STATE OF CALIFORNIA PETE WILSON, Governor

GOVERNOR'S OFFICE OF PLANNING AND RESEARCH
1400 TENTH STREET
SACRAMENTO, CA 95814

RECEIVED
AUG 1 2 1993
PORT OF SAN DIEGO
ENVIRONMENTAL MANAGEMENT

Aug. 9, 1993

Ralph T. Hicks
P.O. Box 488
San Diego, CA
92112

Subject: Convair Lagoon Remediation Draft EIR/RAP
Sch # 92091011

Dear Ralph T. Hicks

IX-1 The State Clearinghouse submitted the above named environmental document to selected state agencies for review. The review period is closed and none of the state agencies have comments. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call Tom Loftus at (916) 445-0613 if you have any questions regarding the environmental review process. When contacting the Clearinghouse in this matter, please use the eight-digit State Clearinghouse number so that we may respond promptly.

Sincerely,

Christine Kinne

Christine Kinne
Deputy Director, Permit Assistance

IX Governor's Office of Planning and Research

IX-1 The State Clearinghouse, part of the Governor's Office, verified compliance with the environmental review requirements under California Environmental Quality Act (CEQA). No comments were received from any of the State agencies through the Clearinghouse.

APPENDIX A

BASIS OF DESIGN REPORT

Convair Lagoon
Basis of Design Report

prepared for
Teledyne Ryan Aeronautical
by

EBASCO ENVIRONMENTAL
A Division of Ebasco Services Incorporated

for submittal to

California Regional Water Quality Control Board, San Diego Region

JUNE 1992

Convair Lagoon
BASIS OF DESIGN REPORT

Submitted to:

California Regional Water Quality Control Board
San Diego Region

Submitted by:

Teledyne Ryan Aeronautical
2701 Harbor Drive
San Diego, California 92101

June 1992

MISC.3/5-28-92/02514A

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CONTENTS (continued)

FIGURES

FIGURES (Continued)

TABLES

GLOSSARY

ACOE	ACOE
AET	Apparent Effects Threshold
BACT	Best available control technology
BDR	Basis of Design Report
BOD	biological oxygen demand
CAF & G	California Department of Fish and Game
CAL-OSHA	California Occupational Safety and Health Act
CB	Catch basin
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response and Compensation Liability
CFR	Code of Federal Regulations
cfs	cubic feet per second
COD	Chemical oxygen demand
CSI	Construction Specific Institute
DAF	Dissolved air flotation
EER	Engineering Evaluation Report
EIR	Environmental Impact Report
EP	Equilibrium Partitioning
EPA	U.S. Environmental Protection Agency
FWPCA	Federal Water Pollution Control Act
GAC	Granular activated carbon
GIS	Geographical Information System
gpm	gallons per minute
HDPE	High density polyethylene
kg	Kilograms
M	Richter magnitude for earthquakes
MDL	MDL Laser Track range-azimuth navigation system
mg	Milligram
MLLW	Mean Lower Low Water
mph	Miles per hour
NCDC	National Climatic Data Center

GLOSSARY (continued)

NCF	Nearshore Containment Facility
NOAA	National Oceanographic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPW	Net present worth
NSR	New Source Review
O&M	Operation and Maintenance
PAH	Polyaromatic Hydrocarbons
PCBs	Polychlorinated biphenyls
pcf	pounds per cubic foot
PCWQA	California Porter Cologne Water Quality Act
pH	chemical acidity or alkalinity measure
ppb	parts per billion
ppm	parts per million
PSD	Port of San Diego
psf	pounds per square foot
RCP	Reinforced concrete pipe
RCRA	Resource Conservation and Recovery Act
RWQCB	Regional Water Quality Control Board
SAP	Sample and Analysis Plan
APCD	San Diego County Air Pollution Control District
SLC	Screening Level Concentrations
SMW	State Mussel Watch
SQT	Sediment Quality Triad
TOC	Total Organic Carbon
TRA	Teledyne Ryan Aeronautical
TSCA	Toxic Substances Control Act
TTLCs	Total Threshold Limit Concentrations

EXECUTIVE SUMMARY

This document is the Basis of Design Report (BDR) which presents the preliminary design and cleanup plan for the remediation of polychlorinated biphenyl (PCB) containing sediments in Convair Lagoon, San Diego Bay, California. The BDR was prepared in response to Directive 2a of Addendum Number 4 to Cleanup and Abatement Order 86-92 issued by the California Regional Water Quality Control Board (RWQCB) on December 9, 1991. The proposed remediation option consists of a combination of dredging and containment and was selected because it has historical precedent, minimizes potential impacts to the Lagoon, and effectively isolates PCBs from the environment.

In the dredging and containment option, up to 13,300 cubic yards of sediment in Convair Lagoon would be hydraulically dredged and pumped directly into a Nearshore Containment Facility (NCF). The dredging volume reflects the quantity of sediment required to remove sediment which exceeds the 10 mg/kg PCB action level prescribed in the Order. The proposed NCF design and configuration would accommodate the volume of dredged material, provide sufficient volume for the settlement of dredged material, and effectively isolate PCBs from the environment due to the construction of impermeable walls and the installation of an impermeable surface liner.

Settling of dredged material within the NCF generates water which must be treated in a treatment facility. Treatment would occur at a rate compatible with the dredging and settling schedule, and three treatment processes in series would be used to remove PCBs and other contaminants from the water. Monitoring would be conducted in the sediment and water column during and immediately following the remediation to document the success of the dredging and to ensure continuing water quality. In addition, piezometers would also be installed to monitor the long-term performance of the NCF.

The remedial plan would comply with federal, state, and local regulatory statutes including Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, the Toxic Substances Control Act, the California Environmental Quality Act, the California Porter Cologne Water Quality Act, and other state and local requirements regarding hazardous substances, water and air quality, and mitigation. The proposed schedule for the remedial option satisfies the requirements listed in Directive 2 of

Addendum Number 4 to the Order. It is expected that the permitting process would be initiated in October 1, 1992 and continue through August 1, 1993, with construction beginning in the fall of 1993. Dredging operations could then be completed by June 1, 1994. Overall remediation, including installation of the final cover, could be accomplished by spring of 1995. It should be noted that the remedial activities are sequential and time periods in which they can occur are highly constrained. For example, all permitting must be complete before dredging and NCF construction can begin. Furthermore, dredging and construction can only occur from September through March, due to the habitat requirements by key biological species in the Lagoon. Thus if all permits are not issued by August 1,1993, the remediation schedule would necessarily be extended by one year. Therefore, each milestone set in the proposed schedule must be met in order to comply with the deadlines set forth in the Order. However, even if these deadlines are met, overall remediation will not be complete until Spring 1995. The Order should be modified accordingly.

The preliminary design and cleanup plan presented in the BDR satisfy the first milestone prescribed in the Order. Additional documents will follow including a monitoring program, a mitigation project description, a final design plan, a post-cleanup sampling plan and its results, and a monitoring plan for the NCF cover. Each of these documents will be prepared to ensure the successful remediation of Convair Lagoon.

1.0 INTRODUCTION

This Basis of Design Report (BDR) presents the preliminary design and cleanup plan for the remediation of polychlorinated biphenyl (PCB) containing sediments in Convair Lagoon, San Diego Bay, California. The document was prepared in response to Directive 2a of Addendum Number 4 to Cleanup and Abatement Order 86-92 issued by the California Regional Water Quality Control Board (RWQCB) on December 9, 1991. The BDR outlines the proposed remedial option consisting of a combination of dredging and containment. In this option, up to 13,300 cubic yards of sediment would be dredged and contained in a Nearshore Containment Facility (NCF), to effectively isolate the PCBs from the environment. The details of the dredging, NCF construction, and other components of the proposed cleanup plan are outlined in the BDR as shown below.

The BDR is comprised of seven major sections. Section 1 contains the site history and location of Convair Lagoon, as well as a summary of the selected cleanup plan. Section 2 contains a summary of the recent site investigations required to develop this plan, including field surveys and storm drain systems operation analysis. Section 3 contains the remedial design objectives, the sequence of cleanup activities, and the remedial design criteria for the following clean up activities: site mobilization, storm drain modifications, NCF configuration, sediment removal procedures, water treatment processes, site restoration strategy, operation and maintenance considerations, and a long-term monitoring program. In addition, several special technical considerations that will control implementation of cleanup activities are discussed in Section 3. Section 4 covers permit and regulatory compliance, right-of-way and access, health and safety, and community relations activities. Section 5 contains the project schedule. Section 6 contains a preliminary list of construction drawings and an outline of construction specifications anticipated for the final design. Section 7 contains the references. Supporting appendices, including engineering drawings, are also attached.

1.1 SITE LOCATION AND HISTORY

Convair Lagoon is a 10-acre embayment located northeast of Harbor Island and immediately west of the U.S. Coast Guard Station within northern San Diego Bay (Figure 1-1 and Appendix C drawings C1 and C2). General Dynamics, Port of San Diego,

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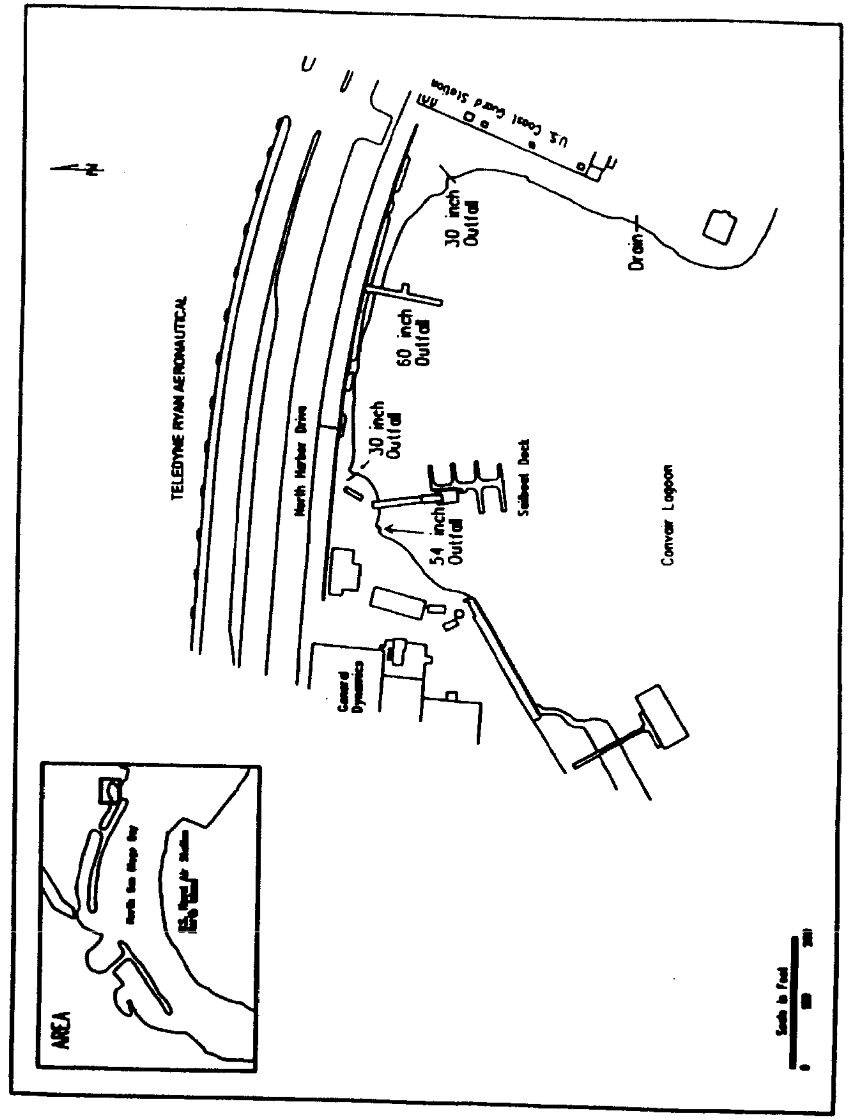

Figure 1-1. Location of Convair Lagoon.

Teledyne Ryan Aeronautical, and the Coast Guard maintain facilities in the area. In addition, San Diego International Airport (Lindbergh Field) is located within the upland. Harbor Drive, a busy six-lane thoroughfare, also fronts a portion of the shoreline. The Convair Sailing Club, associated with General Dynamics, maintains a pier/dock for small sailboats in the western portion of the Lagoon. Although technically available for public access, there are no readily available shore side access points to the Lagoon; thus, public shore use is limited. Several drains and pipes terminate in the Lagoon, including four large storm drains (a 54-inch drain to the west, a 60-inch drain off a central pier, a 30-inch drain from the airfield, and a 30-inch drain near Teledyne Ryan Aeronautical property). Smaller drains also originate from the Coast Guard Station and the General Dynamics facility.

The configuration of the Lagoon dates to the mid 1930s. It was created as part of an expansive dredge and fill project to develop the upland which currently encompasses Lindbergh Field, the U.S. Marine Corps Recruit Depot, the U.S. Naval Training Center, and the railroad yards. The adjoining U.S. Coast Guard Station, which predates this project, is also constructed on fill material.

Historically, the embayment was used as a dumping ground and retrieval area for derelict vessels (Barker and Davis 1986). Over time, as many as 500 vessels have been scuttled in the Lagoon. Currently, less than five remain. In the 1960s, Convair Lagoon was used by General Dynamics for aerospace and oceanographic research (SDUPD 1985).

Periodically, noticeable amounts of debris have been observed in a scattered pattern along the Lagoon shoreline, in the intertidal zone, and offshore to a distance of approximately 150 feet from the deteriorating retaining wall which borders the Lagoon. Such debris has included tires, boat wreckage, engine batteries, portable radios, cushions, plastic bags, miscellaneous plastic, bottles, cans, wood, and assorted rubbish (TRA 1989).

Under the Unified Port District of San Diego Master Plan, the present uses of Convair Lagoon are designated as commercial, recreation, and harbor services on the land, and craft storage and boat navigation in the water. The Lagoon supports a significant amount of small craft recreational boating traffic, especially on the weekends. Additionally, several vessels anchored in the vicinity of the Lagoon boundary appear to be used as permanent dwellings.

1.2 HISTORICAL PERSPECTIVE OF PCB CONTAMINATION IN CONVAIR LAGOON

In 1977, the RWQCB established the State Mussel Watch (SMW) program to monitor the coastal marine, bay, and estuarine water quality on a long-term basis. SMW used specimens of resident and transplanted mussels (*Mytilus edulus* and *Mytilus californianus*) to evaluate the bioaccumulation of trace metals and synthetic organic compounds. From 1979 to 1985, SMW conducted tissue analysis on Convair Lagoon mussels on five occasions, once during each of the fiscal years. The results of these analyses and additional sediment samples indicated the presence of PCB contamination in mussel tissue and sediment.

Subsequently, a two-phase sampling plan was performed under Cleanup and Abatement Order 86-92 to evaluate the extent of PCB contamination in Convair Lagoon. Phase I of the sampling plan was performed to characterize the vertical extent of PCB and heavy metal contamination in Convair Lagoon. The results of this sampling plan were submitted in a two-volume report entitled, "Characterization of the Vertical Extent of Contaminated Sediments in Convair Lagoon, San Diego Bay," which indicated that elevated PCB levels were present in nearshore areas primarily in the vicinity of the 60-inch storm drain.

Phase II sampling was intended to further characterize both the lateral and vertical extent of PCB contamination in Convair Lagoon. The final report describing the results of Phase II sampling was submitted to RWQCB on May 12, 1989, and a supplemental report was submitted on July 6, 1989. The Phase II sampling results showed overall PCB sediment concentrations ranging from below the limit of detection to 1,800 mg/kg dry weight. The arthimetic mean of the Phase II surface sample concentrations was 36 mg/kg. The Phase II results generally confirmed the Phase I results.

In order to evaluate potential remedial levels for the contaminated sediments, a March 1990 technical report entitled, "Recommendations for PCB Action Levels in Sediments: Convair Lagoon, San Diego Bay, March 1990" was prepared and submitted to the RWQCB. This report contains a range of potential PCB action levels developed for the protection of aquatic biota in contact with sediments. Based on the evaluation of several different criteria, the report recommended an action level of 10 mg/kg total PCBs (dry weight) in the Lagoon portion of San Diego Bay.

On January 25, 1991, a report was submitted to the RWQCB entitled, "Engineering Evaluation Report, Sediment Cleanup Options: Convair Lagoon" (EER). The EER was developed in response to a request from the RWQCB for an engineering analysis to remediate the Lagoon in San Diego Bay (Coe 1990). Pursuant to that request, the report presented information on the feasibility and order-of-magnitude cost of three selected remedial action alternatives for cleanup of PCB-containing sediments in the Lagoon portion of San Diego Bay: removal and disposal, nonremoval (isolated by capping), and a combination of removal and nearshore containment.

Based on the evaluation in the EER, a combination of dredging/nearshore containment was found to be the most cost-effective approach to effectively isolate the PCB-containing sediment. The combination of dredging with nearshore containment has been demonstrated as an effective remedial approach for PCB-containing sediment by EPA and the ACOE during a pilot scale test conducted for the New Bedford Harbor Superfund site. The results of this pilot study formed the basis for EPA's recent decision to propose dredging with nearshore containment to remediate 300,000 cubic yards of PCB-containing sediment from the New Bedford site (EPA 1992).

In addition, this approach has the distinct advantage of minimizing potential impacts. These impacts include both the area to be isolated within San Diego Bay and the modifications to the existing storm drain network. The EER also demonstrated diminishing returns from sediment PCB action levels below approximately 10 mg/kg. The potential volume of sediment that would have to be removed at action levels below this concentration increases dramatically in a non-linear fashion (Figure 1-2a). While the removal volumes would increase dramatically, the associated percentage of PCB removal from the Lagoon would only increase by negligible quantities (Figure 1-2b). Furthermore, the costs associated with the increased removal volumes would increase in direct proportion to the dramatic increase in volume. Therefore, cleanup to levels below approximately 10 mg/kg range would likely have minimal effect on the lagoon, yet have dramatic costs impacts.

The RWQCB adopted Addendum Number 4 to the Order on December 9, 1991. In the addendum, the RWQCB established a PCB action level of 10 mg/kg PCBs (dry weight) in the Convair Lagoon. Addendum Number 4 specifies a specific time schedule for the lagoon remediation. Details of this schedule, its requirements, and their location within the BDR are given in Section 1.3.

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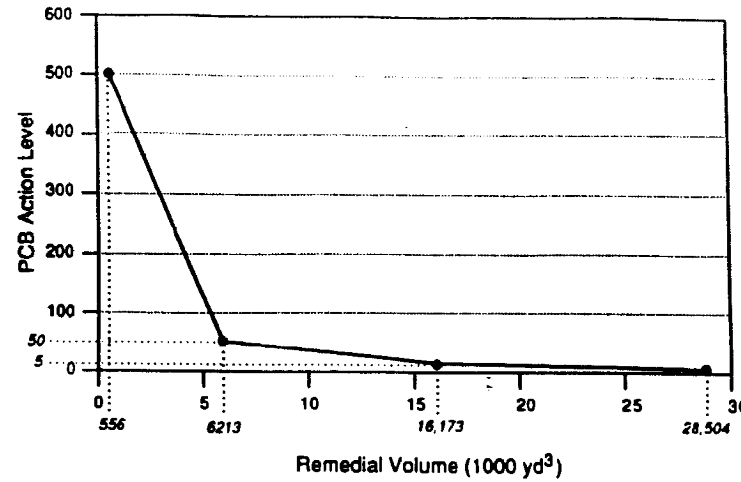

Figure 1-2a. PCB action level/remedial volume relationship for Convair Lagoon, San Diego Bay.

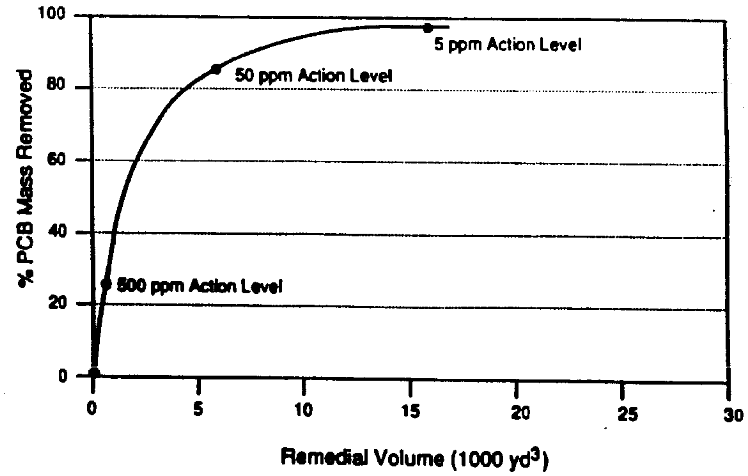

Figure 1-2b. PCB mass removed/remedial volume relationship for Convair Lagoon, San Diego Bay.

It should be noted that the contamination detected in Convair Lagoon is historical in nature and is the result of over 40 years of industrial activity in and around the Lagoon. In particular, discharges through the 60-inch storm drain and activities in Convair Lagoon in the vicinity of the storm drain are largely responsible for the existing contamination. While Teledyne Ryan Aeronautical is the only party named in the Cleanup and Abatement Order, other persons have also contributed to the contamination in the lagoon. Teledyne Ryan Aeronautical has attempted to obtain the voluntary cooperation of other parties whose activities have contributed to the contamination in the lagoon, and will continue to do so. However, a ruling may be sought from the Regional Board to add those parties to the Cleanup and Abatement Order.

1.3 COMPONENTS OF THE PROPOSED CLEANUP PLAN

This section identifies the key components of the proposed cleanup plan for Convair Lagoon required to comply with Directives 1 and 2 of Addendum Number 4 to the Cleanup and Abatement Order Number 86-92 (Coe 1991). These key components include: design (Sections 3 and 4), permitting (Section 4), construction (Section 6 and Appendix C), environmental sampling and monitoring (Sections 3.10 and 3.11), mitigation (Section 4.2) and overall schedule (Section 5.2). Directive 2, which contains the schedule, also includes several specified deliverables as shown in Table 1-1.

It is important to note that many of the deliverables specified in Table 1-1 are dependent upon a preceding activity. Therefore, the schedule cannot be satisfied unless all of the milestones are met, including timely agency review. Furthermore, the deadlines in the schedule are extremely tight and if extensive response to public comments or revisions of permit applications are required, the deadlines given in the order will have to be revised.

Table 1-1. Components of Directive 2, Addendum Number 4 to Administrative Order 86-92.

Requirement	Description	Date
2a	Submit preliminary plan (BDR) for cleanup of Convair Lagoon.	June 1, 1992
2b	Submit a bioaccumulation monitoring program for PCBs in Convair Lagoon.	July 1, 1992
2c	Submit all necessary permit application and government approvals.	October 1, 1992
2d	Submit a description and a schedule of the mitigation project.	October 1, 1992
2e	Submit a final design plan for the cleanup of Convair Lagoon, subject to the approval of the RWQCB.	March 1, 1993
2f	Complete bidding and award construction contract for the approved cleanup project.	September 1, 1993
2g	Submit a post-cleanup plan to verify attainment of the action level.	November 1, 1993
2h	Complete the approved cleanup plan to the prescribed action level.	June 1, 1994
2i	Submit the results of the post-sampling plan.	August 1, 1994
2j	Submit a plan for monitoring the long-term integrity of the cap.	August 1, 1994

2.0 SUMMARY OF SITE INVESTIGATIONS

To develop a sound conceptual engineering design it was necessary to identify a feasible approach for cleanup activities and to quantitatively and qualitatively define the work to be done. To this end, several field surveys were conducted and additional data were obtained. These activities are listed below and are described in greater detail in Sections 2.1, 2.2, 2.3, and 2.4, respectively. Section 2.5 provides a description of the additional information and data that would be required to complete the final design. While a conceptual cleanup plan was developed in the EER, additional information was required to refine the approach and quantify the work elements.

- Perform field surveys of:
  - Pipe outfalls and debris around and in the Lagoon
  - Bathymetry in the Lagoon
  - Landside topography surrounding the Lagoon
  - Sediment contamination in the vicinity of the 60-inch outfall

- Obtain available details of storm drains entering the Lagoon, and perform hydraulic analysis of present conditions and potential modifications to accommodate various potential configurations for the NCF.

- Obtain existing geotechnical data relevant to both the structural design of the NCF and dredging performance.

- Obtain wind, wave, and tide data relevant to the overall layout and structural design of the NCF.

2.1 FIELD SURVEYS

This section describes the data collection and analysis procedures together with results from the marine field surveys conducted at Convair Lagoon from February 2 to February 7, 1992. The purpose of these surveys was to locate pipes and debris in the Lagoon,

produce bathymetric and landside topographic maps, and further define PCB contamination of the sediment.

2.1.1 Pipe and Debris Location Survey

Since pipes and other discrete objects could adversely affect dredging and construction operations, surveys were conducted to identify and map important surficial and subsurface features in the seabed. For this purpose, three field surveys were conducted including a perimeter survey, a surface debris survey using side-scanning sonar, and a subbottom profiling survey. Positioning for the surveys was accomplished by on-site navigation. The procedures used and the results obtained from these three surveys are discussed in greater detail below. In addition, a brief document search was conducted to identify and obtain any drawings, maps, and records which might describe the existence and location of pipes, outfalls, and debris in the Lagoon.

2.1.1.1 On-Site Navigation

Each of the pipe and debris location surveys required accurate positioning data in order to precisely fix sampling locations. These horizontal positioning data were obtained using a laser navigation system. This system uses a laser, placed onshore at a station with known state plane coordinates, to track the survey vessel. The range-azimuth data obtained during tracking were telemetered to the vessel, and displayed and stored on a portable computer at 1-second intervals.

The geodetic coordinates for the laser track station and the backsite were obtained from Randall Ashley of Pelagos, San Diego, California. Position data for several distant reference fixes were provided by the Port of San Diego. Calibration procedures were performed to assess the stability and repeatability of the range-azimuth data. The positioning data were plotted on a large-scale map. After editing and correcting the position information, a trackline data file was generated and used to produce tracking maps for analysis in all the surveys conducted.

The survey area was approximately 600 feet in the north-south direction and 700 feet in the east-west direction. In the general survey pattern, primary survey transects were run in the north-south direction as shown in Figure 2-1. Data validation lines were run in the east-west direction.

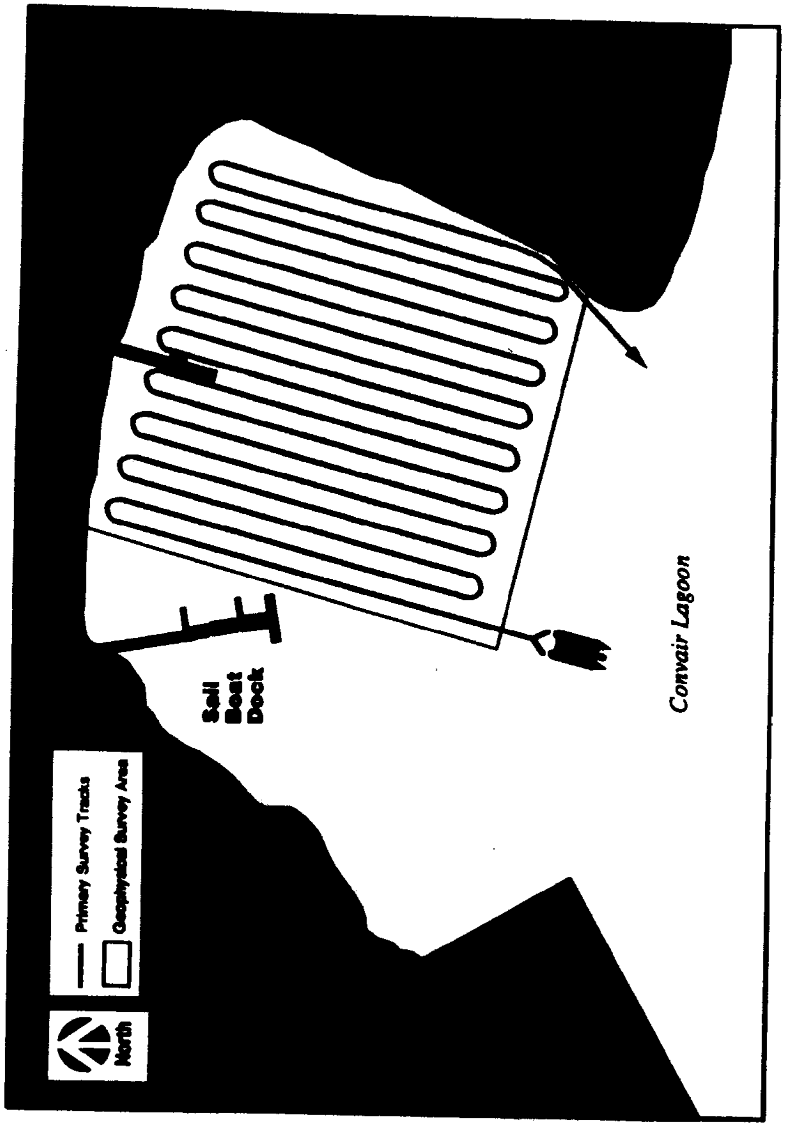

Figure 2-1. Geophysical survey area, showing tracking for bathymetric and sidescan sonar surveys.

2.1.1.2 Perimeter Survey

To locate small discharge points not identified in the literature, a perimeter survey was performed along the shore and shallow waters of the Lagoon. Accurate coordinates were recorded for all discharge pipes, outfalls, and prominent shoreline features using a shore-based laser positioning system. These coordinates were checked against existing maps to produce an accurate perimeter map of the Lagoon that includes all known pipes and outfalls. Table 2-1 gives the locations of all identified pipes and outfalls.

2.1.1.3 Sidescan Survey for Surface Debris

A sidescan sonar survey was conducted to locate and identify surface debris. Certain objects located within an area to be dredged would be relocated within the footprint of the NCF prior to dredging. Survey lines were run on a line spacing of 80 feet in the north-south direction and 100 feet in the east-west direction. Use of a swath width (total distance left and right of the trackline) of 150 feet provided over 50 percent of coverage overlap of the seabed.

A detailed acoustic image of the seabed was obtained and displayed on a variable density recorder set to print a map of the surficial characteristics of the seafloor (Figure 2-2). Variations in reflection characteristics, as well as the presence of discrete targets identified on the sonograms, were plotted on overlays of the trackline maps. These variations and discrete reflections were indicative of changes in sediment type, the presence of eelgrass (*Zostera marina*) or other macrophytes, and the presence of artifacts such as sunken vessels and other discarded debris.

As shown in Figure 2-2, the most pronounced reflection pattern on the seabed was that produced by eelgrass and macroalgae (*Sargassum muttcum*). The eelgrass beds were located in the nearshore area adjacent to the outfall, and the macroalgae were found primarily in three small areas near the southeast corner of the site. The macroalgae protrude 2 to 3 feet above the seabed, whereas near the outfall, eelgrass has very little relief.

A number of discrete targets were identified and mapped. Some of these, such as the two sunken vessels, were marked with buoys. Some of the discrete targets were interpreted to be anchors from boats moored in the Lagoon. Other targets are believed to

Table 2-1. Size, description, and coordinates of identified pipes and outfalls.

Size (inches)	Description	Location (state plane coordinates, x, y)
3	Metal pipe, extending from U.S.C.G.	1712690, 205134
12	Plastic pipe, extending from U.S.C.G.	1712830, 205418
30	Concrete drain pipe, northeast corner of lagoon	1712820, 205606
60	Concrete square drain outfall	1712617, 205551
30	Concrete drain pipe, east of sailboat dock	1712366, 205697
54	Concrete drain pipe, extending from General Dynamics	1712274, 205638
2	Metal pipe, at fence near boat dock	1712426, 205701

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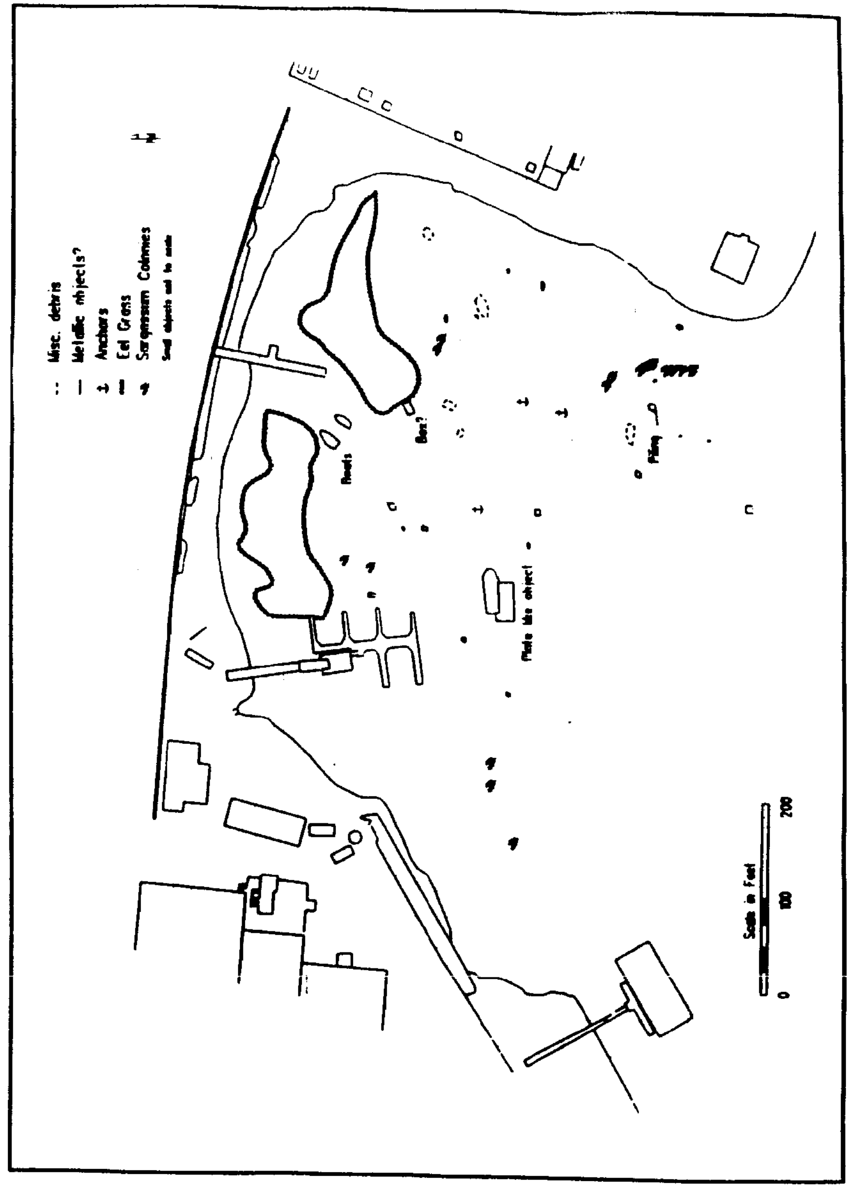

Figure 2-2. Map showing surficial seafloor features in Convair Lagoon.

be metallic objects and miscellaneous debris discarded from boats in the Lagoon. It was not possible to identify many of these objects due to their small size (< 1 foot in cross-section). The maximum height of these discrete objects was 2 feet. An unusual, large, rectangular feature with 1 to 2 feet of relief was identified and mapped in the southwest area of the site. Although this object has not been positively identified, it appears to be a metallic or concrete plate and would not affect the dredging operation because it is located outside the dredging area.

2.1.1.4 Subbottom Profiling Survey

This survey was conducted to locate and identify any buried objects in the Convair Lagoon. The primary survey lines in the subbottom profile survey were run at a 20-foot interval and cross lines were run at 100-foot intervals. In addition, a nearshore profile was made along the entire perimeter of the site.

Locating and mapping subsurface features was accomplished with a 3.5 kHz subbottom profiler. Operationally, this system transmitted an acoustic pulse that traveled through the water column and the sediments below the seafloor. At each interface that represented a change in density (e.g., the water-seabed interface or the interface between subsurface sediments and buried objects), some of the transmitted energy was reflected back toward the water surface. These acoustic reflections were received by the transmitting transducer, converted to electrical impulses, and displayed as a representative profile or cross-section of the seabed, underlying sediments, and buried objects along the survey trackline.

The interpretation of the subsurface reflection data is based on a procedure known as seismic facies analysis. The term seismic facies refers to a sedimentary unit, or reflector, that produces an identifiable and often unique reflection pattern. Common buried objects, particularly pipes and tanks, produce a cone-shaped signature on the reflection record that is easily identified. Using this procedure, significant subsurface reflectors (e.g., sedimentary horizons) and discrete targets were plotted on an overlay of the trackline map (Figure 2-3).

