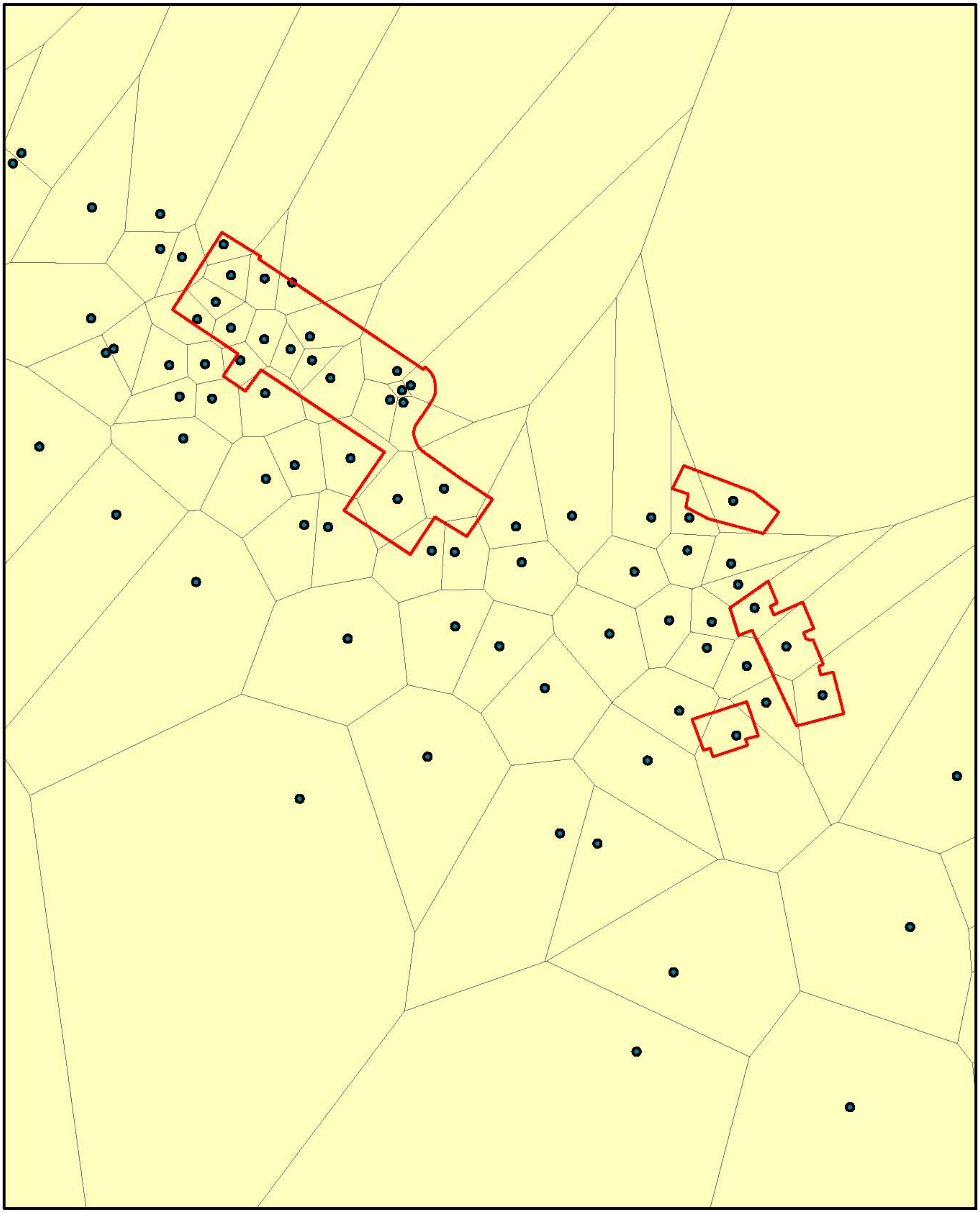
Shipyard Sediment Site
Proposed Remediation Footprint

N

0 270 540
Feet

FIGURE E-13
HPAH - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations
Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

\\ICONIA\PROJECTS\US_NAVY\388185_NBSD\GIS\SHIPYARDSEDIMENTSITE\MAPFILES\COC_MAPS\RESPONSEREPORT_FIG_E13_HPAH.MXD SWOLFSKI 6/22/2010 15:38:14



LEGEND

- PCB Sample Points
- PCB Thiessen Polygons
- Shipyard Sediment Site Proposed Remediation Footprint