The subsurface reflection data suggest that most of the seabed is covered with fine-grained sediments, possibly silt or clayey silt. In the central portion of the survey area, an acoustic boundary (located 2 to 3 feet below the seabed) was identified and

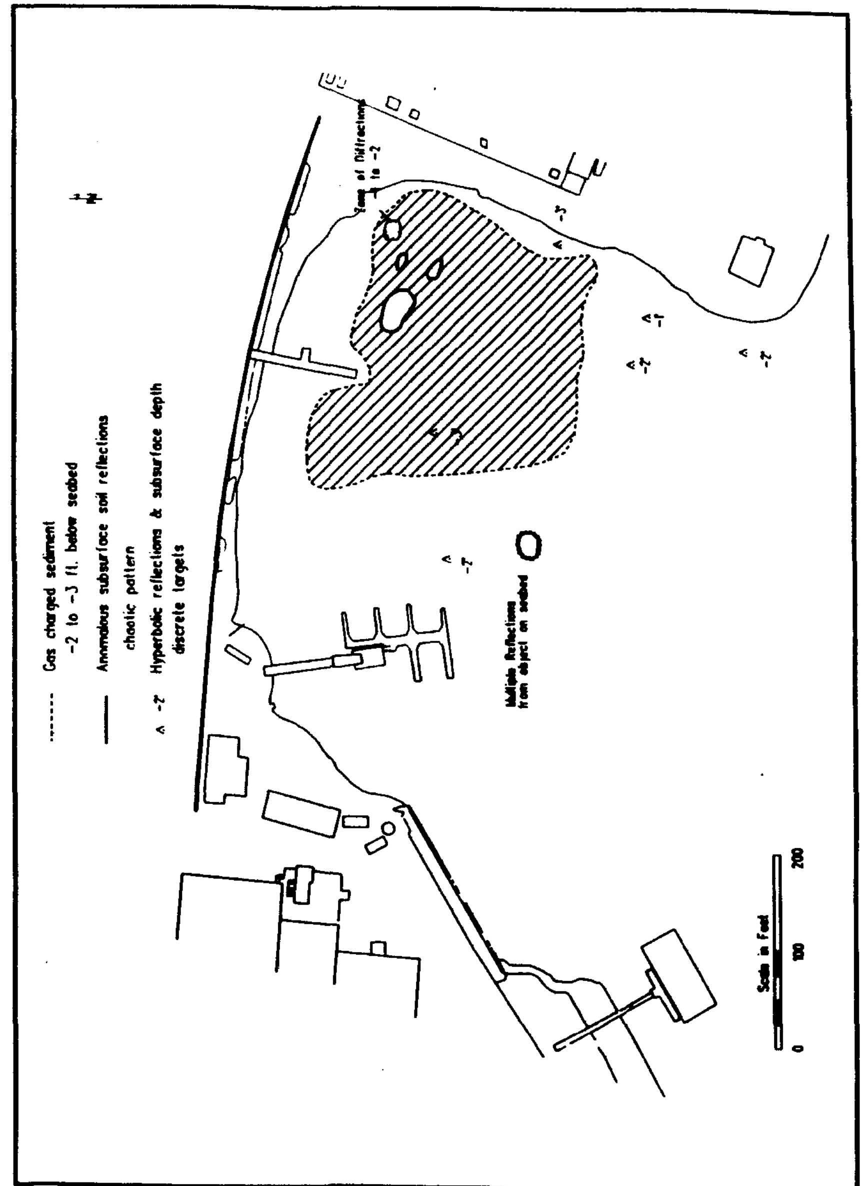

Figure 2-3. Map showing subsurface features in Convair Lagoon

mapped. This boundary is interpreted to represent the upper surface of gas-charged sediments. The presence of shallow bedrock or biogenic gas in the sediments, both of which represent a significant change in substrate density, creates an acoustic boundary that results in poor subsurface penetration. Therefore, any objects below this layer would not have been detected.

In the offshore area to the south, the sediments appear to be fine- to medium-grained and are in excess of 30 feet in thickness. Several subsurface targets, interpreted to be discrete objects, were identified on the subbottom profile data. There was no evidence on adjacent tracklines of continuity between these targets. Thus, they do not appear to be buried pipes.

The results of the pipe and debris location survey indicate that very little surface or submerged debris is present which would impede dredging and construction activities. The sunken vessels, anchors, and other discrete objects which were located in the subbottom profiling survey and are in the proposed dredging area must be removed before remediation activities can begin. The estimated number of objects to be relocated is less than six.

2.1.2 Bathymetric Survey

The bathymetric survey was conducted to provide a detailed bathymetric map of the Convair Lagoon seabed. This map was subsequently used in conjunction with the sediment PCB data to develop engineering cross-sections for the areas to be dredged. Although initial dredging cross-sections had been developed in the EIR, the bathymetric survey was required to calculate accurate cross-sections for dredging volumes and to refine the dredging plan.

The data were obtained with an instrument that provided an analog display of the seabed using procedures similar to those used to map the Lagoon subsurface features. Quality control of the bathymetric data was maintained by conducting calibrations twice a day. Changes in water elevation due to tides were monitored with a tide staff and two internally recording water level gauges. The area and the primary survey transects for the bathymetric survey was the same as those in the pipe and debris survey.

The analog records obtained by the bathymetric survey were digitized at a fixed 10-second interval, corrected for tidal variations, and entered into a Geographical Information System (GIS). Anomalous variations that occurred in the seabed, such as those due to eelgrass or other plants, sunken vessels, or unidentified objects, were noted but not digitized.

Based on the interpretation of these data, the GIS produced 2- and 3-dimensional bathymetric contour maps of Convair Lagoon (Figures 2-4 and 2-5). Water depths in the study area varied from 0 to 11 feet. A prominent ridge, 2 to 4 feet in height, was located near the center of the site and extends offshore from the 60-inch outfall. Presumably, this ridge-like feature is due to the discharge of sediments from the outfall. Other than this feature, the seabed gently slopes offshore and has no unusual bathymetric variations.

2.1.3 Landside Topographic Survey

A landside topographic survey was conducted to provide topographic contours between the Lagoon shoreline and North Harbor Drive, and to identify invert elevations of drainline outfalls and catch basins. County and city offices were contacted to gather detailed information on the storm drainage system's catchment area.

A detailed topographic map was obtained from the San Diego Unified Port District. This map was updated, digitized into the GIS, and then merged with the bathymetric data set to produce a map with a continuous series of landside and marine elevation contours (Figure 2-4). The landside and marine topographic information were integrated based on the zero shoreline elevation contour and the common coordinate grid system.

2.1.4 Sediment Evaluation

To refine the nature and extent of PCB-containing sediment adjacent to the 60-inch outfall, additional sediment cores were collected and analyzed (Figure 2-6). These data were used in combination with the sediment data presented in the EIR to refine the vertical and horizontal extent of sediment PCB contamination in order to estimate the volume of sediment to be dredged.

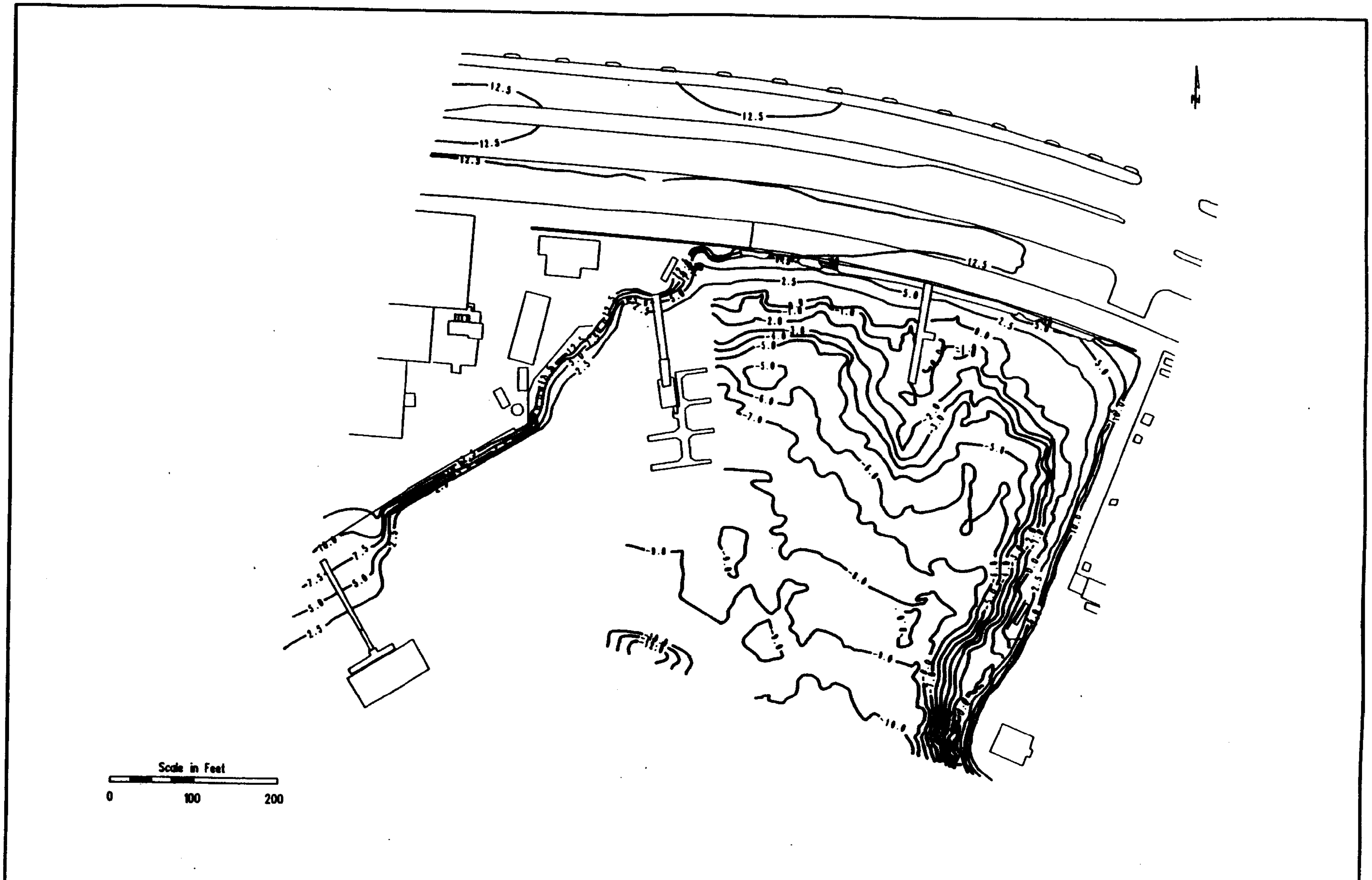

Figure [illegible] Two-dimensional bathymetric contour plot of Convair Lagoon. Elevations are relative to mean lower low water.

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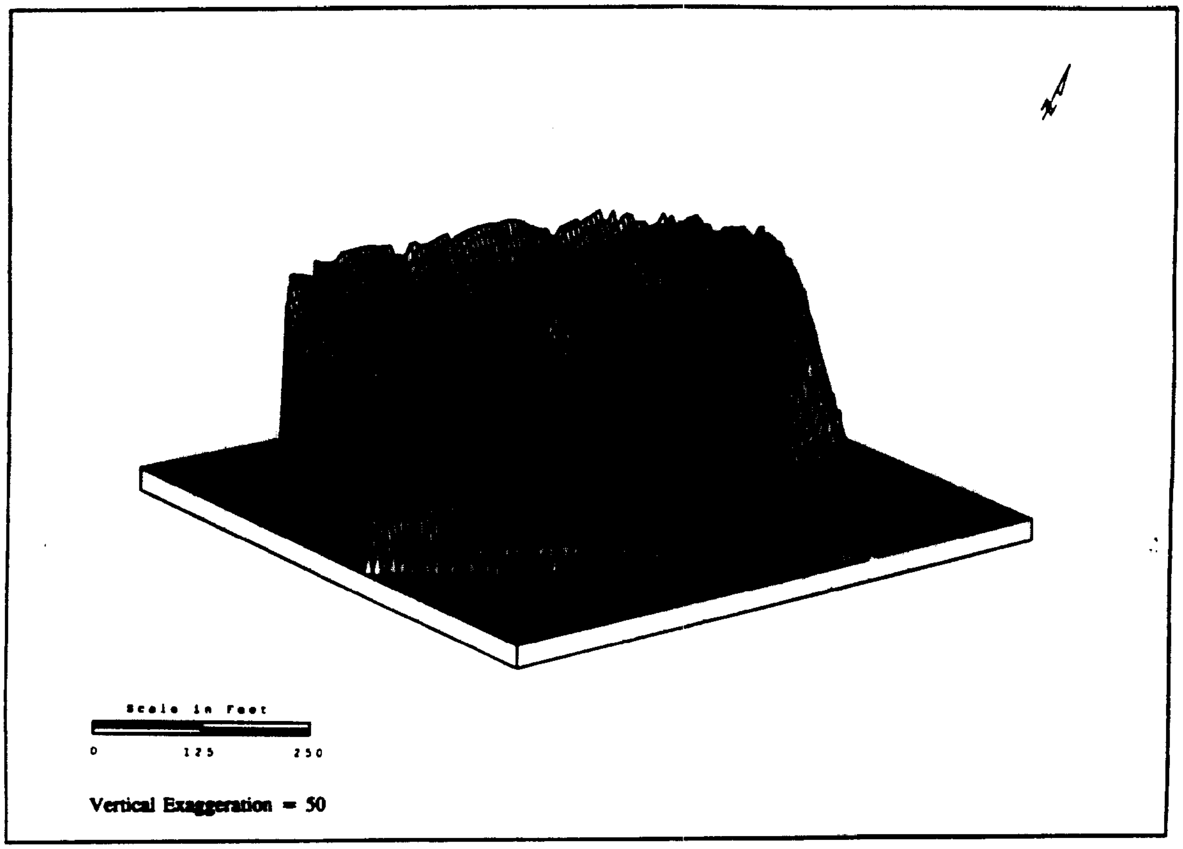

Figure 2-5. Three-dimensional bathymetric contour plot of Convair Lagoon (vertical exaggeration).

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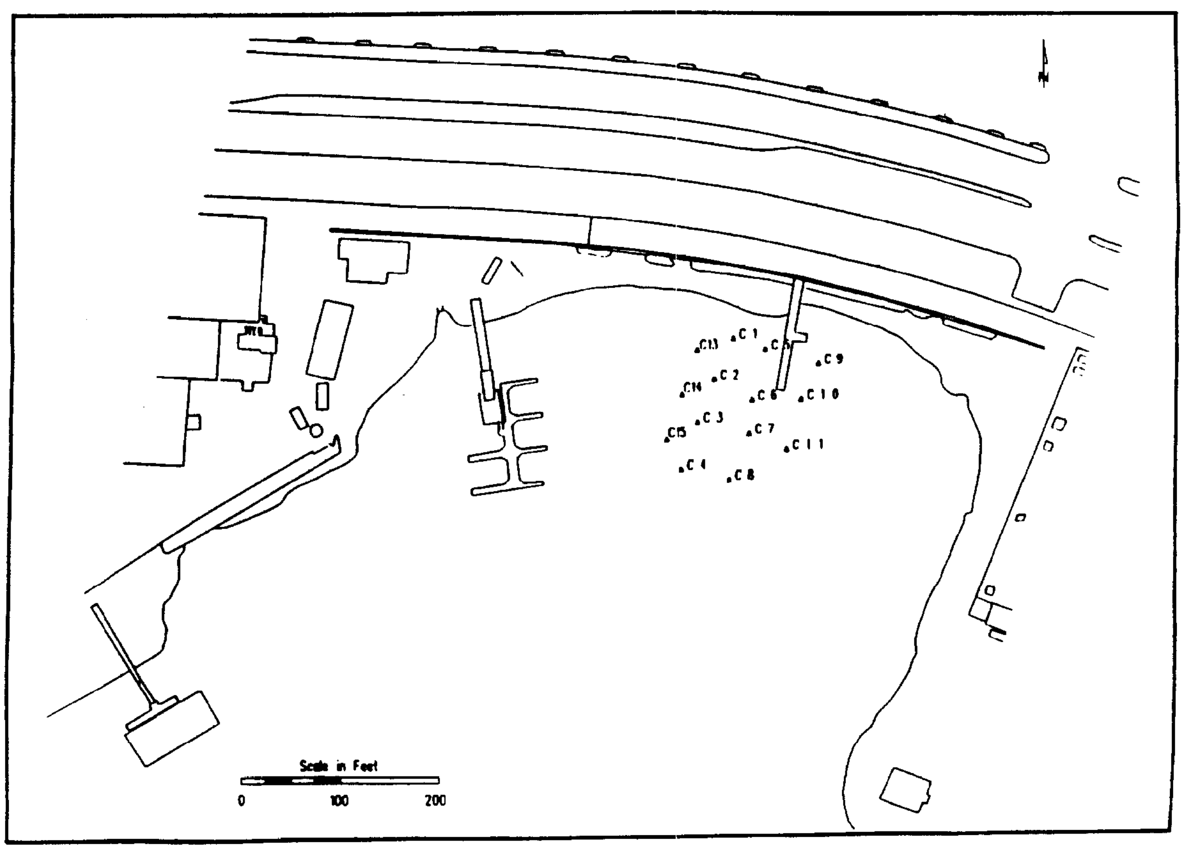

Figure 2-6. Map of sediment core sampling stations in Convair Lagoon.

Fourteen sediment cores were collected in the Lagoon using a vibra-corer sampler. The The sample locations were spaced in a pattern that provided a finer scale grid of the area of highest contamination identified in the Phase II sampling investigation (Figure 2-6). This facilitated the use of both data sets in establishing the nature and extent of contamination. Core depths ranged from 8 to 16 feet depending upon the depth of contamination. PCB analysis was performed on homogenized 1-foot sections of the core to an average depth of 8 feet using EPA method 8080 (gas chromatography with electron capture detector). In addition, 1-foot sections for core C10 were analyzed from 11 to 16 feet to confirm the absence of PCBs in the underlying sediment.

Based on the appearance of the cores, three general horizons were identified: 0 to 4 feet, 4 to 7 feet, and greater than 7 feet. The 0 to 4-foot section was black with an odor of oil and hydrogen sulfide. This section typically consisted of unconsolidated fine-grained sediments with visible oily bands from 1 to 6 inches. Several thin layers, 1 to 3 mm in depth, of a grayish, grease-like material were also found throughout this section. The 4 to 7-foot section was greenish-gray to black with an odor of oil and hydrogen sulfide. These sediments were coarser and more compact than the 0 to 4-foot section. This section also contained several oily bands of varying thicknesses (1 to 6 inches). The 7-foot and deeper sediments were greenish-gray and contained increasing amounts of sand and shells. Several cores had visible oil in the upper 1 foot of this section. Photographs of this pattern are shown in Figures 2-7a and 2-7b. Based on the analyses described above, it was apparent that PCB concentrations greater than the action level did not exceed deeper than 8 feet.

These results confirm the data from the Phase II investigation (TRA 1989) by indicating a general trend of higher PCB concentrations in the vicinity of the 60-inch storm drain outfall. Within this area of contamination, the new (and previous) sampling results indicated no obvious horizontal or vertical concentration gradients. Instead, the contaminant distribution pattern was patchy in the vicinity of the 60-inch storm drain. The highest PCB concentrations were generally located 3 to 5 feet deep; very little sediment containing PCBs was found below 7 feet. The data indicate that PCB concentrations vary in the Lagoon, and are primarily confined to the upper northeast quadrant of the Lagoon in the vicinity of the 60-inch storm drain.

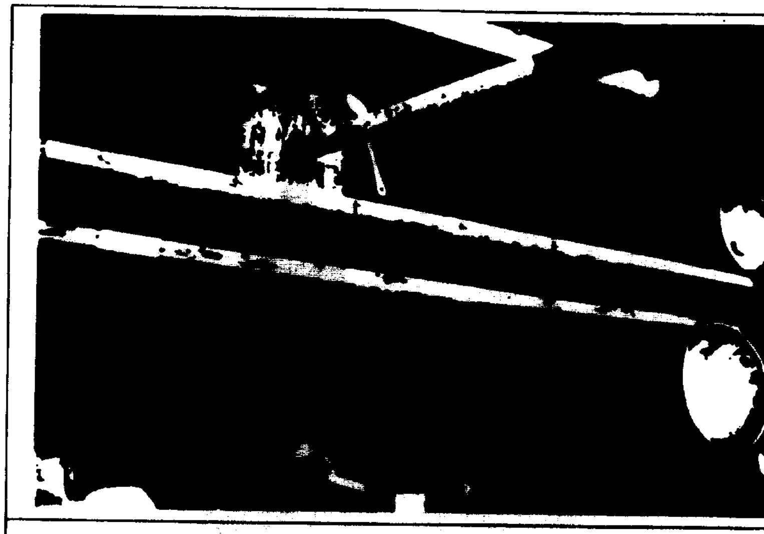

Figure 2-7a. Photograph of sediment core C-9, collected in Convair Lagoon, showing typical appearance of the upper 0-7ft section. This section tends to be black, unconsolidated fine material containing bands of oily material.

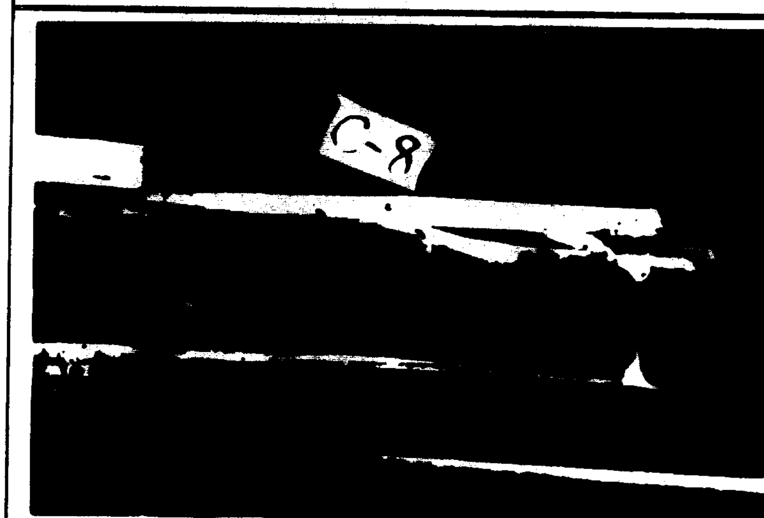

Figure 2-7b. Photograph of sediment core C-8, collected in Convair Lagoon, showing typical appearance of the deep 7-15ft section. This section is generally coarse, gray consolidated sands mixed with shells.

2.2 STORM DRAIN SYSTEM OPERATIONS

The construction of a NCF in Convair Lagoon would necessarily cover some of the storm drain outlets located in the Lagoon. In order to evaluate which modifications would be necessary to avoid drainage problems due to the coverage of these outlets, a preliminary analysis was conducted to identify all existing drains and to assess potential impacts. This section presents the results of this analysis.

2.2.1 Existing Storm Drain System

There are several storm drain outlets on the Lagoon shore (Figure 1-1). From west to east at point of discharge into the Lagoon, the four largest drains are:

- A 54-inch reinforced concrete pipe lying west of the Convair Sailing Club dock. This pipe drains the west half of the TRA complex, U.S. Air, and the central part of the runway area of Lindbergh Field. No date was given for the installation of this pipe.

- A 30-inch reinforced concrete pipe (30west), drains a portion of the parking area outside of the TRA complex and the adjacent section of Harbor Drive. This pipe was installed prior to 1942.

- A 60-inch reinforced concrete pipe on the north shore of the Lagoon, contained within a concrete dock which projects further into the Lagoon than does the conduit. This pipe was installed circa 1935 by the ACOE in association with the dredge and fill project which created most of the surrounding land. Its layout has been studied extensively, and its length has been estimated at approximately 1.75 miles to Witherby Street, and its catchment area at several square miles. This pipe receives discharge from several sources: Lindbergh Field and General Dynamics complex drains; Teledyne Ryan Aeronautical (TRA) facility drains; drains from the Pacific Highway, Atchison, Topeka, and Santa Fe railroad yards; and drains from a portion of the Mission Hills residential district beyond the rail yards.

- A 30-inch outlet located in the northeast corner of the Lagoon (30east) drains the east end of the TRA complex and adjacent portions of Harbor Drive, and was in place by 1942.

2.2.2 Potential Modifications to the Storm Drain System

The proposed location of the NCF in the northeast corner of the Lagoon would not cover the 54-inch, the western 30-inch, or the 60-inch drains (drawing C-11 in Appendix C). However, the proposed location would cover the present location of the eastern 30-inch drain outlet (30east) and the smaller Coast Guard drains. Therefore, the impacts of potential modifications to these drains were evaluated.

The location was selected so that modifications to the 60-inch drain would not be required for the following reasons. At higher high tide there is only a 3-foot difference between the water level in the Lagoon and the grade around the plant. The highest tide reaches an elevation of 8.0 feet, which is close to the elevations of adjacent catch basin covers, which range from 10.2 to 12.3 feet. According to the City Engineer's notes (City Drawing 17-D-46, last revised 1938), the 60-inch storm drain pipe carries 461.3 cubic feet per second by design but lies at a very flat slope of 0.07 percent. To carry such a flow, the hydraulic grade line slope of this pipe should be at least 1.7 percent (i.e., 17 feet per 1,000 feet of pipe). Therefore, the 60-inch pipe is already significantly underdesigned for current capacities, and any modification to its alignment or tie-in with the 30east pipe would likely result in upstream flooding. Thus, the 60-inch pipe outlet should not be covered by the NCF footprint.

With respect to the 30east pipe, a brief on-site investigation was conducted to determine modification options. Estimates of flows and profiles for the 30-inch drain, catch basin/manhole surface data, and invert elevation data were obtained. Information contained in several reports, including the topographical survey, indicates that the harbor Drive area is quite flat and that the tops of manholes/catch basins are at about the same elevation. Two alternatives for the 30east drain are discussed below.

In the first alternative, the 30east drain is extended southwest through the NCF to a new outfall location beyond the NCF bulkhead wall. The extension would continue in the same direction as the existing pipe (no bends), would be larger than the existing pipe to reduce backpressure effects due to its greater length, and would be pile-supported across the NCF to avoid settlement damage to the pipe extension. In the second alternative, the 30east drain pipe would be terminated in a manhole at a point landward of the beach and rerouted to the west beyond the NCF and then south to the Lagoon next to the 60-inch outfall. Two new manholes would be required and two changes in direction would be introduced. Hydraulic analysis indicates that the second alternative is the best option for the 30east pipe (See Appendix B). This option is discussed in greater detail in Section 3.4, Storm Drain System Modifications.

The Coast Guard drains that would be covered by the NCF would be redirected to connect with the new 30east configuration.

2.3 GEOTECHNICAL AND GEOLOGIC DESCRIPTION

Available geotechnical and geologic data were compiled to develop a preliminary design of the NCF and to assess the stability of the proposed structure and the surrounding area. A summary of this information is provided in this section.

Convair Lagoon is located along the northern edge of what was previously a marshy part of San Diego Bay. Present topography adjacent to the Lagoon is nearly flat due to the placement of hydraulic fill over recent, poorly consolidated bay mud deposits and the subsequent importation of finish-grade soil materials. Underlying the bay mud is a more consolidated sequence of terrace deposits consisting of sand, silt, and clay. The site is situated in a seismically active area within the Rose Canyon Fault Zone. Geotechnical aspects are discussed in some detail below.

2.3.1 Stratigraphic Units

Descriptions of the materials adjacent to and underlying the Lagoon have been obtained from subsurface investigation reports for several small areas located on the TRA plant site north of the Convair Lagoon (Woodward-Clyde Consultants 1980). Three borings were drilled at TRA Building 120. A summary of the results is given below and a representative boring log is shown in Figure 2-8. This information is confirmed by a subsurface investigation report prepared by Geocon Incorporated which investigated the Harbor Island Hotel site southwest of Convair Lagoon (Geocon 1990).

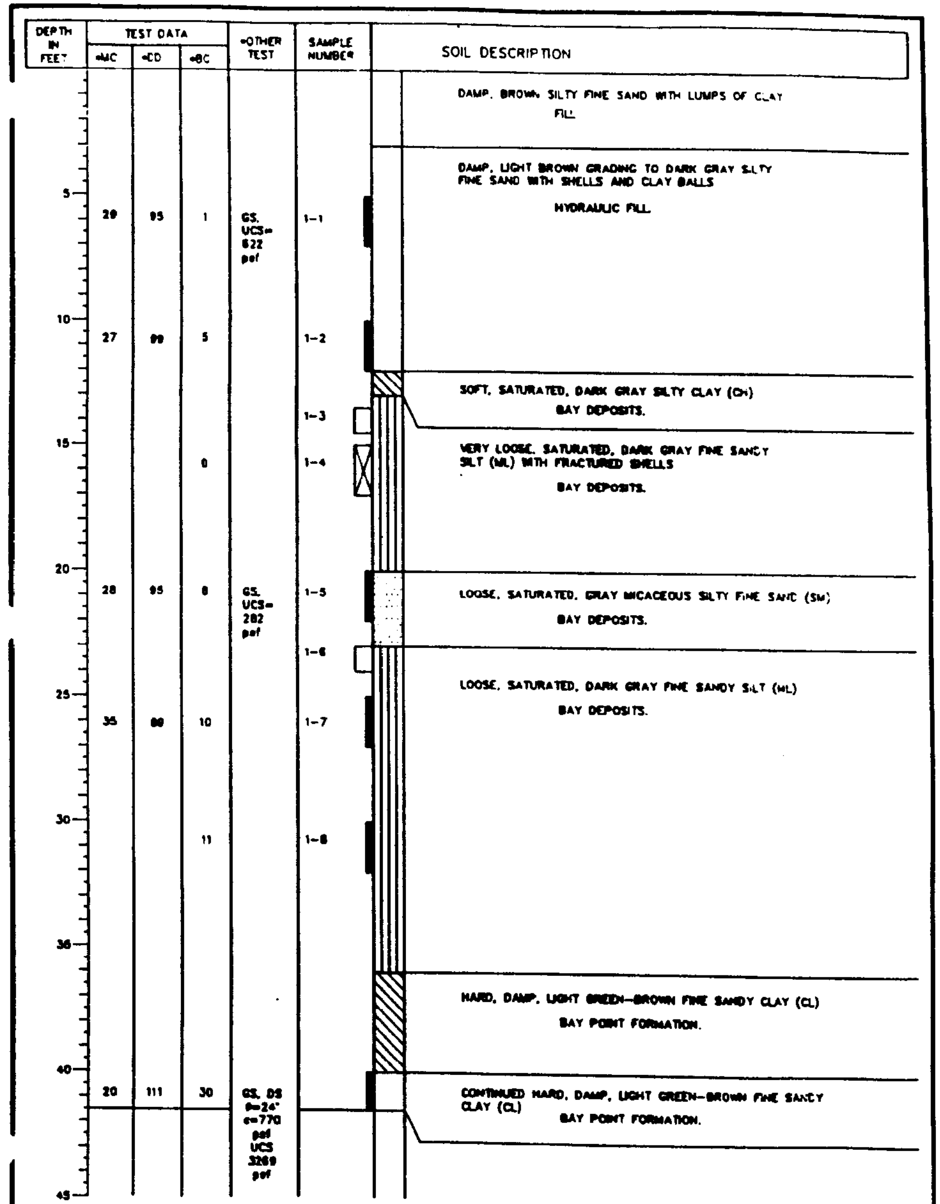

Figure 2-8. Representative soil boring log taken on TRA property near Harbor Drive (Woodward-Clyde Consultants 1980.)

Hydraulic Fill. These materials, dredged from the San Diego Bay, are approximately 10 to 12 feet thick and consist of loose to slightly dense, light-brown to dark-gray, silty fine sand with abundant shell fragments and some clay balls. Occasional thin layers or lenses of fine sandy silt are also present. The bottom of the hydraulic fill appears to be located within 1 or 2 feet below elevation 0 (Port of San Diego Datum), overlying the undisturbed bay mud sediments. Unit dry weight of the hydraulic fill ranges from approximately 95 to 103 pounds per cubic foot (pcf). These materials are essentially saturated below the mean high water elevation of about 5 feet.

Bay Mud Alluvium. Along the shoreline and inland, the Holocene bay deposits are approximately 25 feet thick and consist of loose to medium dense layers of fine sand and silty fine sand. Soft to slightly stiff layers of fine sandy silt and silty clay are also present. Colors range from dark-brown to brownish-gray, gray to dark-gray, and black (due to a high organic silt content). The thickness of this unit decreases proportionately with increasing water depth offshore. Dry unit weights of these saturated materials vary from about 88 to 96 pcf with an angle of internal friction of about 20 degrees, and an apparent cohesion ranging from zero to approximately 100 to 150 pounds per square foot (psf).

Terrace Deposits. Late Quaternary deposits (tentatively correlated with the Bay Point Formation) were encountered at depths ranging from 36 to 38 feet (-24 to -26 feet, PSD Datum) beneath TRA Building 120. These deposits are believed to be at about the same subsurface elevation beneath the Lagoon. Although the total thickness of these deposits in the site's vicinity is not known, they extend beyond the explored depth of 42.5 feet at TRA Building 120 and consist of hard, greenish-brown, fine sandy clay and very dense, brown, clayey sand with fine gravel. Dry density of a single sample was 111 pcf. The results from direct shear tests on the sample indicate a friction angle of 24 degrees and an apparent cohesion of 770 psf. Unconfined compressive strength was measured at approximately 3,270 psf.

2.3.2 Geologic Considerations

The predominant geologic considerations associated with constructing a confined disposal facility in the Lagoon are related to potential seismic activity in the Rose Canyon Fault Zone. These considerations include faulting, seismicity, liquefaction, and subsidence.

Faulting and Seismicity. The Rose Canyon Fault Zone is part of a major north-northwest trending fault system passing through the San Diego Bay area. This zone is more than 40 miles long, including the Point Loma Fault Zone, and is more than 5 miles wide in the San Diego Bay area. One fault strand within the zone, the Spanish Bight Fault, has been inferred to pass by the Lagoon within a few hundred yards to the west. Since total offsets in Quaternary deposits within the Point Loma Fault Zone are reported to be nearly 500 feet, the Rose Canyon Fault Zone is considered to be potentially active although it has experienced low seismicity with respect to earthquakes in excess of magnitude (M) 5.0. In 1985, a series of earthquakes inferred to be along the Rose Canyon fault occurred in southern San Diego. The largest of these earthquakes was approximately M4.7. The maximum credible earthquake along the Rose Canyon fault is M6.5, which based on previous studies, has a recurrence interval of 200 to 400 years (Geocon 1990). An earthquake of M5.9 was reported on May 27, 1862, and is believed to have occurred in the Rose Canyon fault zone.

Liquefaction and Subsidence. In order to address the potential for liquefaction and subsidence, a series of geotechnical tests and evaluations would be conducted, including standard penetration tests in the field and grain size characteristic tests in the laboratory. These tests would be performed as part of the geotechnical program discussed in Section 2.5, and the results would be incorporated into the final design of the NCF in order to meet applicable safety criteria.

In general, loose, unconsolidated, cohesionless fine-grained sediments and soils (with shallow water tables) are subject to liquefaction and subsidence during severe and prolonged motion generated by strong earthquakes. Preliminary data from Convair Lagoon and the surrounding area suggest that sediments within the Lagoon as well as soils in the surrounding fill area would be subject to liquefaction during a strong earthquake. However, according to a geotechnical investigation for a proposed hotel on East Harbor Island within 2,000 feet of the Lagoon, a liquefaction analysis for an earthquake of M6.5 indicated that although localized areas of the site would experience liquefaction, general site failure would be unlikely (Geocon 1990).

Similar conclusions are also reasonable for the structural integrity of the proposed NCF since (1) fill material under the proposed hotel is similar to the sediments underlying the proposed NCF; and (2) the structural sheet piling of the NCF and the piling for the hotel would be supported by the Bay Point Formation, which consists of dense, fine to medium-grained silty to clayey sands and is less susceptible to liquefaction. Thus, the results from the nearby geotechnical investigation indicate that although liquefaction of the dredged material and existing sediment may occur during a strong earthquake, failure of the NCF sheet pilings, which would be supported on the Bay Point formation, is unlikely. Site specific geotechnical results for Convair Lagoon would be evaluated to verify this tentative conclusion. Furthermore, the NCF would be designed to meet applicable seismic design criteria.

2.4 EXTREME WIND, WAVE, AND TIDE DATA

Estimates of wind, wave, and tidal conditions are important in the development of the final design of the NCF. Extreme conditions were evaluated as a function of return period (years). The analysis indicated 100-year wind speeds of 61 to 63 miles per hour, a 100-year wave height of 3.2 feet, and a 100-year tide height of 8.8 feet. The wind data were used to evaluate wave conditions, and the wind and tidal data were used to determine the height of the NCF necessary to prevent significant overtopping. Analysis of these conditions is given in Appendix A.

2.5 ADDITIONAL ENGINEERING DATA REQUIREMENTS

To complete the final design of the conceptual cleanup plan presented in this document, additional data and information will be needed. As a first step, additional geotechnical and geochemical information are required for the structural analysis of the NCF and the refinement water treatment processes, respectively. Engineering properties of the sediment must be determined to complete the basis for the design for the NCF walls, settlement estimates, and treatment characteristics. This information would also be used to complete the final basis of design for dredging and dewatering activities and the integration of the water treatment processes.

2.5.1 Geotechnical Investigation

No site-specific geotechnical data is currently available for Convair Lagoon. The closest location of a previous geotechnical investigation data was a study of the TRA complex, inside Building 120, about 1,200 feet from the shore of the Lagoon (Table 2-2). Data from this report primarily consists of three borings to depths of 42 feet (bottom elevation -30 feet) by Woodward-Clyde Consultants (1980). These borings were located about

Table 2-2. Extrapolated Physical Properties and Liquefaction Potential of Stratigraphic Units.

Stratigraphic Unit	Unit Dry Weight (pcf)	Moisture Content (percent dry weight)	Internal Friction Angle (degrees)	Unconfined Compression Strength (psf)	Liquefaction Potential
Hydraulic Fill	95 to 103	18 to 29	22*	620	High
Bay Mud Alluvium	88 to 96	28 to 53	20	280	Moderate
Terrace Deposits	111	20	24	3,270	None
Newly Dredged Sediments	Unknown	Unknown	Unknown	0	High
Granular Capping Materials	Unknown	Unknown	Unknown	0	High (underwater) Moderate (above water table)

*Estimated from other sources.

1,200-1,500 feet north of the project site. A representative boring log from this study was presented and discussed in Section 2.3.

The overall usefulness of the Woodward-Clyde (1980) study is somewhat limited. Although the stratigraphy of the general area is likely to be fairly uniform considering its common origin, there may be a downdip in the top of the Bay Point Formation from Building 120 in the direction of the Lagoon. If such a downdip exists, the length of sheet piles and the thickness of settling layers would be affected. There may also be differences in the properties of the settling layer between Building 120 and the Lagoon since the Lagoon was never filled. The settling layer under Building 120 should be stronger due to the effect of the weight of fill over time. Therefore, the available information from a location 1200 feet away, which has had a different history, is inadequate for final design purposes.

In order to obtain the necessary geotechnical data for Convair Lagoon, five exploratory borings are proposed along the alignment of the sheet pile wall to determine soil properties for sheet pile design. All of these borings would be drilled to approximately elevation -50 feet, with two of the borings drilled a minimum of 10 feet into the underlying dense sands and hard clays of the Bay Point Formation. Standard Penetration Test blow counts would be taken every 5 feet. Four undisturbed 3-inch diameter tube samples would be taken in each boring. Six borings would also be drilled in the dredging area to determine sediment properties pertinent to dredging and containment operations. Minimum boring depth would be 15 feet with continuous 3-inch diameter tube samples for the full length of the boring.

Laboratory tests would also be conducted to obtain sediment properties for the sheet pile wall design. These tests would include unit weights, Atterberg limits, gradations, and triaxial tests on samples from the borings along the wall alignment. These tests would also be used to determine the material's dredging characteristics. Consolidation tests on samples from these borings would also be performed to determine the expected settlement of the foundation sediments following deposition of the dredged material fill. Since dredge production rates and pipe wear are significantly affected by the quantity of shells in the sediment, a laboratory estimate of the quantity of shells in the sediments would also be made.

2.5.2 Water Treatability

In order to complete the final water treatment plant design and to predict the time and volume required for settling of dredged material, additional information must be obtained. Physical and chemical testing of both the sediments and the water associated with the sediments is necessary to identify both soluble and insoluble components in the water. These tests would include elutriate tests as well as settling and compaction tests. Elutriate testing would be performed to identify target chemicals. In this test, sediment and associated water column water are mixed for 30 minutes, allowed to settle, and separated by both centrifugation and filtration (Plumb 1981; EPA/CE-81-1 or equivalent). The clarified water is then analyzed for chemical components using EPA or other approved standard analytical tests. A minimum of five elutriate tests on Convair Lagoon sediments would be performed, and analyzed for target chemicals. Particle size, hydrometer, and bulk density testing would also be necessary.

Bench scale testing would also be conducted to develop a detailed process design. This testing would be performed using appropriate vendors in order to identify equipment configurations, sizes, and expected performance.

3.0 REMEDIAL DESIGN

This section presents the proposed remedial design for cleanup of Convair Lagoon. It includes the remedial objectives, a general sequence of the proposed remedial activities, the relevant criteria for the remedial components, including a summary of the operation and maintenance requirements, and a description of the long-term monitoring program to ensure the performance of the NCF. A separate discussion of several site-specific technical constraints is also provided in this section to highlight remediation aspects not normally encountered during marine construction. The design proposed in the section is a preliminary design (30%) and would be further refined in the final design (100%) to be submitted March 1, 1993.

3.1 REMEDIAL DESIGN OBJECTIVES

The objectives of the Convair Lagoon remediation are: (1) to isolate all Lagoon bottom sediments with greater than 10 mg/kg (dry weight) PCBs from the marine environment, and (2) to minimize disturbance to the Lagoon and the surrounding environment. In order to accomplish these objectives, a combination of dredging and containment within a NCF is proposed. These objectives are the direct result of Directives 1 and 2 given in Addendum Number 4 to the Order (Table 1-1).

3.2 GENERAL SEQUENCE OF REMEDIAL ACTIVITIES

An overview of the sequence of remedial activities is presented below to establish the basis for the proposed cleanup process of the Convair Lagoon. Technical details of these activities are discussed in Section 3.3. Scheduling details are presented in Section 5. The proposed activities listed below would be conducted by the appropriate party.

- Obtain local construction permits not obtained as a part of the environmental permitting process.
- Conduct mobilization activities including installation of a construction support area with environmental, health and safety review and monitoring, as well as administration facilities.

- Relocate General Dynamics Sailing Club dock to facilitate dredging operation.
- Construct a silt curtain in the Lagoon around the area to be dredged.
- Complete storm drain system modifications including relocation of the 30east drain and the coast guard drains.
- Construct the NCF by driving steel sheet piles from a barge and from the land to form a rectangular sediment containment facility in the northeast corner of the Lagoon.
- Install corrugated sheet liner behind the sheet piles.
- Fill space between liner and the sheet pile with bentonite.
- Remove debris from the area of the Lagoon to be dredged and place debris in the NCF.
- Install the water treatment plant next to the NCF to receive flow from the overflow weir box.
- Remove sediment with a small hydraulic cutterhead dredge and pump the dredged material slurry to the NCF.
- Conduct environmental monitoring during dredging to monitor the surface water quality (suspended sediments and turbidity) in the vicinity of the dredging area.
- Conduct confirmational sampling to verify attainment of the 10 mg/kg PCB action level program in the dredging area.
- Reduce the water level inside the NCF to mean sea level, thereby exposing and drying the surface of the dredge spoils after dredging is complete.

- Remove the silt curtain and water treatment plant.

- Place a geotextile over dredged material followed by several feet of imported granular fill when the surface of the dredge spoils becomes dry enough to support the activity (this fill will likely be placed in several stages as settlement of the dredged material progresses).

- Install a suitable cover as an infiltration barrier when the settlement of the dredged material is essentially complete.

- Conduct regular maintenance on the NCF to maintain the design life of the sheet pile walls and maintain the integrity of the infiltration barrier.

- Conduct long-term monitoring to ensure continued performance of the cleanup actions.

3.3 REMEDIAL DESIGN CRITERIA

3.3.1 Nearshore Containment Facility

The key objective of the NCF design is to isolate the contaminated sediment while also minimizing the potential impact to wetland areas. The design considerations must include the following: (1) reconfiguration of the storm drain systems, (2) capacity for settling dredging material, (3) capacity for dredged material containment, (4) height limitations, (5) availability and impacts of construction materials and techniques, (6) foundation considerations, and (7) limited construction window to accommodate nesting habits of the endangered species, the least tern. The final NCF configuration would also be compatible with the best beneficial use of the facility. These considerations are discussed in detail in the following subsections.

3.3.1.1 Reconfiguration of Storm Drain System

Since all potential NCF locations within the Lagoon would require a modification to the existing storm drain network, the first step of the design is to evaluate the potential

limitations on the location and configuration of the NCF due to the existing network. A detailed discussion of the storm drain operations and potential modifications is presented in Section 3.3.2. The results of this evaluation indicate that modifications to the 60-inch drain would be problematic due to current hydraulic loadings. Since the 30east and Coast Guard drains do not have these constraints, the northeast corner of the Lagoon would be the best location for the NCF.

3.3.1.2 Capacity for Settling and Dredged Material Containment

In the NCF design process, it is important to consider both the ultimate volume required to contain the dredged sediment and the volume required to settle solids prior to water treatment. However, in order to provide sufficient volume to efficiently settle solids during a standard continuous dredging operation, the NCF would encompass the majority of the Lagoon. To reduce this volume requirement, the sequence and duration of dredging would be modified as follows. The entire NCF would be filled with dredged material prior to operating the water treatment system. Once a sufficient amount of settlement has occurred, the clarified water would be removed and treated. This process would create sufficient capacity within the NCF for dredging to resume. This method of operation would keep the footprint of the NCF to a minimum.

In the proposed remediation scheme, the in situ volume of the sediment to be dredged would be approximately 10,600 cubic yards. In the event that the dredging depth is increased by 1 foot over the entire dredging area, the volume would increase to 13,300 cubic yards. Taking this volume into account as well as assuming a short-term bulking factor of 2, the minimum NCF capacity would be approximately 27,000 cubic yards. The bulking factor is a ratio of the initial in situ dredge material volume, to the short-term settled dredge volume stored in the NCF. Following the completion of dredging, the long-term bulking factor would be on the order of 1.4. The short-term bulking factor would be confirmed by settling tests discussed in Section 2.5.

Based on the above considerations and the site-specific bathymetry, the proposed NCF would be constructed in an area bounded by the northern and eastern shorelines of the Lagoon (Figure 3-1 and Drawing C4 in Appendix C). The approximate outside dimensions of the facility would be 430 feet by 177 feet. The resulting storage volume up to an elevation of 10 feet would be approximately 34,000 cubic yards (see Drawing C11 in Appendix C).

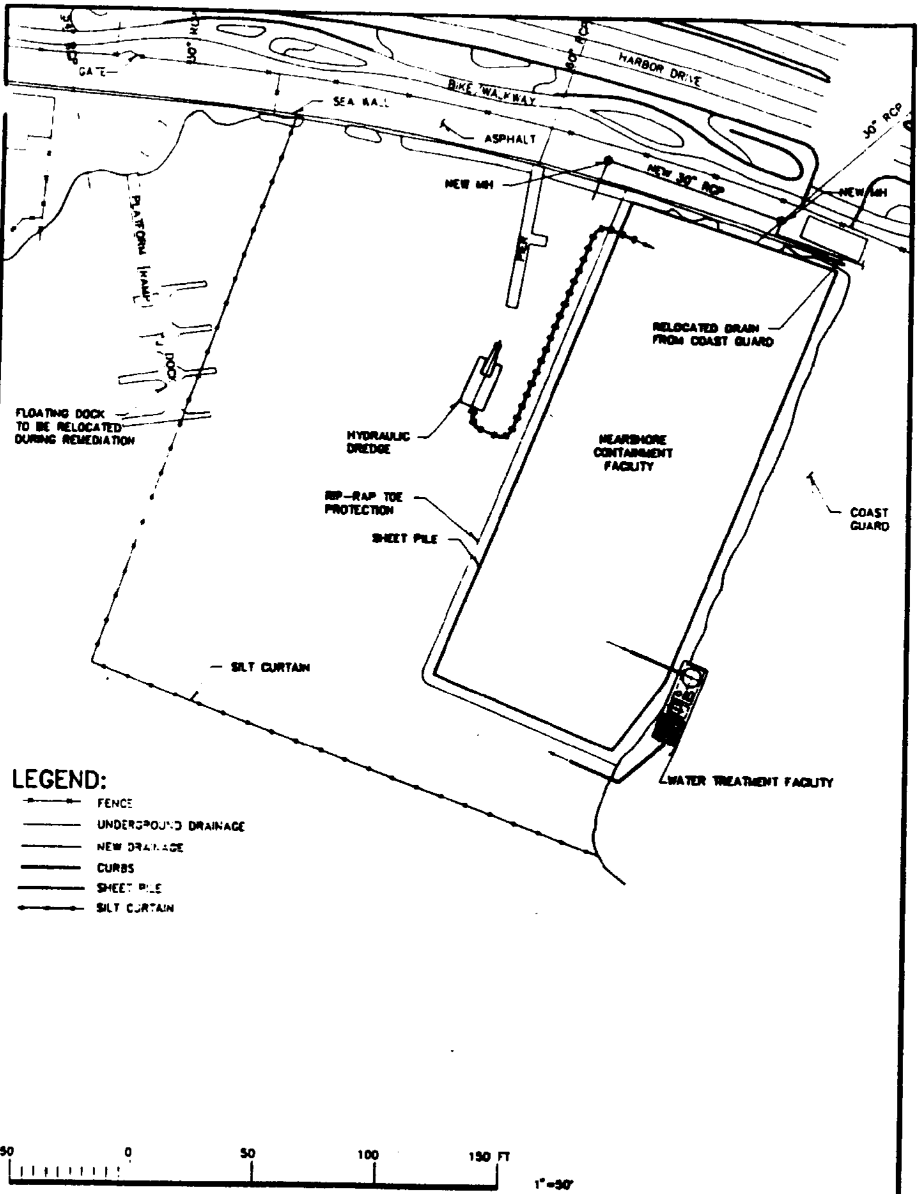

Figure 3-1. Proposed construction plan.

FIG-1.DWG

3.3.1.3 Height Limitations

For aesthetic reasons, the height of the NCF must be compatible with the adjacent upland areas. This limits the ultimate elevation of the facility to about 10 feet, which is the elevation of the adjacent Coast Guard property. The sheet piling would initially be constructed to an elevation of 12 feet to provide 2 feet of free board during dredging. The facility walls on the landward sides would then be lowered to a final elevation of 10 feet as part of the site restoration activities. However, for safety reasons, a 2-foot parapet wall would remain on the seaward site for a total seaward elevation of 12 feet (wall plus cover). This elevation is based on the sum of the highest high tide of 8 feet, a 2.5 feet wave height (25-year return period), and a freeboard of 1.5 feet above wave crest (based on data presented in Appendix A). Wave run-up may still overtop the wall; however, the overtopping would not be considered a safety hazard because the 2-foot wall would significantly diminish the impact of the wave activity. Upon completion of the imported fill operation, the wall would have scuppers installed to prevent flooding by draining water from rainfall or waves off the surface.

3.3.1.4 Construction Materials and Techniques

The proposed NCF would be constructed with steel sheet piles because the sediments of the Lagoon floor are not strong enough to bear the weight of a fill dike (earthen embankment) without using a staged construction technique, which would extend the project schedule considerably. In addition, relative to an earthen embankment, the sheet pile wall would reduce the footprint of the facility, thereby minimizing fill area. The sheet pile wall would be structurally designed for an interior flooded condition equal to the height of the wall when the water level in the Lagoon outside the NCF is at lowest low tide (elevation -2 feet). A rip-rap toe protection blanket would be installed on the Lagoon floor outside the wall to minimize erosion due to wave action. The wall of the NCF would bear a head of water during hydraulic dredging. In order to construct the sheet pile wall as a low permeability barrier, an inner liner of bentonite or similar material would be required between the Lagoon bottom and the top of the wall. Details of the NCF and sheetpile assembly are shown in Figure 3-2 and Drawings C11 and C12 in Appendix C.

The proposed sheet piles would be driven through the soft deposits of bay mud and into the hard clays of the Bay Point Formation, assuming that the Formation lies at about the

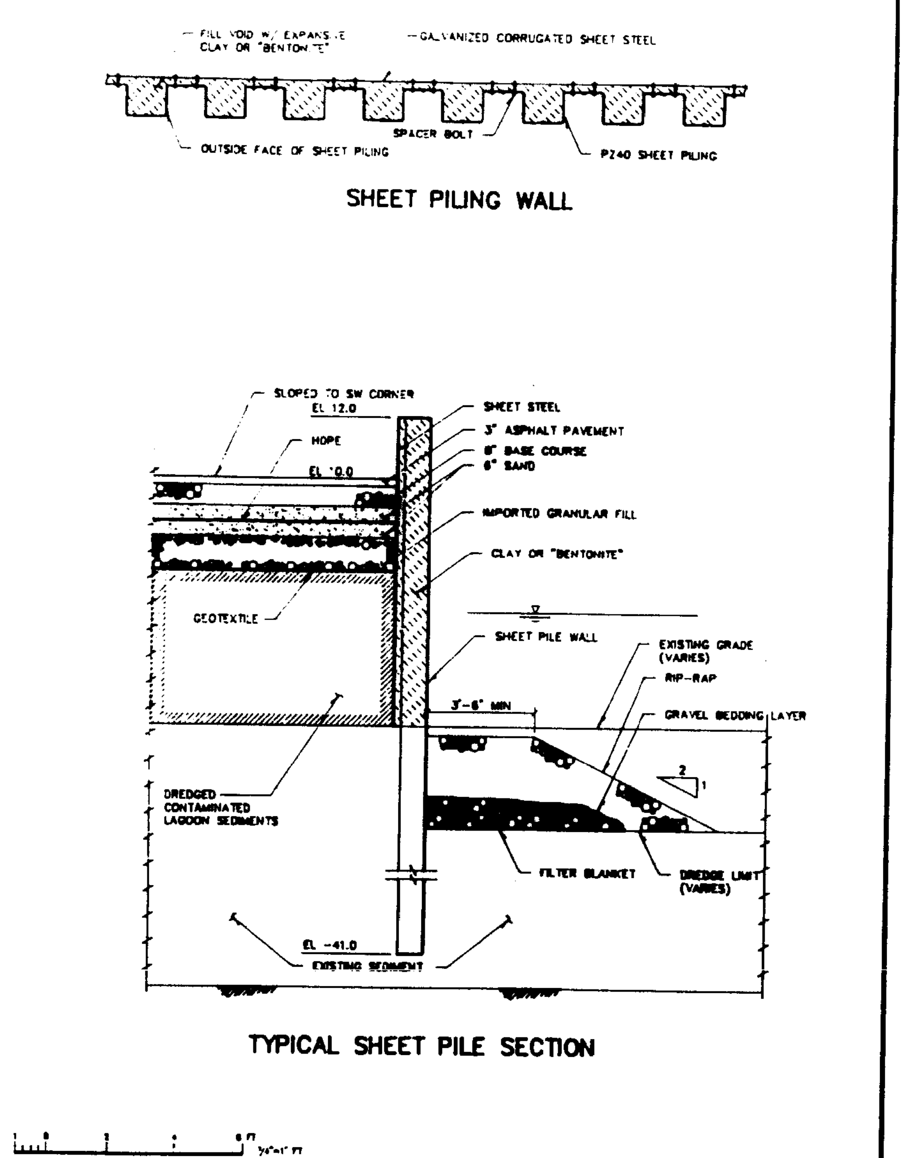

Figure 3-2. Design proposed for NCF piling.

same elevation in the Lagoon as it does 1,200 feet north (Woodward-Clyde Consultants 1980), and 3,000 feet southwest (Geocon 1990), where it is found at about elevation -25 feet. Sheet piles driven to the Bay Point Formation would effectively isolate the dredged sediment from the environment. The final design of the NCF would require confirmatory information regarding the stratigraphy of the soils underlying the Lagoon. A geotechnical program designed to provide the required design data is described in Section 2.5.

After the dredging and water treatment operations are complete, the dredge sediment would consolidate and dry out over a period of several months. The sediment would occupy approximately 1.4 times its in situ volume, or 15,000 cubic yards. The remaining volume in the NCF would be filled to grade with imported fill material covered by a multilayer infiltration barrier. Prior to placing the fill, a woven or synthetic geotextile mat would be placed on top of the dredge sediment to distribute the load from the imported fill. The geotextile would act to consolidate the underlying sediment in a uniform manner and prevent intermixing between the clean fill and the contaminated sediment. Approximately 14,000 cubic yards of imported fill would be required to bring the NCF surface to an elevation of 8 feet. The remaining 2 feet to grade would consist of the multiple layer infiltration barrier. The barrier would be constructed by placing 6 inches of medium sand over the imported fill layer to support an impermeable membrane layer. The 60 mil high density polyethylene (HDPE) membrane would prevent the infiltration of rain and runoff into the NCF. The surface would probably be completed with an asphalt surface layer. An asphalt surface would require a layer of medium sand and a base course material followed by 3 inches of asphalt (Figure 3-2 and Drawing C12 in Appendix C).

The proposed NCF would provide an effective long-term containment of both the PCB-containing sediment removed through dredging and the PCB-containing sediment covered by the footprint of the NCF. The walls and surface of the NCF would be low permeability structures due to the installation of a bentonite layer and a HPDE liner, respectively. The bottom of the facility would consist of Lagoon sediments, which also have a low permeability. The combination of these low permeability features would effectively isolate the PCB-containing sediment from the environment. A monitoring program to demonstrate the long-term effectiveness of the facility is described in Section 3.3.9.

3.3.2 Storm Drain System Modifications

Storm drain outfalls within the area covered by the NCF must be relocated or extended through the NCF. The design must consider the upstream effects of modifying these drains since added flow resistance introduced through the extension or rerouting of the pipes may increase flooding in the drainage area. In addition, the design must consider the effects of fill settlement upon the extended pipe through the NCF. In such cases, the pipe may have to be enlarged for a substantial distance upstream of the existing outfall to mitigate the effect. Appropriate supports would be provided for any pipe within the affected area.

The existing 30east drainage system located in the northeast corner of the Lagoon consists of 13 catch basins connected by PVC pipes ranging from 8 inches to 18 inches in diameter. This system drains the east end of the TRA complex and adjacent portions of Harbor Drive and runs along the east and south perimeter of Building 120, heads south at the Gate two plant entrance, and then terminates at a city manhole on the north side of Harbor Drive. A 30-inch reinforced concrete pipe (RCP) conveys stormwater from the manhole to the northeast corner of the Lagoon. The invert elevation of the outlet is 5.28 feet, and the outlet is partially submerged at times by the tide. The proposed modifications are described below.

The 30east RCP outlet would be terminated into a manhole at a point landward of the beach and rerouted by adding a new 36-inch RCP going west beyond the NCF and then south to the Lagoon. The new line would be about 185 feet long and have two manholes that would serve as junctions where the pipe changes directions. One manhole would be installed about 30 feet from the outlet end of the existing pipe. From this manhole, 150 feet of 36-inch RCP would be installed heading to the west at a slope of about 4 feet per 1,000 feet and would terminate at a second new manhole. From the second new manhole, a 36-inch RCP would be installed extending south about 35 feet to the Lagoon serving as the new outlet with an invert elevation of about 4.6 feet (see drawing C4 in Appendix C). Details of the hydraulic analysis used in these modifications are given in Appendix B.

A backwater analysis of the existing system was performed to determine if sufficient head is available to pass the required flow without backing up the system when the losses associated with the changes in length and direction are added to the existing system. The

analysis also evaluated the effect of tidal fluctuation on the system performance. This analysis revealed that the capacity of the drainage system upstream of the city manhole is not affected by the elevation of the tide. The 18-inch pipe between CB-155 (the most downstream catch basin of the 30east system) and the city manhole operates under inlet control for the range of flows examined (i.e., 2 to 12 cubic feet per second (cfs); the upper value reflects the 10 year storm). Inlet control refers to the discharge capacity of the pipe, and is controlled at the pipe entrance by the depth of headwater and the entrance geometry. The length of the pipe and the depth of tailwater do not affect the pipe discharge under inlet control. Therefore, the water surface elevation in CB-155 would be the same for a given discharge regardless of the tide elevation in the bay. However, this is not the case for the city manhole. The pipe downstream of the city manhole is much larger and operates under outlet control when the outlet is submerged. Under outlet control, pipe capacity is dependent not only on tailwater depth but also on the length of the pipe. This means that as the tailwater depth or pipe length increase, headwater depth would also increase in order to pass the same flow.

The modifications to the drainline (i.e., lengthening the system and increasing the downstream pipe size from 30-inch to 36-inch RCP) would cause the hydraulic grade line at the existing city manhole to increase about 2 inches for a discharge of 12 cfs when the tide is at elevation of 8 feet. The modifications would not affect the hydraulic capacity of the existing system upstream of the city manhole. Downstream of the manhole, the capacity would be slightly decreased during extreme high tides. However, during low tides, when the system operates under inlet control, there would be no change in capacity. Based on the above analyses, a 36-inch RCP is recommended for the modifications in order to be conservative. No upstream flooding would result from the proposed modifications with a 36-inch RCP.

3.3.3 Mobilization and Site Preparation

The first activities during the NCF construction phase of the proposed Convair Lagoon cleanup are mobilization and site preparation. In order to begin construction, the construction support area must be established with office trailers for administrative purposes, a facility for health and safety equipment, and a contaminant decontamination facility.

To support these facilities and the water treatment operation, temporary utilities would be established. These may include telephone, water supply, electrical power, and sanitary sewage collection. Access control for personnel and vehicles would be controlled by fencing. Unauthorized visitors would not be permitted to enter the active work areas. Where required, security fences would be of chain link type to a minimum height of 6 feet.

Following the initial site setup, the appropriate party would relocate the General Dynamics Sailing Club dock for the duration of construction activities. The silt curtain would then be deployed to reduce surface water turbidity that may arise during dredging or during the construction of the NCF. A silt curtain is essentially a vinyl nylon tarp which extends around the dredging area supported by a float and anchored by a ballast (Figure 3-3). Once the silt curtain is in place, debris within the area of dredging would be relocated inside the footprint area of the NCF.

3.3.4 Sediment Removal

Activities under sediment removal include dredging and sediment placement in the NCF. Based on the sediment PCB distribution data, approximately 10,600 cubic yards of sediment outside of the proposed NCF footprint must be removed in order to comply with the 10 mg/kg action level specified in the Order (Drawing C3 and C5 in Appendix C). In order to determine the dredging volumes, the Lagoon was divided into a grid system with three major grids, A, B, and C. Grid A, the area of the highest contamination, was further divided into 30 cells (A_1, A_2, . . . A_{30}) where PCB data were clustered. Each fifty-by-fifty cell extends to a depth of 10 feet, and is further divided into 1-foot segments creating a three dimensional site block which is comprised of 1-foot by 50-foot subcells.

Based on PCB sampling events described in Section 1.2 and Section 2.1.4, PCB concentrations were assigned to each of these subcells. These concentrations were then compared to the prescribed action level of 10 mg/kg PCBs. Cells in which PCB concentrations exceeded the action level, and cells located above cells with exceedances would be removed in the proposed dredging and containment scheme. The volume of the material to be dredged was based on depth from mudline and adjusted using both the bathymetric survey data and the appropriate engineering side slope cuts. An additional dredging volume of one foot in each grid cell was also calculated in sizing the NCF. In this case, approximately 13,300 cubic yards of sediment would be removed.

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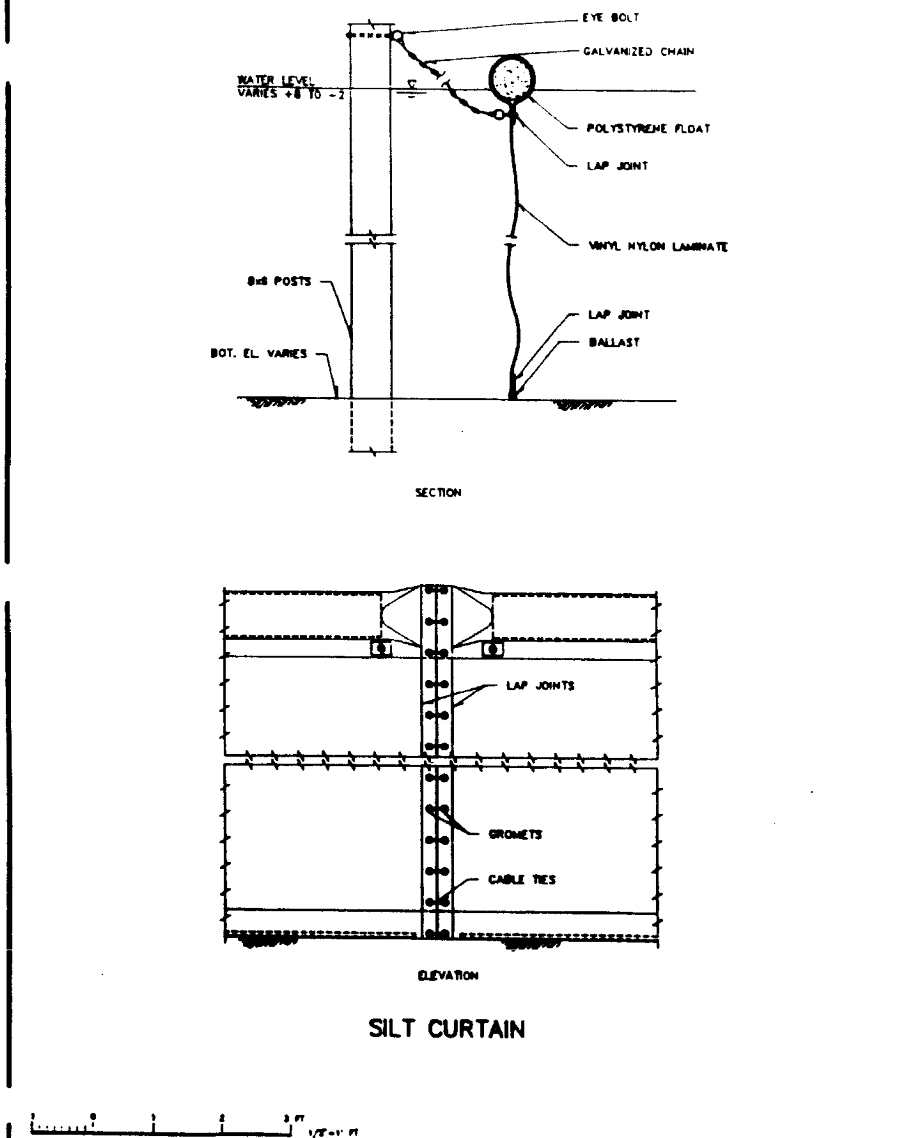

Figure 3-3. Design proposed for silt curtain construction.

The nature of the dredged material and the water depth of the dredging area are important considerations with respect to the dredging plan. The upper 10 feet of Lagoon sediment is generally a fine sandy silt with some clay and primarily results from surface runoff activities. Preliminary settling tests conducted on sediment from the Lagoon suggest that the material settles relatively quickly (within several hours). This should be confirmed by additional testing (Section 2.5.2). Water depths in the dredging areas range from +3.00 mean lower low water (MLLW) along the northern fringe of the Lagoon to -8.00 MLLW at the southern extremity of the dredging area (Figures 2-4 and 2-5). Debris in the general area of dredging depicted in Figure 3-4 would be removed as a part of the site mobilization activities. Any additional debris encountered during dredging activities would also be removed.

The two dredges proposed for sediment removal at the Convair Lagoon include a water-tight clamshell and a hydraulic cutterhead dredge. The selection of these two dredges was site-specific and based on the following criteria:

- Effectiveness in removing the contaminated sediment.
- Resuspension of sediment into the water column.
- Equipment availability, access to site, water depth required for operation.
- Worker and public health and safety.
- The physical/chemical characteristics of the sediment.

The water-tight clamshell dredge is proposed for use along shoreline areas if water depth and access preclude hydraulic dredging. In addition, this dredge could be used from either a land or water-based position to work in areas with large pieces of debris.

The cutterhead dredge, a hydraulic dredge, is proposed for use as the primary dredge for sediment removal. Its demonstrated success in dredging contaminated sediment from New Bedford Harbor (Otis 1990), combined with its versatility under a variety of operating conditions, make the cutterhead a logical choice. In 1989, EPA and the ACOE evaluated three hydraulic dredges (mudcats, matchbox and cutterhead) during the New Bedford Harbor Pilot Study within a cove along the New Bedford shoreline quite similar

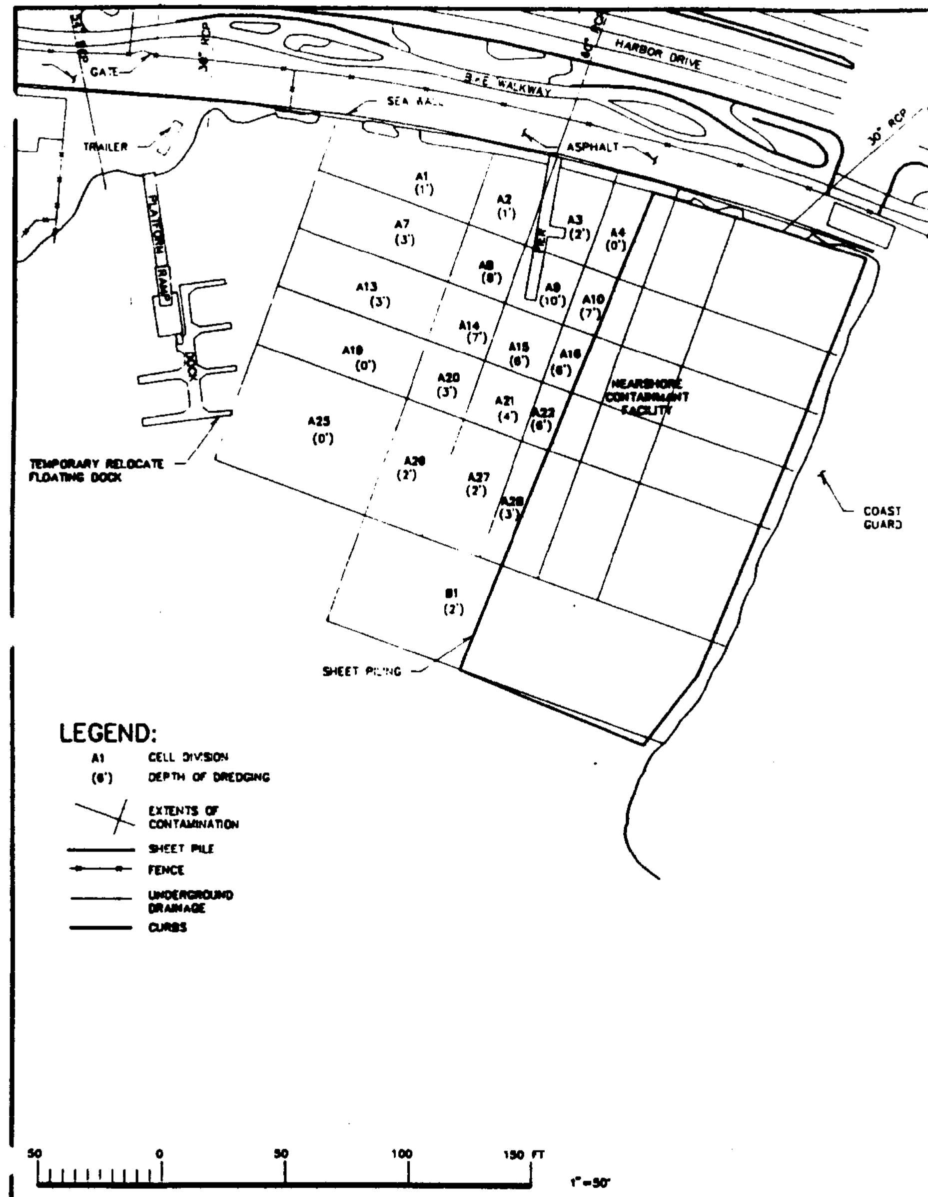

Figure 3-4. Dredging plan, including specific dredging depths.

FIG-2 DWG

to Convair Lagoon. A total of over 10,000 cubic yards of sediment was dredged, of which approximately 3,000 cubic yards was contaminated with PCBs at levels ranging from 150 mg/kg to 585 mg/kg. The cutterhead dredge removed more than 1,600 cubic yards of contaminated sediment during the study. The results indicated that all three dredges were effective in removing the contamination and minimizing sediment resuspension and contaminant release. However, based on continuous suspended sediment levels and water column PCB measurements, the cutterhead was singled out by the ACOE as the best dredge to minimize sediment resuspension. Therefore, EPA selected this dredge for sediment removal as part of the New Bedford Harbor Hot Spot Operable Unit Record of Decision (EPA 1990). The dredge was also proposed as the sediment removal technology of choice within the Feasibility Study for the remainder of the New Bedford site (Ebasco 1990). A brief operating summary of the cutterhead dredge is provided below.

The dredge operates by loosening the sediment with a rotating cutter that also guides the material into a suction pipe. The dredge is versatile in cutting differing types of material including soft sediment, compacted deposits, hardpan, and weathered rock and is capable of operating in shallow areas. During operation the dredged slurry is drawn into the suction pipe by a centrifugal pump that also pushes the mixture through a pipeline to the point of discharge. A 10-inch cutterhead dredge was used by EPA and the Corps during the New Bedford Pilot study. A similar size dredge is applicable to dredging operations within the Lagoon.

Specialized operating conditions would be required for use of the cutterhead dredge in Convair Lagoon. In Convair Lagoon, the sediment would be removed in 1-foot horizons throughout the dredging area at dredging depths presented in Figure 3-4. The corresponding engineering cross sections are presented in Figure 3-5 and Drawings C7 and C9 of Appendix C. The dredge would be operated in a specialized mode to minimize resuspension. A preliminary list of operating parameters is presented below:

- Swing Speed - 50 percent of dredge capability
- Cutterhead Rotation - 50 percent of dredge capability
- Dredge Pump Speed - Run at maximum RPM (1,570 gpm)

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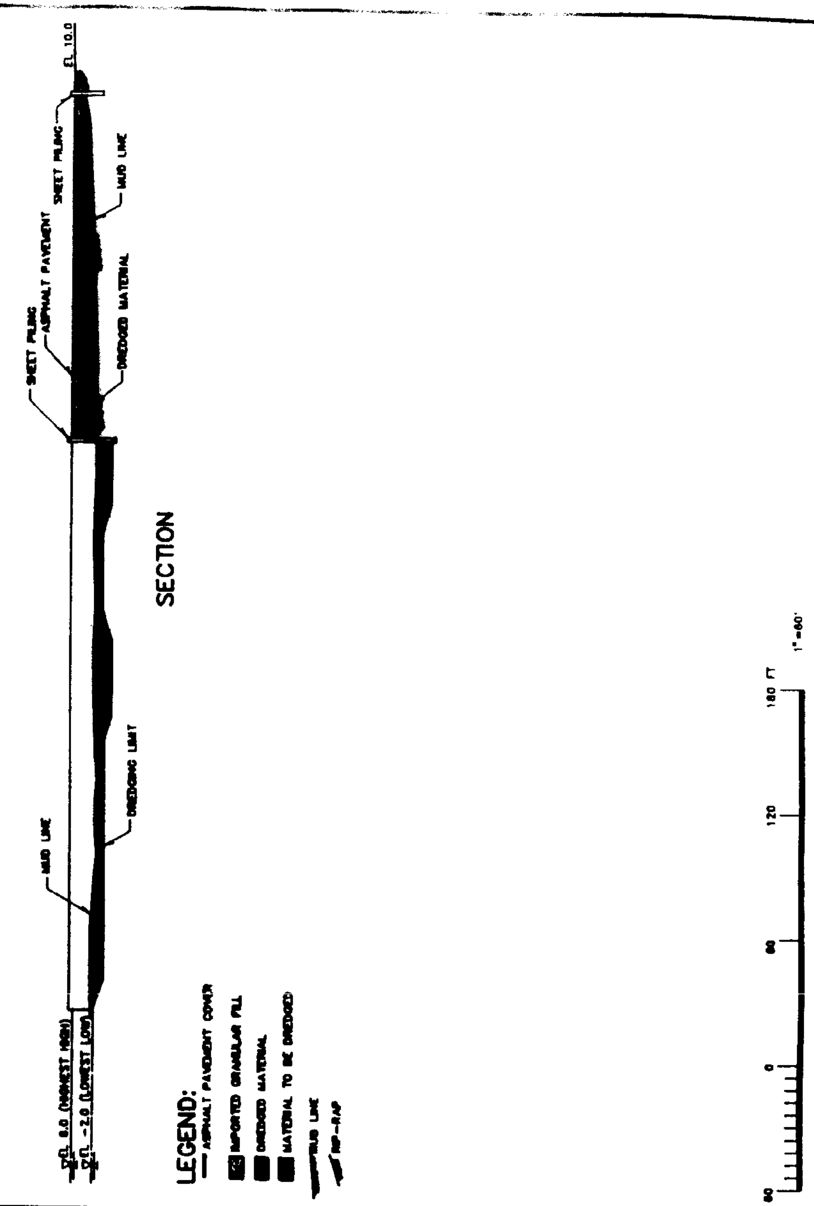

Figure 3-5. Schematic of dredging profile.