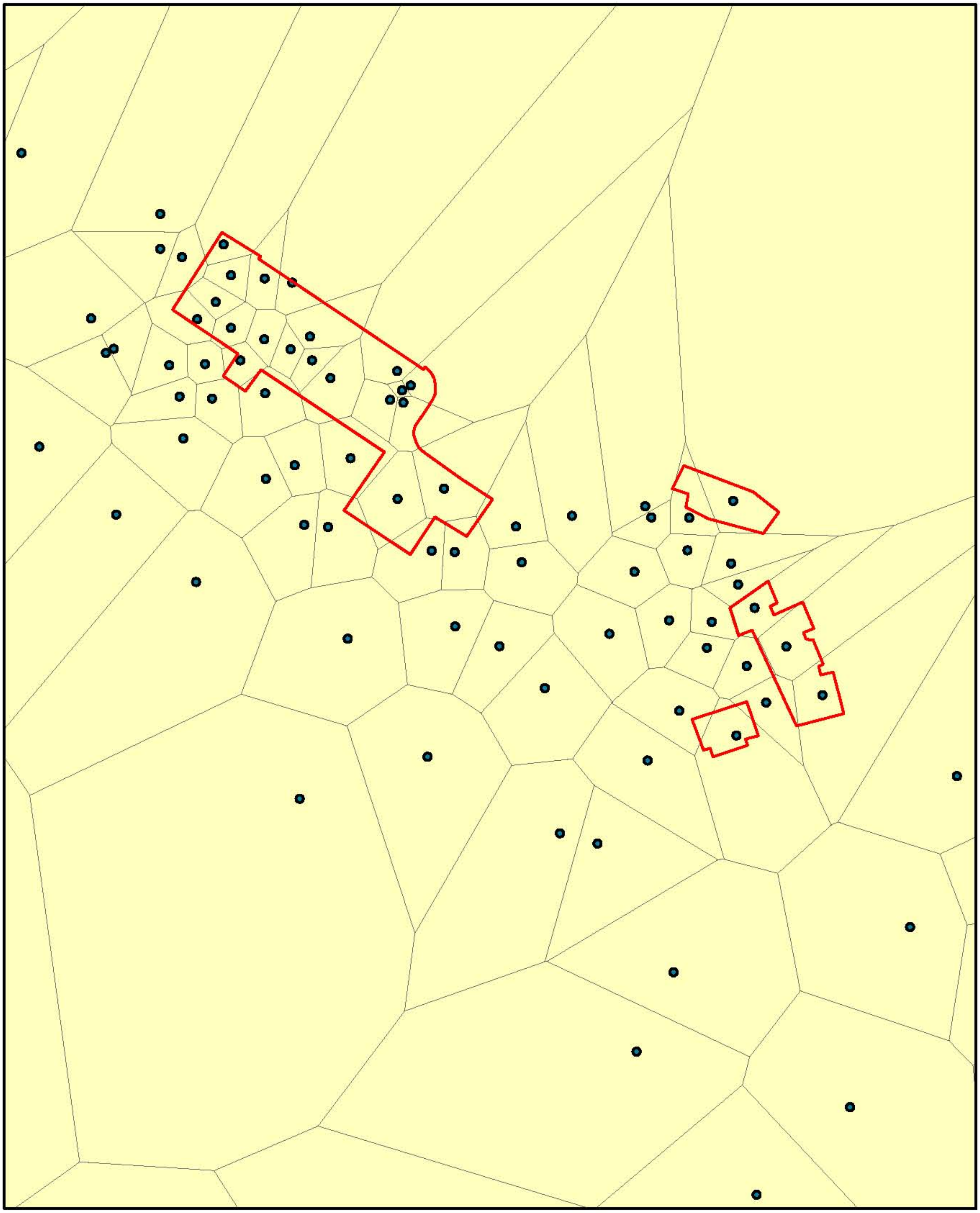
N

0 270 540
Feet

FIGURE E-14
PCB - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations

Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint

United States Naval Base San Diego, California



LEGEND

Arsenic Sample Points

Arsenic Thiessen Polygons

Shipyard Sediment Site
Proposed Remediation Footprint

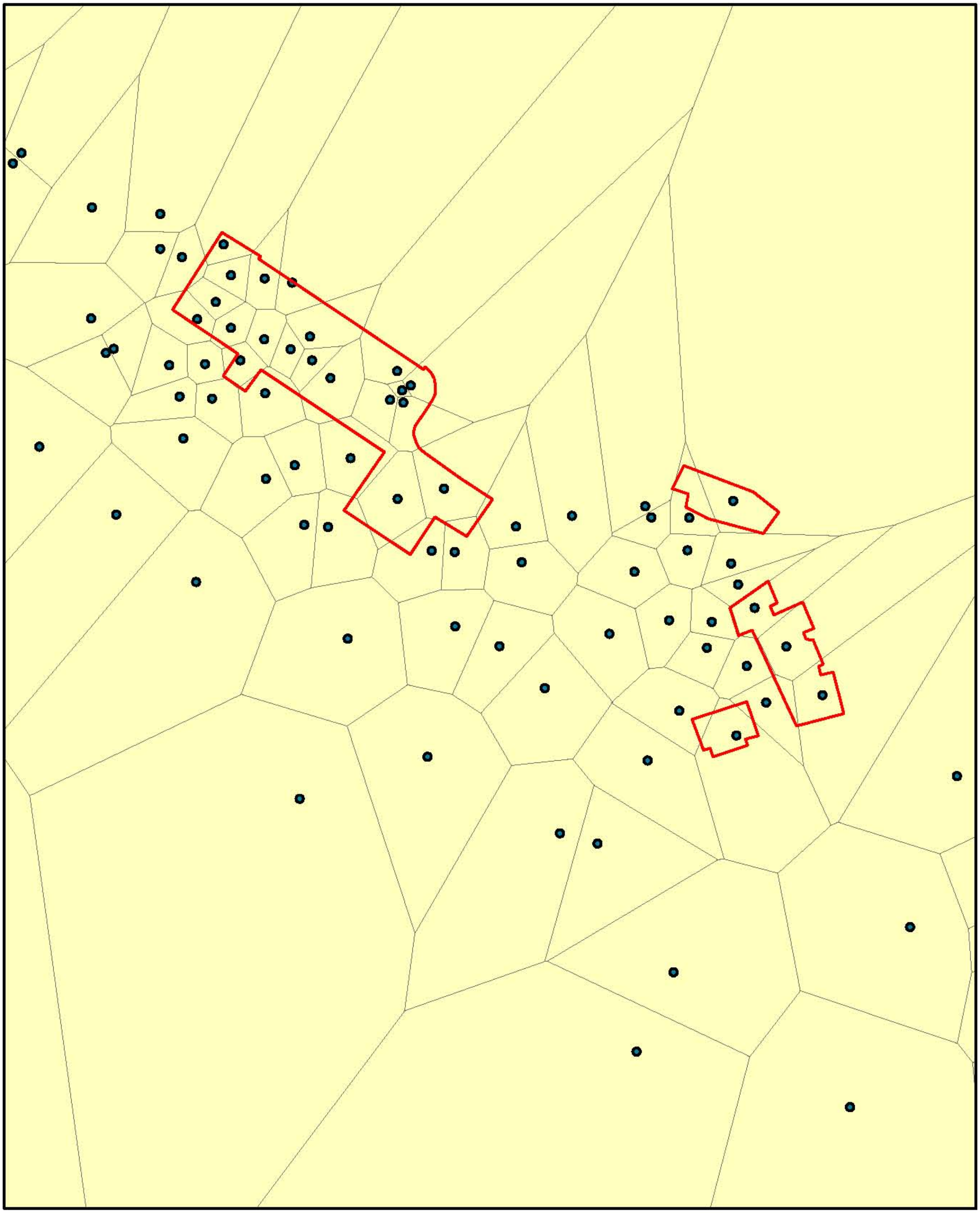
N

0 270 540
Feet

FIGURE E-15
Arsenic - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations

Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint

United States Naval Base San Diego, California



LEGEND

- Cadmium Sample Points
- Cadmium Thiessen Polygons
- Shipyard Sediment Site Proposed Remediation Footprint