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- Advance per Swing - 1 foot (cutterhead diameter)
- Swing Anchors - To be placed on shore
- Depth of Cut - Sufficient to remove the top 1 foot of sediment with each pass i.e., cutterhead location at approximately 1 foot (cutterhead diameter) below sediment/water interface.

To estimate the time required to dredge 10,600 cubic yards from the Lagoon, the above operating parameters were applied to the following Lagoon sediment characteristics. Assuming an in situ sediment density of 108 lbs per cubic feet and 70 percent solids, a dredge material slurry of 10 percent, and an efficiency of 75 percent for an 8-hour work day, the dredge would remove approximately 231 cubic yards per day. On an hourly basis, this equates to 29 cubic yards per hour of in situ sediment removal. Only hydraulic dredging was included in this estimate since the mechanical dredging would occur on a parallel track. Also, the small quantity of mechanically dredged sediment would not significantly influence the calculations.

Dredged sediment would be hydraulically pumped through floating pipelines to the NCF, and placed in the NCF with the assistance of a diffuser. The diffuser would reduce the exit velocity of the slurry to minimize mixing within the NCF, and would be movable by crane to prevent the potential buildup of sediment in any particular location of the NCF.

Although increased turbidity in the surface water is only expected in the immediate area surrounding the dredge, a silt curtain would be placed around the entire dredging area. The silt curtain would contain an oil boom as an added contingency. An extensive water column monitoring program would be conducted during the dredging operation to evaluate surface water suspended sediment and PCB levels. Details of the monitoring program are provided in Section 3.3.8.

Based on an in situ volume of 10,600 cubic yards, approximately 46 dredging days would be required. However, since the hydraulic capacity of the proposed NCF would be limited to approximately 6,900,000 gallons, the period of continuous dredging would be limited to a maximum of approximately 12 working days. Following placement within the NCF, a day or two would be necessary for a clear layer of water to develop. This

water would then be transferred to the treatment plant until the water is drawn down to near the top of the sediment in the facility. The dredging would then resume following the same cycle of events until the dredging was complete. This interactive manner of operation is required due to NCF size constraints discussed in Section 3-3. Specifically, water clarification and treatment cannot occur simultaneously during dredging operations since the placement of dredged soils in the NCF provides too much agitation. Based on the preliminary evaluation, it would take approximately six cycles of dredging and water treatment to remove the 10,600 cubic yards of sediment necessary to achieve the 10 mg/kg PCB sediment action level. This process would take about five months. An additional three cycles of dredging and water treatment would be required to remove a total of 13,300 cubic yards of material. The estimated sequence of dredging and water treatment activities is presented in Table 3-1. A bird screen would be installed during the dredging, settling, and drawing periods to prevent wildlife from entering the NCF.

3.3.5 Water Treatment

During the hydraulic dredging and sediment settlement operation, water would be generated which would require treatment. The objectives of the proposed water treatment facility are: (1) to design a system with a rate compatible with the dredging rate; (2) to treat to a 1 μg/L PCB concentration in the effluent; and (3) to achieve the above objectives while minimizing the cost. The design PCB concentration of 1 μg/L was specified assuming a dilution factor of approximately 1:33 at the edge of the mixing zone. This assumption should be easily satisfied in Convair Lagoon.

The following sequential steps were used to develop the water treatment design.

- Available information was gathered on the dredging activity including type of dredging operation, processing rate, size and location of anticipated facilities, and expected operating times and duration.
- Information was obtained to characterize the solids and liquids which would be produced during the dredging activity.
- A conceptual treatment process was developed.

Table 3-1. Schedule of Dredging and Water Treatment.

Cycle No.	Activity	NCF Remaining Capacity (gal)	Duration (days)	Cumulative Duration	Sediment Removed/ Cycle (CY)	Cumulative Sediment Removed (CY)
1		6,866,640			2772	2772
	Dredging		12			
	Water Treatment		27	29		
2		5,746,974			2310	5082
	Dredging		10			
	Water Treatment		22	71		
3		4,813,919			2079	7161
	Dredging		9			
	Water Treatment		18	98		
4		3,974,169			1617	8778
	Dredging		7			
	Water Treatment		15	120		
5		3,321,030			1386	10164
	Dredging		6			
	Water Treatment		13	139		
6		2,761,197			1155	11319
	Dredging		5			
	Water Treatment		11	155		
7		2,294,670			924	12243
	Dredging		4			
	Water Treatment		9	168		
8		1,921,447			693	12936
	Dredging		3			
	Water Treatment		8	179		
9		1,641,531			693	13629
	Dredging		3			
	Water Treatment		6	188		

- Costs and weights for the anticipated equipment were obtained for use in the conceptual treatment process.

The first two steps were discussed in the previous section, and steps three and four are discussed below.

3.3.5.1 Water Treatment Conceptual Design

Approximately 25 million gallons of water would be treated by the water treatment facility. This estimate is based on the dredging and water treatment schedule shown in Table 3-1 and a water treatment flowrate of 150 gallons per minute (gpm). A treatment flowrate of 50 gpm was also considered, but was determined to be impractical due to scheduling constraints.

Three unit processes would be required in the proposed water treatment, including dissolved air flotation (DAF), filtration, and carbon adsorption. These processes would be implemented in series in order to achieve effective treatment. The arrangement of the three process steps is shown in Figure 3-6, and details of the processes are provided below.

DAF is commonly used to remove dispersed/emulsified oil from water. In this process, air is dispersed into the water stream where it attaches to oil droplets. These droplets rise through the water at a accelerated rate and are collected and skimmed off of the top of the water in a flocculation/skimming tank. At the same time, some of the solids present in the water flocculate and settle to the bottom of the tank where they are collected. Flocculating agents are added to increase the flocculation and flotation effects. Depending on the degree of initial settling in the settling basin, a pre-filter may be required prior to the DAF.

Filtration through a granular-media filter removes additional suspended solids. In this process, water is passed through a bed of sandy or other granular material in order to trap and retain suspended solids. When the bed is full of solids, it is backwashed with filtrate, and both the backwashed filtrate and solids are discharged back into the NCF.

Carbon adsorption is used to remove dissolved organics from the water. In this process, water is passed through the bed where it comes into contact with granular activated

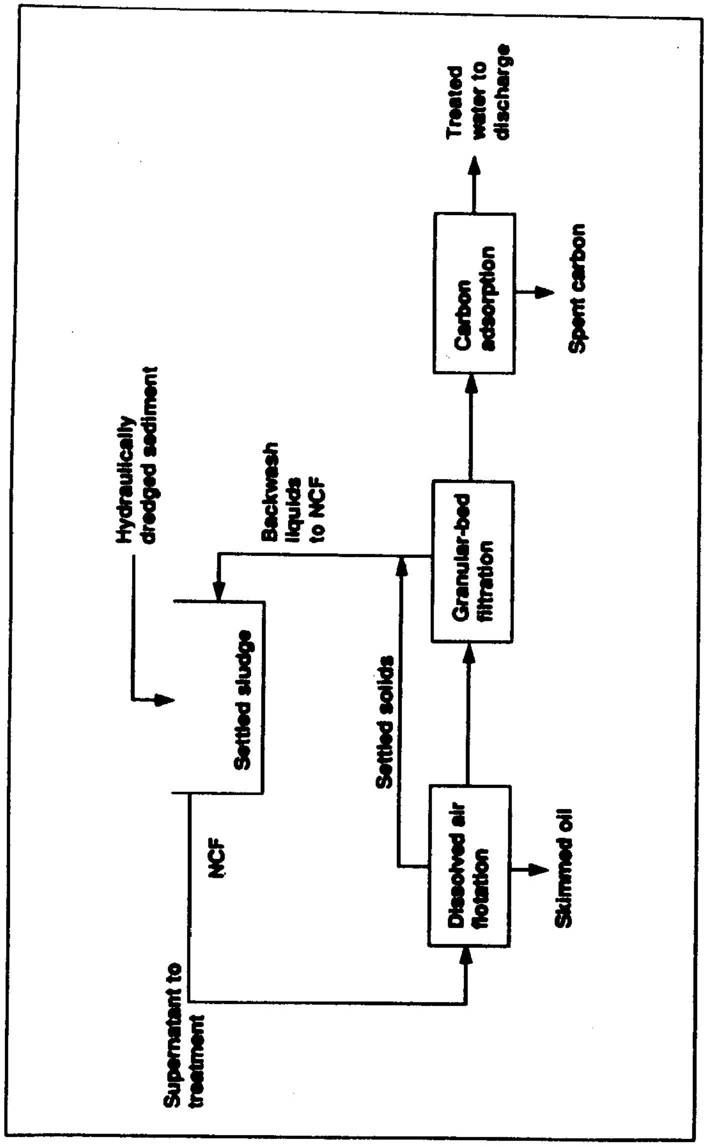


Figure 3-6. Flow diagram of conceptual wastewater treatment system.

carbon (GAC). Dissolved organic molecules are adsorbed onto the surface of the carbon media. As a general rule, hydrophobic compounds, especially those with high molecular weight such as PCBs and PAHs, adsorb strongly to GAC. Although the concentration of PCBs in the water would probably be extremely low, PCBs would absorb to the surface of the carbon. Carbon which is contaminated with traces of PCBs cannot be reactivated and must be managed appropriately. The effluent water from the carbon adsorption unit would be discharged into the Lagoon.

3.3.5.2 Final Water Treatment Design

To complete the water treatment design, additional sediment and water treatability data are required. These data, along with the discharge limits based on the allowable dilution factor, would determine the final treatment system. Analytical testing, suction and discharge line relocation, health and safety monitoring, and other such activities would also be considered in the final design.

In addition, additives would be required for the dissolved air flotation process, and activated carbon would be required for the carbon adsorption unit. The dissolved air flotation process would produce waste oil and solids at the conclusion of the processing. The carbon adsorption process would produce approximately 300 drums of carbon waste. Waste from the treatment processes would be managed appropriately.

3.3.6 Site Restoration

Following completion of the work, all construction equipment, anchors, trailers, debris, and temporary fencing would be removed from the site. The final cover system for the NCF would be installed when settling of the dredge spoils was essentially complete so the surface would be stable. Settlement can be measured and assessed as a function of time to make this determination. An estimated rate of settlement can be further refined after the geotechnical program outlined in Section 2.5.1 has been completed. More than 3 feet of total settlement is expected during the first few years, most of it in the dredge spoils. If an asphalt pavement cover system is to be installed, some differential settlement cracking will occur, and surface renewal after a few years will be required. The end use of the NCF area will determine the best type of cover system.

3.3.7 General Operation and Maintenance

The NCF will require maintenance by the appropriate party to ensure its integrity. To prevent corrosion of the steel sheet piles in the intertidal zone, the piles would be coated with bitumastic or other corrosion inhibitor, which must be renewed at intervals of approximately 10 years. The scupper drains would be kept clear of debris, and if the surface settles below the level of the bottom lip of the scuppers, the scuppers would be cut lower to match the new surface. The cover system will require care depending on its type. The long-term effectiveness of the NCF in isolating PCB-containing sediment would be demonstrated through regular monitoring (Section 3.3.9).

3.3.8 Short-Term Monitoring

The proposed short-term monitoring program would address monitoring issues during a two-year construction time frame. This program would include pre-operational, operational, and post-operational monitoring in the water column, operational monitoring in the sediments, and pre-operational and operational monitoring in the air. The basic components of this program are summarized in the following paragraphs.

3.3.8.1 Water Quality Monitoring

Pre-Operational Monitoring. In order to establish existing baseline conditions, pre-operational monitoring would be conducted in the water column. Based on analytical results from elutriate tests described in Section 2.5, target components for monitoring would be identified considering magnitude, frequency of occurrence, and toxicity. In addition, suspended solids, turbidity, pH, and conductivity would be determined.

The proposed baseline monitoring would be conducted at a minimum of six stations in the dredging area and two stations outside the immediate dredging zone. In order to account for temporal variability, sampling events would be conducted at four different periods, spaced approximately one month apart. Sampling events would include at least one high tide and one low tide period. Monitored parameters would include elutriate testing parameters, suspended solids, turbidity, pH, and conductivity. Both dissolved and total (i.e., dissolved and particulate) concentrations would be determined in the water samples. Samples would be collected from surficial, mid-depth, and bottom water and combined to form a single composite sample.

Operational Monitoring. During the actual construction phase, two issues must be addressed; the resuspension of sediment during dredging and in-water construction, and the discharge of treated water following dewatering of the NCF. The objective of the operational phase monitoring is to demonstrate that any impacts to water quality are near-field and of short duration.

The eight stations identified in the pre-operational monitoring would be sampled again during the operational phase. Sampling would occur on a routine basis during dredging for the first five days, and once in the week following dredging operations. These samples would be analyzed for both dissolved and total concentrations of the same parameters determined in the pre-operational samples. In addition, two continuous reading turbidometers with remote sending capability would be anchored. Tentatively, one would be inside and one would be outside the silt curtain (Figure 3-3), providing water column turbidity measurements during dredging operations. If turbidity levels become excessive, dredging operations could be temporarily suspended or the operational parameters discussed in Section 3.3.4 could be modified. Ten additional grab samples for total suspended solids would also be taken for turbidometer calibration purposes.

Treated water from the NCF treatment plant would be monitored to verify that the discharge complies with NPDES requirements. Composite grab samples would be collected on a periodic basis and analyzed for target compounds. As a rough estimate, a total of 75 samples would need to be analyzed; assumed parameters include pH, BOD, COD, oil and grease, total suspended solids and PCBs.

Post-Operational Monitoring. The objective of post-operational monitoring is to demonstrate that water quality has returned to a quality equivalent or superior to the baseline conditions. For this purpose, the eight previously identified stations would be sampled once a quarter for two quarters following remediation. Samples would be analyzed for the same parameters as in the pre-operational monitoring.

3.3.8.2 Sediment Monitoring

Since the extent of PCB contamination in Convair Lagoon sediments has been well documented by previous studies, no additional pre-operational sediment monitoring would be required. However, post-dredging verification monitoring would be implemented during operations to demonstrate that contaminated material has been removed to the action level of 10 mg/kg PCBs. Approximately one sample for every 50 feet x 50 feet grid cell would be taken. Sampling would be coordinated with dredging operations in such a manner that additional material could be dredged if verification samples test above the action level. Details will be outlined in the post-remediation sampling plan to be submitted to the RWQCB pursuant to Directive 2.g of Addendum 4 of the Order.

3.3.8.3 Air Quality Monitoring

Some volatilization may occur as the PCBs are exposed to the atmosphere during remediation activities. To demonstrate that the release of PCBs does not result in offsite migration through volatilization, an air monitoring program may be required. A typical program would consist of two high volume PSI monitors located upwind and downwind of the NCF and a meteorological monitoring system. Other sampling might include portable hydrocarbon detectors around the NCF perimeter to verify that the project is adhering to the hydrocarbon emissions standards.

3.3.9 Long-Term Monitoring

Through a long-term monitoring program (greater than two years), the integrity of the NCF would be demonstrated to confirm that PCBs have been effectively isolated from the environment. The long-term response of the ecosystem is being addressed separately in a bioaccumulation monitoring program as directed by the Order.

3.3.9.1 NCF Monitoring

Monitoring of the NCF performance would be achieved by the installation of up to eight piezometers. Piezometers provide a measure of flow gradient and would indicate flow conditions of groundwater in the vicinity of the NCF.

Readings would be recorded on at least a quarterly basis for the first three years and then annually for the following years. This program would be further refined in the final design. Results would be presented in a brief report. Every three years, the monitoring program would be reviewed, and modified as appropriate.

3.3.9.2 Storm Drain Monitoring

The remediation plan assumes that PCB sources have been controlled and eliminated. In order to confirm this assumption, effluent and sediment from the four major storm drains discharging to Convair Lagoon would be monitored prior to construction. If storm drain sediments contain PCBs, they would be removed and isolated in the NCF.

Effluent would be collected from each of the four major storm drains at convenient access points such that the collected samples represent discharged water rather than backwash from tidal flushing. The effluents would be analyzed for total PCBs (EPA method 608). Analyses would be performed to determine both dissolved and total PCB concentrations. In addition, a sediment sample would be collected from each of the drains. Sediment would be collected from an appropriate location (e.g. catchbasin or manhole) such that drain sediments rather than resuspended Lagoon sediments are sampled. The sediment samples would be analyzed for total PCBs (EPA method 8080).

3.4 SPECIAL TECHNICAL CONSTRAINTS

Development of the proposed NCF imposes several special technical constraints not normally encountered in marine construction projects. These include (1) the sequential, iterative nature of the dredging and water treatment activities which is necessary to minimize the size of the NCF; (2) the limited construction period of September through March due to the least tern (*Sterna Albifrons Browni*) which utilizes the Lagoon during the months of April through August; and (3) the method of dredging.

The first two constraints significantly impact scheduling. Sequencing the dredging and water treatment cycles extends the construction period compared to continuous operation. In contrast, the narrow operation window constrains the construction period. Since Directive 2 of Addendum No. 4 set very specific dates in the cleanup schedule, accelerated site mobilization, maximized efficiencies in scheduling, and concurrent tasking of activities are required. Therefore, due to the aggressive, yet highly constrained nature of the schedule, any delays or difficulties encountered may have significant impacts on the construction schedule. For example, if the volume of dredged material is as large as indicated by current upperbound estimates, the schedule in the Order for completion of the work may not be met and an extension may be necessary. Currently, nine months are allotted for the completion of the remediation following award of the construction contract. This period is based upon a best-case scenario. Since the NCF construction and the dredging and water treatment activities are sequential, delays in any part of the schedule could result in significant project delays.

Regarding the third constraint, the dredging equipment would be operated in a specialized manner in order to minimize sediment resuspension. Specifically, the dredge would remove sediment in 1-foot layers, with the hydraulic pump at full throttle and the dredge cutterhead and swing speed operated at half speed. While this method produces a rather dilute dredge material (approximately 10 percent solids by weight), it has the advantage of minimizing sediment resuspension. This special method of operation has important implications with respect to the NCF design and the water treatment efficiency so it must be explicitly stated in the dredging contract. Generally, dredging contracts are based upon volume production, but in this case, the contract must be based upon incentives to minimize the sediment resuspension and to accurately follow precise specifications.

4.0 REGULATORY CONSIDERATIONS

The following section details the statutory, regulatory, and permitting requirements applicable to the Convair Lagoon remediation, including Federal, State and Local standards and permits. This discussion outlines the type of information required and presents a suggested timeline for coordination of permit application submissions. Identification of access, easement and right-of-way requirements, and a preliminary discussion of health and safety requirements are also presented.

4.1 FEDERAL STANDARDS AND PERMITS

4.1.1 Section 404 Clean Water Act, Section 10 Rivers and Harbors Act

Section 404 prohibits the discharge of dredged or fill material into the nation's waters without a permit from the ACOE. Under Section 10 of the Rivers and Harbors Act, a permit must also be obtained authorizing structures and work in or affecting navigable waters of the United States. For the proposed Convair Lagoon remediation, a single permit encompassing both Section 404 and Section 10 standards will be issued by the ACOE.

Major application requirements for the Section 10/Section 404 permit include: (1) a detailed description of the proposed Convair Lagoon remediation, including appropriate drawings outlining the approximate dimensions of structures, fills, and excavations; (2) a description of the purpose, need, and intended use of the activity including a detailed work schedule; and (3) a description of the dredged material. During the permit review process, the ACOE evaluates whether the benefits of the project approach outweigh the environmental impacts. General review factors considered include: basic project purpose and need; water dependency; availability of practical alternatives; and environmental impacts.

Discussions with ACOE staff indicate that approximately six months are required for completion of the review and approval process for the Section 404 permit. One of the most critical steps in the process is the review of the application by other Federal and State agencies. A "contingent" permit can also be issued by ACOE if all approvals have not been received. The principal review agencies will be the RWQCB, California Coastal Commission, U.S. EPA, U.S. Fish and Wildlife Service, California Fish and Game, and the National Marine Fisheries Service.

4.1.2 Toxic Substances Control Act (TSCA)

The regulations promulgated by EPA pursuant to TSCA, 40 CFR Part 761, outline disposal standards for materials containing PCBs. Specifically, section 761.60(a)(5) states that such materials must either be incinerated in a facility meeting the requirements of 761.70, disposed of in a chemical waste landfill which complies with 761.75, or disposed through an alternative method approved by the EPA Regional Administrator.

These TSCA disposal standards were developed for situations where PCB-containing materials are to be moved and disposed at an offsite location. Thus, those standards may not apply to a remedial action to contain materials which will not be moved offsite. Consequently, guidance will have to be sought from EPA Region IX as to whether TSCA disposal standards are applicable to the proposed remedial actions.

Even if EPA Region IX determines TSCA regulations are applicable to the NCF, either a dredge material exemption pursuant to 40 CFR 761.60(a)(5)(iii) or a waiver from portions of the chemical waste landfill requirements pursuant to 761.75(c)(4) may be obtained from EPA authorizing construction of the NCF. Regulatory precedent for such alternatives has been established. For example, the first of these two waiver provisions is being proposed by EPA to allow a NCF type facility to be used for sediment containment at the New Bedford Harbor Superfund site. EPA's proposed plan for New Bedford calls for removal of approximately 300,000 cubic yards of sediment at PCB concentrations of up to 4,000 mg/kg to be placed in a series of NCFs along with the New Bedford shoreline.

4.2 STATE STANDARDS AND PERMITS

4.2.1 California Environmental Quality Act (CEQA)

The Guidelines for Implementation of the California Environmental Quality Act set out regulations for implementation of CEQA. Generally, these regulations provide for designation of a "lead agency" to implement the CEQA requirement. The lead agency is

the agency which has "the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (CEQA section 21067). The lead agency will determine whether an environmental impact report (EIR) or negative declaration will be required for this project. To date, neither a lead agency or an EIR/ negative declaration determination have been made by public authorities for this project.

In general, the CEQA process begins when the Agency conducts a preliminary review to determine whether a particular activity is exempt from CEQA. The project may be granted a statutory exemption (Article 18 of CEQA), a categorical exemption (CEQA Article 19), or determined not to have the potential for significant effect on the environment. An initial study may be prepared to determine if an EIR is required.

CEQA determinations and documentation are also important components to other permit applications including the Coastal Development Permit Application, the State Lands Commission permit application, and the Section 404/Section 10 dredge and fill permit review process.

4.2.2 California Porter Cologne Water Quality Act (PCWQA)

PCWQA requires that waste discharge reports be issued when discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the state. There are two activities for which reports of waste discharge and waste discharge requirements would be required: the discharge of treated water from the dewatering operation and the construction of the NCF. The discharge of treated water from the dewatering operation would require effluent discharge requirements in the form of an NPDES permit. That permit will contain effluent limitations and monitoring and reporting requirements and will be designed to meet applicable water quality standards.

The waste discharge requirements issued by the RWQCB for the NCF would authorize construction of the NCF and set forth specific design criteria to ensure the effectiveness of the NCF structure as a containment barrier. Monitoring and reporting requirements will also be included in those discharge requirements.

4.2.3 State Lands Commission Permit

A permit must be obtained from the State Lands Commission for the dredge and fill operation. The Commission will ensure that CEQA requirements have been met as part of the review process, and will evaluate the volume of material to be disposed and the type of disposal.

4.2.4 Mitigation Requirement

A mitigation plan is required by Directive 2.d of the Cleanup and Abatement Order. The mitigation project shall involve the creation or restoration of beneficial uses in San Diego Bay or other water body. The mitigation plan will be submitted to the RWQCB for review and approval before remediation begins. The mitigation plan will also be described in the ACOE and Port permit applications and reviewed in conjunction with the analysis of any significant environmental effects of the project, as directed under CEQA.

4.3 LOCAL STANDARDS AND PERMITS

4.3.1 Coastal Development Permit

Under the San Diego Unified Port District Coastal Development Permit Regulations, a coastal determination must be made for all projects within the jurisdiction of the Port District. The decision to grant or deny a Coastal Development Permit is based on the project's conformance with the Port Master Plan as adopted by the Board of Port Commissioners. The permit may require amendment of the Master Plan through the formal Master Plan amendment process. Application requirements include a copy of the EIR or negative declaration issued under CEQA, and a project location map document. The application will be reviewed and issued by the Board of Port Commissioners.

4.3.2 General Construction Permits

In addition to the above environmental-related permits, there will be a number of local permits required associated with general construction activities. These may include, but are not limited to, construction permits, building permits, electrical permits, and sanitary permits. These permits will be identified upon completion of the final design and construction bid specifications.

4.4 PERMIT APPLICATION COORDINATION AND SCHEDULE

CEQA determinations and documentation are required components to the Coastal Development permit application, the State Lands Commission permit application, and the Section 404/Section 10 dredge and fill permit review process. Accordingly, early completion of that process is important to the timely permit application submittal and permit receipt. Figure 4-1 outlines a timeline for issuance and receipt of permit applications, and Figure 5-1 shows where permitting fits into the cleanup schedule according to Directive 2 of the Order.

As indicated on the timeline, all permit applications must be submitted by October 1, 1992 in accordance with the Order. The waste discharge requirements and NPDES permit are prepared and submitted concurrently due to their similarity in content. The Coastal Development Permit and State Land Commission permit will not be reviewed by the appropriate agencies until an EIR is available.

4.5 ACCESS, EASEMENTS, RIGHT-OF-WAY

Site access from the land side consists of a small turnout from Harbor Drive. Harbor Drive is very heavily traveled and the turnout is inadequate for construction and earthmoving equipment. Parking and laydown space is confined to the esplanade area above the seawall, which is narrow. Therefore, it is not recommended to plan any substantial material movements from the land side. Necessary easements and/or right of ways must be obtained to gain access to adjoining properties as required.

Water access is comparatively easy. Shallowness is the principal problem in the northeast corner of the Lagoon, which would prevent barge-mounted piledriving equipment from approaching the shore; the shoreward walls of the NCF must therefore be driven by a rig on the land. All other operations associated with remediating the Lagoon should be handled by water, especially those handling bulk materials such as fill.

4.6 HEALTH AND SAFETY REQUIREMENTS

The health and safety requirements of the Convair Lagoon remediation must be tailored to the specific activities associated with this effort. During the final design process,

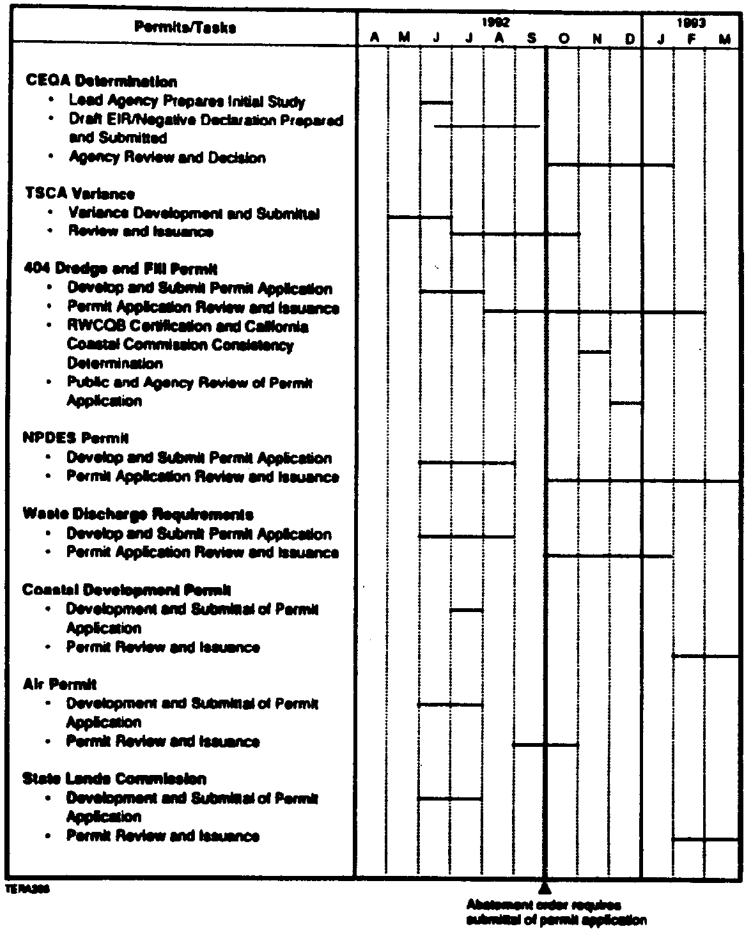


Figure 4-1. Convair Lagoon permit timeline.

health and safety professionals would work with the engineers to incorporate appropriate and regulatory required safety systems into the design.

An evaluation of the potential occupational health hazards associated with sediment removal, treatment of Lagoon water, and maintenance operations would be conducted to fulfill the necessary requirements of the site-specific health and safety plan. An evaluation of the occupational health hazards would define the appropriate engineering controls necessary to reduce occupational health exposures and would be incorporated into the final design.

The health and safety requirements must comply with California Code of Regulations (CCR) Title 8 and OSHA (29 Code of Federal Regulations) which include a site-specific health and safety plan in compliance with 8 CCR Section 5192. A Hazardous Waste programmatic site-specific health and safety plan would also be prepared. In addition, health and safety specifications would be developed to be submitted with the bid specifications.

The contractor(s) would be required to oversee health and safety to ensure compliance with the Health and Safety Plan. In addition, a contractor audit and review of held records during the course of remediation is anticipated to document compliance with the Health and Safety Plan.

5.0 SCHEDULE

This section presents the preliminary construction schedule of the selected remediation. Half-size engineering drawings are attached in Appendix C (C1-C12). The schedule reflects the sequencing and time frames outlined in Addendum to the Order.

The schedule for the cleanup of the Lagoon is based on the requirements of the Cleanup and Abatement Order. The bar chart schedule is shown on Figure 5-1. These requirements are presented as Directives 2.a. through 2.j. of the Order (Coe 1991) (Table 1-1). Reports would be filed quarterly beginning October 1, 1992 to facilitate communication. It is also important to note that complete remediation has been defined as the completion of the dredging phase of the remedial operation necessary to achieve the action level of 10 mg/kg PCBs in the sediment surrounding the NCF. Thus while dredging will be complete by June 1, 1994, overall remediation will not be complete until the Spring of 1995. The order should be modified accordingly.

To facilitate tracking the numerous submittals associated with the Order, the schedule has been organized in a consistent manner. The schedule includes an estimated agency review and approval cycle period of two months for the various submittals. While this is challenging, it must be maintained by the RWQCB if the current schedule is to be met. For example, to meet the submittal date of October 1, 1992 for the permits, the preliminary design will have to be approved by the Board's Executive Officer by August 1, 1992. This would allow only two months to finalize the permit applications consistent with the RWQCB comments on the BDR.

This schedule is based on completing the work by the dates specified in the Order. However, if the volume of dredged material approaches the upper bound of the current estimates, there is not sufficient time allocated to complete the work due to the limitations on the construction period to accommodate least tern nesting. In this case a second construction season would be necessary. In addition, the time for drying the dredge spoils before placement of fill and final surface was estimated from limited sediment characterization data. The actual time required could extend the construction period considerably. Also, the schedule is based on the successful completion of NCF construction followed by a stringent dredging and water treatment schedule. Any interruptions

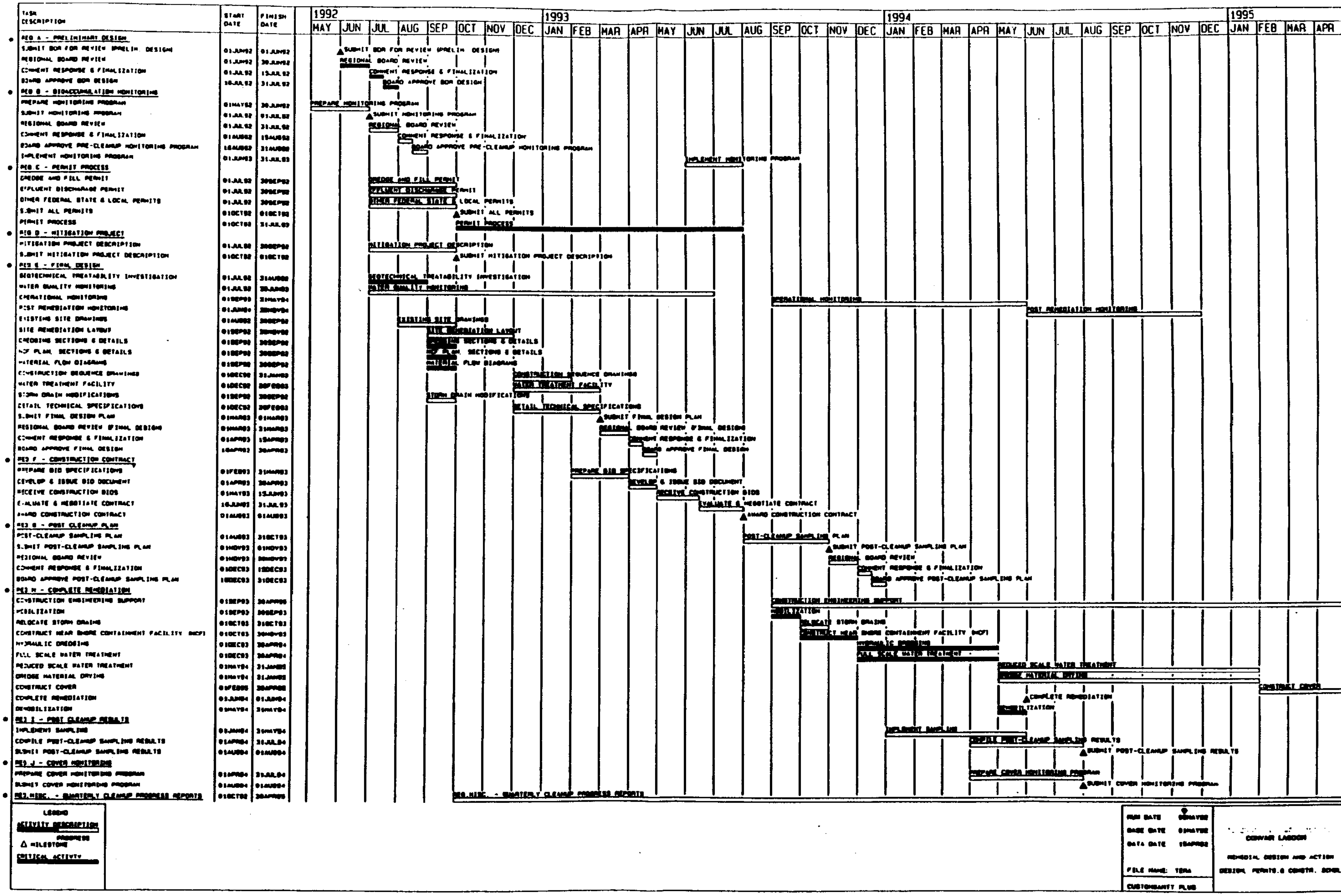


Figure 5-1. Bar chart schedule.

could result in significant scheduling delays. Finally, the schedule is dependent upon prompt agency and board reviews. If extensive revision of permit applications or delays in agency or board reviews occur, the schedule given in Figure 5.1 would have to be modified accordingly.

6.0 CONSTRUCTION DRAWINGS AND TECHNICAL SPECIFICATIONS

This section of the report presents a list of anticipated drawings and technical specifications that will be prepared during the final design of the facility. The drawings will show the existing site conditions, layouts for site remediation, material flow diagrams, suggested layouts for water treatment facility, and the general construction approach to implement the design of the NCF, including the NCF plans, sections, and details. Technical specifications necessary for the implementation of the selected remediation will also be prepared.

6.1 CONSTRUCTION DRAWINGS

The following drawings will be prepared to support the construction.

Drawing Description	Estimated No. of Dwgs.
Overall Site Plan	1
Existing Topography	1
Sampling Location Plan	1
Plot Plan	1
Dredging Plans	6
Dredging Sections	3
Nearshore Containment Facility Plan	1
Nearshore Containment Facility Sections and Details	3
Grading and Paving Plan	1
Grading and Paving Sections and Details	2
Water Treatment Plant Flow Diagram	1
Water Treatment Plant Layout	1
Sediment Control Plan	1
Sediment Control Sections and Details	1
	25

6.2 TECHNICAL SPECIFICATIONS

Technical specifications for the implementation of these selected remedies are an integral part of the technical bid package. The technical specifications that will be developed include the following items:

- Scope of Work
- Applicable Codes and Standards
- Material specifications
- Technical Requirements

6.2.1 Specification Format

The specifications will be prepared in accordance with the Construction Specifications Institute (CSI) format as given in the following Section 01000 - Specification Outline (Table 6-1).

6.2.2 Scope of Specifications

The scope of the technical specifications for the site will include general requirements, site work, concrete, specialties, special construction, mechanical, electrical, and appendices as presented in Table 6-2.

Table 6-1
SECTION 01000
SPECIFICATION OUTLINE

PART 1 — GENERAL

1.1 Summary

1.1.1 The purpose of this Section is to describe the organization and format to which the Specification has been prepared. This Section is intended as an aid to facilitate the use of the Specification.

1.2 Specification Format

1.2.1 The Specification has been prepared in accordance with Construction Specifications Institute (CSI) Format.

1.2.2 The CSI format is subdivided into 16 major divisions. Divisions form the framework of this Specification and contain the technical requirements for the category of work within each Division. Divisions which are not applicable to this Specification are not used.

1.2.3 Sections within each division describe the specific requirements for different units of work based on trade or type of work. Sections within divisions are arranged in a five-digit numerical order in which the first two digits represent the division number. Page numbering is subordinate to section numbering.

1.2.4 Sections are subdivided into three distinct groupings of related information as follows:

Part 1 — GENERAL: Defines the administrative procedural requirements unique to the section.

Part 2 — PRODUCTS: Details the quality and features of items required for this project.

Part 3 — EXECUTION: Details the incorporation of the products into the project.

Most sections contain all three subdivisions, however, they are included only where needed. Within each part, paragraphs and subparagraphs are designated by a number-period system in which the first numeral represents the part number (e.g., 1.1, 1.1.1, 1.2, etc. for Part 1).

1.2.5 Most sections do not stand alone and are related to other portions of the contract documents. Some sections are specific extensions of, or are governed by the general

Table 6-1 (Continued)

SECTION 01000
SPECIFICATION OUTLINE

requirements of Division 1. Requirements of the Contract Documents shall apply as a whole, regardless of any overlapping of various portions of the Specification.

1.2.6 This Specification has been written in the imperative mood and, in some cases, in a streamlined form. The imperative language is directed to the Contractor, unless specifically noted otherwise.

1.3 Clarifications

1.3.1 Most sections begin with a paragraph in Part 1 entitled "Summary" or "Scope of Work." These paragraphs provide a brief description of the work specified in that Section. These descriptions are not intended to be all-inclusive, but provide a brief clarification of the particular subject matter in the Specification.

1.3.2 Some technical sections contain a paragraph entitled "Related Sections" or "Related Work Specified Elsewhere." This paragraph lists some of the related work specified in other sections of the Contract Documents. These listings are not intended to be all-inclusive. They are presented as a means of aiding the Contractor in locating other Specification Sections containing work that has a close relationship with the work specified in that Section. The requirements of the Contract Documents, including all specifications, shall apply as a whole.

1.3.3 Reference standards are incorporated into the Specifications by reference number, title or other designations. The provisions of these standards become a part of the Specification in their entirety. When there is a conflict or discrepancy between a reference standard and the Specification or with another reference standard, the more stringent requirements shall apply.

1.3.4 In the event of a discrepancy between a drawing and the Specification, the Specification shall govern.

1.3.5 No typographical or other error on drawings shall relieve the Contractor from his responsibility to perform the intent of this Contract.

PART 2 — PRODUCTS

Not used.

PART 3 — EXECUTION

Not used.

Table 6-2
SPECIFICATIONS FOR CLEAN-UP PLAN
CONVAIR LAGOON
SAN DIEGO, CALIFORNIA

PART II — TECHNICAL PROVISIONS

TABLE OF CONTENTS

All work included in Divisions 1, 2, 3, 10, 15 and 16

DIVISION 1 — GENERAL REQUIREMENTS

Table 6-2 (Continued)

SPECIFICATIONS FOR CLEAN-UP PLAN
CONVAIR LAGOON
SAN DIEGO, CALIFORNIA

01505	Mobilization/Demobilization
01510	Temporary Site Facilities and Utilities
01540	Security
01550	Spill Control
01560	Temporary Controls/Environmental Protection
01562	Dust Control
01563	Erosion and Sediment Control
01564	Spill Control
01600	Equipment and Material Handling
01640	Off-Site Transportation and Disposal
01700	Project Closeout
01720	Project Record Documents
01725	As-Built Drawings
01730	Safety, Health and Emergency Response

DIVISION 2 — SITE WORK

02050	Demolition and Decommissioning
02100	Site Preparation
02220	Excavation
02221	Backfill and Grading
02500	Paving and Surfacing
02215	Geotextile
02230	Geomembrane
02440	Control Area Signs
02444	Chain Link Fence and Gates
02445	Bumper and Guard Posts
	Drainage
	Sheet Piling

DIVISION 3 — CONCRETE

03200	Concrete Reinforcement/Bentonite
03310	Structural Concrete

Table 6-2 (Continued)

SPECIFICATIONS FOR CLEAN-UP PLAN
CONVAIR LAGOON
SAN DIEGO, CALIFORNIA

DIVISION 11 — EQUIPMENT

	Water Treatment Specification
	Other Miscellaneous Equipment Specification

DIVISION 13 — SPECIAL CONSTRUCTION

13121	Metal Buildings

DIVISION 14 — CONVEYING SYSTEMS

14100	Dredging
14110	Sediment Transfer System

DIVISION 15 — MECHANICAL

	General Mechanical Equipment Specification

DIVISION 16 — ELECTRICAL

16010	Basic Electrical Work

APPENDICES

Appendix A	Site Data
Appendix B	Process Equipment Design Report

7.0 REFERENCES

ACOE (ACOE). 1984. Shore Protection Manual. Coastal Engineering Research Center, Waterways Experiment Station, ACOE, Vicksburg, Mississippi.

Barker, D.T. and D. Davis. 1986. Investigation of Polychlorinated Biphenyls (PCBs) in the Convair Lagoon Portion of San Diego Bay - Staff Testimony for Regional Board Meeting of July 29, 1986. California Regional Water Quality Control Board, San Diego Region, California.

Coe, A.L. 1991. Personal communication, Executive Officer, San Diego Region, California Regional Water Quality Control Board, San Diego, California, December 13, 1991.

Coe, A.L. 1990. Personal communication, Executive Officer, San Diego Region, California Regional Water Quality Control Board, San Diego, California, October 1990.

Ebasco. 1990a. Recommendations for PCB Action Levels in Sediments: Convair Lagoon, San Diego Bay. Technical Report. Ebasco Environmental and ERC Environmental and Energy Services Co., Bellevue, Washington.

Ebasco. 1990. Draft Final Feasibility Study of Remedial Alternatives for the Estuary and Lower Harbor/Bay, New Bedford, Massachusetts. Prepared for EPA under Contract No. 68-01-7250. Ebasco Environmental, Bellevue, Washington.

EPA (Environmental Protection Agency). 1982. Test Methods - Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. EPA-600/4-82-057. Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.

EPA (Environmental Protection Agency). 1983. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020. Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.

EPA (Environmental Protection Agency). 1986. Test Methods for Evaluating Solid Waste - Volume 1B: Laboratory Manual Physical/Chemical Methods. SW-846. Office of Solid Waste and Emergency Response, Washington, D.C.

EPA (Environmental Protection Agency). 1990. New Bedford Harbor Hot Spot Operable Unit Record of Decision. USEPA Region 1, Boston, Massachusetts.

EPA (Environmental Protection Agency). 1992. Record of Decision for New Bedford Harbor.

Geocon. 1990. Geotechnical Engineering Investigation for Harbor Island Hotel, San Diego, California. Technical Report. Geocon Incorporated, San Diego, California.

M/B&A (Meredith/Boli & Associates, Inc). 1987. Draft, First Phase Information Search for Users of Polychlorinated Biphenyls In and Around Convair Lagoon, San Diego, California. Meredith/Boli & Associates, Los Angeles, California.

Otis, M.J. 1990. New Bedford Harbor Superfund Pilot Study: Evaluation of Dredging and Dredge Material Disposal. ACOE, New England Division. Walthem, Massachusetts.

Plumb, R.H. 1981. Procedures for Handling and Chemical Analysis of Sediment and Water Samples. Technical Report. EPA/CE-81-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

SDUPD (San Diego Unified Port District). 1985. Marine Service Center Site, Convair Lagoon. Environmental Impact Report. UPD# 83356-EIR-35, Keith B. MacDonald and Associates, Inc., San Diego, California.

Smith, J.M. 1989. Wind-wave Generation on Restricted Fetches. Unpublished working draft. Coastal Engineering Research Center, Waterways Experiment Station, ACOE, Vicksburg, Mississippi.

TRA (Teledyne Ryan Aeronautical). 1989. Characterization of the Extent of Contaminated Sediments in Convair Lagoon - Volume I, Technical Report. Teledyne Ryan Aeronautical, San Diego, California.

TRA (Teledyne Ryan Aeronautical). 1988. Characterization of the Vertical Extent of Contaminated Sediments in Convair Lagoon, San Diego Bay - Volumes I and II, Technical Reports. Teledyne Ryan Aeronautical, San Diego, California.

TRA (Teledyne Ryan Aeronautical). 1989a. Supplemental Report, Characterization of the Extent of Contaminated Sediments in Convair Lagoon - Volume I, Technical Report. Teledyne Ryan Aeronautical, San Diego, California.

TRA (Teledyne Ryan Aeronautical). 1991. Engineering Evaluation Report Sediment Cleanup Options: Convair Lagoon. Technical Report. Teledyne Ryan Aeronautical, San Diego, California.

Water Resources Control Board. 1991. California Enclosed Bays and Estuaries Plan - Water Quality Control Plan for Enclosed Bays & Estuaries of California. 91-18 WQ. Water Resources Control Board, Sacramento, California.

Woodward-Clyde Consultants. 1980. Soil and Geologic Investigation for the Proposed Machine Foundation, Building 120, Teledyne Ryan Aeronautical, San Diego, California. Woodward-Clyde Consultants, San Diego, California.

The following appendices to the Basis of Design Report are on file with the District Clerk's office and are available for review.

Appendix A - Wind, Wave, and Tidal Data

Appendix B - Hydraulic Analysis

Appendix C - Convair Lagoon Remediation List of Drawings

APPENDIX B

DESCRIPTIONS OF SELECTED CAPPING PROJECTS

Table B-1

DESCRIPTIONS OF SELECTED CAPPING PROJECTS

PROJECT		CONTAMINATED MATERIAL			CAPPING MATERIAL		
Location (date)	Site Characteristics	Vol. of Material (m^3)	Dredging Method	Placement Method	Volume type m^3	Thickness of Cap (m)	Placement Method
Duwamish Waterway, Seattle, WA (1984)	Existing subaqueous depression 12 m deep	840	Clamshell	Scow	2,700	0.3-1.0	Sprinkling from bottom dump scow
One Tree Island, Olympia, WA (1987)	Contained Aquatic Disposal of material 11m deep conical pit	3,000	Clamshell	Scow	3,000 (dredge sand)	1.2m (minimum)	Clamshell
Simpson Tacoma Kraft Co., Tacoma, WA (1988)	In situ capping of 6.9 ha of contaminated near shore area	N/A	N/A	N/A	153,000 (dredge sand)	.6 - 3.7	Hydraulic Dredge with Energy Dissipating Box
Denny Way (CSO), Elliott Bay, WA (1990)	In situ capping of 11,000 m^3 contaminated near shore area	N/A	N/A	N/A	15,300 (dredged sand)	.52 (Minimum)	Sprinkling from bottom dump scow
Portland General Electric Co, Portland, OR (1990)	Low-volume dredging and capping of 900 m^2 of shoreline sediments with armoring	200	Low-volume, hand-held, dredge	Upland disposal	5,000; sand gravel, filter, and rip rap	1.8 - 3.6	Clamshell
Pier 53, Elliott Bay, Seattle, WA (1992)	In situ cap approx. 18,400 m^2 in depths of 12 to 22 m	N/A	N/A	N/A	23,000 dredge sand	1.0 (Average)	Clamshell/split hull scow
Seattle Ferry Terminal, Elliott Bay, WA (1989)	In situ capping of 11,600 m^2 contaminated near shore area	N/A	N/A	N/A	6,900 (process sand and quarry spalls)	.5 (Average)	Clamshell

Table B-1 (Continued)

DESCRIPTIONS OF SELECTED CAPPING PROJECTS

PROJECT		CONTAMINATED MATERIAL			CAPPING MATERIAL		
Location (date)	Site Characteristics	Vol. of Material (m^3)	Dredging Method	Placement Method	Volume type m^3	Thickness of Cap (m)	Placement Method
Rotterdam Harbor, The Netherlands (1981-1983)	Phase I: Botlek Harbor excavated to 29.9 m deep	920,000	Trailing suction hopper	Pumpout submerged diffuser	--- (clay)	0.6 - 1.0	Scow, then leveled over site
	Phase II: First petroleum harbor excavated to 24.4 m deep	470,000	Matchbox suction	Pipeline submerged diffuser	--- (clay)	0.6 - 1.0	Scow, then leveled over site
Delfshaven-Rotterdam, Buzenwaal Harbor (1985)	In situ cap of oil contaminated sediment	---	---	---	--- (sand with a geotextile, and clay)	1.0 (average)	Sprinkler barge
New York Bight (1980)	Generally flat bottom 24.3-27.4 m deep	660,000 (mounded to 1.8 m thick)	Clamshell	Scow	1,400,000 (majority fine sand)	Average 1-1.2; Maximum 1.5-2.7	Scow, hopper dredge
Central Long Island Sound Disposal Area (1979)	Stamford-New Haven North: generally flat, bottom 19.8 m deep	26,000 (mounded 1 -1.8 m thick)	Clamshell	Scow	50,000 (sand)	Up to 2.1 - 3.0	Hopper dredge
	Stamford-Hew Haven South: generally flat, bottom 21 m deep	38,000 (mounded 1.2-1.9 m thick)	Clamshell	Scow	76,000 (cohesive silt)	Up to 4.0	Scow
Sorfjord, Norway (1992)	In situ cap 90,000 m^2 of metal contamination	N/A	N/A	N/A	--- (sand and geotextile)	0.3 m sand	Installed specialized geotextile then sand
Central Long Island Sound Disposal Area (1981)	Norwalk: generally flat bottom 19.8 m deep	70,000 (multiple mounds up to 2.5-3.6 m thick)	Clamshell	Scow	280,000 (silt and sand)	Up to 1.8 - 2.1	Scow

Table B-1 (Continued)

DESCRIPTIONS OF SELECTED CAPPING PROJECTS

PROJECT		CONTAMINATED MATERIAL			CAPPING MATERIAL		
Location (date)	Site Characteristics	Vol. of Material (m^3)	Dredging Method	Placement Method	Volume type m^3	Thickness of Cap (m)	Placement Method
Central Long Island Sound Disposal Area (1983)	Cap Site No. 1: generally flat, 18.3 m deep	25,000 (mounded 1 m thick)	Clamshell	Scow	60,000 (silt)	Incomplete coverage	Scow
	Cap Site No. 2 generally flat, 17.0 m deep	30,000 (low mound, 0.6 m thick)	Clamshell	Scow	30,000	Irregular: Maximum 1.4, Minimum 0.2	Scow
Lake Biwa, Japan (1988)	In situ cap two areas, 3700 m^2 and 900 m^2	N/A	N/A	N/A	---(sand)	0.5 to 0.20	Water-dispersal method, studied for cap thickness
Kure Bay, Japan (1984)	In situ cap 1.92 ha and 4.48 ha	N/A	N/A	N/A	--- (sand)	0.5 m max.	Barge unloader and sand spreader
Hiroshima Bay Japan (1979-1980)	Contaminated bottom sediment overlaid in situ with capping material 21 m deep	N/A	N/A	N/A	--- (sand with shell)	0.5	Conveyor to gravity fed submerged tremie. Suction/ pumpout through submerged spreader bar
Central Long Island Sound Disposal Area (1982-1983)	Mill-Quinnipac: generally flat bottom 19.8 m deep	30,000	Clamshell	Scow	990,000 (silt)	Multiple broad area placement; estimated average 1.8 - 3.0	Scow

* All volumes are approximates
--- Indicates volumes are unknown or not reported.

APPENDIX C

MARINE RESOURCES TECHNICAL DATA

Appendix C-1. Summary of Total PCBs (mg/kg dry weight) in Convair Lagoon Sediments from All Studies. Shaded Values Indicate Concentrations above 10 mg/kg Cleanup Level.
Sample Locations Highlighed in Bold Box are within the Proposed Cleanup Area.

STATION LOCATION	Depth of Core Segment Below Sediment Surface (ft) 1	2	3	4	5	6	7	8	9	10
PHASE 1 (ERCE 1988)										
AR-60-1	902.1	-	-	-	-	-	-	-	-	-
AR-60-2	141.9	-	-	-	-	-	-	-	-	-
AR-60-3	647.8	-	-	-	-	-	-	-	-	-
AR-60-4	271.7	-	-	-	-	-	-	-	-	-
A-60-1	182.6		-	-	-	-	-	-	-	-
AR-120-1	279.7	-	-	-	-	-	-	-	-	-
AR-120-2	164.5	443.43	49.16	-	-	-	-	-	-	-
AR-120-3	213.9	-	-	-	-	-	-	-	-	-
AR-120-4	71.5	-	-	-	-	-	-	-	-	-
A-120-1	114.2	-	-	-	-	-	-	-	-	-
A-240-1	93.5	129.03	12.57	0.34	-	-	-	-	-	-
AR-500-1	1.5	-	-	-	-	-	-	-	-	-
AR-500-2	0.1	-	-	-	-	-	-	-	-	-
AR-500-3	1.4	-	-	-	-	-	-	-	-	-
AR-500-4	1.9	-	-	-	-	-	-	-	-	-
A-500-1	1.4	-	-	-	-	-	-	-	-	-
B-90-1	0.0	0	2.19	3.32	-	-	-	-	-	-
B-430-1	1.3	0.60		0	-	-	-	-	-	-
B-630-1	0.3	0	0	-	-	-	-	-	-	-
PHASE 1A (ERCE 1988)										
C-20-1	2.9	0.17	0	-	-	-	-	-	-	-
D-20-1	6.6	13.68	0	-	-	-	-	-	-	-
CV-1	0.49	-	-	-	-	-	-	-	-	-
CV-2	1	16.00	0.12	-	-	-	-	-	-	-
CV-3	3.5	-	-	-	-	-	-	-	-	-
CV-4	66	-	-	-	-	-	-	-	-	-
CV-5	170	-	-	-	-	-	-	-	-	-
CV-6	3.3	-	-	-	-	-	-	-	-	-
CV-7	1.03	-	-	-	-	-	-	-	-	-
PHASE 2 (ERCE 1989)										
1-50	6.9	70	46.5	8.2	1.36	0.26	0.099	0	-	-
1-100	4.8	36.8	17.7	8	0	0	0	0	-	-
1-150	1.6	0.6	0	0	-	-	-	-	-	-
1-200	8.51	0.9	0	0	-	-	-	-	-	-
2-0	24.8	2	0	0	-	-	-	-	-	-
2-50	91	96.3	90.5	471	1800	98	1410	45.6	3.2	0.82
2-100	73	108.3	880	304	100	23.8	1.35	0.38	0	0
2-150	49.8	630	25	18	1.42	0.34	0	0	-	-
2-250	53.6	13.6	4.68	0.36	0.17	0.058	0	0	-	-
3-0	76	21	9.6	0.15	0.056	0.136	0	0.081	-	-
3-50	89	1800	400	4.25	2.7	0.85	1.05	0.49	0.197	0.074
3-100	94	570	180	60	11	0.73	1.3	0.31	0.064	0.28
3-150	35.7	54.6	78	9.4	25	6.1	1.8	0.192	0.096	0
4-0	0.42	0.59	0	0	-	-	-	-	-	-
4-50	57.5	36.9	33.8	97	270	85	11	0.44	0.36	0.16
4-100	42.8	70.9	83	180	230	20.8	1.62	0.55	0.16	0.096
4-150	57	25.2	160	18.2	0.68	11.3	0.28	0	-	-
4-250	23.2	58.7	14.9	4.37	0.24	0.063	0	0	-	-
5-0	6.8	6.5	15	0.091	0	0	0	0.055	-	-
5-50	28.7	44.6	34.9	2.78	150	16	5	0.42	0.055	0
5-100	52.7	50.5	64.4	1800	11.6	31	0.73	0.073	-	-
6-0	4.6	11	0.3	0	0	-	-	-	-	-
6-50	4.08	3.66	4.5	17.5	180	6.4	2.78	0.64	0.17	0.153
6-100	20.9	13.3	95.4	10.2	2.32	0.16	0	0	-	-
6-150	11.3	89	211	7.5	2.07	0.47	0	0	-	-
6-250	17.1	59.5	30.6	3.95	0.61	0	0	0	-	-
PHASE 3 (EBASCO ND)										
C1	14.6	130	1100	31	93	7.68	1.91	0.54	-	-
C2	26.3	360	290	42.8	8.1	1.63	0.54	0.487	0.069	-
C3	28	160	240	41	14.9	1.07	1.3	0.791	-	-
C4	360	61	24	4.52	0.141	0.183	0.228	-	-	-
C5	110	290	11	1.5	0.079	0	0.1	27	-	-
C6	46.6	67.6	140	220	49	70.4	12	2.03	0.41	-
C7	54.8	460	71	46.7	21.6	3.41	0.65	0.366	-	-
C8	22.1	410	88	32.7	9.7	2.5	1.01	0.87	-	-
C9	57.8	89.7	97	950	71	45.3	20.2	2.93	0.483	-
C10	34.1	120	210	150	1800	166	107.8	16.5	14.6	15.1
C11	39.5	55	43	47.8	22	19	3.12	0.9	0.309	0.097

Appendix C-2. Heavy Metals Concentrations (mg/kg dry weight) in Convair Lagoon Sediment Near Storm Drains, May 2 AND 3, 1985.

Data from Regional Board Staff Sampling, Table 17, RWQCB 1986
Sample Locations Highlighed in Bold Box are within the Proposed Cleanup Area.

		Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
Regulatory Guidelines								
NOAA-ERL (1)		5	80	70	35	0.15	30	120
NOAA-ERM (1)		9	145	390	110	1.3	50	270
WSMS (2)	Bold	5.1	260	390	450	0.41	—	410
Sample Location								
30" Drain								
30A		<1	120	32	43	1.1	<1	77
30B		3	229	93	103	0.5	11	210
30C1		3	231	152	142	<0.5	12	280
30C2		<1	100	23	55	0.5	6	69
30C3		11	611	399	393	1.1	28	745
30D		8	526	421	321	1.1	39	680
60" Drain								
60A1		10	758	122	299	0.5	18	490
60A2		12	696	183	417	<0.5	21	570
60A3		10	811	163	292	0.5	23	540
60B		26	859	179	414	<0.5	24	700
60C2		9	732	229	484	1.1	25	780
60C3		17	720	168	309	3.7	16	550
54" Drain								
54A		<1	59	15	40	<0.5	2	53
54B		4	140	53	85	2.1	8	97
54C1		<1	152	59	82	<0.5	11	122
54C2		<1	21	7	7	<0.5	4	20
54C3		5	132	68	91	<0.5	11	122
54D		4	201	82	83	1.1	15	230

(1) NOAA 1990
(2) Washington State Dept of Ecology 1991

Appendix C-3. Concentration (mg/kg dry weight) of Metals in Convair Lagoon Based on Phase 1 Sampling (ERCE 1988). Sample Locations Highlighed in Bold Box are within the Proposed Cleanup Area.

Sample		Cadmium	Chromium	Copper	Lead	Mercury	Zinc
Regulatory Guidelines							
NOAA-ERL (1)		5	80	70	35	0.15	120
NOAA-ERM (1)		9	145	390	110	1.3	270
WSMS (2)	**Bold**	5.1	260	390	450	0.41	410
Sediment Depth =1 ft							
AR-60-1		26.13	1290.5	183.5	276.8	0.58	799.7
AR-60-2		25.81	1367.7	92.1	211.6	2.45	690.3
AR-60-3		24.18	1965.9	252.7	320.1	0.65	2115.4
AR-60-4		29.44	1631.3	123.9	366.0	0.48	928.4
A-60-1		32.87	1692.1	114.6	398.1	0.57	1123.4
AR-120-1		13.85	1018.4	219.6	317.5	0.48	597.2
AR-120-2		17.90	1262.7	205.1	536.5	0.32	821.6
AR-120-3		16.18	1085.6	159.1	357.0	0.28	641.7
AR-120-4		18.97	921.6	92.0	440.2	0.30	563.5
A-120-1		15.57	1124.8	273.8	373.4	0.32	808.3
A-240-1		10.88	664.7	331.6	435.6	0.95	677.2
D-20-1		1.48	213.8	44.3	57.5	0.30	100.5
AR-500-1		1.97	112.7	60.5	59.2	0.64	165.4
AR-500-2		1.19	79.6	59.9	49.3	0.31	79.6
AR-500-3		1.87	103.0	61.2	66.9	0.66	143.2
AR-500-4		1.93	105.1	61.2	74.6	0.54	148.7
A-500-1		2.11	107.4	56.1	46.6	0.63	157.9
A-750-1		0.54	43.6	37.3	22.1	0.32	88.9
AR-1000-1		0.44	30.6	19.2	15.6	0.27	54.5
AR-1000-2		0.43	31.1	29.7	18.7	0.21	32.0
AR-1000-3		0.46	33.0	32.9	22.0	0.20	33.0
AR-1000-4		0.37	30.9	31.1	19.9	0.23	30.9
A-1000-1		0.44	32.6	28.1	20.6	0.21	72.8
B-90-1		0.26	25.2	11.1	6.6	ND	37.4
B-430-1		1.75	100.6	63.2	45.0	0.47	139.1
B-630-1		0.79	48.0	25.0	14.7	ND	48.0
C-20-1		2.44	73.8	38.8	87.3	0.52	77.3
Sediment Depth = 2 ft							
A-60-02							
A-120-2		38.07	1727.8	325.7	451.1	0.26	1342.5
A-240-2		101.14	1886.1	218.2	605.3	1.20	1571.2
D-20-2		1.99	406.7	25.2	40.9	ND	72.4
A-500-2		1.10	56.5	18.0	14.9	0.41	77.9
A-750-2		0.38	26.8	15.7	7.1	ND	41.8
A-1000-2		0.33	25.2	12.8	6.8	0.18	39.8
B-90-2		0.85	44.4	14.0	8.7	0.17	56.3
B-430-2		2.29	103.0	25.3	26.7	0.20	103.3
B-630-2		ND	15.6	6.4	1.3	ND	15.6
C-20-2		1.34	60.4	7.0	19.6	0.32	32.7
Sediment Depth = 3 ft							
A-60-3							
A-120-3		41.79	2458.8	74.4	684.3	0.17	1992.2
A-240-3		71.50	2247.8	78.1	3.0	1.12	1946.9
D-20-3		8.87	548.9	49.4	86.6	0.37	237.3
A-500-3		ND	16.4	6.5	1.7	ND	25.8
A-750-3		ND	16.4	11.2	4.4	ND	32.4
A-1000-3		ND	13.7	6.2	2.3	ND	22.8
B-90-3		7.13	376.5	62.2	88.7	0.70	378.1
B-430-3		ND	19.1	9.4	3.7	ND	33.6
C-20-3		1.61	66.3	11.1	9.7	0.15	47.0
Sediment Depth = 4 ft							
A-240-4		52.89	1375.9	73.8	415.0	0.82	1717.7
B-90-4		1.88	124.3	76.3	69.9	0.43	172.0
B-430-4		0.14	23.5	14.0	6.4	ND	46.3

(1) NOAA 1990
(2) Washington State Dept of Ecology 1991

APPENDIX C-4

MARINE RESOURCES TECHNICAL DATA

The regulatory guidelines applied to the trace metals data include National Oceanic and Atmospheric Administration (NOAA) Effects Range Low (ER-L) and Effects Range Median (ER-M) values (Long and Morgan 1990) and the Washington State Marine Sediment Quality Standards - Chemical Criteria (Washington State Department of Ecology 1991). Long and Morgan (1990) define ER-L as a concentration at the low end of the range of data reviewed in this document in which effects had been observed. They define an ER-M as a concentration approximately in the the middle of the range of reported values associated with biological effects. These two values were determined using a method similar to that used by Klapow and Lewis (1979) in establishing marine water quality standards for the State of California. For each chemical of interest, they assembled available toxicity data from spiked-water bioassays, examined the distribution of the reported LC_{50} values and determined the lower 10- and 50-percentile concentrations among the ranges of values. In Long and Morgan (1990), the ER-L values are concentrations equivalent to the lower 10 percentile of the screened available data and indicate the low end of the range of concentrations in which toxic effects were observed or predicted. They are used in the document to indicate concentrations above which adverse effects may begin or are predicted among sensitive life stages and/or species or as determined in sublethal tests. The ER-M values for the chemicals are the concentrations equivalent to the 50 percentile point in the screened available data. They are used in the document to indicate the concentration above which effects are frequently or always observed or predicted among most species.

Appendix C-5. Historical State Mussel Watch Tissue Data for Metals (mg/kg dry weight) in Convair Lagoon.

Station Number Location	Collection Date	Al	Cd	Cr	Cu	Pb	Mg	Hg	Ag	Zn	Report
Transplanted Mussels											
894 SD BAY E. COMM. BASIN	1/7/82	575.23	7.13	**5.13**	17	**15.13**	24.37	0.195	0.677	278.8	SWRCB 1988
894 SD BAY E. COMM. BASIN	12/29/82	143.27	5.03	1.77	15.23	6.87	18.17	0.175	**0.75**	269.33	SWRCB 1988
894 SD BAY E. COMM. BASIN	2/19/85	NA	NA	NA	NA	NA	NA	NA	NA	NA	SWRCB 1988
894 SD BAY E. COMM. BASIN	1/3/86	453.29	4.67	**7.71**	**29.76**	**29.78**	20.69	0.125	**0.853**	329.41	SWRCB 1988
894 SD BAY E. COMM. BASIN	12/21/88	412.06	7.67	***5.22***	***43.06***	***16.28***	19.94	0.194	1.433	365.72	SWCRB 1990
894 SD BAY E. COMM. BASIN	12/21/89	420.52	7.65	***7.34***	***37.69***	***15.52***	12.88	0.206	***1.295***	392.32	SWCRB 1991
894.1 E. BASIN SOFT BOTTOM	1/4/84	356.23	**11.8**	**6.03**	15.3	9.87	14	0.443	0.608	368.27	SWRCB 1988
894.1 E. BASIN SOFT BOTTOM	12/21/88	361.13	5.13	2.8	***76***	2.2	25.93	0.34	0.547	348.87	SWCRB 1990
Sediment											
894 SD BAY E. COMM. BASIN	9/1/89	13810	10.58	12.7	136.35	157.8	876.92	0.215	0.05	397.79	SWCRB 1991

Bold values indicate that concentrations of an analyte exceed 85% of all measurements of that analyte in similar samples at all other sites in the Mussel Watch Program (EDL 85).
Bold and boxed values indicate that concentrations of an analyte exceed 95% of all measurements of that analyte in similar samples at all other sites in the Mussel Watch Program (EDL 95).
Italicized EDL values were calculated with wet weight results. The data presented here are dry weight estimates.
* Sample types are Transplanted California Mussels (TCM) and Sediment (SED).
ND Not Detected

Appendix C-6. Historical State Mussel Watch Tissue Data for PCBs and Organics (ug/kg dry weight) in Convair Lagoon.

Station Number	Location	Collection Date	Alpha Chlordene	Chlor-pyrifos	Total Chlordane	Cis Chlordane	Trans Chlordane	Cis Nonachlor	Trans Nonachlor	O,P' DDD	P,P'- DDD	O,P' DDE	P,P'- DDE	O,P' DDT	P,P' DDT	P,P' DDMS	P,P' DDMU	Total DDT
	Transplanted Mussels																	
894	SD BAY E. COMM. BASIN	1/7/82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
894	SD BAY E. COMM. BASIN	12/29/82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
894	SD BAY E. COMM. BASIN	2/19/85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
894	SD BAY E. COMM. BASIN	1/3/86	ND	ND	82.2	25	26	7.2	24	ND	120	ND	120	ND	ND	ND	ND	240
894 ‡	SD BAY E. COMM. BASIN	1/3/86	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
894	SD BAY E. COMM. BASIN	12/21/88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
894	SD BAY E. COMM. BASIN	12/21/89	$\boxed{\textbf{\textit{9}}}$	$\boxed{\textbf{\textit{29.9}}}$	95.8	29.2	25	9.7	22.9	43.8	145.8	***68.7***	52.1	ND	ND	***41***	22.2	373.6
894 ‡	SD BAY E. COMM. BASIN	12/22/90	ND	ND	52	19	14	5.1	14	26	69	ND	38	ND	5.2	ND	ND	140
894 ‡	SD BAY E. COMM. BASIN	12/21/91	ND	ND	49	15	15	5.8	13	45	98	73	120	ND	17	ND	18	370
894.1	E. BASIN SOFT BOTTOM	1/4/84	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
894.1	E. BASIN SOFT BOTTOM	12/21/88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
894.2 ‡	CONVAIR LAGOON DOCK	12/21/88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
894.3 ‡	CONVAIR LGN. MID-CHAN.	12/21/88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Sediment																	
894	SD BAY E. COMM. BASIN	9/1/89	6.4	ND	66.9	17.7	21.8	6.5	14.6	59.9	231.3	163.3	62.6	136.1	421.8	12.2	29.2	1170
894 ‡	SD BAY E. COMM. BASIN	9/7/90	6.2	ND	65	14	22	3.5	12	81	240	260	51	ND	4.7	13	48	700
894 ‡	SD BAY E. COMM. BASIN	8/31/91	3.5	ND	99	32	35	5.4	17	100	450	380	630	2	57	21	44	1700

Bold values indicate that concentrations of an analyte exceed 85% of all measurements of that analyte in similar samples at all other sites in the Mussel Watch Program (EDL 85).
Bold and boxed values indicate that concentrations of an analyte exceed 95% of all measurements of that analyte in similar samples at all other sites in the Mussel Watch Program (EDL 95).
Italicized EDL values were calculated by SWCRB with wet weight results. The data presented here are in dry weight.
‡ EDLs not calculated or available for that sample(s) by SWCRB for that year. EDLs are estimated by comparing to past values.
* Sample types are Transplanted California Mussels (TCM), Resident Bay Mussels (RBM), and Sediment (SED).
** indicates values that exceed 2.0 PPM wet weight
ND Not Detected
NA Not Analyzed

Appendix C-6. Historical State Mussel Watch Tissue Data for PCBs and Organics (ug/kg dry weight) in Convair Lagoon. (Continued)

Dieldrin	PCBs Total PCB	PCBs 1248	PCBs 1254	TBT	Alpha-HCH	Gamma-HCH (Lindane)	Hexa-Chloro-Benzene	Report
NA	7300	ND	7300	NA	NA	NA	NA	SWRCB 1988
NA	24000**	11000	13000**	NA	NA	NA	NA	SWRCB 1988
NA	12000**	4300	7700	NA	NA	NA	NA	SWRCB 1988
5	12200**	4200	8000	1770	ND	ND	ND	SWRCB 1988
NA	12000	7500	4400	NA	NA	NA	NA	SWCRB (unpub.)
NA	*18500***	*8800*	*9700*	NA	NA	NA	NA	SWCRB 1990
3.5	*8472.22*	*3680.6*	*4791.7*	899.93‡	ND	*6.2*	ND	SWCRB 1991
5	9100	4500	4600	NA	ND	ND	ND	SWCRB (unpub.)
ND	8200	3300	4900	NA	ND	ND	ND	SWCRB (unpub.)
NA	19000**	7000	12000	NA	NA	NA	NA	SWRCB 1988
NA	*3020*	*320*	*2700*	NA	NA	NA	NA	SWCRB 1990
NA	**5500**	**1100**	**4400**	NA	NA	NA	NA	SWCRB (unpub.)
NA	**13000**	**3900**	**9200**	NA	NA	NA	NA	SWCRB (unpub.)
3	NA	NA	NA	NA	1.1	ND	1.2	SWCRB 1991
ND	58000	42000	ND	NA	ND	ND	7.4	SWCRB (unpub.)
1.3	107000	86000	ND	NA	ND	ND	5.1	SWCRB (unpub.)

APPENDIX D

MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM

PROGRAM DESCRIPTION AND GENERAL GUIDELINES

This mitigation monitoring program (herein referred to as the "Program") is based on mitigation proposed for the preferred alternative (i.e., the Sand Capping alternative) within the Final Environmental Impact Report (EIR/Final Remedial Action Plan for the Convair Lagoon Remediation Project (UPD #83356-EIR-225; SCH #92091011). Also included are mitigation measures appropriate for the proposed project (i.e., the Nearshore Containment Facility). This Final EIR was certified by the San Diego Unified Port District (SDUPD) on or about October 19, 1993. The Program is presented in tabular form for both the preferred alternative and the proposed project to simplify verification of the various mitigation and monitoring actions. The Program is intended to be used to verify implementation of the necessary mitigation measures as well as to generate information on the effectiveness of the mitigation to guide future mitigation efforts.

Implementation of this mitigation monitoring program is the responsibility of the SDUPD. The SDUPD will either designate an in-house staff person or will contract with an outside consultant to function as the Mitigation Compliance Coordinator (MCC). The primary role of the MCC is to oversee the entire monitoring program including the coordination of all in-field monitoring activities. Plan reviews and checks are also the responsibility of the MCC to ensure that mitigation is noted or incorporated into the Final Remedial Action Plan, as necessary. Specific MCC functions include the following:

- Overall implementation and management of the monitoring program.

- Quality control of the monitoring team.

- Administration and preparation of daily logs, status reports, compliance report and the final construction monitoring report.

- Liaison between the San Diego Unified Port District, project contractors, and all in-field monitors.

- Monitoring of onsite, day-to-day construction activities, including the direction of all project personnel in the understanding of all permit conditions, site-specific project requirements, construction schedules, and environmental quality control effort.

- Ensure contractor knowledge of, and compliance with, all appropriate permit conditions.

- Review of all construction impact mitigations and, if need be, proposed alternative mitigation (as long as the measures achieve the level of mitigation originally proposed and have been approved by staff of the appropriate jurisdiction).

- Have the authority to require correction of activities observed that violate project environmental conditions or that represent unsafe or dangerous conditions under direction of the staff of the appropriate jurisdiction.

The Program for the sand capping of Convair Lagoon addresses impacts for the following issues: Marine Resources; Geotechnical/Seismicity; Human Health and Safety; and Recreational Boating/Navigational Safety.

The Program for the Nearshore Containment Facility addresses impacts for the following issues: Water Quality; Marine/Avian Resources; Geotechnical/Seismicity; Human Health and Safety; and Coast Guard Operations/Security.

REPORTING FORMAT

An effective reporting system shall be established prior to any monitoring efforts. Copies of the measures shall be distributed to the participants of the monitoring effort to ensure that all parties involved have a clear understanding of the mitigation monitoring measures adopted. It is anticipated that the participants will include the appropriate SDUPD staff or MCC, SDUPD's environmental consultant, Teledyne Ryan, and the remediation crew supervisor. The MCC shall distribute to each in-field monitor a specific list of mitigation measures that pertain to his or her monitoring task as well as the appropriate time frame for implementation of each mitigation measure. In-field monitoring reports shall be completed by the in-field monitors and given to the MCC, who shall then file them as documentation regarding the monitoring activities and results. A sample report format is attached to this report as Exhibit A.