N

0 270 540

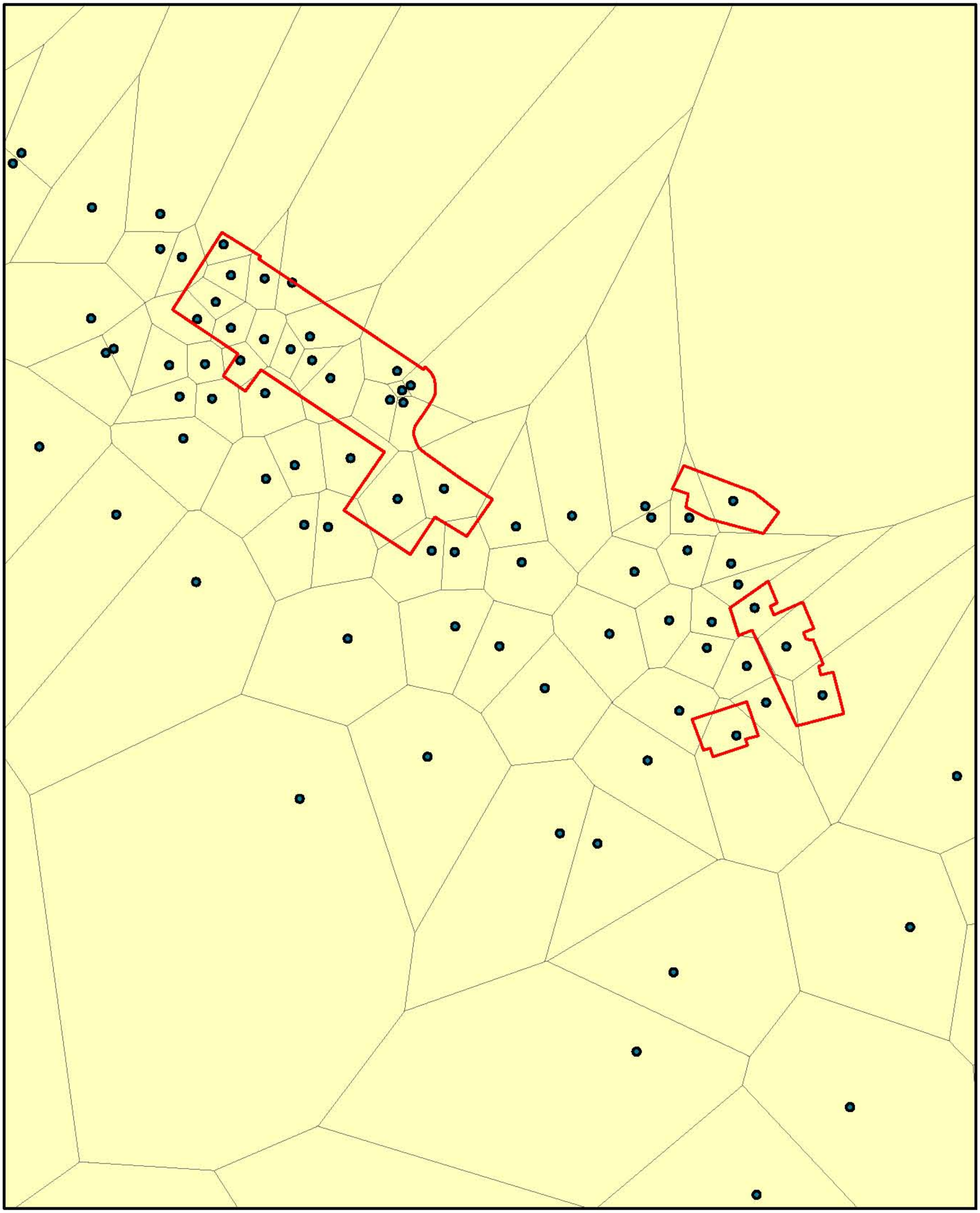
Feet

FIGURE E-16

Cadmium - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations

Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint

United States Naval Base San Diego, California



LEGEND

Lead Sample Points

Lead Thiessen Polygons

Shipyard Sediment Site Proposed Remediation Footprint

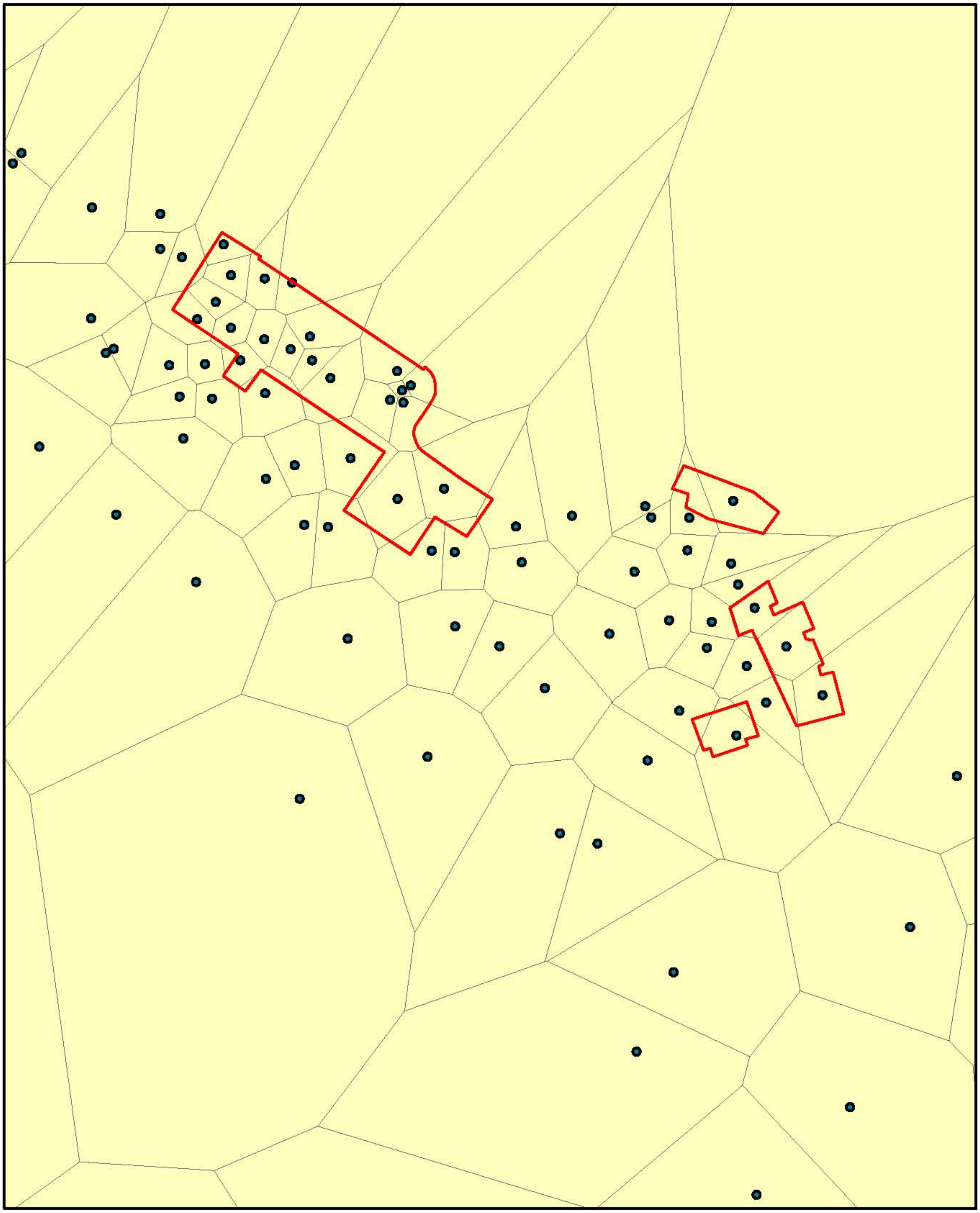
0 270 540 Feet

N

FIGURE E-17
Lead - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations

Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint

United States Naval Base San Diego, California



LEGEND

Zinc Sample Points

Zinc Thiessen Polygons

Shipyard Sediment Site Proposed Remediation Footprint

N

0 270 540

Feet

FIGURE E-18

Zinc - Thiessen Polygons for Calculation of Surface Weighted Average Concentrations

Response to Shipyard Sediment Site Tentative Cleanup and Abatement Order and City of San Diego Complaint

United States Naval Base San Diego, California

Appendix F
Composite Sediment Chemistry Analytical Data

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TABLE F-1
Inorganics in Composite Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	TYPE	SAMPLE_DATE	MEASUREMENT_ METHOD	PARAMETER_ NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER	AREA OF INTEREST
2004 Paleta Creek Sediment Characterization Study	1-1		117.11826	32.67280	Core	5/20/2004		Arsenic (As)	Dry weight	9.92	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-1		117.11826	32.67280	Core	5/20/2004		Cadmium (Cd)	Dry weight	2.23	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-1		117.11826	32.67280	Core	5/20/2004		Copper (Cu)	Dry weight	317	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-1		117.11826	32.67280	Core	5/20/2004		Lead (Pb)	Dry weight	136	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-1		117.11826	32.67280	Core	5/20/2004		Mercury (Hg)	Dry weight	0.921	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-1		117.11826	32.67280	Core	5/20/2004		Zinc (Zn)	Dry weight	477	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-2		117.11758	30.67318	Core	5/20/2004		Arsenic (As)	Dry weight	8.59	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-2		117.11758	30.67318	Core	5/20/2004		Cadmium (Cd)	Dry weight	1.97	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-2		117.11758	30.67318	Core	5/20/2004		Copper (Cu)	Dry weight	202	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-2		117.11758	30.67318	Core	5/20/2004		Lead (Pb)	Dry weight	138	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-2		117.11758	30.67318	Core	5/20/2004		Mercury (Hg)	Dry weight	1.09	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-2		117.11758	30.67318	Core	5/20/2004		Zinc (Zn)	Dry weight	404	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-3		117.11720	32.67338	Core	5/20/2004		Arsenic (As)	Dry weight	10.8	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-3		117.11720	32.67338	Core	5/20/2004		Cadmium (Cd)	Dry weight	2.82	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-3		117.11720	32.67338	Core	5/20/2004		Copper (Cu)	Dry weight	237	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-3		117.11720	32.67338	Core	5/20/2004		Lead (Pb)	Dry weight	199	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-3		117.11720	32.67338	Core	5/20/2004		Mercury (Hg)	Dry weight	1.01	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-3		117.11720	32.67338	Core	5/20/2004		Zinc (Zn)	Dry weight	486	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-4		117.11685	32.67348	Core	5/20/2004		Arsenic (As)	Dry weight	10.9	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-4		117.11685	32.67348	Core	5/20/2004		Cadmium (Cd)	Dry weight	2.66	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-4		117.11685	32.67348	Core	5/20/2004		Copper (Cu)	Dry weight	217	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-4		117.11685	32.67348	Core	5/20/2004		Lead (Pb)	Dry weight	211	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-4		117.11685	32.67348	Core	5/20/2004		Mercury (Hg)	Dry weight	0.891	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-4		117.11685	32.67348	Core	5/20/2004		Zinc (Zn)	Dry weight	485	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-5		117.11665	32.67380	Core	5/20/2004		Arsenic (As)	Dry weight	10.2	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-5		117.11665	32.67380	Core	5/20/2004		Cadmium (Cd)	Dry weight	2.93	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-5		117.11665	32.67380	Core	5/20/2004		Copper (Cu)	Dry weight	359	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-5		117.11665	32.67380	Core	5/20/2004		Lead (Pb)	Dry weight	215	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-5		117.11665	32.67380	Core	5/20/2004		Mercury (Hg)	Dry weight	1.12	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-5		117.11665	32.67380	Core	5/20/2004		Zinc (Zn)	Dry weight	513	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-1		117.11628	32.67387	Core	5/20/2004		Arsenic (As)	Dry weight	7.53	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-1		117.11628	32.67387	Core	5/20/2004		Cadmium (Cd)	Dry weight	2.32	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-1		117.11628	32.67387	Core	5/20/2004		Copper (Cu)	Dry weight	135	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-1		117.11628	32.67387	Core	5/20/2004		Lead (Pb)	Dry weight	217	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-1		117.11628	32.67387	Core	5/20/2004		Mercury (Hg)	Dry weight	0.754	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-1		117.11628	32.67387	Core	5/20/2004		Zinc (Zn)	Dry weight	381	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-2		117.11607	32.67410	Core	5/20/2004		Arsenic (As)	Dry weight	5.31	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-2		117.11607	32.67410	Core	5/20/2004		Cadmium (Cd)	Dry weight	1.12	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-2		117.11607	32.67410	Core	5/20/2004		Copper (Cu)	Dry weight	91.4	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-2		117.11607	32.67410	Core	5/20/2004		Lead (Pb)	Dry weight	108	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-2		117.11607	32.67410	Core	5/20/2004		Mercury (Hg)	Dry weight	0.227	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-2		117.11607	32.67410	Core	5/20/2004		Zinc (Zn)	Dry weight	209	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-3		117.11593	32.67377	Core	5/20/2004		Arsenic (As)	Dry weight	9.04	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-3		117.11593	32.67377	Core	5/20/2004		Cadmium (Cd)	Dry weight	1.78	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-3		117.11593	32.67377	Core	5/20/2004		Copper (Cu)	Dry weight	160	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-3		117.11593	32.67377	Core	5/20/2004		Lead (Pb)	Dry weight	182	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-3		117.11593	32.67377	Core	5/20/2004		Mercury (Hg)	Dry weight	0.559	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-3		117.11593	32.67377	Core	5/20/2004		Zinc (Zn)	Dry weight	346	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-4		117.11598	32.67352	Core	5/20/2004		Arsenic (As)	Dry weight	7.41	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-4		117.11598	32.67352	Core	5/20/2004		Cadmium (Cd)	Dry weight	1.8	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-4		117.11598	32.67352	Core	5/20/2004		Copper (Cu)	Dry weight	163	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-4		117.11598	32.67352	Core	5/20/2004		Lead (Pb)	Dry weight	126	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-4		117.11598	32.67352	Core	5/20/2004		Mercury (Hg)	Dry weight	0.884	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-4		117.11598	32.67352	Core	5/20/2004		Zinc (Zn)	Dry weight	449	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-5		117.11597	32.67298	Core	5/20/2004		Arsenic (As)	Dry weight	7.73	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-5		117.11597	32.67298	Core	5/20/2004		Cadmium (Cd)	Dry weight	1.99	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-5		117.11597	32.67298	Core	5/20/2004		Copper (Cu)	Dry weight	175	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-5		117.11597	32.67298	Core	5/20/2004		Lead (Pb)	Dry weight	253	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-5		117.11597	32.67298	Core	5/20/2004		Mercury (Hg)	Dry weight	0.641	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-5		117.11597	32.67298	Core	5/20/2004		Zinc (Zn)	Dry weight	530	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-1		117.11630	32.67273	Core	5/20/2004		Arsenic (As)	Dry weight	5.37	mg/kg		Paleta Creek Mouth

TABLE F-1
Inorganics in Composite Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	TYPE	SAMPLE_DATE	MEASUREMENT_ METHOD	PARAMETER_ NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER	AREA OF INTEREST
2004 Paleta Creek Sediment Characterization Study	3-1		117.11630	32.67273	Core	5/20/2004		Cadmium (Cd)	Dry weight	1.56	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-1		117.11630	32.67273	Core	5/20/2004		Copper (Cu)	Dry weight	127	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-1		117.11630	32.67273	Core	5/20/2004		Lead (Pb)	Dry weight	157	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-1		117.11630	32.67273	Core	5/20/2004		Mercury (Hg)	Dry weight	1.05	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-1		117.11630	32.67273	Core	5/20/2004		Zinc (Zn)	Dry weight	404	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-2		117.11695	32.67237	Core	5/21/2004		Arsenic (As)	Dry weight	3.42	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-2		117.11695	32.67237	Core	5/21/2004		Cadmium (Cd)	Dry weight	0.596	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-2		117.11695	32.67237	Core	5/21/2004		Copper (Cu)	Dry weight	85.6	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-2		117.11695	32.67237	Core	5/21/2004		Lead (Pb)	Dry weight	55.3	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-2		117.11695	32.67237	Core	5/21/2004		Mercury (Hg)	Dry weight	0.275	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-2		117.11695	32.67237	Core	5/21/2004		Zinc (Zn)	Dry weight	173	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-3		117.11718	32.67222	Core	5/20/2004		Arsenic (As)	Dry weight	6.95	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-3		117.11718	32.67222	Core	5/20/2004		Cadmium (Cd)	Dry weight	1.72	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-3		117.11718	32.67222	Core	5/20/2004		Copper (Cu)	Dry weight	163	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-3		117.11718	32.67222	Core	5/20/2004		Lead (Pb)	Dry weight	179	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-3		117.11718	32.67222	Core	5/20/2004		Mercury (Hg)	Dry weight	0.558	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-3		117.11718	32.67222	Core	5/20/2004		Zinc (Zn)	Dry weight	409	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-4		117.11815	32.67182	Core	5/21/2004		Arsenic (As)	Dry weight	8.12	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-4		117.11815	32.67182	Core	5/21/2004		Cadmium (Cd)	Dry weight	0.984	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-4		117.11815	32.67182	Core	5/21/2004		Copper (Cu)	Dry weight	141	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-4		117.11815	32.67182	Core	5/21/2004		Lead (Pb)	Dry weight	114	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-4		117.11815	32.67182	Core	5/21/2004		Mercury (Hg)	Dry weight	0.574	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-4		117.11815	32.67182	Core	5/21/2004		Zinc (Zn)	Dry weight	296	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-5		117.11835	32.67160	Core	5/21/2004		Arsenic (As)	Dry weight	14.8	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-5		117.11835	32.67160	Core	5/21/2004		Cadmium (Cd)	Dry weight	1.65	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-5		117.11835	32.67160	Core	5/21/2004		Copper (Cu)	Dry weight	259	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-5		117.11835	32.67160	Core	5/21/2004		Lead (Pb)	Dry weight	143	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-5		117.11835	32.67160	Core	5/21/2004		Mercury (Hg)	Dry weight	2.01	mg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-5		117.11835	32.67160	Core	5/21/2004		Zinc (Zn)	Dry weight	546	mg/kg		Paleta Creek Mouth
Sediment Characterization Study Pier and Berthing Areas	SD1-42 NAVSTA		-117.12320	32.67219	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.43	mg/kg		Paleta Creek Mouth
Sediment Characterization Study Pier and Berthing Areas	SD1-43 NAVSTA		-117.12174	32.67308	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.11	mg/kg		Paleta Creek Mouth
Sediment Characterization Study Pier and Berthing Areas	SD3-44 NAVSTA		-117.12053	32.67048	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.01	mg/kg	U	Paleta Creek Mouth
Sediment Characterization Study Pier and Berthing Areas	SD3-44 NAVSTA		-117.12053	32.67048	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.17	mg/kg		Paleta Creek Mouth
Sediment Characterization Study Pier and Berthing Areas	SD3-44 NAVSTA		-117.12053	32.67048	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.69	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A		-117.12301	32.67125	Core	12/01/92	Greenbook	Arsenic (As)	Dry weight	4.59	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A		-117.12301	32.67125	Core	12/01/92	Greenbook	Cadmium (Cd)	Dry weight	1.11	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A		-117.12301	32.67125	Core	12/01/92	Greenbook	Copper (Cu)	Dry weight	113	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A		-117.12301	32.67125	Core	12/01/92	Greenbook	Lead (Pb)	Dry weight	0.72	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A		-117.12301	32.67125	Core	12/01/92	Greenbook	Mercury (Hg)	Dry weight	0.385	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A		-117.12301	32.67125	Core	12/01/92	Greenbook	Zinc (Zn)	Dry weight	152	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Arsenic (As)	Dry weight	5.57	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Cadmium (Cd)	Dry weight	1.21	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Copper (Cu)	Dry weight	124	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Lead (Pb)	Dry weight	77	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Mercury (Hg)	Dry weight	0.51	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Zinc (Zn)	Dry weight	248	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B		-117.12120	32.67266	Core	12/02/92	Greenbook	Arsenic (As)	Dry weight	4.43	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B		-117.12120	32.67266	Core	12/02/92	Greenbook	Cadmium (Cd)	Dry weight	0.55	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B		-117.12120	32.67266	Core	12/02/92	Greenbook	Copper (Cu)	Dry weight	111	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B		-117.12120	32.67266	Core	12/02/92	Greenbook	Lead (Pb)	Dry weight	0.45	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B		-117.12120	32.67266	Core	12/02/92	Greenbook	Mercury (Hg)	Dry weight	0.409	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B		-117.12120	32.67266	Core	12/02/92	Greenbook	Zinc (Zn)	Dry weight	159	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Arsenic (As)	Dry weight	1.21	mg/kg	U	Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Cadmium (Cd)	Dry weight	0.241	mg/kg	U	Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Copper (Cu)	Dry weight	8.08	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Lead (Pb)	Dry weight	5.58	mg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Mercury (Hg)	Dry weight	0.024	mg/kg	U	Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B Mole pier		-117.12120	32.67053	Core	11/10/92	Greenbook	Zinc (Zn)	Dry weight	20	mg/kg		Paleta Creek Mouth
P-326 1997 Preliminary Sediment Characterization Study	20				Core	1997		Copper (Cu)	Dry weight	65	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	20				Core	1997		Lead (Pb)	Dry weight	15	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	20				Core	1997		Mercury (Hg)	Dry weight	0.33	mg/kg		Pier 10-12

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PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	TYPE	SAMPLE_DATE	MEASUREMENT_ METHOD	PARAMETER_ NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER	AREA OF INTEREST
P-326 1997 Preliminary Sediment Characterization Study	20				Core	1997		Zinc (Zn)	Dry weight	92	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	21				Core	1997		Copper (Cu)	Dry weight	24	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	21				Core	1997		Lead (Pb)	Dry weight	5.1	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	21				Core	1997		Mercury (Hg)	Dry weight	0.06	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	21				Core	1997		Zinc (Zn)	Dry weight	47	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	22				Core	1997		Copper (Cu)	Dry weight	29	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	22				Core	1997		Lead (Pb)	Dry weight	6.4	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	22				Core	1997		Mercury (Hg)	Dry weight	0.13	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	22				Core	1997		Zinc (Zn)	Dry weight	56	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	23				Core	1997		Copper (Cu)	Dry weight	120	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	23				Core	1997		Lead (Pb)	Dry weight	31	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	23				Core	1997		Mercury (Hg)	Dry weight	0.73	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	23				Core	1997		Zinc (Zn)	Dry weight	220	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	24				Core	1997		Copper (Cu)	Dry weight	94	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	24				Core	1997		Lead (Pb)	Dry weight	30	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	24				Core	1997		Mercury (Hg)	Dry weight	0.83	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	24				Core	1997		Zinc (Zn)	Dry weight	160	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	25				Core	1997		Copper (Cu)	Dry weight	26	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	25				Core	1997		Lead (Pb)	Dry weight	4	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	25				Core	1997		Mercury (Hg)	Dry weight	0.02	mg/kg	U	Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	25				Core	1997		Zinc (Zn)	Dry weight	21	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	26				Core	1997		Copper (Cu)	Dry weight	20	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	26				Core	1997		Lead (Pb)	Dry weight	8.3	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	26				Core	1997		Mercury (Hg)	Dry weight	0.05	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	26				Core	1997		Zinc (Zn)	Dry weight	38	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	27				Core	1997		Copper (Cu)	Dry weight	100	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	27				Core	1997		Lead (Pb)	Dry weight	31	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	27				Core	1997		Mercury (Hg)	Dry weight	0.32	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	27				Core	1997		Zinc (Zn)	Dry weight	110	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	28				Core	1997		Copper (Cu)	Dry weight	450	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	28				Core	1997		Lead (Pb)	Dry weight	87	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	28				Core	1997		Mercury (Hg)	Dry weight	0.57	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	28				Core	1997		Zinc (Zn)	Dry weight	210	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	29				Core	1997		Copper (Cu)	Dry weight	110	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	29				Core	1997		Lead (Pb)	Dry weight	44	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	29				Core	1997		Mercury (Hg)	Dry weight	1.24	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	29				Core	1997		Zinc (Zn)	Dry weight	150	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	30				Core	1997		Copper (Cu)	Dry weight	30	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	30				Core	1997		Lead (Pb)	Dry weight	18	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	30				Core	1997		Mercury (Hg)	Dry weight	0.47	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	30		-117.12228	32.66493	Core	1997		Zinc (Zn)	Dry weight	81	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	32				Core	1997		Copper (Cu)	Dry weight	190	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	32				Core	1997		Lead (Pb)	Dry weight	58	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	32				Core	1997		Mercury (Hg)	Dry weight	1.06	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	32		-117.11912	32.66517	Core	1997		Zinc (Zn)	Dry weight	220	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	33				Core	1997		Copper (Cu)	Dry weight	64	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	33				Core	1997		Lead (Pb)	Dry weight	21	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	33				Core	1997		Mercury (Hg)	Dry weight	0.28	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	33		-117.11997	32.66500	Core	1997		Zinc (Zn)	Dry weight	97	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	34				Core	1997		Copper (Cu)	Dry weight	92	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	34				Core	1997		Lead (Pb)	Dry weight	35	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	34				Core	1997		Mercury (Hg)	Dry weight	0.69	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	34		-117.12065	32.66508	Core	1997		Zinc (Zn)	Dry weight	130	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	35				Core	1997		Copper (Cu)	Dry weight	17	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	35				Core	1997		Lead (Pb)	Dry weight	8.7	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	35				Core	1997		Mercury (Hg)	Dry weight	0.16	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	35		-117.12133	32.66500	Core	1997		Zinc (Zn)	Dry weight	35	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	36				Core	1997		Copper (Cu)	Dry weight	22	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	36				Core	1997		Lead (Pb)	Dry weight	13	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	36				Core	1997		Mercury (Hg)	Dry weight	0.32	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	36		-117.12268	32.66447	Core	1997		Zinc (Zn)	Dry weight	54	mg/kg		Pier 10-12