CONVAIR LAGOON REMEDIATION MITIGATION MONITORING PROGRAM
SAND CAPPING (PREFERRED ALTERNATIVE)

Mitigation Measure	Monitoring Effort	Time Frame of Mitigation	Responsible for Mitigation	Time Frame for Verification	Responsible for Verification	Date of Completion	Date of Verification
<u>Marine Resources</u>							
Placement of one foot of crushed rock on the existing lagoon bottom to act as a deterrent to deep-burrowing organisms.	Field inspection to verify that rock layer is in place.	During remediation activity	Teledyne Ryan	During and after remediation activity	MCC		
Conduct additional field studies to determine what species created the burrows in Convair Lagoon and to estimate the depth of those systems. Then conduct field and lab investigations to determine the effectiveness of the proposed rock layer.	Review field studies and lab investigation. Any changes to the proposed rock layer recommended by the studies shall be incorporated into the final remediation plan.	Prior to approval at final remediation plan	Teledyne Ryan	Prior to approval of final remediation plan	MCC		
The District will work with the Responsible Party(ies) to establish an adequate Annuity or other financial account to provide funds necessary for long-term monitoring and maintenance.	Establish an Annuity or other financial account.	Prior to remediation activity	Teledyne Ryan	Prior to remediation alternative	MCC		

CONVAIR LAGOON REMEDIATION MITIGATION MONITORING PROGRAM (Continued)
SAND CAPPING (PREFERRED ALTERNATIVE)

Mitigation Measure	Monitoring Effort	Time Frame of Mitigation	Responsible for Mitigation	Time Frame for Verification	Responsible for Verification	Date of Completion	Date of Verification
<u>Geotechnical/Seismicity</u>							
A contingency plan shall be prepared describing how significant damage to the cap resulting from an earthquake will be repaired.	Review contingency plan. A long-term monitoring program to evaluate the effectiveness of the cap shall involve sediment core samples and biological samples.	Prior to approval of final remediation plan	Teledyne Ryan	Prior to approval of final remediation plan and throughout life of project	MCC		
An ordinance prohibiting anchoring within Convair Lagoon shall be adopted by the SDUPD. Upon adoption of the ordinance, the San Diego Harbor Police and the U.S. Coast Guard shall be notified. Signs shall also be posted to notify boaters of the restriction.	Documentation of the adopted ordinance and of notification of the ordinance to the San Diego Harbor Police and the U.S. Coast Guard shall be obtained. Field checks shall be made to verify the placement of the signs.	Prior to initiation of remediation	SDUPD	Prior to initiation of remediation	MCC		

CONVAIR LAGOON REMEDIATION MITIGATION MONITORING PROGRAM (Continued)
SAND CAPPING (PREFERRED ALTERNATIVE)

Mitigation Measure	Monitoring Effort	Time Frame of Mitigation	Responsible for Mitigation	Time Frame for Verification	Responsible for Verification	Date of Completion	Date of Verification
Recreational Boating/Navigational Safety							
An ordinance prohibiting anchoring within Convair Lagoon shall be adopted by the SDUPD. Upon adoption of the ordinance, the San Diego Harbor Police and the U.S. Coast Guard shall be notified. Signs shall also be posted to notify boaters of the restriction.	Documentation of the adopted ordinance and of notification of the ordinance to the San Diego Harbor Police and the U.S. Coast Guard shall be obtained. Field checks shall be made to verify the placement of the signs.	Prior to initiation of remediation	SDUPD	Prior to initiation of remediation	MCC		

CONVAIR LAGOON REMEDIATION MITIGATION MONITORING PROGRAM
NEARSHORE CONTAINMENT FACILITY (PROPOSED PROJECT)

Mitigation Measure	Monitoring Effort	Time Frame of Mitigation	Responsible for Mitigation	Time Frame for Verification	Responsible for Verification	Date of Completion	Date of Verification
Water Quality							
Dredging shall be conductedin a manner to minimize resuspension and recontamination of nearby sediments and water, as ell as to ensure removal of all contaminated sediments	Sediment and water ampling during and after dredging operations.	During and after remediation activity	Teledyne Ryan	During and after remediation activity	MCC		
Verify that leakage of contaminants is not occurring from the Nearshore Containment Facility (NCF)	Field inspections and annual sediment and water sampling near NCF perimeter.	Following remediation activity	Teledyne Ryan	Following remediation activity and throughout life of project	MCC		
The District will work with the Responsible Party(ies) to establish an adequate Annuity or other financial account to provide funds necessary for long-term monitoring and maintenance.	Establish an Annuity or other financial account.	Prior to remediation activity	Teledyne Ryan	Prior to remediation alternative	MCC		

CONVAIR LAGOON REMEDIATION MITIGATION MONITORING PROGRAM (Continued)
NEARSHORE CONTAINMENT FACILITY (PROPOSED PROJECT)

Mitigation Measure	Monitoring Effort	Time Frame of Mitigation	Responsible for Mitigation	Time Frame for Verification	Responsible for Verification	Date of Completion	Date of Verification
Marine Resources							
Dredging shall be conducted in a manner to minimize resuspension and recontamination of nearby sediments and water, as well as to ensure removal of all contaminated sediments.	Sediment and water ampling during and after dredging operations.	During and after remediation activity	Teledyne Ryan	During and after remediation activity	MCC		
Evaluate potential impacts of wastewater treatment unit discharge.	Conduct toxicity tests and evaluate plume discharge.	Prior to remediation activity	Teledyne Ryan	Prior to remediation activity	MCC		
Construct 0.75 acres of intertidal habitat and an equivalent area of new shallow subtidal habitat.	Field inspections to verify creation of new habitats.	Following remediation activity	Teledyne Ryan	Following remediation activity	MCC		
Plant 0.94 acres of eelgrass to mitigate loss of 0.78 acres due to sediment dredging and NCF construction.	Field inspections to verify restoration of eelgrass.	Following remediation activity	Teledyne Ryan	Following remediation activity	MCC		

CONVAIR LAGOON REMEDIATION MITIGATION MONITORING PROGRAM (Continued)
NEARSHORE CONTAINMENT FACILITY (PROPOSED PROJECT)

Mitigation Measure	Monitoring Effort	Time Frame of Mitigation	Responsible for Mitigation	Time Frame for Verification	Responsible for Verification	Date of Completion	Date of Verification
<u>Marine Resources</u> (continued)							
Verify that leakage of contaminants is not occurring from the Nearshore Containment Facility (NCF).	Field inspections and annual sediment, water, and tissue sampling near NCF perimeter.	Following remediation activity	Teledyne Ryan	Following remediation activity and throughout life of project	MCC		
<u>Avian Resources</u>							
Conduct remediation activities from late September to early March as feasible to avoid impacts on least tern.	Inspections to verify absence of least terns.	During remediation activity	Teledyne Ryan	During remediation activity	MCC		
Plant 0.94 acres of eelgrass o mitigate loss of 0.78 acres due to sediment dredging and NCF construction.	Field inspections to verify restoration of eelgrass.	Following remediation activity	Teledyne Ryan	Following remediation activity	MCC		

CONVAIR LAGOON REMEDIATION MITIGATION MONITORING PROGRAM (Continued)
NEARSHORE CONTAINMENT FACILITY (PROPOSED PROJECT)

Mitigation Measure	Monitoring Effort	Time Frame of Mitigation	Responsible for Mitigation	Time Frame for Verification	Responsible for Verification	Date of Completion	Date of Verification
Geotechnical/Seismicity							
Conduct a site-specific geotechnical investigation to ensure that NCF is adequately designed to withstand an earthquake.	Design review and subsurface investigations.	Prior to remediation activity	Teledyne Ryan	Prior to remediation activity	MCC		
Human Health and Safety							
Conduct remediation activities in accordance with procedures to avoid worker exposure to contaminants.	Implement a health and safety plan for remediation activity.	During remediation activity	Teledyne Ryan	During remediation activity	MCC		
Coast Guard Operations/Security							
Install a fence between the Coast Guard facility and the NCF site.	Verify that fence is installed.	Prior to and during remediation activity	Teledyne Ryan	Prior to and during remediation activity	MCC		

SAN DIEGO UNIFIED PORT DISTRICT

MITIGATION MONITORING REPORT

☐ COMPLIANCE
☐ NONCOMPLIANCE

DATE: DAY OF WEEK: TIME: REPORT NUMBER:

PROJECT/LOCATION (attach figure if necessary)

DISCIPLINE:

☐ Cultural Resources
☐ Biological Resources
☐ Soil/Geology
☐ Land/Water Use
☐ Other ______________

MITIGATION MEASURE:

COMPLIANCE: ☐ Acceptable ☐ Unacceptable ☐ Follow-up Required

OBSERVATIONS:

RECOMMENDATIONS:

BY:

REPORT APPROVAL (MMC):

RECEIPT BY:

Signature: ______________________________ Date: ________________ Time: ____________

SDUPD Environmental Management Coordinator

cc:

APPENDIX E

INITIAL STUDY

INITIAL STUDY

Port of San Diego
and Lindbergh Field Air Terminal
(619) 291-3900 · P.O. Box 488, San Diego, California 92112

ENVIRONMENTAL MANAGEMENT DEPARTMENT

Project Title: CONVAIR LAGOON REMEDIATION

Project Location: CONVAIR LAGOON, SAN DIEGO

Applicant: Teledyne Ryan Aeronautical

Date Submitted: SEPTEMBER 18, 1992 Date Accepted: September 18, 1992

SAN DIEGO UNIFIED PORT DISTRICT (SDUPD) MASTER PLAN DESIGNATIONS

Planning District: LINDBERGH FIELD/HARBOR ISLAND, Dist. #2

Planning District Subarea: EAST BASIN INDUSTRIAL

Land/Water Use: Harbor Master Berthing/Boat Navigation Cor./ Recreation Boat Berthing

PROJECT AND PROCESSING PERMITS

	Numbers	Dates
SDUPD Environmental Management File Number:	UPD # 225	
State Clearinghouse (SCH) Number:	SCH # 92091011	
SDUPD Engineering File Number:		
SDUPD Property Plat Number:		
SDUPD Resolution Number of Adopted Negative Declaration (ND) or Certified Environmental Impact Report (EIR):		
SDUPD Document Number of Adopted ND or Certified EIR:		
Coastal Development Permit Number:		
U.S. Army Corps of Engineers Public Notice/ Permit Number:		
Air Pollution Control District (APCD) Authority to Construct & Permit to Operate Number:		
Regional Water Quality Control Board (WQCB) National Pollutant Discharge Elimination System (NPDES) Permit Number:		

(Revised EM 11/15/83)

WORKING PROJECT TITLE: CONVAIR LAGOON REMEDIATION

APPLICANT'S REFERENCE NUMBER (if applicable): ______

ENVIRONMENTAL ASSESSMENT
(To be completed by Applicant)

Applicant	Preparer of EA
(Name)	Elaine Dorward-King (Name)
(Title)	Project Director (Title)
Teledyne Ryan Aeronautical (Organization)	Ebasco Environmental (Organization)
2701 Harbor Drive P.O. Box 85311 (Address)	10900 NE 8th Street (Address)
San Diego, CA 92186-5311 (State, Zip Code)	Bellevue, WA 98004 (State, Zip Code)
(619) 291-7311 (Telephone)	(206) 451-4613 (Telephone)

I. PROJECT DESCRIPTION

1. Describe the type of development proposed, including all phases of project construction and operation, in a self-explanatory and comprehensive fashion. Discuss the need for the project and include site size, square footage, building footprint, number of floors, on-site parking, employment, phased development, and associated projects. If the project involves a variance, indicate the reason and any related information.
The project involves the remediation of Convair Lagoon through a combination of dredging and containment activities. Up to 13,300 cubic yards of PCB-containing sediments will be hydraulically dredged from the Lagoon and placed in a nearshore containment facility (NCF) of approximately 430 feet by 177 feet constructed within the Lagoon. The elevation of the NCF will be 10 feet, which is the elevation of the adjacent Coast Guard property. A 2 foot parapet wall on the seaward side of the NCF will also be constucted, increasing the total height of the structure to 12 feet. The dredging volume reflects the quantity of sediment required to remove sediment which exceeds 10 ppm (dry weight) PCBs. Settling of dredged material within the NCF generates water which will be treated in a temporary treatment facility adjacent to the NCF. Treatment would occur at a rate compatible with the sequential dredging and settling schedule, and three

treatment processes in series will remove PCBs and other contaminants from the water. After the material has dried in the NCF, clean fill will be placed over the dredged material and an infiltration barrier will be installed. Preliminary regulatory implications have been reviewed. If the design is finalized, any regulatory concerns will be addressed as appropriate. See the Basis of Design Report for additional regulatory and construction details.

2. Describe project appearance, any proposed signs, and how the design of the project would be coordinated with the surroundings.
The facility would appear as an extension of the Coast Guard property into the Lagoon. The final use of the cover has not yet been determined.

3. Describe how the public would be affected by the project:
The public may be impacted by the final use of the cover, which will be determined based upon environmental, safety, and economic considerations. Improved water quality following remediation may improve beneficial uses of the Lagoon, although area for recreational boating will be decreased.

4. Describe how the project could attract more people to the area or enable additional people to use the area, and what additional service businesses would be required:
Use of the area will depend upon the final use of the cover, which is not yet decided.

II. ENVIRONMENTAL SETTING

1. Describe the existing project site and surrounding area including: the type and intensity of land/water use; structures, including height; landscaping and naturally occurring land plants and animals, and marine life; land and water traffic patterns, including peak traffic and congestion; and any cultural, historical or scenic aspects.
The present uses of Convair Lagoon are designated as commercial, recreation, and harbor services on the land, and craft storage and boat navigation in the water. The Lagoon supports a significant amount of small craft recreational boating traffic, especially on weekends. Harbor Drive, a busy six-lane thoroughfare, fronts a portion of the shoreline. Teledyne Ryan Aeronautical, the Coast Guard, and General Dynamics all have facilities in the area and General Dynamics has a boat dock in the western portion of the Lagoon. Eelgrass and other macrophytes are present on the seafloor, and wildlife and biota utilize the site as habitat.

III. ENVIRONMENTAL ANALYSIS

1. Compare the existing project area, improvements, and activities with what would exist after implementation of the proposed project. Data concerning the present condition should be entered before the slash (/); those after the project is completed should be given after the (/).

(a) Existing/proposed land area: 0 / 76,110 sq. ft.
water area: 436,000 / 360,000 sq. ft.

(b) Existing/proposed land area for:
structures: 0 / up to 76,110 sq. ft.
landscape: 0 / up to 76,110 sq. ft.
pavement: 0 / up to 76,110 sq. ft.
undeveloped: 0 / up to 76,110 sq. ft.

(c) Number of existing/proposed floors of construction: 0 / 0 .

(d) Principal height of existing/proposed structures: 0 / 12 ft. (Approximately 5 ft. below water, 5 ft. above water surface, 2 ft. for parapet wall on seaward side of NCF.)

(e) For land development, indicate extent of grading:
excavation: 0 cu. yds., 0 sq. ft.
fill: 0 cu. yds., 0 sq. ft.
Describe method, source of fill, and location of spoil disposal:
N/A

(f) For water development, indicate extent of dredging and fill:
dredging: up to 13,300 cu. yds., 82,000 sq. ft.
fill: up to 29,000 cu. yds., 76,110 sq. ft.
Describe method and location of spoil disposal:
Up to 13,300 cubic yards of sediment will be hydraulically dredged and placed into the NCF. After bulking, this dredged sediment would occupy approximately 15,000 cubic yards. This sediment would be overlain by 14,000 cubic yards of clean fill and topped with a multilayer infiltration barrier, for a total of up to 29,000 cubic yards of total fill material.

(g) Describe existing/proposed method of solid waste disposal and amounts involved:
Solid waste and debris generated during construction activities will be transferred to a local landfill.

(h) Describe existing/proposed drainage system improvements and what materials other than domestic wastes, are/would be discharged into the sewer system:
There would be no discharges into the sewer system. Existing drainage into the Lagoon would have to be modified. The existing 30" drainage outfall would be modified to route drainage around the NCF. Small drains from the Coast Guard would also be modified.

(i) Describe the existing/proposed fire protection needs of the site and proposed project, and the nature and location of existing/proposed facilities:
Fire protection needs should not change significantly.

(j) Describe existing/proposed public access to San Diego Bay through the project site, including any controlled access:
There are no readily available shore side access points to Convair Lagoon; thus, public shore use is limited. Controlled access is presently available to employees through the General Dynamics dock, which would be temporarily removed. Future access will depend upon the final use of the cover which has not yet been determined.

(k) Existing/proposed slips, piers: 1 / 1
docks or marine ways: 1 / 1

(l) Existing/projected employees per day: NA / NA

(m) Existing/projected customers or visitors per day: NA / NA

(n) Explain the projections for (l) and (m):
The final use for the cover is not yet decided.

(o) Existing/projected daily motor vehicle round trips associated with the site and proposed project: NA / NA

(p) Existing/projected mileage for daily motor vehicle round trips associated with the site and the proposed project: NA / NA

(q) Existing/projected total round trip daily motor vehicle miles traveled associated with site and the proposed project: NA / NA

(r) Explain the projections for (o), (p), and (q): NA

(s) Existing/proposed parking spaces: On site: NA / NA
Other if used by project: NA / NA
Specify location(s): NA

(t) Explain the parking space requirements and compare with applicable standards: NA

(u) Existing/projected water consumption: NA / NA gal./day

(v) Existing/projected electrical power consumption: NA / NA kwhr./month

(w) Existing/projected gas/oil consumption: NA / NA therms/day or gal./day

2. Indicate whether or not the following may result from or may apply to the proposed project or its effects.

	YES	NO
(a) Substantial change in the existing land/water use of the site.	X[1]	
(b) Incompatibility with approved Port Master Plan.	X[2]	
(c) Part of a larger project or series of projects.		X
(d) Involve the demolition or removal of existing improvements, including landscaping.		X
(e) Substantial change in the existing features of San Diego Bay, tidelands, or beaches.	X[3]	

[1] See Response I 1 (Project Description).
[2] Regarding construction of the NCF within the lagoon water.
[3] See Response IV 1(a).

	YES	NO
(f) Significant increase in demands on parking or transportation facilities.		X
(g) Substantial increase in demand for municipal services (police, fire, etc.)		X
(h) Significant increase in amounts of solid waste or litter.		X
(i) Involvement with potentially hazardous materials, such as toxic substances, flammables or explosives.	X[4]	
(j) Substantial increase in fossil fuel consumption (electricity, oil, natural gas, etc.) or in water consumption.		X
(k) Interference with scenic views or vistas from existing residential areas or from adjacent uplands.		X
(l) Decreased access to public facilities or recreational resources.		X
(m) Substantial change in the employment base of the community.		X
(n) Substantial increase in dust, ash, smoke, fumes or odors in project vicinity.		X
(o) Significant change in San Diego Bay water quality or alteration of existing drainage patterns into San Diego Bay.	X[5]	
(p) Increase the possibility of erosion of tidelands or siltation of San Diego Bay.		X
(q) Substantial increase in existing noise or vibration levels in the vicinity.		X
(r) Require any variance from existing environmental standards (air, water, noise, etc.)	X[6]	

[4] Remediation involves PCBs, which will be handled in an environmentally safe manner in accordance with regulations.
[5] Cleanup of sediments containing PCBs should improve water and sediment quality.
[6] At this time, the possibility exists for a mixing zone variance request for water treatment effluent. Other regulatory concerns may arise during final design, which will be addressed as appropriate.

	YES	NO
(s) Involve soil stability or geological hazards.	___	X
(t) Substantial decrease in the habitat of any land plants or animals, or marine life.	X[7]	___

IV. ENVIRONMENTAL EFFECTS

1. Describe environmental effects which could result from the project:

(a) Physiographic changes in San Diego Bay, tidelands, or beaches:
Approximately 76,110 square feet of Convair Lagoon would be filled to grade in the northeast corner of the lagoon, adjacent to the Coast Guard property.

(b) Increased demands on urban support systems, including: parking streets, sewers, utilities, transportation:
None following construction.

(c) Increased energy consumption due to operation of the project:
None following construction.

(d) Change in appearance of the project site and views from/to the site which could be affected by the project:
The appearance of the project site will be dependent upon the final use of the cover. No views would be obstructed.

(e) Changes in air quality from both stationary and mobile sources, including any dust, odors, fumes, chemical vapors, water sprays, etc.:
Following construction, no changes in air quality are expected. No significant impacts to air quality are expected during construction. Mitigation measures will be employed to reduce odors if necessary during construction.

(f) Changes in bay water quality, including those which could result from the removal and/or construction of structures in the water:
During construction, local short-term water quality will be degraded to a minimal extent through dredging activities. Following construction, water quality should be as good or better than at present.

[7] See Response IV 1 (h).

(g) Changes in the sound environment which could occur on or off-site, both from construction and operational noise generated by the project:
There will be no operational noise. Construction noise will be at normal levels.

(h) Describe any change to plant or animal life, including landscaping:
Approximately 76,110 square feet of marine intertidal habitat would be replaced by the NCF. The remaining marine habitat should be improved due to removal of PCB-containing sediments.

V. MITIGATING MEASURES

1. Describe all proposed mitigating measures, or those already incorporated in the project to mitigate potentially significant environmental effects, if any:
1) Through construction of the NCF and dredging activities, up to 13,300 cubic yards of PCB containing sediments will be effectively isolated from the environment and biota which occupy Convair Lagoon. This volume is consistent with removal of sediments to a level of less than 10 ppm (dry weight) PCBs in the remaining sediment. This action restores suitable habitat in over 80% of Convair Lagoon. In other words, approximately 360,000 square feet of the total 436,000 square feet of Convair Lagoon will be restored.
2) Dredging activities will be conducted using a modified technique to minimize sediment resuspension. A silt curtain will be installed around the dredging site to minimize the extent of disturbance.
3) Construction activities will be conducted from October to March to accommodate habitat requirements within the Lagoon.
4) A sequential dredging/settling schedule has been developed to minimize the size of the NCF.

2. Specify how and when the mitigating measures will be carried out:
Removal of the PCB-containing sediments will begin following approval of a Final Design by the RWQCB and approval of all necessary permits by the appropriate regulatory agencies.

3. Explain the extent and effectiveness of mitigation expected and how this was determined:
The effectiveness of remediation will be documented through water quality monitoring before, during, and following dredging and isolation activities to ensure continuing water quality. In addition, piezometers will be installed to monitor the long-term performance of the NCF. Sediment sampling will be conducted to document removal of PCBs to a less than 10 ppm (dry weight) concentration.

4. Describe other mitigation measures considered and indicate why they were discarded:
Other alternatives considered to remove PCB-containing sediments were considered less acceptable due to engineering or environmental considerations.

VI. BACKGROUND INFORMATION

1. Pre-Application Project Processing

(a) Indicate if the conceptual plans have been presented to the Board of Port Commissioners or Port Staff. If so, describe in what form, and give date and result:
Conceptual plans were contained in the basis of design report. See below.

(b) Indicate if project plans have been submitted to Port Staff: Yes.
If so, describe in what form, to whom submitted, give date and result:
The Board of Port Commissioners received a Basis of Design Report for Convair Lagoon remediation from Teledyne Ryan Aeronautical and gave conceptual approval of the proposal on July 14, 1992. The Board has directed the preparation of an environmental impact report to evaluate the potential effects of such an activity and its alternatives.

(c) List all environmental consultations and processing contacts with other agencies, firms or individuals in connection with this project. Give agency, name, phone, date, subject and result of consultation:
1) U.S. Army C.O.E.: Elizabeth White and David Zoutendyk: 619-455-9422: 2/25/92: gave very preliminary preview of RWQCB order and initiation of basis of design report (BDR): received input on permitting process from C.O.E.
2) RWQCB: David Barker: (619) 265-5114: 2/26/92: discussed regulatory implications of project.
3) USFWS: Martin Kenney: 619-431-9440: 2/27/92: gave very preliminary preview of RWQCB order and initiation of BDR: received input on process from USFWS.
Bob Hoffman
4) National Marine Fisheries Service: ~~Richard Nitzes:~~ 213-590-5174: 2/27/92: gave very preliminary preview of RWQCB order and initiation of BDR: received input on process from National Marine Fisheries Service.
Richard Nitzes
5) California Fish and Game: ~~Bob Hoffman:~~ 310-980-4043: 2/27/92: gave very preliminary preview of RWQCB order and initiation of BDR: received input on process from California Fish and Game.

6) USFWS: Martin Kenney: 619-431-9440: 6/17/92: regarding mitigation alternatives.

(d) Last project plans or working drawings approved by the Port at this site:
Title: Basis of Design Report for Convair Lagoon Remediation
Date: July 14, 1992
Port Engineering File Number: NA

2. Permit Background

(a) List all other public agencies which have approval or permit authority related to this project and indicate type required, e.g., City building permits, Coastal permit, WQCB, APCD, Army Corps, EPA, FAA, Coast Guard, etc.
U.S. Army Corps of Engineers: Section 404/Section 10 Permit.
Port of San Diego: CEQA and Coastal Development Permit.
Regional Water Quality Control Board: NPDES permit, possibly Waste Discharge Requirements.
State Lands Commission: Dredge and Fill Permit.
City of San Diego: General Construction Permits.

(b) Pending permits or variances at this site:

(1) Indicate any permits or variances applied for. Agency, type, file number, date, phone number, and name of person who is processing the permit application or variance request must be included:
No permit applications have been submitted at this time. The permitting process is still under development. See the Basis of Design Report for schedule details.

VII. CERTIFICATION

1. Certification: This Environmental Assessment was prepared by me for as the applicant and I hereby certify that the statements furnished above and in the attached exhibits disclose relevant information to determine environmentally significant effects, as required for the San Diego Unified Port District Initial Study. It has been prepared to the best of my ability, and the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

George Faison	9/15/92
(Signature of Preparer)	(Date)
George Faison	Manager, Waste Policy and Regulatory Analysis
(Print Name)	(Title)
Ebasco Environmental	(206) 451-4649
(Organization)	(Telephone)

10900 N.E. 8th Street
(Address)

Bellevue	Washington	98004-4405
(City)	(State)	(Zip Code)

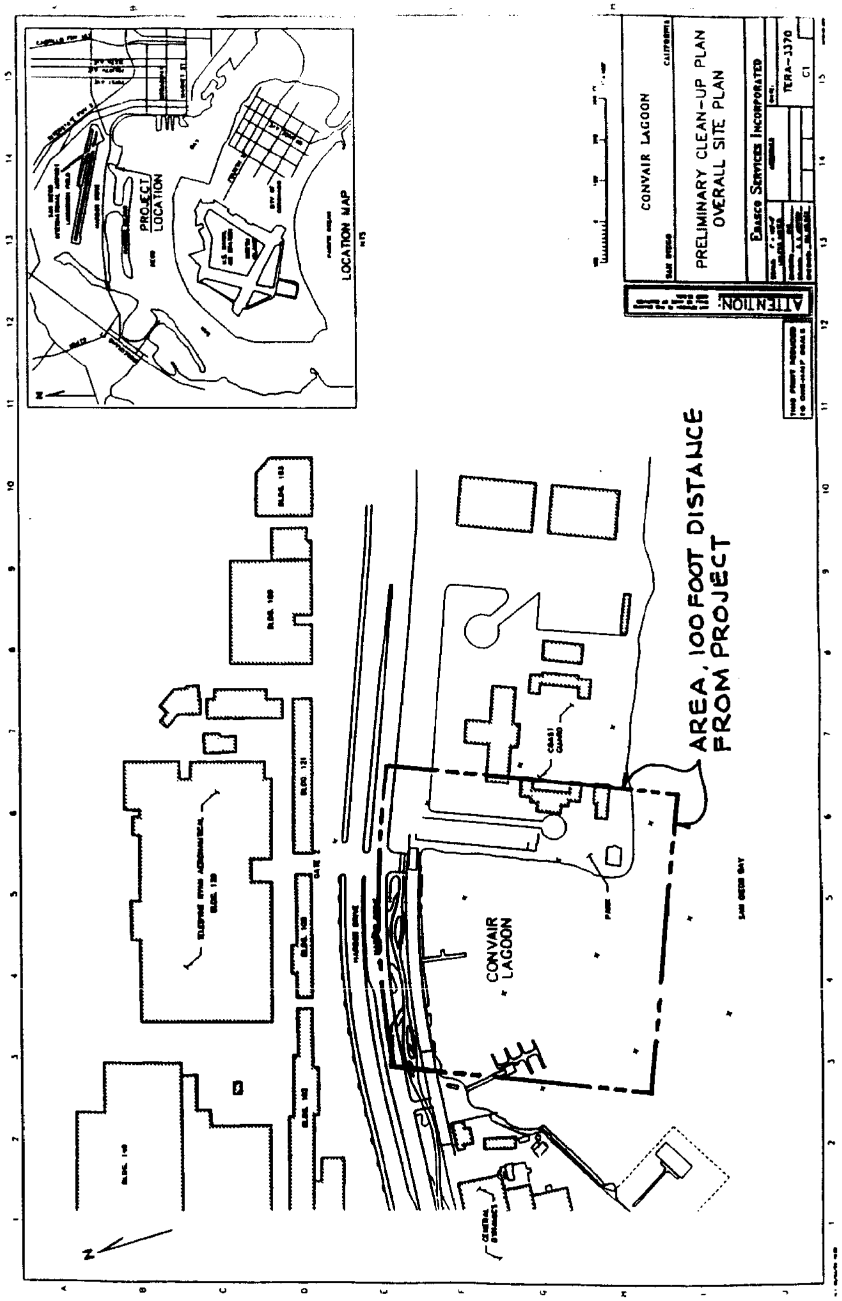
2. Applicant Certification:

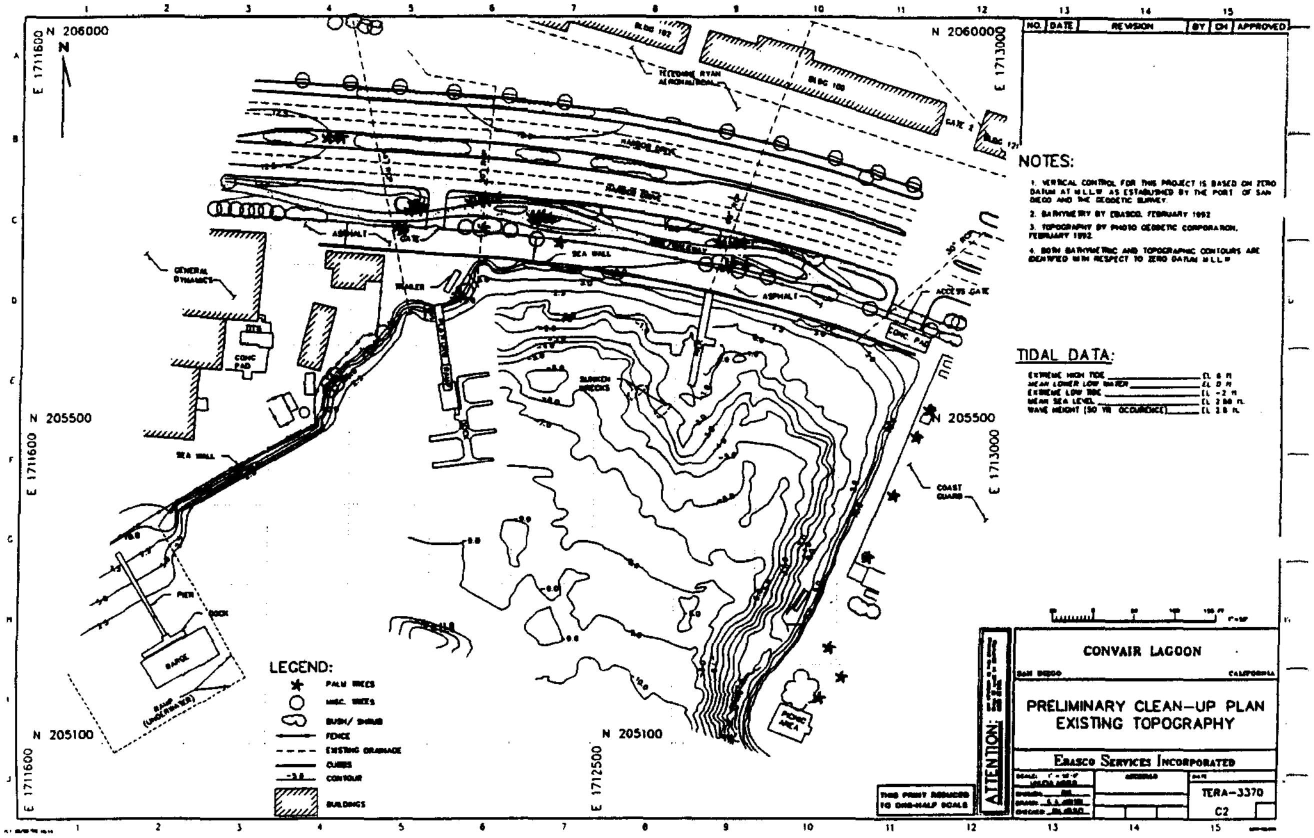
I hereby certify that the project-related facts, statements, and information furnished above and in the attached exhibits, and in any other form to the preparer of this Environmental Assessment or to the San Diego Unified Port District are true and correct to the best of my knowledge and belief. I am duly authorized to and do hereby accept and commit the applicant to the implementation of all mitigation measures listed in this Environmental Assessment and of the project as herein described. I understand that non-compliance with any of the mitigation measures, or changes in the project as herein described shall be grounds to invalidate any or all project approvals or permits regardless of the stage of project development or operation. I will notify the San Diego Unified Port District immediately in writing of any changes in the proposed project, and I acknowledge that project changes may require additional environmental evaluation. I shall hold the San Diego Unified Port District harmless of any cost or damages resulting from consequences of non-compliance or unapproved project changes.