TABLE F-1
Inorganics in Composite Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	TYPE	SAMPLE_DATE	MEASUREMENT_ METHOD	PARAMETER_ NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER	AREA OF INTEREST
P-326 1997 Preliminary Sediment Characterization Study	38				Core	1997		Copper (Cu)	Dry weight	61	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	38				Core	1997		Lead (Pb)	Dry weight	40	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	38				Core	1997		Mercury (Hg)	Dry weight	0.71	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	38		-117.12188	32.66443	Core	1997		Zinc (Zn)	Dry weight	110	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	39				Core	1997		Copper (Cu)	Dry weight	64	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	39				Core	1997		Lead (Pb)	Dry weight	27	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	39				Core	1997		Mercury (Hg)	Dry weight	0.37	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	39		-117.12048	32.66465	Core	1997		Zinc (Zn)	Dry weight	1300	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	40				Core	1997		Copper (Cu)	Dry weight	120	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	40				Core	1997		Lead (Pb)	Dry weight	50	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	40				Core	1997		Mercury (Hg)	Dry weight	0.67	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	40		-117.11935	32.66470	Core	1997		Zinc (Zn)	Dry weight	190	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	41				Core	1997		Copper (Cu)	Dry weight	78	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	41				Core	1997		Lead (Pb)	Dry weight	43	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	41				Core	1997		Mercury (Hg)	Dry weight	0.24	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	41		-117.11863	32.66448	Core	1997		Zinc (Zn)	Dry weight	250	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	42				Core	1997		Copper (Cu)	Dry weight	24	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	42				Core	1997		Lead (Pb)	Dry weight	15	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	42				Core	1997		Mercury (Hg)	Dry weight	0.5	mg/kg		Pier 10-12
P-326 1997 Preliminary Sediment Characterization Study	42		-117.12163	32.66420	Core	1997		Zinc (Zn)	Dry weight	72	mg/kg		Pier 10-12
P-326 2000 Study	4				Composite	2000		Arsenic (As)	Dry weight	1.43	mg/kg		Pier 10-12
P-326 2000 Study	4				Composite	2000		Cadmium (Cd)	Dry weight	0.219	mg/kg		Pier 10-12
P-326 2000 Study	4				Composite	2000		Copper (Cu)	Dry weight	26.4	mg/kg		Pier 10-12
P-326 2000 Study	4				Composite	2000		Lead (Pb)	Dry weight	8.24	mg/kg		Pier 10-12
P-326 2000 Study	4				Composite	2000		Mercury (Hg)	Dry weight	0.109	mg/kg		Pier 10-12
P-326 2000 Study	4				Composite	2000		Zinc (Zn)	Dry weight	46.3	mg/kg		Pier 10-12
P-326 2000 Study	5				Composite	2000		Arsenic (As)	Dry weight	2.36	mg/kg		Pier 10-12
P-326 2000 Study	5				Composite	2000		Cadmium (Cd)	Dry weight	0.59	mg/kg		Pier 10-12
P-326 2000 Study	5				Composite	2000		Copper (Cu)	Dry weight	39.1	mg/kg		Pier 10-12
P-326 2000 Study	5				Composite	2000		Lead (Pb)	Dry weight	15	mg/kg		Pier 10-12
P-326 2000 Study	5				Composite	2000		Mercury (Hg)	Dry weight	1.55	mg/kg		Pier 10-12
P-326 2000 Study	5				Composite	2000		Zinc (Zn)	Dry weight	63.5	mg/kg		Pier 10-12
P-326 2000 Study	6				Composite	2000		Arsenic (As)	Dry weight	4.07	mg/kg		Pier 10-12
P-326 2000 Study	6				Composite	2000		Cadmium (Cd)	Dry weight	1.12	mg/kg		Pier 10-12
P-326 2000 Study	6				Composite	2000		Copper (Cu)	Dry weight	40.1	mg/kg		Pier 10-12
P-326 2000 Study	6				Composite	2000		Lead (Pb)	Dry weight	25.2	mg/kg		Pier 10-12
P-326 2000 Study	6				Composite	2000		Mercury (Hg)	Dry weight	0.499	mg/kg		Pier 10-12
P-326 2000 Study	6				Composite	2000		Zinc (Zn)	Dry weight	83.2	mg/kg		Pier 10-12
P-326 2000 Study	7				Composite	2000		Arsenic (As)	Dry weight	1.73	mg/kg		Pier 10-12
P-326 2000 Study	7				Composite	2000		Cadmium (Cd)	Dry weight	0.278	mg/kg		Pier 10-12
P-326 2000 Study	7				Composite	2000		Copper (Cu)	Dry weight	41.2	mg/kg		Pier 10-12
P-326 2000 Study	7				Composite	2000		Lead (Pb)	Dry weight	15.6	mg/kg		Pier 10-12
P-326 2000 Study	7				Composite	2000		Mercury (Hg)	Dry weight	0.132	mg/kg		Pier 10-12
P-326 2000 Study	7				Composite	2000		Zinc (Zn)	Dry weight	64.4	mg/kg		Pier 10-12
P-326 2000 Study	8				Composite	2000		Arsenic (As)	Dry weight	2.23	mg/kg		Pier 10-12
P-326 2000 Study	8				Composite	2000		Cadmium (Cd)	Dry weight	0.268	mg/kg		Pier 10-12
P-326 2000 Study	8				Composite	2000		Copper (Cu)	Dry weight	32.2	mg/kg		Pier 10-12
P-326 2000 Study	8				Composite	2000		Lead (Pb)	Dry weight	11	mg/kg		Pier 10-12
P-326 2000 Study	8				Composite	2000		Mercury (Hg)	Dry weight	0.115	mg/kg		Pier 10-12
P-326 2000 Study	8				Composite	2000		Zinc (Zn)	Dry weight	118	mg/kg		Pier 10-12
P-326 2000 Study	9				Composite	2000		Arsenic (As)	Dry weight	3	mg/kg		Pier 10-12
P-326 2000 Study	9				Composite	2000		Cadmium (Cd)	Dry weight	0.456	mg/kg		Pier 10-12
P-326 2000 Study	9				Composite	2000		Copper (Cu)	Dry weight	32.3	mg/kg		Pier 10-12
P-326 2000 Study	9				Composite	2000		Lead (Pb)	Dry weight	19	mg/kg		Pier 10-12
P-326 2000 Study	9				Composite	2000		Mercury (Hg)	Dry weight	0.338	mg/kg		Pier 10-12
P-326 2000 Study	9				Composite	2000		Zinc (Zn)	Dry weight	71.2	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	1				Composite	2005		Arsenic (As)	Dry Weight	2.78	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	1				Composite	2005		Cadmium (Cd)	Dry Weight	0.429	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	1				Composite	2005		Copper (Cu)	Dry Weight	59.5	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	1				Composite	2005		Lead (Pb)	Dry Weight	20.2	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	1				Composite	2005		Mercury (Hg)	Dry Weight	0.243	mg/kg		Pier 10-12

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	TYPE	SAMPLE_DATE	MEASUREMENT_ METHOD	PARAMETER_ NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER	AREA OF INTEREST
P-327 Pier 12 Phase I	1				Composite	2005		Zinc (Zn)	Dry Weight	84.6	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	2				Composite	2005		Arsenic (As)	Dry Weight	4.57	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	2				Composite	2005		Cadmium (Cd)	Dry Weight	0.591	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	2				Composite	2005		Copper (Cu)	Dry Weight	85.5	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	2				Composite	2005		Lead (Pb)	Dry Weight	35.5	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	2				Composite	2005		Mercury (Hg)	Dry Weight	0.300	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	2				Composite	2005		Zinc (Zn)	Dry Weight	197	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	3				Composite	2005		Arsenic (As)	Dry Weight	5.04	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	3				Composite	2005		Cadmium (Cd)	Dry Weight	0.747	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	3				Composite	2005		Copper (Cu)	Dry Weight	91.7	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	3				Composite	2005		Lead (Pb)	Dry Weight	21.4	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	3				Composite	2005		Mercury (Hg)	Dry Weight	0.459	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	3				Composite	2005		Zinc (Zn)	Dry Weight	141	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-1		-117.11942	32.66513	Core	2005		Arsenic (As)	Dry Weight	3.99	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-1		-117.11942	32.66513	Core	2005		Cadmium (Cd)	Dry Weight	0.486	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-1		-117.11942	32.66513	Core	2005		Copper (Cu)	Dry Weight	85.6	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-1		-117.11942	32.66513	Core	2005		Lead (Pb)	Dry Weight	22.8	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-1		-117.11942	32.66513	Core	2005		Mercury (Hg)	Dry Weight	0.257	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-1		-117.11942	32.66513	Core	2005		Zinc (Zn)	Dry Weight	115	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-2		-117.11932	32.66450	Core	2005		Arsenic (As)	Dry Weight	3.26	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-2		-117.11932	32.66450	Core	2005		Cadmium (Cd)	Dry Weight	0.441	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-2		-117.11932	32.66450	Core	2005		Copper (Cu)	Dry Weight	77.4	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-2		-117.11932	32.66450	Core	2005		Lead (Pb)	Dry Weight	18.7	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-2		-117.11932	32.66450	Core	2005		Mercury (Hg)	Dry Weight	0.246	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-2		-117.11932	32.66450	Core	2005		Zinc (Zn)	Dry Weight	107	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-3		-117.11988	32.66517	Core	2005		Arsenic (As)	Dry Weight	3.93	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-3		-117.11988	32.66517	Core	2005		Cadmium (Cd)	Dry Weight	0.236	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-3		-117.11988	32.66517	Core	2005		Copper (Cu)	Dry Weight	79.3	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-3		-117.11988	32.66517	Core	2005		Lead (Pb)	Dry Weight	17	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-3		-117.11988	32.66517	Core	2005		Mercury (Hg)	Dry Weight	0.261	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-3		-117.11988	32.66517	Core	2005		Zinc (Zn)	Dry Weight	96.3	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-4		-117.11963	32.66477	Core	2005		Arsenic (As)	Dry Weight	2.02	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-4		-117.11963	32.66477	Core	2005		Cadmium (Cd)	Dry Weight	0.145	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-4		-117.11963	32.66477	Core	2005		Copper (Cu)	Dry Weight	24.9	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-4		-117.11963	32.66477	Core	2005		Lead (Pb)	Dry Weight	6.54	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-4		-117.11963	32.66477	Core	2005		Mercury (Hg)	Dry Weight	0.134	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-4		-117.11963	32.66477	Core	2005		Zinc (Zn)	Dry Weight	48.9	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-5		-117.12018	32.66475	Core	2005		Arsenic (As)	Dry Weight	8.02	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-5		-117.12018	32.66475	Core	2005		Cadmium (Cd)	Dry Weight	2.24	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-5		-117.12018	32.66475	Core	2005		Copper (Cu)	Dry Weight	105	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-5		-117.12018	32.66475	Core	2005		Lead (Pb)	Dry Weight	51.4	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-5		-117.12018	32.66475	Core	2005		Mercury (Hg)	Dry Weight	0.507	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 1-5		-117.12018	32.66475	Core	2005		Zinc (Zn)	Dry Weight	636	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-1		-117.12093	32.66505	Core	2005		Arsenic (As)	Dry Weight	2.89	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-1		-117.12093	32.66505	Core	2005		Cadmium (Cd)	Dry Weight	0.263	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-1		-117.12093	32.66505	Core	2005		Copper (Cu)	Dry Weight	42.2	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-1		-117.12093	32.66505	Core	2005		Lead (Pb)	Dry Weight	10.6	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-1		-117.12093	32.66505	Core	2005		Mercury (Hg)	Dry Weight	0.69	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-1		-117.12093	32.66505	Core	2005		Zinc (Zn)	Dry Weight	83.5	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-2		-117.12077	32.66430	Core	2005		Arsenic (As)	Dry Weight	11.1	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-2		-117.12077	32.66430	Core	2005		Cadmium (Cd)	Dry Weight	1.46	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-2		-117.12077	32.66430	Core	2005		Copper (Cu)	Dry Weight	249	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-2		-117.12077	32.66430	Core	2005		Lead (Pb)	Dry Weight	78.8	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-2		-117.12077	32.66430	Core	2005		Mercury (Hg)	Dry Weight	0.228	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-2		-117.12077	32.66430	Core	2005		Zinc (Zn)	Dry Weight	411	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-3		-117.12153	32.66482	Core	2005		Arsenic (As)	Dry Weight	2.51	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-3		-117.12153	32.66482	Core	2005		Cadmium (Cd)	Dry Weight	1.2	mg/kg	U	Pier 10-12
P-327 Pier 12 Phase I	Navy 2-3		-117.12153	32.66482	Core	2005		Copper (Cu)	Dry Weight	26.1	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-3		-117.12153	32.66482	Core	2005		Lead (Pb)	Dry Weight	6.23	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-3		-117.12153	32.66482	Core	2005		Mercury (Hg)	Dry Weight	0.52	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-3		-117.12153	32.66482	Core	2005		Zinc (Zn)	Dry Weight	54.9	mg/kg		Pier 10-12

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	TYPE	SAMPLE_DATE	MEASUREMENT_ METHOD	PARAMETER_ NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER	AREA OF INTEREST
P-327 Pier 12 Phase I	Navy 2-4		-117.12138	32.66420	Core	2005		Arsenic (As)	Dry Weight	7.16	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-4		-117.12138	32.66420	Core	2005		Cadmium (Cd)	Dry Weight	0.581	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-4		-117.12138	32.66420	Core	2005		Copper (Cu)	Dry Weight	161	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-4		-117.12138	32.66420	Core	2005		Lead (Pb)	Dry Weight	40.1	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-4		-117.12138	32.66420	Core	2005		Mercury (Hg)	Dry Weight	0.0954	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-4		-117.12138	32.66420	Core	2005		Zinc (Zn)	Dry Weight	212	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-5		-117.12188	32.66487	Core	2005		Arsenic (As)	Dry Weight	2.52	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-5		-117.12188	32.66487	Core	2005		Cadmium (Cd)	Dry Weight	0.163	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-5		-117.12188	32.66487	Core	2005		Copper (Cu)	Dry Weight	26.5	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-5		-117.12188	32.66487	Core	2005		Lead (Pb)	Dry Weight	8.04	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-5		-117.12188	32.66487	Core	2005		Mercury (Hg)	Dry Weight	0.341	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 2-5		-117.12188	32.66487	Core	2005		Zinc (Zn)	Dry Weight	82.1	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-1		-117.12235	32.66487	Core	2005		Arsenic (As)	Dry Weight	6.29	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-1		-117.12235	32.66487	Core	2005		Cadmium (Cd)	Dry Weight	0.862	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-1		-117.12235	32.66487	Core	2005		Copper (Cu)	Dry Weight	55.8	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-1		-117.12235	32.66487	Core	2005		Lead (Pb)	Dry Weight	25.4	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-1		-117.12235	32.66487	Core	2005		Mercury (Hg)	Dry Weight	0.362	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-1		-117.12235	32.66487	Core	2005		Zinc (Zn)	Dry Weight	125	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-2		-117.12230	32.66412	Core	2005		Arsenic (As)	Dry Weight	4.16	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-2		-117.12230	32.66412	Core	2005		Cadmium (Cd)	Dry Weight	0.261	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-2		-117.12230	32.66412	Core	2005		Copper (Cu)	Dry Weight	66.7	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-2		-117.12230	32.66412	Core	2005		Lead (Pb)	Dry Weight	29.2	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-2		-117.12230	32.66412	Core	2005		Mercury (Hg)	Dry Weight	0.146	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-2		-117.12230	32.66412	Core	2005		Zinc (Zn)	Dry Weight	111	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-3		-117.12325	32.66492	Core	2005		Arsenic (As)	Dry Weight	5.54	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-3		-117.12325	32.66492	Core	2005		Cadmium (Cd)	Dry Weight	0.596	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-3		-117.12325	32.66492	Core	2005		Copper (Cu)	Dry Weight	32.4	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-3		-117.12325	32.66492	Core	2005		Lead (Pb)	Dry Weight	17.4	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-3		-117.12325	32.66492	Core	2005		Mercury (Hg)	Dry Weight	0.389	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-3		-117.12325	32.66492	Core	2005		Zinc (Zn)	Dry Weight	88.3	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-4		-117.12273	32.66433	Core	2005		Arsenic (As)	Dry Weight	6.4	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-4		-117.12273	32.66433	Core	2005		Cadmium (Cd)	Dry Weight	1.25	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-4		-117.12273	32.66433	Core	2005		Copper (Cu)	Dry Weight	114	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-4		-117.12273	32.66433	Core	2005		Lead (Pb)	Dry Weight	34.9	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-4		-117.12273	32.66433	Core	2005		Mercury (Hg)	Dry Weight	0.668	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-4		-117.12273	32.66433	Core	2005		Zinc (Zn)	Dry Weight	186	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-5		-117.12327	32.66425	Core	2005		Arsenic (As)	Dry Weight	3.34	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-5		-117.12327	32.66425	Core	2005		Cadmium (Cd)	Dry Weight	1.2	mg/kg	U	Pier 10-12
P-327 Pier 12 Phase I	Navy 3-5		-117.12327	32.66425	Core	2005		Copper (Cu)	Dry Weight	32.6	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-5		-117.12327	32.66425	Core	2005		Lead (Pb)	Dry Weight	8.7	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-5		-117.12327	32.66425	Core	2005		Mercury (Hg)	Dry Weight	0.091	mg/kg		Pier 10-12
P-327 Pier 12 Phase I	Navy 3-5		-117.12327	32.66425	Core	2005		Zinc (Zn)	Dry Weight	61.6	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area D				Composite	2005		Arsenic (As)	Dry Weight	2.13	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area D				Composite	2005		Cadmium (Cd)	Dry Weight	0.188	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area D				Composite	2005		Copper (Cu)	Dry Weight	28.8	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area D				Composite	2005		Lead (Pb)	Dry Weight	8.01	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area D				Composite	2005		Mercury (Hg)	Dry Weight	0.0907	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area D				Composite	2005		Zinc (Zn)	Dry Weight	53.6	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area E				Composite	2005		Arsenic (As)	Dry Weight	3.3	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area E				Composite	2005		Cadmium (Cd)	Dry Weight	0.359	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area E				Composite	2005		Copper (Cu)	Dry Weight	34.3	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area E				Composite	2005		Lead (Pb)	Dry Weight	13.2	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area E				Composite	2005		Mercury (Hg)	Dry Weight	0.184	mg/kg		Pier 10-12
P-327 Pier 12 Phase II	Area E				Composite	2005		Zinc (Zn)	Dry Weight	76.8	mg/kg		Pier 10-12
P-327 Pier 12 Phase III	D	USNVC-2008-D			Composite	10/29/08	EPA 6020m	Arsenic (As)	Dry Weight	2.601	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	D	USNVC-2008-D			Composite	10/29/08	EPA 6020m	Cadmium (Cd)	Dry Weight	0.191	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	D	USNVC-2008-D			Composite	10/29/08	EPA 6020m	Copper (Cu)	Dry Weight	35.76	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	D	USNVC-2008-D			Composite	10/29/08	EPA 6020m	Lead (Pb)	Dry Weight	8.597	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	D	USNVC-2008-D			Composite	10/29/08	EPA 245.7m	Mercury (Hg)	Dry Weight	0.09	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	D	USNVC-2008-D			Composite	10/29/08	EPA 6020m	Zinc (Zn)	Dry Weight	51.94	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	E	USNVC-2008-E			Composite	10/31/08	EPA 6020m	Arsenic (As)	Dry Weight	4.893	µg/kg		Pier 10-12