Donald Wilkins	September 17, 1992
(Signature of Applicant)	(Date)
Donald J. Wilkins	General Counsel
(Print Name)	(Title)
Teledyne Ryan Aeronautical	(619) 291-7311
(Organization)	(Telephone)

2701 Harbor Drive, P. O. Box 85311
(Address)

San Diego	California	92186-5311
(City)	(State)	(Zip Code)




N 206000
E 1711600
N 206000
E 1713000
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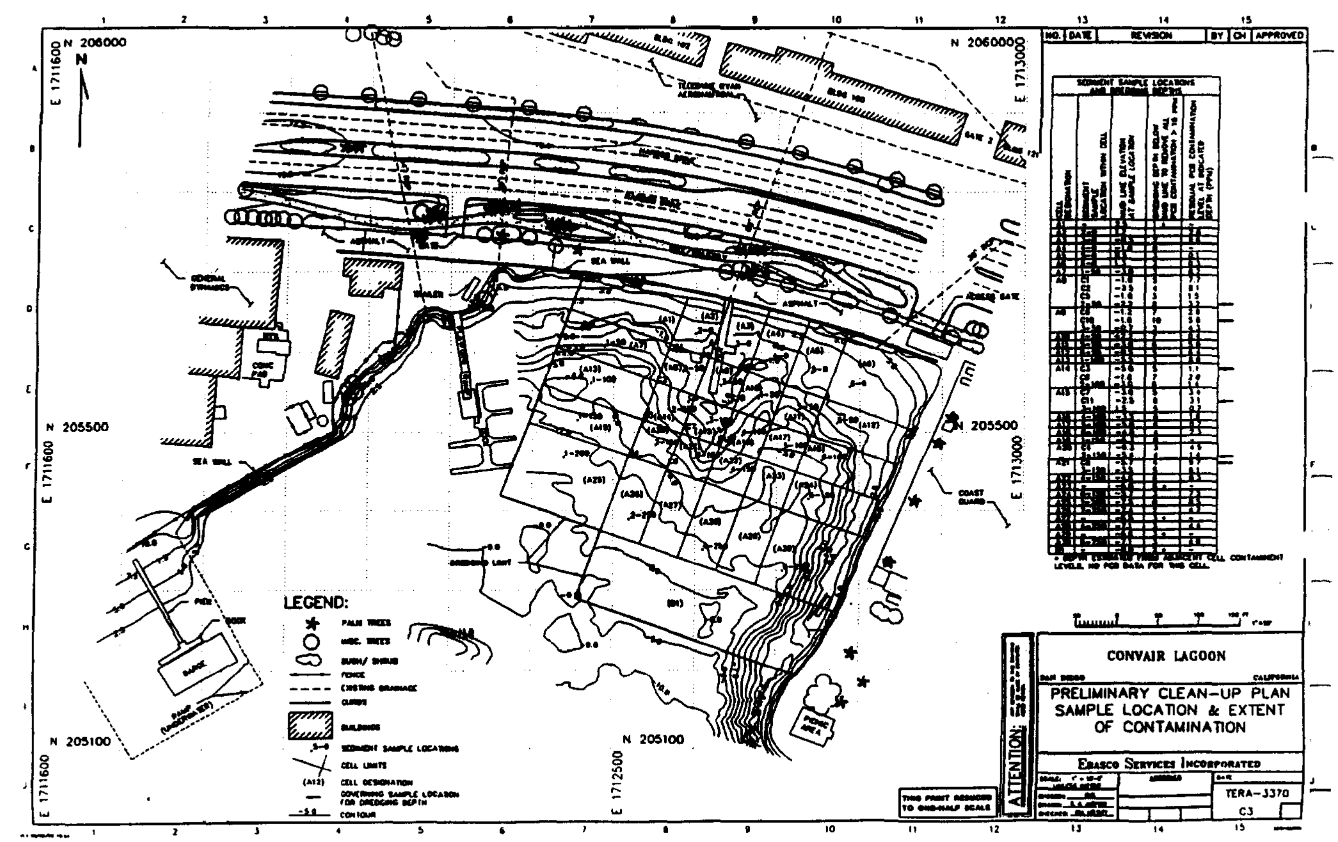
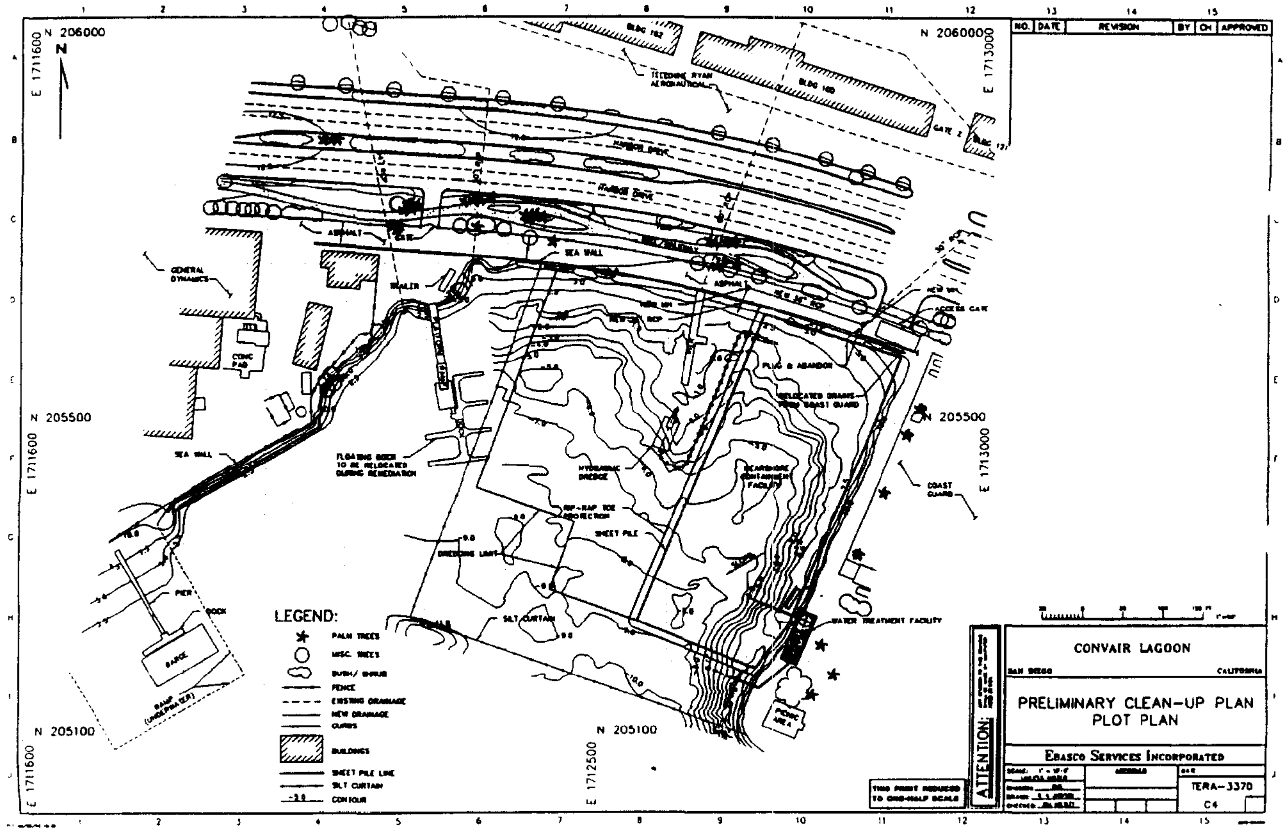
1. VERTICAL CONTROL FOR THIS PROJECT IS BASED ON ZERO DATUM AT M.L.L.W. AS ESTABLISHED BY THE PORT OF SAN DIEGO AND THE GEODETIC SURVEY.
2. BATHYMETRY BY EBASCO, FEBRUARY 1992
3. TOPOGRAPHY BY PHOTO GEODETIC CORPORATION, FEBRUARY 1992
4. BOTH BATHYMETRIC AND TOPOGRAPHIC CONTOURS ARE IDENTIFIED WITH RESPECT TO ZERO DATUM M.L.L.W.
TIDAL DATA:
EXTREME HIGH TIDE
MEAN LOWER LOW WATER
EXTREME LOW TIDE
MEAN SEA LEVEL
WAVE HEIGHT (50 YR OCCURENCE)
N 205500
N 205500
E 1711600
E 1713000
SEA WALL
GENERAL DYNAMICS
ASPHALT
SEA WALL
ACCESS GATE
CONC PAD
SUNKEN WRECKS
COAST GUARD
PIER
DOCK
BARGE
RAMP (UNDERWATER)
PICNIC AREA
LEGEND:
PALM TREES
MISC. TREES
BUSH/ SHRUB
FENCE
EXISTING DRAINAGE
CURBS
CONTOUR
BUILDINGS
N 205100
N 205100
E 1711600
E 1712500
THIS PRINT REDUCED TO ONE-HALF SCALE
ATTENTION:
CONVAIR LAGOON
SAN DIEGO
CALIFORNIA
PRELIMINARY CLEAN-UP PLAN
EXISTING TOPOGRAPHY
EBASCO SERVICES INCORPORATED
TERA-3370
C2


N 206000
E 1711600
N 206000
E 1713000
SEDIMENT SAMPLE LOCATIONS AND DREDGING DEPTHS
GENERAL DYNAMICS
ASPHALT
SEA WALL
ACCESS GATE
SEA WALL
N 205500
N 205500
E 1711600
E 1713000
COAST GUARD
PIER
DOCK
BARGE
RAMP (UNDERWATER)
PICNIC AREA
LEGEND:
PALM TREES
MISC. TREES
BUSH/ SHRUB
FENCE
EXISTING DRAINAGE
CURBS
BUILDINGS
SEDIMENT SAMPLE LOCATIONS
CELL LIMITS
CELL DESIGNATION
GOVERNING SAMPLE LOCATION FOR DREDGING DEPTH
CONTOUR
N 205100
N 205100
E 1711600
E 1712500
THIS PRINT REDUCED TO ONE-HALF SCALE
ATTENTION:
CONVAIR LAGOON
SAN DIEGO
CALIFORNIA
PRELIMINARY CLEAN-UP PLAN
SAMPLE LOCATION & EXTENT OF CONTAMINATION
EBASCO SERVICES INCORPORATED
TERA-3370
C3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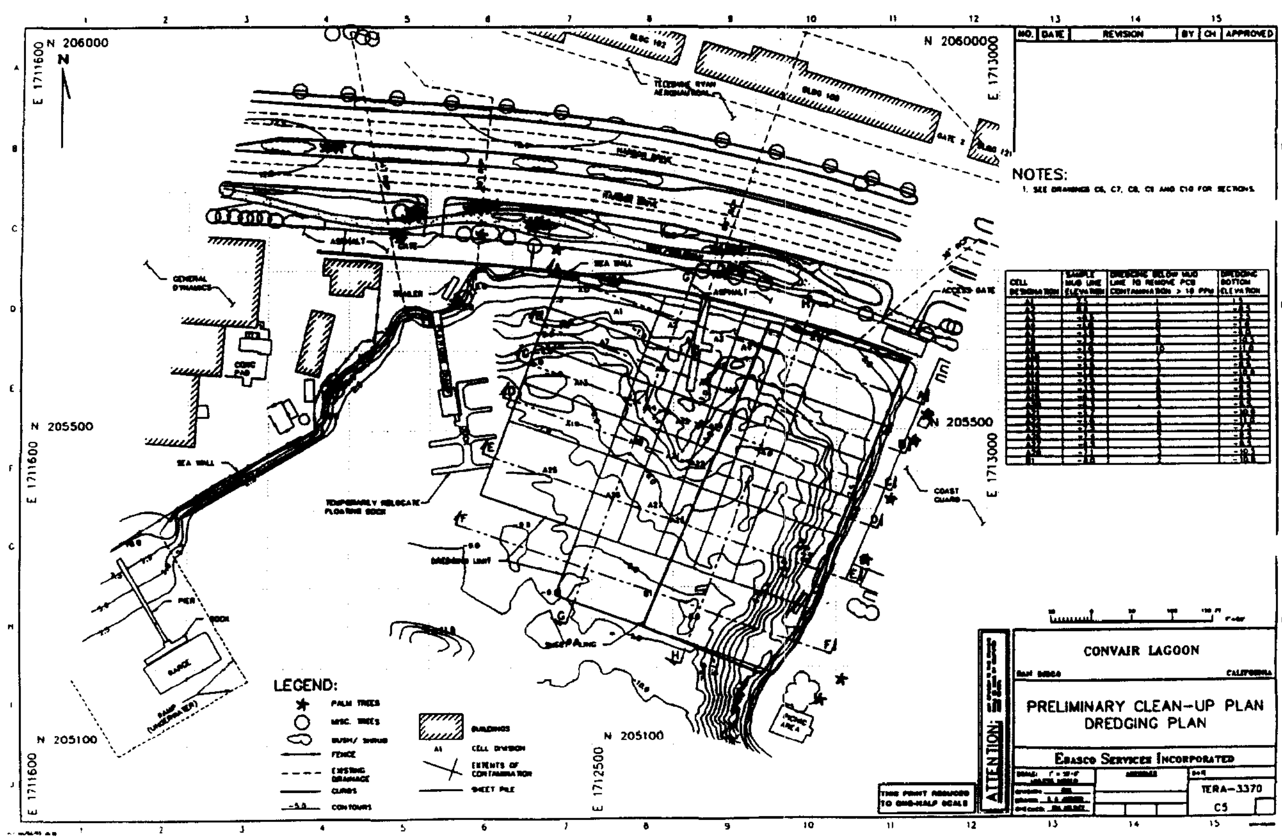
N 205500
N 205100
E 1711600
E 1712500
E 1713000
BLDG 102
BLDG 180
TELEDYNE RYAN AERONAUTICAL
GATE 2
HARBOR DRIVE
SEA WALL
ASPHALT
GENERAL DYNAMICS
CONC PAD
TRAILER
FLOATING DOCK TO BE RELOCATED DURING REMEDIATION
HYDRAULIC DREDGE
NEARSHORE CONTAINMENT FACILITY
RIP-RAP TOE PROTECTION
SHEET PILE
DREDGING LIMIT
SILT CURTAIN
PLUG & ABANDON
RELOCATED DRAINS FROM COAST GUARD
ACCESS GATE
COAST GUARD
WATER TREATMENT FACILITY
PICNIC AREA
PIER
DOCK
BARGE
LEGEND:
PALM TREES
MISC. TREES
BUSH/ SHRUB
FENCE
EXISTING DRAINAGE
NEW DRAINAGE
CURBS
BUILDINGS
SHEET PILE LINE
SILT CURTAIN
CONTOUR
THIS PRINT REDUCED TO ONE-HALF SCALE
ATTENTION:
NO. DATE REVISION BY CH APPROVED
CONVAIR LAGOON
SAN DIEGO CALIFORNIA
PRELIMINARY CLEAN-UP PLAN
PLOT PLAN
EBASCO SERVICES INCORPORATED
TERA-3370
C4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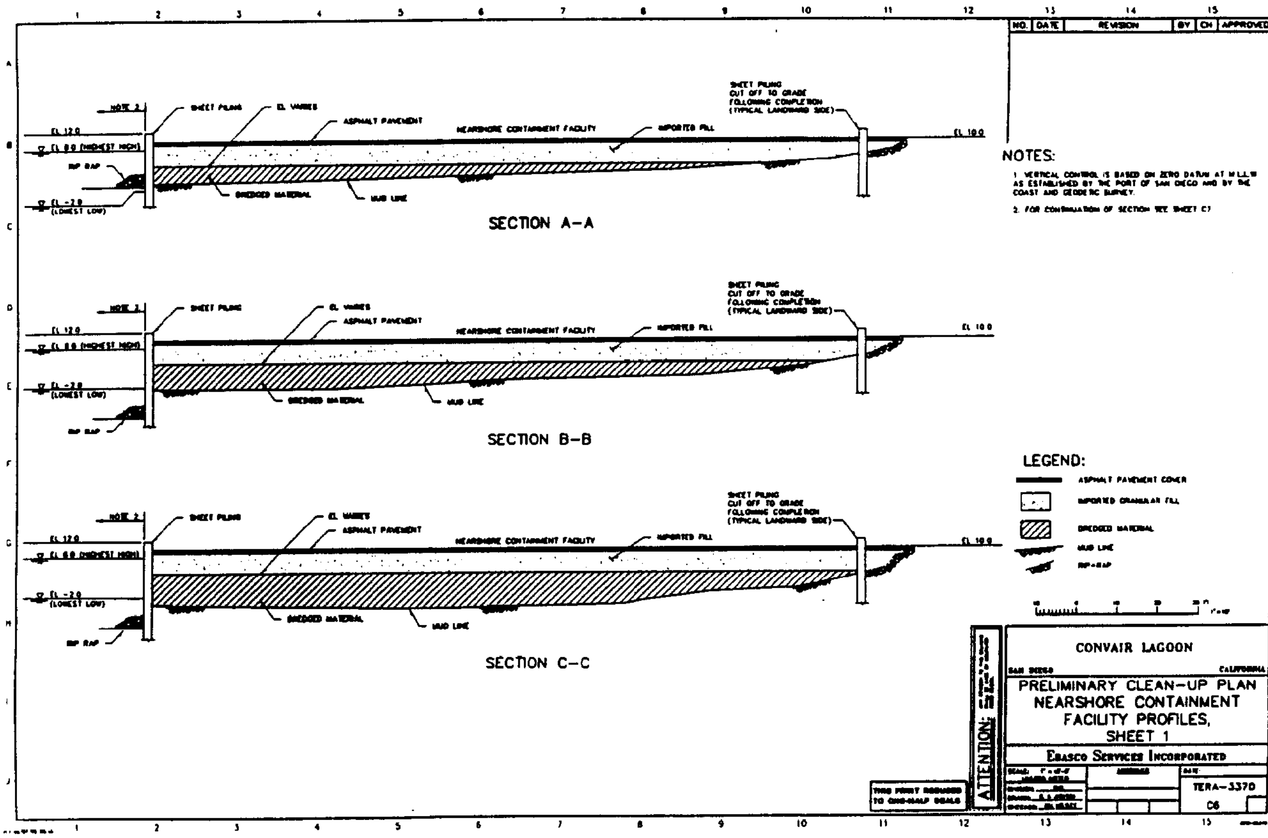
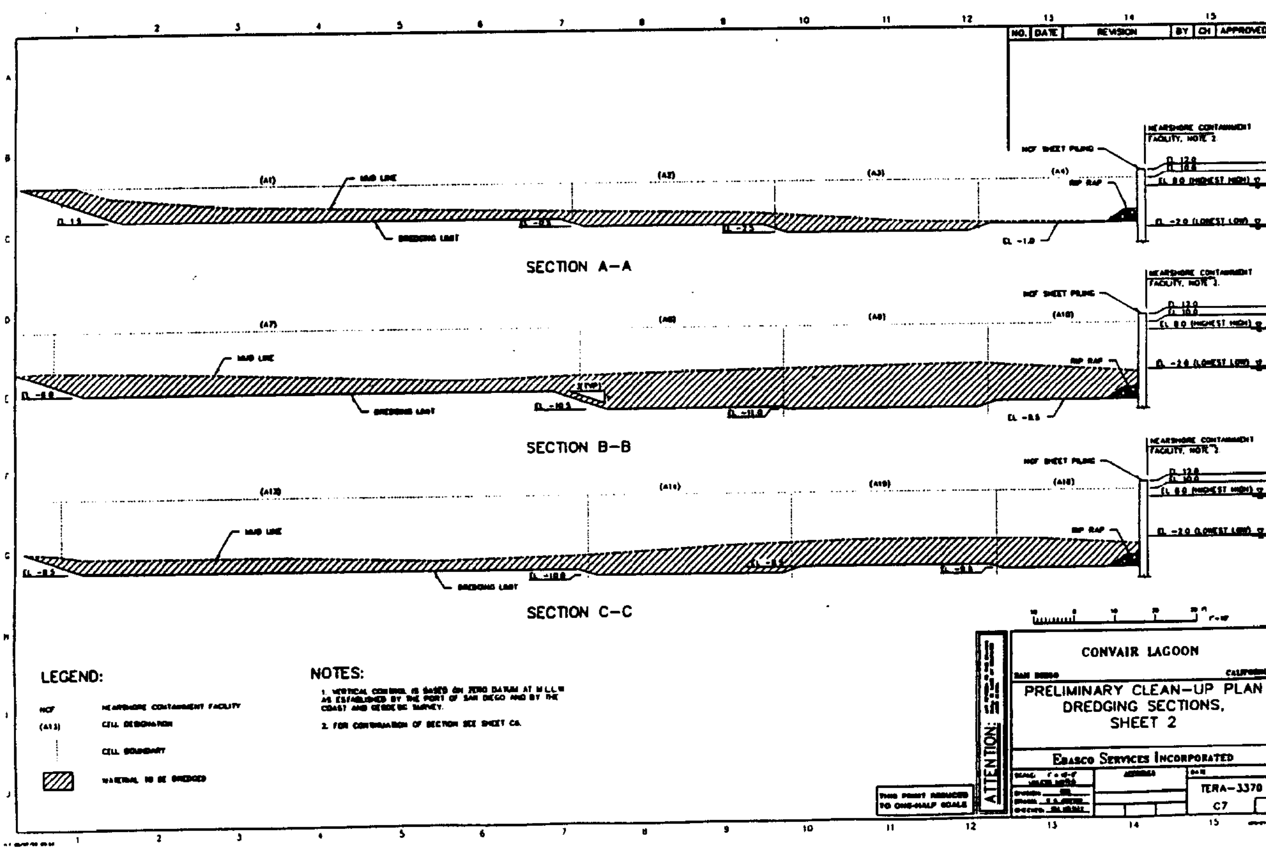
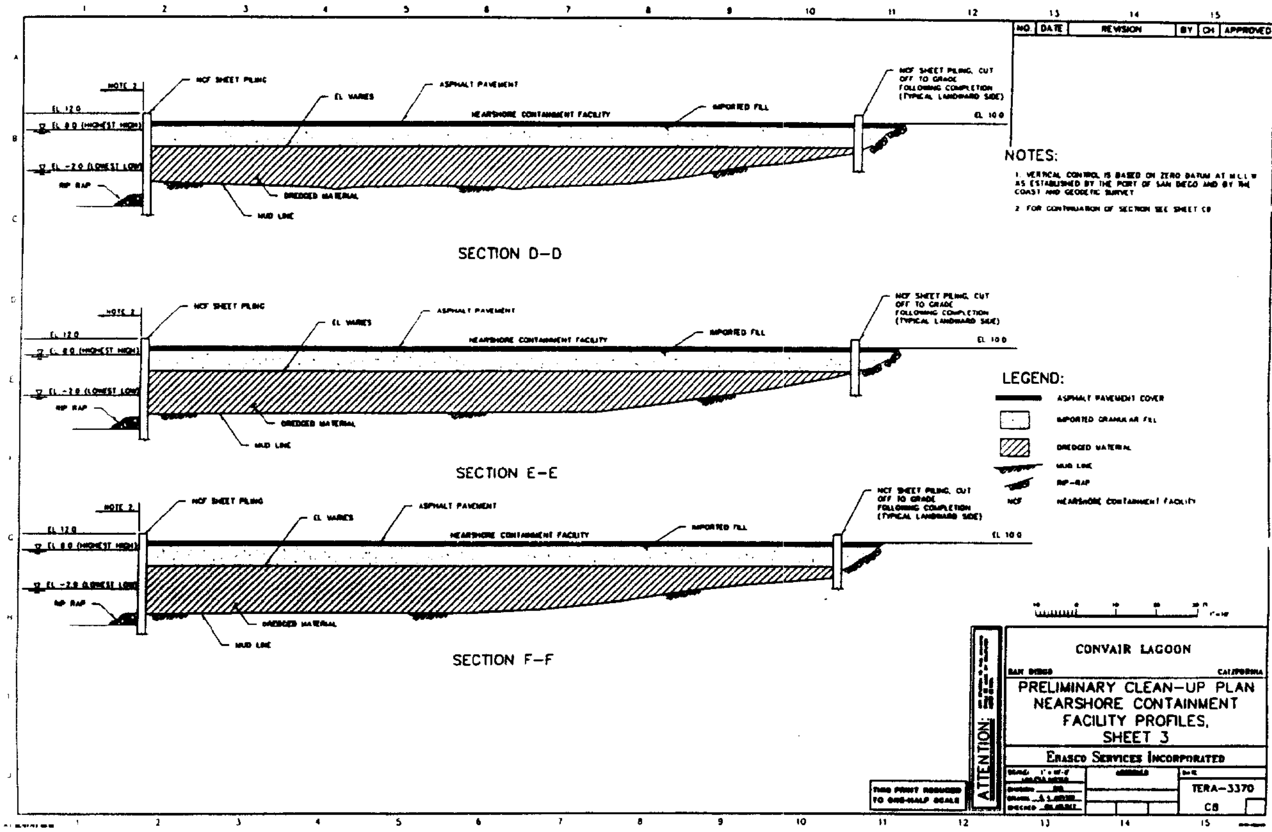
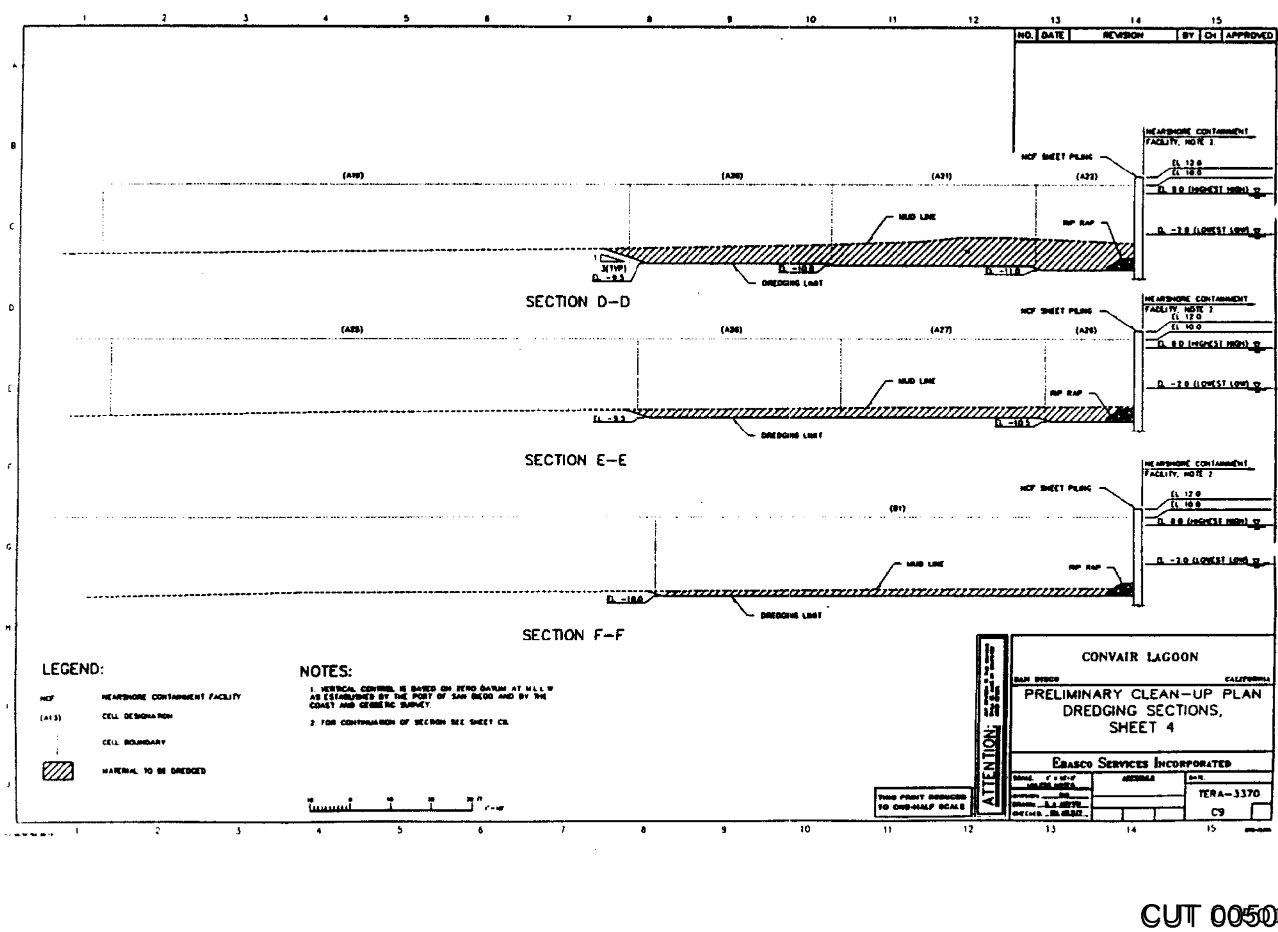
N 205500
N 205100
E 1711600
E 1712500
E 1713000
BLDG 102
BLDG 180
TELEDYNE RYAN AERONAUTICAL
GATE 2
HARBOR DRIVE
SEA WALL
ASPHALT
GENERAL DYNAMICS
CONC PAD
TRAILER
TEMPORARILY RELOCATE FLOATING DOCK
DREDGING LIMIT
SHEET PILING
ACCESS GATE
COAST GUARD
PICNIC AREA
PIER
DOCK
BARGE
NOTES:
1. SEE DRAWINGS C6, C7, C8, C9 AND C10 FOR SECTIONS.
LEGEND:
PALM TREES
MISC. TREES
BUSH/ SHRUB
FENCE
EXISTING DRAINAGE
CURBS
CONTOURS
BUILDINGS
CELL DIVISION
EXTENTS OF CONTAMINATION
SHEET PILE
THIS PRINT REDUCED TO ONE-HALF SCALE
ATTENTION:
NO. DATE REVISION BY CH APPROVED
CONVAIR LAGOON
SAN DIEGO CALIFORNIA
PRELIMINARY CLEAN-UP PLAN
DREDGING PLAN
EBASCO SERVICES INCORPORATED
TERA-3370
C5

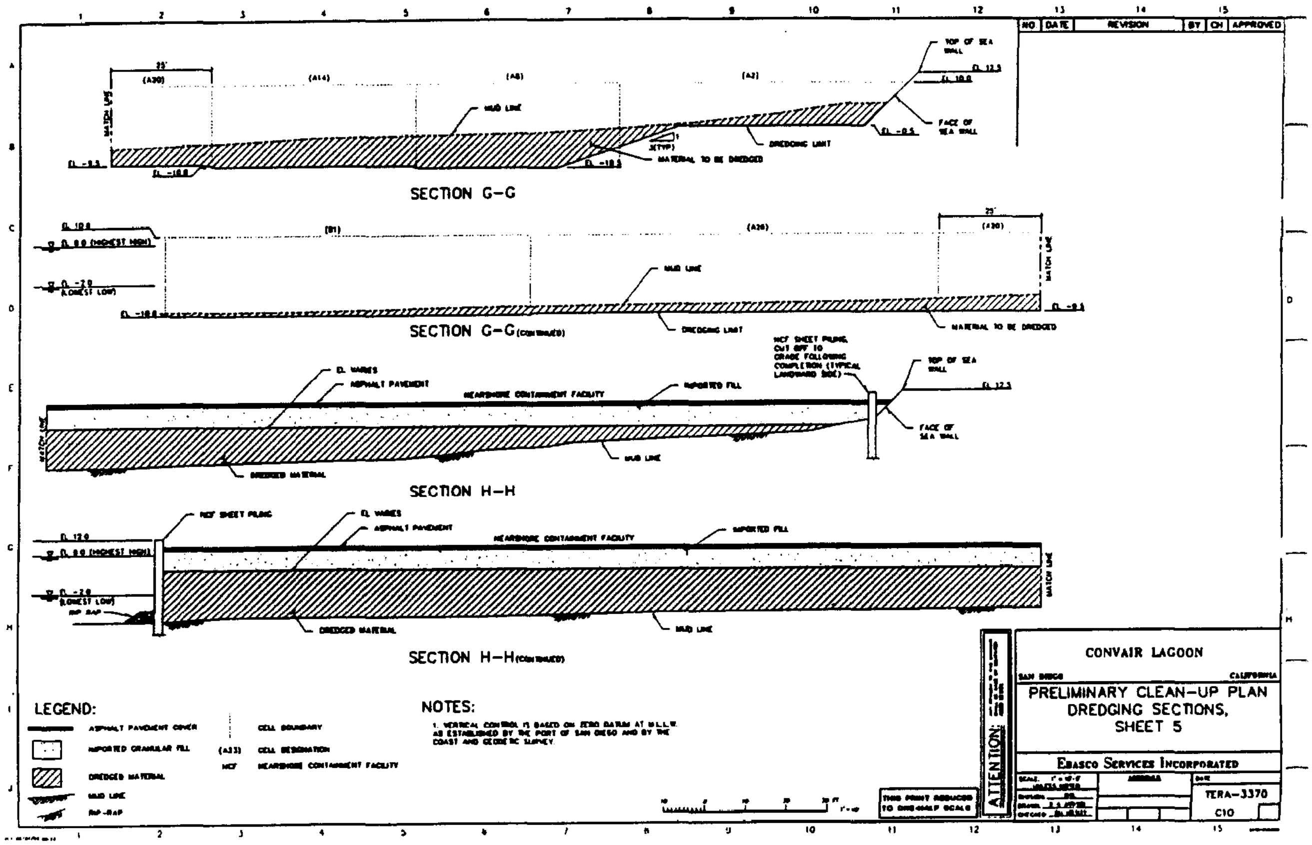
CUT 005014

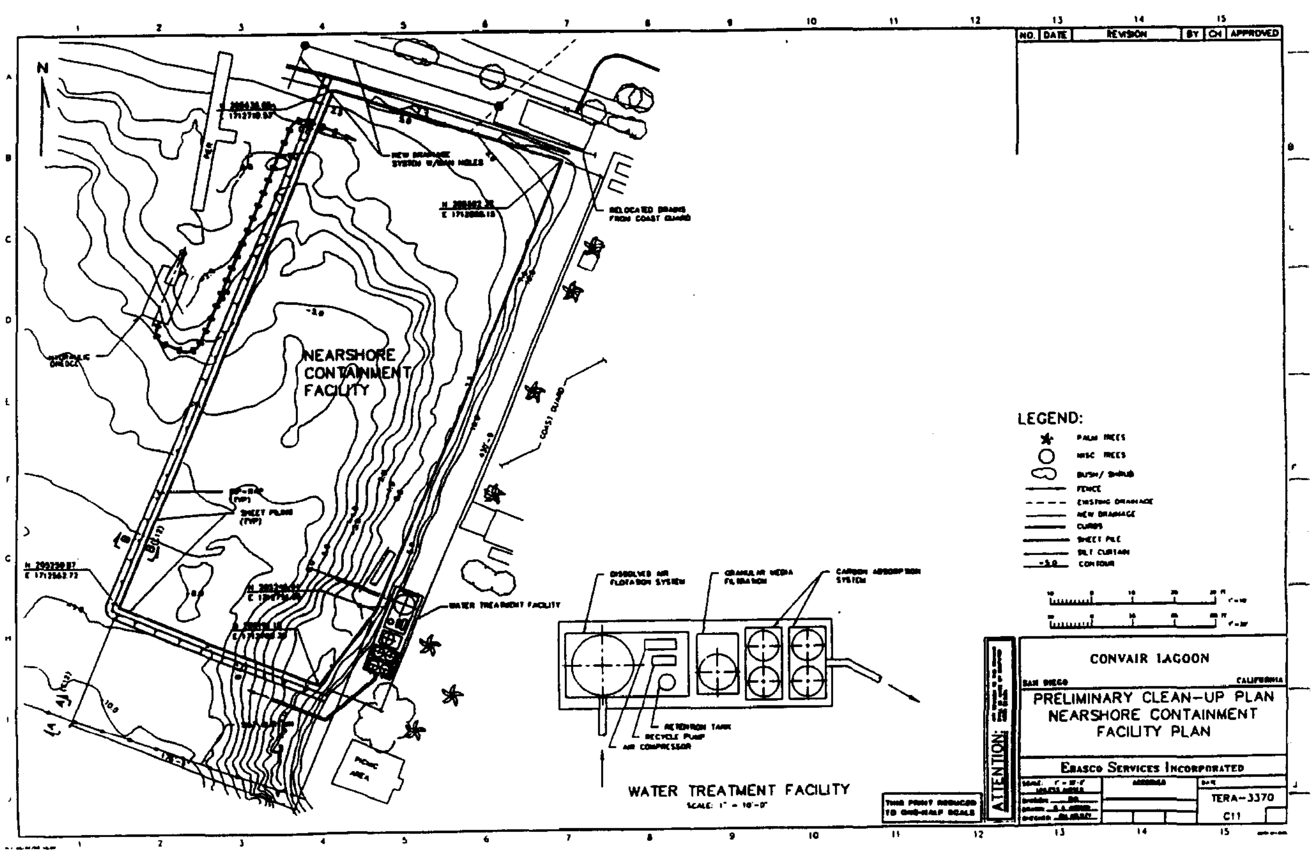

SECTION A-A
SECTION B-B
SECTION C-C
NOTES:
LEGEND:
CONVAIR LAGOON
PRELIMINARY CLEAN-UP PLAN
NEARSHORE CONTAINMENT
FACILITY PROFILES,
SHEET 1
Ebasco Services Incorporated
TERA-3370
C6
ATTENTION:

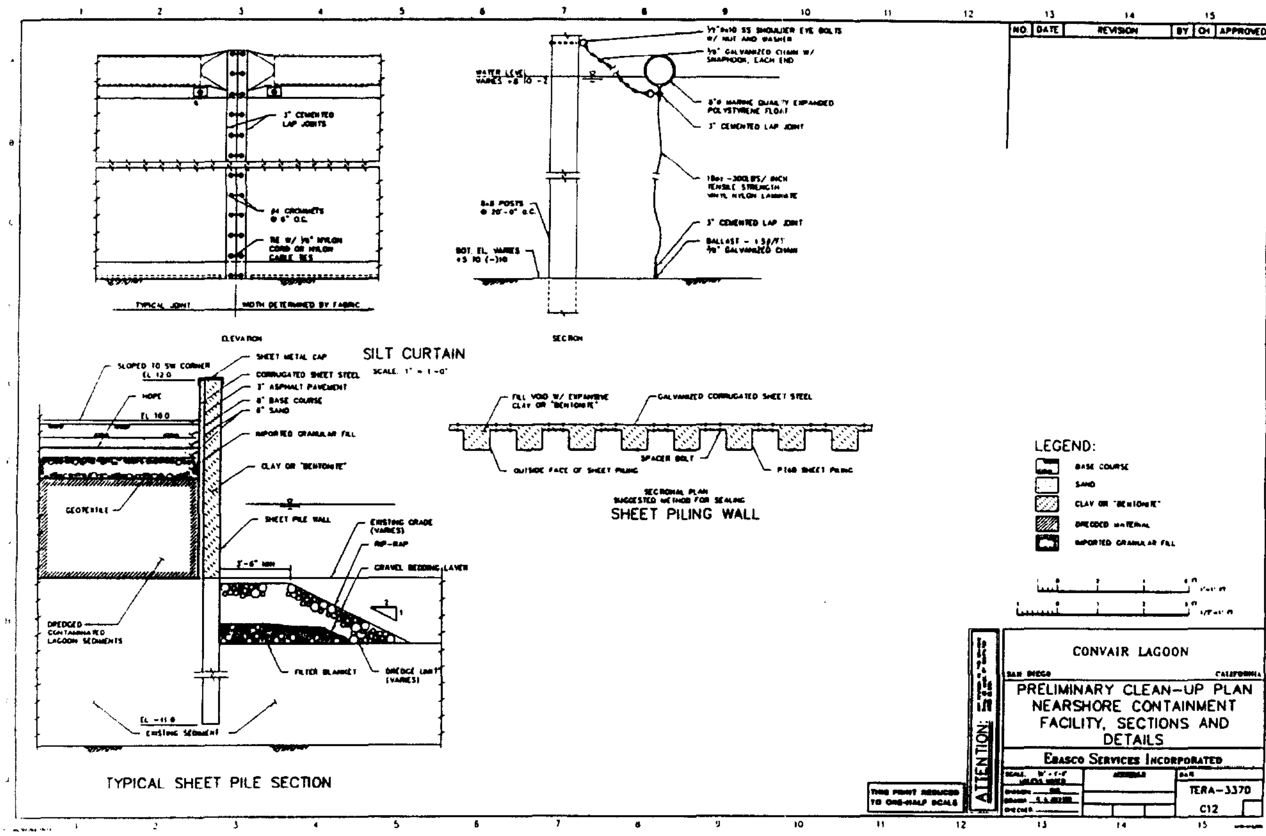

SECTION A-A
SECTION B-B
SECTION C-C
LEGEND:
NOTES:
CONVAIR LAGOON
PRELIMINARY CLEAN-UP PLAN
DREDGING SECTIONS,
SHEET 2
Ebasco Services Incorporated
TERA-3370
C7
ATTENTION:


NO. DATE REVISION BY CH APPROVED
NOTES:
1. VERTICAL CONTROL IS BASED ON ZERO DATUM AT M.L.L.W AS ESTABLISHED BY THE PORT OF SAN DIEGO AND BY THE COAST AND GEODETIC SURVEY
2. FOR CONTINUATION OF SECTION SEE SHEET C9
NCF SHEET PILING
ASPHALT PAVEMENT
EL VARIES
NEARSHORE CONTAINMENT FACILITY
IMPORTED FILL
DREDGED MATERIAL
MUD LINE
RIP RAP
SECTION D-D
SECTION E-E
SECTION F-F
LEGEND:
ASPHALT PAVEMENT COVER
IMPORTED GRANULAR FILL
DREDGED MATERIAL
MUD LINE
RIP-RAP
NCF NEARSHORE CONTAINMENT FACILITY
CONVAIR LAGOON
SAN DIEGO CALIFORNIA
PRELIMINARY CLEAN-UP PLAN
NEARSHORE CONTAINMENT
FACILITY PROFILES,
SHEET 3
EBASCO SERVICES INCORPORATED
ATTENTION:
THIS PRINT REDUCED TO ONE-HALF SCALE
TERA-3370
C8