TABLE F-1
Inorganics in Composite Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	TYPE	SAMPLE_DATE	MEASUREMENT_ METHOD	PARAMETER_ NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER	AREA OF INTEREST
P-327 Pier 12 Phase III	E	USNVC-2008-E			Composite	10/31/08	EPA 6020m	Cadmium (Cd)	Dry Weight	0.476	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	E	USNVC-2008-E			Composite	10/31/08	EPA 6020m	Copper (Cu)	Dry Weight	51.03	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	E	USNVC-2008-E			Composite	10/31/08	EPA 6020m	Lead (Pb)	Dry Weight	15.01	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	E	USNVC-2008-E			Composite	10/31/08	EPA 245.7m	Mercury (Hg)	Dry Weight	0.24	µg/kg		Pier 10-12
P-327 Pier 12 Phase III	E	USNVC-2008-E			Composite	10/31/08	EPA 6020m	Zinc (Zn)	Dry Weight	89.85	µg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-54 NAVSTA		-117.12007	32.66606	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.46	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-54 NAVSTA		-117.12007	32.66606	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.67	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-54 NAVSTA		-117.12007	32.66606	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.87	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-55 NAVSTA		-117.12105	32.66595	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.01	mg/kg	U	Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-55 NAVSTA		-117.12105	32.66595	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.08	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-55 NAVSTA		-117.12105	32.66595	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.25	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-56 NAVSTA		-117.12199	32.66576	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.9	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-57 NAVSTA		-117.12295	32.66568	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.02	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-57 NAVSTA		-117.12295	32.66568	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.38	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-57 NAVSTA		-117.12295	32.66568	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.97	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-59 NAVSTA		-117.12293	32.66526	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.06	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-59 NAVSTA		-117.12293	32.66526	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.57	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-59 NAVSTA		-117.12293	32.66526	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.9	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-59 NAVSTA		-117.12293	32.66526	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	1.34	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-60 NAVSTA		-117.12196	32.66537	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.01	mg/kg	U	Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-60 NAVSTA		-117.12196	32.66537	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.01	mg/kg	U	Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-60 NAVSTA		-117.12196	32.66537	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.18	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-60 NAVSTA		-117.12196	32.66537	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	1.3	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-61 NAVSTA		-117.12087	32.66539	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.01	mg/kg	U	Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-61 NAVSTA		-117.12087	32.66539	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.01	mg/kg	U	Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-61 NAVSTA		-117.12087	32.66539	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.07	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-61 NAVSTA		-117.12087	32.66539	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.3	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-62 NAVSTA		-117.11992	32.66546	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.05	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-62 NAVSTA		-117.11992	32.66546	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.86	mg/kg		Pier 10-12
Sediment Characterization Study Pier and Berthing Areas	SD3-26 NAVSTA		-117.12738	32.67736	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.03	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-26 NAVSTA		-117.12738	32.67736	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.86	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-26 NAVSTA		-117.12738	32.67736	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	1.9	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-27 NAVSTA		-117.12672	32.67778	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.41	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-27 NAVSTA		-117.12672	32.67778	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	1.9	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-28 NAVSTA		-117.12599	32.67819	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.07	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-29 NAVSTA		-117.12534	32.67857	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.12	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-29 NAVSTA		-117.12534	32.67857	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.78	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-30 NAVSTA		-117.12430	32.67723	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.1	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-30 NAVSTA		-117.12430	32.67723	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.47	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-30 NAVSTA		-117.12430	32.67723	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.91	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-30 NAVSTA		-117.12430	32.67723	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.1	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-31 NAVSTA		-117.12506	32.67681	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	2.13	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-31 NAVSTA		-117.12506	32.67681	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	2.7	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-32 NAVSTA		-117.12572	32.67642	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.04	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-32 NAVSTA		-117.12572	32.67642	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.48	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-33 NAVSTA		-117.12656	32.67598	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.01	mg/kg	U	Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-33 NAVSTA		-117.12656	32.67598	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.07	mg/kg		Pier 5-6
Sediment Characterization Study Pier and Berthing Areas	SD3-33 NAVSTA		-117.12656	32.67598	Core	10/30/93	EPA7471Mercury	Mercury (Hg)	Dry weight	0.49	mg/kg		Pier 5-6

TABLE F-2
Tributyltin (TBT) in Composite Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	SAMPLE_DATE	TYPE	MEASUREMENT_ METHOD	PARAMETER_ NAME	PROPERTY	QUANTITY	UNIT	QUALIFIER	AREA OF INTEREST
2004 Paleta Creek Sediment Characterization Study	1-1		117.11826	32.67280	5/20/2004	Core		Tributyltin (TBT)	Dry weight	145	µg/kg	U	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-2		117.11758	30.67318	5/20/2004	Core		Tributyltin (TBT)	Dry weight	694	µg/kg	U	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-3		117.11720	32.67338	5/20/2004	Core		Tributyltin (TBT)	Dry weight	553	µg/kg	U	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-4		117.11685	32.67348	5/20/2004	Core		Tributyltin (TBT)	Dry weight	68.7	µg/kg	U	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-5		117.11665	32.67380	5/20/2004	Core		Tributyltin (TBT)	Dry weight	1620	µg/kg	U	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-1		117.11628	32.67387	5/20/2004	Core		Tributyltin (TBT)	Dry weight	41.8	µg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-2		117.11607	32.67410	5/20/2004	Core		Tributyltin (TBT)	Dry weight	30.6	µg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-3		117.11593	32.67377	5/20/2004	Core		Tributyltin (TBT)	Dry weight	7.5	µg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-4		117.11598	32.67352	5/20/2004	Core		Tributyltin (TBT)	Dry weight	27.1	µg/kg	U	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-5		117.11597	32.67298	5/20/2004	Core		Tributyltin (TBT)	Dry weight	3.3	µg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-1		117.11630	32.67273	5/20/2004	Core		Tributyltin (TBT)	Dry weight	87	µg/kg	U	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-2		117.11695	32.67237	5/21/2004	Core		Tributyltin (TBT)	Dry weight	9	µg/kg		Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-3		117.11718	32.67222	5/20/2004	Core		Tributyltin (TBT)	Dry weight	26.4	µg/kg	U	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-4		117.11815	32.67182	5/21/2004	Core		Tributyltin (TBT)	Dry weight	38	µg/kg	U	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-5		117.11835	32.67160	5/21/2004	Core		Tributyltin (TBT)	Dry weight	59.9	µg/kg	U	Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A		-117.12301	32.67125	12/01/92	Discrete Sample	Greenbook	Tributyltin (TBT)	Dry weight	3.54	µg/kg		Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A Mole pier		-117.12120	32.67053	11/10/92	Discrete Sample	Greenbook	Tributyltin (TBT)	Dry weight	1.68	µg/kg	U	Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B		-117.12120	32.67266	12/02/92	Discrete Sample	Greenbook	Tributyltin (TBT)	Dry weight	1.68	µg/kg	U	Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B Mole pier		-117.12120	32.67053	11/10/92	Discrete Sample	Greenbook	Tributyltin (TBT)	Dry weight	1.21	µg/kg	U	Paleta Creek Mouth
P-327 Pier 12 Phase I	1				2005	Composite		Tributyltin (TBT)	Dry Weight	1	µg/kg	U	Piers 10-12
P-327 Pier 12 Phase I	2				2005	Composite		Tributyltin (TBT)	Dry Weight	1.6	µg/kg		Piers 10-12
P-327 Pier 12 Phase I	3				2005	Composite		Tributyltin (TBT)	Dry Weight	1.5	µg/kg		Piers 10-12
P-327 Pier 12 Phase II	Area D				2005	Composite		Tributyltin (TBT)	Dry Weight	4.1	µg/kg	U	Piers 10-12
P-327 Pier 12 Phase II	Area E				2005	Composite		Tributyltin (TBT)	Dry Weight	4.4	µg/kg	U	Piers 10-12
P-327 Pier 12 Phase III	D	USNVC-2008-D			10/29/08	Composite	Krone et al., 1989	Tributyltin (TBT)	Dry Weight	3	µg/kg	U	Piers 10-12
P-327 Pier 12 Phase III	E	USNVC-2008-E			10/31/08	Composite	Krone et al., 1989	Tributyltin (TBT)	Dry Weight	3	µg/kg	U	Piers 10-12
P-326 2000 Study	4				2000	Composite		Tributyltin (TBT)	Dry weight	1		U	Piers 10-12
P-326 2000 Study	5				2000	Composite		Tributyltin (TBT)	Dry weight	1		U	Piers 10-12
P-326 2000 Study	6				2000	Composite		Tributyltin (TBT)	Dry weight	1		U	Piers 10-12
P-326 2000 Study	7				2000	Composite		Tributyltin (TBT)	Dry weight	1		U	Piers 10-12
P-326 2000 Study	8				2000	Composite		Tributyltin (TBT)	Dry weight	1		U	Piers 10-12
P-326 2000 Study	9				2000	Composite		Tributyltin (TBT)	Dry weight	1		U	Piers 10-12

TABLE F-3
High Molecular Weight Polynuclear Aromatic Hydrocarbons (HPAH) in Composite Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	TYPE	SAMPLE_DATE	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	AREA OF INTEREST
P-327 Pier 12 Phase I	1				Composite	2005	Total HPAH	Dry Weight	390	µg/kg	Piers 10-12
P-327 Pier 12 Phase I	2				Composite	2005	Total HPAH	Dry Weight	885	µg/kg	Piers 10-12
P-327 Pier 12 Phase I	3				Composite	2005	Total HPAH	Dry Weight	247	µg/kg	Piers 10-12
P-327 Pier 12 Phase II	Area D				Composite	2005	Total HPAH	Dry Weight	101	µg/kg	Piers 10-12
P-327 Pier 12 Phase II	Area E				Composite	2005	Total HPAH	Dry Weight	84	µg/kg	Piers 10-12
P-327 Pier 12 Phase III	D	USNVC-2008-D			Composite	10/29/08	Total HPAH	Dry Weight	335	µg/kg	Piers 10-12
P-327 Pier 12 Phase III	E	USNVC-2008-E			Composite	10/31/08	Total HPAH	Dry Weight	365	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	7				Core	1997	Total HPAH	Dry Weight	89	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	8				Core	1997	Total HPAH	Dry Weight	224	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	9				Core	1997	Total HPAH	Dry Weight	77	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	10				Core	1997	Total HPAH	Dry Weight	442	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	11				Core	1997	Total HPAH	Dry Weight	200	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	12				Core	1997	Total HPAH	Dry Weight	15267	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	13				Core	1997	Total HPAH	Dry Weight	621	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	14				Core	1997	Total HPAH	Dry Weight	594	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	15				Core	1997	Total HPAH	Dry Weight	60	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	16				Core	1997	Total HPAH	Dry Weight	202	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	18				Core	1997	Total HPAH	Dry Weight	60	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	19				Core	1997	Total HPAH	Dry Weight	81	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	20				Core	1997	Total HPAH	Dry Weight	680	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	21				Core	1997	Total HPAH	Dry Weight	236	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	22				Core	1997	Total HPAH	Dry Weight	114	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	23				Core	1997	Total HPAH	Dry Weight	1930	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	24				Core	1997	Total HPAH	Dry Weight	563	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	25				Core	1997	Total HPAH	Dry Weight	60	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	26				Core	1997	Total HPAH	Dry Weight	118	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	27				Core	1997	Total HPAH	Dry Weight	854	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	28				Core	1997	Total HPAH	Dry Weight	669	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	29				Core	1997	Total HPAH	Dry Weight	1454	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	30		-117.12228	32.66493	Core	1997	Total HPAH	Dry Weight	225	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	32		-117.11912	32.66517	Core	1997	Total HPAH	Dry Weight	2026	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	33		-117.11997	32.66500	Core	1997	Total HPAH	Dry Weight	547	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	34		-117.12065	32.66508	Core	1997	Total HPAH	Dry Weight	316	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	35		-117.12133	32.66500	Core	1997	Total HPAH	Dry Weight	79	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	36		-117.12268	32.66447	Core	1997	Total HPAH	Dry Weight	123	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	38		-117.12188	32.66443	Core	1997	Total HPAH	Dry Weight	590	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	39		-117.12048	32.66465	Core	1997	Total HPAH	Dry Weight	210	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	40		-117.11935	32.66470	Core	1997	Total HPAH	Dry Weight	1245	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	41		-117.11863	32.66448	Core	1997	Total HPAH	Dry Weight	631	µg/kg	Piers 10-12
P-326 1997 Preliminary Sediment Characterization Study	42		-117.12163	32.66420	Core	1997	Total HPAH	Dry Weight	147	µg/kg	Piers 10-12
P-326 2000 Study	7				Composite	2000	Total HPAH	Dry Weight	334	µg/kg	Piers 10-12
P-326 2000 Study	8				Composite	2000	Total HPAH	Dry Weight	169	µg/kg	Piers 10-12
P-326 2000 Study	9				Composite	2000	Total HPAH	Dry Weight	210	µg/kg	Piers 10-12
P-326 2000 Study	4				Composite	2000	Total HPAH	Dry Weight	182	µg/kg	Piers 10-12
P-326 2000 Study	5				Composite	2000	Total HPAH	Dry Weight	167	µg/kg	Piers 10-12
P-326 2000 Study	6				Composite	2000	Total HPAH	Dry Weight	94	µg/kg	Piers 10-12
2004 Paleta Creek Sediment Characterization Study	1-1		117.11826	32.67280	Core	5/20/2004	Total HPAH	Dry weight	5665	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-2		117.11758	30.67318	Core	5/20/2004	Total HPAH	Dry weight	4240	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-3		117.11720	32.67338	Core	5/20/2004	Total HPAH	Dry weight	5070	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-4		117.11685	32.67348	Core	5/20/2004	Total HPAH	Dry weight	3225	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	1-5		117.11665	32.67380	Core	5/20/2004	Total HPAH	Dry weight	10920	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-1		117.11628	32.67387	Core	5/20/2004	Total HPAH	Dry weight	4805	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-2		117.11607	32.67410	Core	5/20/2004	Total HPAH	Dry weight	1670	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-3		117.11593	32.67377	Core	5/20/2004	Total HPAH	Dry weight	2955	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-4		117.11598	32.67352	Core	5/20/2004	Total HPAH	Dry weight	4700	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	2-5		117.11597	32.67298	Core	5/20/2004	Total HPAH	Dry weight	4980	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-1		117.11630	32.67273	Core	5/20/2004	Total HPAH	Dry weight	5180	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-2		117.11695	32.67237	Core	5/21/2004	Total HPAH	Dry weight	1540	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-3		117.11718	32.67222	Core	5/20/2004	Total HPAH	Dry weight	3150	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-4		117.11815	32.67182	Core	5/21/2004	Total HPAH	Dry weight	3060	µg/kg	Paleta Creek Mouth
2004 Paleta Creek Sediment Characterization Study	3-5		117.11835	32.67160	Core	5/21/2004	Total HPAH	Dry weight	6715	µg/kg	Paleta Creek Mouth

TABLE F-3
High Molecular Weight Polynuclear Aromatic Hydrocarbons (HPAH) in Composite Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	X_COORDINATE	Y_COORDINATE	TYPE	SAMPLE_DATE	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	AREA OF INTEREST
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A		-117.12301	32.67125	Core	12/01/92	Total HPAH	Dry weight	539	µg/kg	Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area A Mole pier		-117.12120	32.67053	Core	11/10/92	Total HPAH	Dry weight	1075	µg/kg	Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B		-117.12120	32.67266	Core	12/02/92	Total HPAH	Dry weight	490	µg/kg	Paleta Creek Mouth
Sediment Chemistry Results for Naval Station San Diego	Pier 8, Area B Mole pier		-117.12120	32.67053	Core	11/10/92	Total HPAH	Dry weight	60	µg/kg	Paleta Creek Mouth

TABLE F-4
Total Polychlorinated Biphenyl (PCB) Congeners in Composite Sediment Samples
Response to Tentative Cleanup and Abatement Order and City of San Diego Complaint
United States Naval Base San Diego, California

PROJECT_NAME	SITE_NAME	SAMPLE_ID	TYPE	SAMPLE_DATE	PARAMETER_NAME	PROPERTY	QUANTITY	UNIT	AREA OF INTEREST
Navy Pier 12 Phase III	D	USNVC-2008-D	Composite	10/29/08	Total PCB congeners	Dry Weight	101	µg/kg	Piers 10-12
Navy Pier 12 Phase III	E	USNVC-2008-E	Composite	10/31/08	Total PCB congeners	Dry Weight	98	µg/kg	Piers 10-12

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