NO. DATE REVISION BY CH APPROVED
NEARSHORE CONTAINMENT FACILITY, NOTE 2
NCF SHEET PILING
MUD LINE
RIP RAP
DREDGING LIMIT
SECTION D-D
SECTION E-E
SECTION F-F
LEGEND:
NCF NEARSHORE CONTAINMENT FACILITY
(A13) CELL DESIGNATION
CELL BOUNDARY
MATERIAL TO BE DREDGED
NOTES:
1. VERTICAL CONTROL IS BASED ON ZERO DATUM AT M.L.L.W AS ESTABLISHED BY THE PORT OF SAN DIEGO AND BY THE COAST AND GEODETIC SURVEY
2. FOR CONTINUATION OF SECTION SEE SHEET C8
CONVAIR LAGOON
SAN DIEGO CALIFORNIA
PRELIMINARY CLEAN-UP PLAN
DREDGING SECTIONS,
SHEET 4
EBASCO SERVICES INCORPORATED
ATTENTION:
THIS PRINT REDUCED TO ONE-HALF SCALE
TERA-3370
C9


SECTION G-G
SECTION G-G(CONTINUED)
SECTION H-H
SECTION H-H(CONTINUED)
LEGEND:
NOTES:
ATTENTION:
CONVAIR LAGOON
PRELIMINARY CLEAN-UP PLAN
DREDGING SECTIONS,
SHEET 5
EBASCO SERVICES INCORPORATED
TERA-3370
C10


NEARSHORE CONTAINMENT FACILITY
LEGEND:
WATER TREATMENT FACILITY
ATTENTION:
CONVAIR LAGOON
PRELIMINARY CLEAN-UP PLAN
NEARSHORE CONTAINMENT
FACILITY PLAN
EBASCO SERVICES INCORPORATED
TERA-3370
C11


3" CEMENTED LAP JOINTS
#4 GROMMETS @ 6" O.C.
TYPICAL JOINT
WIDTH DETERMINED BY FABRIC
ELEVATION
WATER LEVEL
3" CEMENTED LAP JOINT
8x8 POSTS @ 20'-0" o.c.
BALLAST
SECTION
SILT CURTAIN
SLOPED TO SW CORNER
SHEET METAL CAP
CORRUGATED SHEET STEEL
3" ASPHALT PAVEMENT
6" BASE COURSE
6" SAND
IMPORTED GRANULAR FILL
CLAY OR "BENTONITE"
GEOTEXTILE
SHEET PILE WALL
EXISTING GRADE (VARIES)
RIP-RAP
GRAVEL BEDDING LAYER
DREDGED CONTAMINATED LAGOON SEDIMENTS
FILTER BLANKET
DREDGE LIMIT (VARIES)
EXISTING SEDIMENT
TYPICAL SHEET PILE SECTION
GALVANIZED CORRUGATED SHEET STEEL
SPACER BOLT
SECTIONAL PLAN
SUGGESTED METHOD FOR SEALING
SHEET PILING WALL
LEGEND:
BASE COURSE
SAND
CLAY OR "BENTONITE"
DREDGED MATERIAL
IMPORTED GRANULAR FILL
NO
DATE
REVISION
BY
CH
APPROVED
CONVAIR LAGOON
SAN DIEGO
CALIFORNIA
PRELIMINARY CLEAN-UP PLAN
NEARSHORE CONTAINMENT
FACILITY, SECTIONS AND
DETAILS
EBASCO SERVICES INCORPORATED
ATTENTION:
TERA-3370
C12

EVALUATION
(To be completed by the San Diego Unified Port District)

VIII. ENVIRONMENTAL EVALUATION

1. Attachments

Site Plan	Attached	Other	
Draft Coastal Application			
Draft Army Corps Application			

2. Additional Information

3. Environmental Assessment Analysis:

(a) Specific questions were raised on the following EA entries:

Item #	Question	Explanation

VIII. Environmental Evaluation (continued)

(b) In addition to the analysis of the EA, the following were considered: Would the proposed result in:

	Yes	Maybe	No
(1) Land Use:			
(a) Substantial alteration of the present or planned land use of an area?	✓		
(b) Non-conformance with the SDUPD Master Plan?	✓		
(2) Earth:			
(a) Substantial changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream, or the bed of the ocean or San Diego Bay, or San Diego Bay channel?	✓		
(b) Exposure of people or property to significant geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?			✓
(3) Transportation/Circulation:			
(a) Generation of substantial additional vehicular movement?			✓
(b) Significant effects on existing parking facilities, or substantial demand for new parking?			✓
(c) Substantial impact upon existing transportation systems?			✓
(d) Significant alterations to present patterns of circulation or movement of people and/or goods?			✓
(e) Substantial alterations to waterborne, rail or air traffic?			✓
(f) Significant increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?			✓

VIII. Environmental Evaluation (Continued)

	Yes	Maybe	No
(4) Public Services:			
(a) Significant effect upon, or result in a need for new or substantially altered governmental services including:			
(1) Fire protection?			✓
(2) Police protection?			✓
(3) Parks or other recreational facilities?			✓
(4) Maintenance of public facilities including roads?			✓
(5) Utilities:			
(a) Significant need for new systems, or substantial alterations to the following utilities:			
(1) Power or natural gas?			✓
(2) Communications systems?			✓
(3) Water?			✓
(4) Sewer?			✓
(5) Storm water drainage?		✓	
(6) Solid waste and disposal?			✓
(6) Energy:			
(a) Use of substantial additional amounts of fuel or energy?			✓
(7) Aesthetics:			
(a) Obstruct any scenic vista or view open to the public, or result in the creation of an aesthetically offensive site open to the public view?			✓
(8) Light and Glare:			
(a) Significant levels of new light or glare?			✓
(9) Recreation:			
(a) Significant decrease in the quality or quantity of existing recreational opportunities?		✓	

VIII. Environmental Evaluation (Continued)

	Yes	Maybe	No
(10) Population:			
(a) Significantly alter the location, distribution, density, or growth rate of the human population of an area?			✓
(11) Housing:			
(a) Significant effects to existing housing, or create a demand for additional housing?			✓
(12) Human Health:			
(a) Exposure of people to potentially significant health hazards?		✓	
(13) Risk of Accident:			
(a) A substantial risk of explosion or the release of hazardous substances (including but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident?		✓	
(b) Possible interference with an emergency response plan?			✓
(14) Air Quality:			
(a) Substantial additional air emissions or deterioration of ambient air quality, beyond Regional Air Quality Maintenance Plan projections?			✓
(b) The creation of objectional odors?			✓
(15) Hydrology and Water Quality:			
(a) Significant changes in currents, or the course or direction of water movements?			✓
(b) Significant changes in soil absorption rates, drainage patterns, or the rate and amount of surface water runoff?			✓
(c) Significant alterations to the course or flow of floodwaters?			✓
(d) Significant change in the surface area of San Diego Bay waters?	✓		
(e) Substantial discharge into San Diego Bay or in any significant alteration of water quality, including but not limited to temperature, dissolved oxygen or turbidity?		✓	

VIII. Environmental Evaluation (Continued)

(16) Noise:

	Yes	Maybe	No
(a) Significant increases in existing noise levels?			✓
(b) Exposure of people to severe noise levels?			✓

(17) Plant Life:

	Yes	Maybe	No
(a) Significant change in the diversity of species of plants (including trees, shrubs, grass, and aquatic plants)?		✓	
(b) Reduction of the numbers of any unique, rare or endangered species of plants?		✓	
(c) Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?			✓

(18) Animal Life:

	Yes	Maybe	No
(a) Significant change in the diversity of species, or number of any species of animals (mammals, birds, reptiles, amphibians, fish, or invertebrates)?		✓	
(b) Reduction of the numbers of any unique, rare or endangered species of animals?			✓
(c) Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?			✓
(d) Significant deterioration to existing fish or wildlife habitat?		✓	

(19) Cultural Resources:

	Yes	Maybe	No
(a) Significant alteration of or the destruction of a prehistoric or historic archeological site?			✓
(b) Adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?			✓
(c) Potential to cause a physical change which would significantly affect unique ethnic cultural values?			✓

VIII. Environmental Evaluation (Continued)

(c) Mandatory Findings of Significance:

Does the project have:

	Yes	Maybe	No
(1) The potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			✓
(2) The potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)		✓	
(3) Impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impacts on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)			✓
(4) Environmental effects which will cause substantially adverse effects on human beings, either directly or indirectly?			✓

(d) The following have been consulted about the project:

Agency	Person	Phone	Disposition	Date
COE		( )		
		( )		
CFG		( )		
		( )		
		( )		
		( )		
City of:		( )		
		( )		
APCD		( )		
		( )		
WQCB		( )		
		( )		

IX. DETERMINATION

1. The ENVIRONMENTAL MANAGEMENT DEPARTMENT OF THE San Diego Unified Port District on Convair Lagoon Rem. reviewed and considered above proposal entitled, ______ (UPD # ______).

On the basis of the Initial Study, the Environmental Management Department found:

☐ The proposal could NOT have a significant adverse effect on the environment and a Categorical Exemption will be prepared, under: Class ______, which reads in part: ______ : and Class ______, which reads in part: ______.

2. The ENVIRONMENTAL REVIEW COMMITTEE of the San Diego Unified Port District at its meeting on ______ reviewed and considered above proposal entitled, ______ (UPD # ______).

On the basis of the proceedings at this meeting and the Initial Study, the Environmental Review Committee found:

☐ The proposed project could NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ Although the proposed project COULD have a significant effect on the environment, there will NOT be a significant effect in this case because of the mitigation measures proposed in the Initial Study, and a NEGATIVE DECLARATION with mitigation conditions will be prepared.

☒ The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT will be prepared.

Melissa Mailander
Preparer of Initial Study

Sept. 19 1992
(Date)

______
RALPH T. HICKS, Chairman
Environmental Review Committee

______
(Date)

(Revised 7/91)

CUT 005022

APPENDIX F

SOUTHERN CALIFORNIA EELGRASS MITIGATION POLICY

RECEIVED
AUG 0 2 1993
PORT OF SAN DIEGO
ENVIRONMENTAL MANAGEMENT

SOUTHERN CALIFORNIA EELGRASS MITIGATION POLICY
(Adopted July 31, 1991)

Eelgrass (Zostera marina) vegetated areas function as important habitat to a variety of fish and other wildlife. In order to standardize and maintain a consistent policy regarding mitigating adverse impacts to eelgrass resources, the following policy has been developed by the Federal and State resource agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game).

For clarity, the following definitions apply. "Project" refers to work performed on-site to accomplish the applicant's purpose. "Mitigation" refers to work performed to compensate for any adverse impacts caused by the "project".

1. **Mitigation Need.** Eelgrass transplants will be considered only after the normal provisions and policies regarding avoidance and minimization, as addressed in the Section 404 Mitigation Memorandum of Agreement between the Corps of Engineers and Environmental Protection Agency, have been pursued to the fullest extent possible prior to the development of any mitigation program.

2. **Mitigation Map.** The project sponsor shall map thoroughly the area, distribution, density and relationship to depth contours of any eelgrass beds likely to be impacted by project construction. This includes areas immediately adjacent to the project site which have the potential to be indirectly or inadvertently impacted as well as areas having the proper depth and substrate requirements for eelgrass but which currently lack vegetation. All mapping efforts must be completed during the active growth phase for the vegetation (typically March through October) and will be valid for a period of 120 days with the exception of surveys completed in October. A survey completed in October will be valid until the resumption of active growth (i.e., March 1). A post-construction survey will be completed within 14 days after the completion of construction. The actual area of impact will be determined from this survey.

3. **Mitigation Site.** Siting of eelgrass transplant mitigation projects will be in areas similar to those where the initial impact occurs. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that should be considered in evaluating potential sites.

4. **Mitigation Size.** In the case of transplant projects that occur concurrent to the action resulting in damage to the existing eelgrass resource, a ratio of 1.2 to 1 will apply. That is, for each square foot adversely impacted, 1.2 square feet of new suitable habitat, vegetated with eelgrass, must be created.

The rationale for this ratio is based on, 1) the time (i.e., generally three years) necessary for a transplanted site to reach full fishery utilization and 2) the need to offset any productivity losses during this recovery period within five years.

Transplant projects completed three years in advance of the impact will not incur the additional 20% requirement and, therefore, can be constructed on a one-for-one basis. However, all other monitoring requirements (outlined below) remain the same irrespective of when the transplant is completed. Consideration also should be given to increasing the size of the mitigation area by 20-30% to provide greater assurance that the required criteria will be met.

An exception to the 1.2 to 1 requirement will be allowed when the impact is temporary, the total area of impact is less than 1,000 square feet, and the maximum width of impact through the existing eelgrass bed impact is less than ten feet. Mitigation on a one-for-one basis will be acceptable for projects that meet these requirements.

5. **Mitigation Technique.** Techniques for the construction and planting of the eelgrass mitigation site will be consistent with the best available technology at the time of the project. Donor material will be taken from area of impact whenever possible. Plantings should consist of bare-root bundles consisting of 8-12 individual turions. Specific spacing of transplant units will be at the discretion of the project sponsor. However, it is understood that whatever techniques are employed, they must comply with the stated requirements and criteria.

6. **Mitigation Timing.** For off-site mitigation projects, transplanting must be started prior to or concurrent to the start-up of the actual activity resulting in the impact to the eelgrass bed. For on-site mitigation projects, transplanting should be postponed when construction work is likely to impact the mitigation. However, transplanting of on-site mitigation projects must be started no later than 30 days after completion of in-water construction activities, unless this would occur outside of the growing period or a greater site stabilization period is deemed warranted by the resource agencies. A construction schedule which includes specific starting and ending dates shall be provided to the resource agencies.

7. **Mitigation Delay.** Any delays in the implementation of required eelgrass mitigation work will result in a seven percent increase of the areal extent of mitigation required per month. This increase in mitigation obligation is necessary to ensure that all productivity losses incurred during this period are sufficiently offset within five years.

8. **Mitigation Monitoring.** Monitoring the success of eelgrass mitigation projects will be required for a period of five years. Monitoring activities will determine the percent coverage and density of plants at the transplant site and will be conducted at 3, 6, 12, 24, 36, 48, and 60 months after completion of the transplant. All monitoring work must be conducted during the active vegetative growth period and will avoid the winter months of November through February. Sufficient flexibility in the scheduling of the 3 and 6 month surveys will be allowed in order to ensure the work is completed during this active growth period.

The monitoring of an adjacent or other acceptable control area (subject to the approval of the resource agencies) to account for any natural changes or fluctuations in bed width or density must be included as an element of the overall program.

Monitoring reports will be provided to the resource agencies within 30 days after of the completion of each required monitoring period.

9. **Mitigation Success.** Criteria for determination of transplant success will be based upon a comparison of vegetation coverage (area) and density (turions per square meter) between the project and mitigation sites. Extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than three feet between individual turions clusters. Density of shoots is defined by the number of turions per area present in representative samples within the control or transplant bed. Specific criteria are as follows:

a. a minimum of 70 percent areal coverage and 30 percent density after the first year.

b. a minimum of 85 percent areal coverage and 70 percent density after the second year.

c. a sustained 100 percent areal coverage and at least 85% density for the third, fourth and fifth years.

Should the required eelgrass transplant fail to meet the established criteria, then a Supplementary Transplant Area (STA) will be constructed and planted. The size of this STA will be determined by the following formula:

$$STA = MTA \times (|A_t + D_t| - |A_c + D_c|)$$

MTA = mitigation transplant area.
A_t = transplant deficiency or excess in area of coverage criterion (%).
D_t = transplant deficiency in density criterion (%).
A_c = natural decline in area of control (%).
D_c = natural decline in density of control (%).

Two conditions apply:
1) For years 2-5, an excess of only up to 30% in area of coverage over the stated criterion may be used to offset any deficiencies in the density criterion.
2) densities which exceed any of the stated criteria may not be used to offset any deficiencies in area of coverage.

10. **Mitigation Bank.** Any mitigation transplant success that, after five years, exceeds the mitigation requirements, as defined in 9, may be considered as credit in a mitigation "bank". Establishment of any habitat bank and use of any credits accrued from such a bank must be with the approval of the resource agencies and be consistent with the provisions stated in this policy.

revised 8/25/92

OGDEN ENVIRONMENTAL AND ENERGY SERVICES CO., INC.

LETTER OF TRANSMITTAL

To: Judi Oliveira Krauss
19805 N. 44th Avenue
Glendale, AZ 85308

Project No. 310361000

Date: July 21, 1993

Attention:

Subject: Convair Lagoon

The following items are transmitted: ☒ Herewith ☐ Under Separate Cover Via: U.S. Mail

Number of copies: 1

Description:

Convair Lagoon Remediation EIR/RAP

The above items are submitted: ☒ For your approval/action ☐ For your information/files

---

General remarks:

Please prepare draft mitigation monitoring program. Hours not-to-exceed 24 at $65/hour. Use 3-1036-1000 task 1002 for your time and WPC. Please call if you have any questions.

Dave Potter/dp

Copies to: Contract file
File copy

Transmitted by: Dave Potter

Forward reply to the Ogden office indicated below:

☒ 5510 Morehouse Drive
San Diego, CA 92121
(619) 458-9044
Fax (619) 458-0943

☐ 510 State St., Suite B
Santa Barbara, CA 93101
(805)962-0992
Fax (805)966-1706

☐ 680 Iwilei Rd., Suite 660
Honolulu, HI 96817
(808) 545-2462
Fax (808) 528-5379

☐ 221 Main St., Suite 1400
San Francisco, CA 94105
(415) 227-4370
Fax (415) 227-4376

(1/93)

DATE

OUT TO

FILE NUMBER OR NAME OUT

DATE

OUT TO

FILE NUMBER OR NAME OUT

DATE

PACO TERMINALS, INCORPORATED
SAN DIEGO UNIFIED PORT DISTRICT
COPPER ORE BAY SEDIMENT CLEANUP
NPDES CAO ORDER: 85-91
ENFORCEMENT **FILE: 10** 08/93-07/97
02-0045.05 STATUS: C

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
9771 CLAIREMONT MESA BOULEVARD, SUITE B
SAN DIEGO, CA 92124-1331
TELEPHONE: (619) 467-2952
FAX: (619) 571-6972

CERTIFIED MAIL -- RETURN RECEIPT REQUESTED

December 16, 1994

Mr. Don Nay, Director
San Diego Unified Port District
P.O. Box 488
San Diego, CA 92112-0488
(Z 416 683 606)

Mr. Robert Pate, President
Paco Terminals Inc.
c/o Jan S. Driscoll
Gray, Cary, Ware, and Freidenrich
401 B Street, Suite 1700
San Diego, CA 92101
(Z 416 683 607)

Dear Messrs. Nay and Pate:

ORDER NO. 94-176 RESCINDING CLEANUP AND ABATEMENT ORDER NO. 85-91 AND ADDENDA THERETO, ISSUED TO PACO TERMINALS INC. AND SAN DIEGO UNIFIED PORT DISTRICT, SAN DIEGO COUNTY

Based on our review of the Port District's Paco Verification Sample Analysis Report dated July 29, 1994 we have determined that the Port District and Paco Terminals Inc. have complied with the directives of Cleanup and Abatement Order No. 85-91. The Cleanup and Abatement Order was issued in 1985 and required the Port District and Paco to achieve a contaminated bay sediment cleanup level of less than 1,000 mg/kg copper at the National City Marine Terminal site. The report provides certification of completion of the following cleanup activities:

1. The Port District completed dredging 20,926 cubic yards of copper contaminated sediment from the National City Marine Terminal. Dredging occurred from November 4, 1993 to June 15, 1994.

2. A portion of the contaminated sediment was treated through an extraction process for offsite recycling. The remaining contaminated sediment was chemically fixated and placed in a designated on-site disposal area regulated under waste discharge requirements contained in the Regional Board's Order No. 94-37.

3. Verification sampling during the dredging activity was performed as provided in the "Revised National City Marine Terminal Copper-Ore Cleanup Verification Sampling Plan" dated August 4, 1993. Laboratory analysis results were reviewed during the dredging activity and when copper levels exceeded the 1,000 mg/kg copper

cleanup level, the tested area was redredged until the required cleanup level was achieved. The final sample results indicate that the remaining sediments in the project area contained less than 1000 mg/kg of copper.

Accordingly I am rescinding Cleanup and Abatement Order No. 85-91 and all addenda thereto. This recision will be effective on February 9, 1995, the next scheduled Regional Board meeting date, unless any objection is raised at the Board meeting. The Regional Board may decide at the meeting to further consider the circumstances of the recision of Cleanup and Abatement Order No. 85-91 on their own motion or upon request from an interested person.

The February 9, 1995 Regional Board meeting will be held as follows:

February 9, 1995 Regional Board Meeting
9:00 AM
San Diego Wastewater Management Agency
District Board Room
600 B Street, 3rd Floor
San Diego, California

If you have any questions on this matter please contact Mr. David Barker at (619) 467-2989.

Very truly yours,

Arthur L. Coe
Executive Officer

cc: Mr. Peter Kaufman
Office of Attorney General
110 West A Street
San Diego, California 92101

Mr. David Hopkins
Hillyer and Irwin
550 West C Street, 16th Floor
San Diego, California 92101-3568

Z 416 683 607

Receipt for Certified Mail

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Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

PS Form 3800, March 1993

Sent to Robert Pate, President	
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P.O., State and ZIP Code San Diego, CA 92101	
Postage	$ 1.29
Certified Fee	1.00
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Postmark or Date Dec. 16, 1994	

REGIONAL WATER QUALITY CONTROL BOARD

INTERNAL MEMO

TO: Kristin Schwall

FROM: David Barker

DATE: September 23, 1994

SIGNATURE: David Barker

SUBJECT: Miscellaneous

Paco Terminals

In my September 19 memo on Paco terminals I indicated we might want to schedule this for the October Regional Board meeting. Disregard this - I meant to say the November meeting. Art mentioned to me that if we decide to rescind the cleanup and abatement order we send a letter stating the order is rescinded and assign it an Order number so that it can be recorded in the WDS system as a rescission order. At the next available Regional Board meeting following the date the letter was sent we schedule the letter as an agenda item so that the public is informed and has an opportunity to comment on the recision.

Shipyard Assessments

I did some more thinking on the shipyard assessments after you left on Friday. I think we should do the following:

1. As we discussed I think it is worthwhile to review the monitoring data submitted by Nassco, Southwest Marine and Continental Maritine. However don't worry about having all the data in Excel if that gets to be a time consuming problem. I talked to Art and he said to mention to you that he has Quatra pro on his machine and he thinks he could translate it to Excel for you. If that doesn't work then just do a non computer review of the data - if you conclude that the monitoring data is showing concentrations over background and applicable State of Washington AET's then we should send "letter". The letter should remind the shipyards of their decision to do the voluntary study and ask them for a time schedule for completing the study. The letter should also inform them that the matter has been scheduled for discussion at the November Board meeting for discussion and that we would like them to attend to answer any questions the Board may have on the status of their voluntary sediment studies. You may want to resend your earlier letter describing what should be in the study as an attachment to the letter. We would want to get he letter out well in advance of the November Board meeting.

REGIONAL WATER QUALITY CONTROL BOARD

INTERNAL MEMO

TO: Kristin Schwall

FROM: David Barker

DATE: September 19, 1994

SIGNATURE: David Barker

SUBJECT: Paco terminals - Completion of Cleanup Report

Attached is a report from the Port District on the completion of cleanup at the Paco Terminals site. I've been wondering when they were going to submit the report. It showed up in my mail box today; apparently it was misdirected here in the office.

The purpose of the report is to determine if the Port District cleaned up the copper ore contaminated sediment to the 1,000 mg/kg copper cleanup level required by the State Board order. Please review the report and determine the following during the week of September 30. (If you are able to, conduct a preliminary review and we could discuss before I leave on Friday).

1. Did the Port District achieve the 1,000 mg/kg cleanup level in the contaminated bay sediment area?

2. Did we approve the August 6, 1993 sampling plan referred to in the comment letter? If not, does the sampling they did appear adequate? WE DID NOT APPROVE THE PLAN BUT [illegible] ADEQUATE

3. I remember the Port District talking about an area under the wharf area where it was going to be very difficult to remove contaminated sediment. Did they sample in this area? If not talk to Eileen at the Port District and determine if any work in this area was necessary to comply with the cleanup and abatement order.

If it seems clear that the cleanup is complete inform Art and discuss if he wants to rescind the cleanup and abatement order with a letter (I think you did something like that with Whelan Dairy ?). He may want to schedule it as an agenda item for the October Board meeting. If so write up the paperwork and tell Nancy to schedule for the October agenda. The draft agenda is attached.

If the report shows that the cleanup is not complete inform Art, determine a course of action and draft the "No you didn't finish" letter by October 15.

The Paco files are in my office.

Port of San Diego
and Lindbergh Field Air Terminal
(619) 686-6200 • P.O. Box 488, San Diego, California 92112-0488

August 1, 1994

RD

Mr. Arthur Coe
California Regional Water Quality Control Board
9771 Clairemont Blvd. Suite B
San Diego, CA 92124-1331

SUBJECT: PACO VERIFICATION SAMPLING

Dear Mr. Coe:

In accordance with Cleanup and Abatement Order 85-91 as amended, the San Diego Unified Port District has completed dredging 20,926 cubic yards of copper contaminated sediment from the National City Marine Terminal. Dredging occurred from November 4, 1993, to June 15, 1994. Some of this material was treated through an extraction process and is awaiting offsite recycling. The rest was chemically fixated and placed in the on-site repository under Waste Discharge Requirement Number 94-37.

Sampling was performed in accordance with the "Revised National City Marine Terminal Copper-Ore Cleanup Verification Sampling Plan (1000 mg cu/kg cleanup level)," dated 4 August 1993, submitted to you on August 6, 1993. Enclosed is the PACO verification sample report which indicates the sample locations and analysis. The cost to perform this analysis was approximately $5,000.

I certify under penalty of law that I am familiar with the information submitted in this document and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

Sincerely,

FOR MANUEL I. ACEVES
Deputy Port Director
Engineering & Development

MIA:PHB:nac
Attachments
File: Paco Remediation, Permitting RWQCB

NATIONAL STEEL AND SHIPBUILDING COMPANY

April 7, 1995

Ms. Kristin Schwall
Water Resources Control Engineer
California Regional Water Quality Control Board
San Diego Region
9771 Clairemont Mesa Blvd., Suite B
San Diego, CA 92124-1331

RECEIVED
APR 11 1995
SAN DIEGO REGIONAL WATER
QUALITY CONTROL BOARD

Re: Shipyard Bay Sediment Study,

Dear Kristin,

At our meeting with you, David Barker and Art Coe on February 21, 1995 we proposed an Effects-Based Risk Assessment approach to respond to the Board's request for the shipyard bay sediment study. The shipyards indicated that we would submit our approach for RWQCB review and approval within five (5) weeks. The reason for the delay in submitting the enclosed approach on behave of the three shipyards was due to time needed by our top management to review and become completely knowledgeable of this project. However, as agreed, we have prepared a short document describing the highlights of the proposed approach for the board's staff review. After we have concurrence from staff that the proposed approach is acceptable we will prepare the formal Sediment Sampling and Testing Plan with schedule of implementation for staff review and concurrence.

The shipyards and our consultant are available to meet with you to address any questions or concerns that staff may have regarding our proposal.

Sincerely,

NATIONAL STEEL & SHIPBUILDING COMPANY

Ronald A. Miller
Environmental Engineer.

File: NASSCO
Continental
SWM

TECHNICAL APPROACH FOR SHIPYARD SEDIMENT STUDY

The overall objective for the evaluation of marine sediments associated with the shipyards will assess risk from chemicals in sediments relative to comparable risks for identified reference stations in San Diego Bay. Inclusion of reference stations in the assessment is important because it allows for estimation of general background risk inherent to the bay as a whole that has resulted from activities independent of the shipyards. It should be noted that chemicals in sediments in the bay derive from a wide range of sources, which can include not only the shipyards but also other ancillary point and non-point sources. Furthermore, exposure pathways from sediments to biota of concern involve complex routes. Finally, the measured presence of a chemical in sediments is not necessarily reason for concern if the chemical is not available to biota. To address the latter concern for bioavailability, an effects-based approach will be utilized with measurements for two key components: (1) **sediment toxicity** using standard, accepted laboratory protocols and (2) **bioaccumulation** of identified chemicals of potential concern from sediments to a standard test organism in the laboratory. If sediments associated with the shipyards do not exhibit toxicity or bioaccumulation of chemicals greater than that for the bay as a whole (i.e., indicated by the reference stations), then the shipyards should not be held accountable for clean-up actions.

A decision tree for assessing information from sediment toxicity and bioaccumulation measurements is presented in Figure 1. To maximize utility of data from the current monitoring programs, the initial step in the decision tree would utilize existing information to assess concern with currently measured concentrations for chemicals in sediments. Subsequent decision points in the tree would be based on information derived from sediment toxicity and bioaccumulation measurements to better define not only those chemicals warranting further consideration but also spatial areas, if any, deserving consideration beyond the background characteristics for the bay as a whole.

The following is an outline of steps to be followed for the above evaluation, which will allow for addressing the above items.

Outline for Approach:

1. Definition of Objectives.
   1.1. Determine the potential of chemicals present in bay sediments to cause adverse effects using U.S. EPA's 1992 Framework for Ecological Risk Assessment as guidance.
2. Problem Formulation.
   2.1. Identify sources of chemicals from existing and historic activities at the shipyards that may have contributed to chemicals in sediments in San Diego Bay.
   2.2. To the extent possible, identify non-shipyard sources for chemicals from existing or historic sources that may have contributed chemicals to San Diego Bay.
   2.3. Identify potential stressors (i.e., chemical as well as non-chemical) that could affect biota associated with San Diego Bay.
   2.4. Identify potential transport and exposure pathways in San Diego Bay.
   2.5. Describe important ecological receptors that could be potentially at risk.
   2.6. Develop a conceptual model with the biological, chemical, and physical components of the ecosystem at the project site.
   2.7. Identify assessment endpoints or those resources that need protection (e.g., the beneficial uses of San Diego Bay).
   2.8. Identify measurement endpoints or easily measurable traits that approximate the assessment endpoint (e.g., mortality of biota due to sediment toxicity).
3. Define The Basis For Decision Making (See Figure 1).
   3.1. Determine whether receptors are related to assessment endpoints?
   3.2. Determine if stressors of potential concern are present?
   3.3. Determine if receptors and stressors are linked by complete exposure pathways? If not, the necessary link for bioavailability of chemicals between sediments and target receptors is not complete and there is no further cause for concern.
   3.4. Determine if the potential exists for stressors to cause adverse effects in receptors related to assessment endpoints?
4. Identify Data Required For Decisions.
   4.1. Define boundaries for the study.
   4.2. Develop a plan to characterize background conditions for ecological systems and chemicals.
   4.3. Define types of data to be collected.

4.4. Define data quality objectives.

5. **Design Sampling and Testing Plan**

5.6. Identify the sampling approach.

5.7. Identify potential sampling methods.

5.5. Define the approach to data analysis and interpretation.

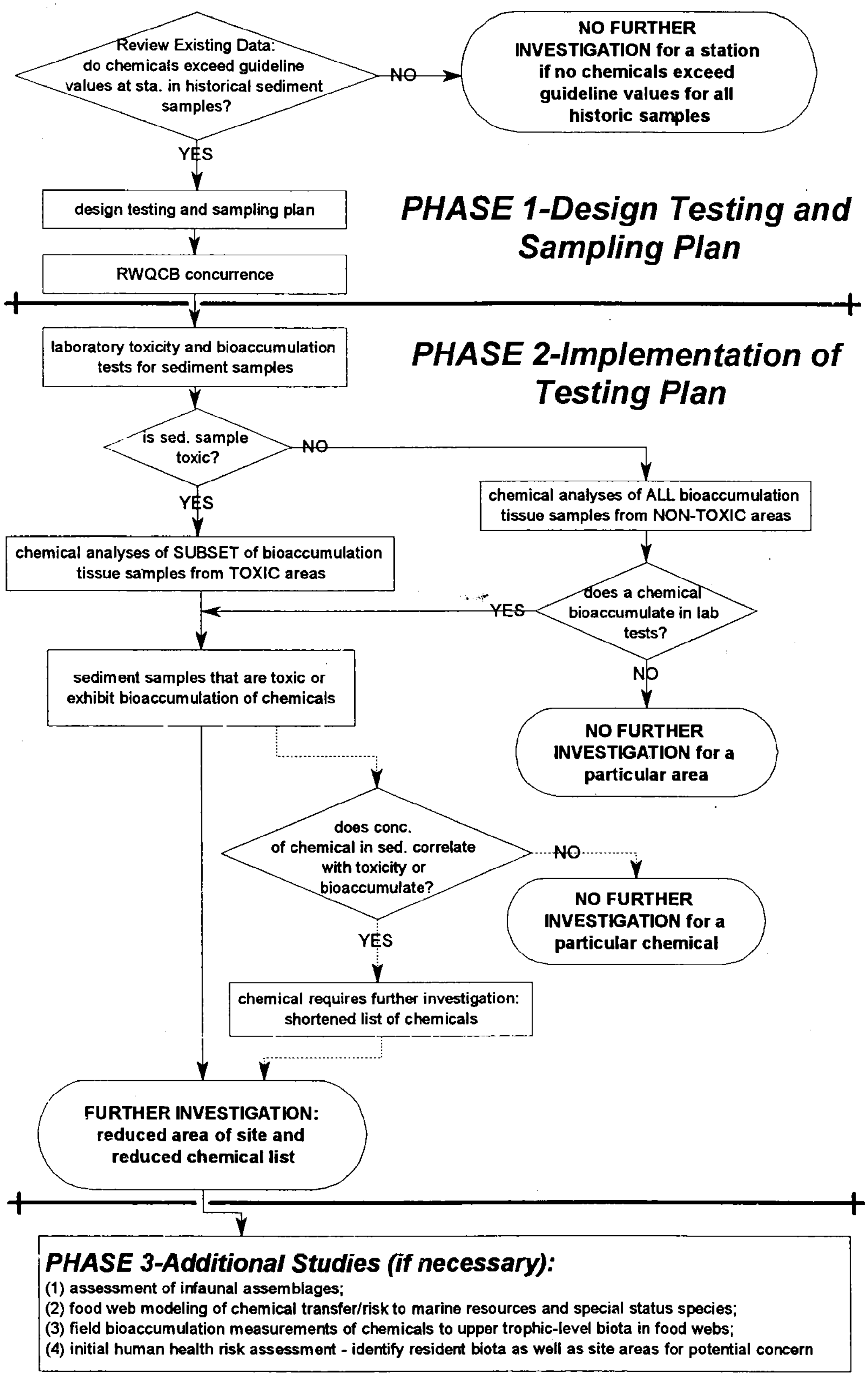

Figure 1. Decision tree for reducing spatial area and list of chemicals for further consideration.

WHAT THE STUDIES SAY ABOUT THE EFFECTS OF CHEMICAL CONTAMINATION ON MARINE LIFE

San Diego Bay Fish Health Risk Study, June 1990, County Health Department

Found elevated levels of mercury and PCBs in some San Diego Bay fish. Evidence of radiation was also found in some fish. Lead to posting of San Diego Bay against consumption of fish by sensitive populations. Further study was recommended for other chemical contaminants and radioisotopes found in the fish.

Chemical Contamination and Associated Fish Diseases in San Diego Bay, Bruce McCain et al. Published in Environmental Science Technology, 1992

Established link between fish diseases and contaminated sediments in San Diego Bay. Found the prevalence of liver neoplasms in black croakers the highest reported for a West Coast Marine species outside of Puget Sound. Relatively high prevalence of fin erosion were found in black croakers and barred sand bass in San Diego Bay. Study indicates that sites in south and central Bay are among the most polluted sites sampled so far in the Bay. Aromatic hydrocarbons have not declined in the Bay.

Coastal Environmental Quality in the United States, 1990, NOAA

San Diego Bay sediments exhibited high concentrations of cadmium, copper, lead, mercury, silver, zinc, PCB, PAH, and total chlordane. On the basis of this contamination, San Diego Bay was rated as one of the most contaminated urbanized coastal areas in the nation.

NOAA Mussel watch 1984-86

Found mean concentration of PCBs and aromatic hydrocarbons, copper, and zinc in mussels among the 10 highest of the bivalve samples taken in 150 samples nationwide.

Sublethal Toxicity of Sediments from Selected Urban Sediments and Non urban Sites Along the U.S. West Coast. Ed Casillas et. al. 1991

Polychaetes, Sand Dollars, and Surf Smelt exhibited significant toxicity and impaired growth (sublethal effect) when exposed to San Diego Bay sediments.

Effects of Coastal Pollution on Living Marine Resources. Usha Varanasi et al. 1993

The results of this multi-year project on reproductive success in English Sole (a bottom dwelling fish) show that in contaminated areas, mature females has a 40 to 50 percent chance of not reaching sexual maturity. More than half of the female fish that did mature in a heavily contaminated area failed to spawn and those that did spawn had larvae with higher frequencies of abnormalities. Larval defects and the failure to spawn were also associated with exposure to PAHs.

CWA DISPATCH

Local 9509

From the desk of Douglas J. Woodbury, President

20

RESULTS OF THE 1984-85 NATIONAL SURVEILLANCE PROJECT: WEST COAST

SUMMARY:

The presence of chemically contaminated sediments and botttomfish with high tissue concentrations of toxic chemicals and certain pathological conditions have been useful indicators of environmental degradation in several coastal areas of the world. In this study bottomfish and sediments were collected from 18 sites including, a number of reference sites on the West Coast during this multiyear surveillance project. This project is a component of the NOAA National Status and Trends Program and the objective is to asses and document the status and long-term changes in environmental quality of the Nation's coastal and esturine environments.

Fish specimens and bottom sediments from eight urban-associated locations were collected along the West Coast (see map). Sediments and stomach contents were analyzed for a broad spectrum of AH, chlorinated hydrocarbons (CH), and metals. Tissues routinely collected for histopathological examination were liver, kidney, and gill. Tissues from the skin and fin were collected only when grossly visible lesions were observed.

The location of sampling sites relative to the sources of contaminants is a critical factor in assessing the status of pollution-related problems. In coastal waters near the most densely populated locations, highest concentrations of AH and PCB and Cu were found in the sediments from sites closest to the sources of municipal and 'or industrial wastes. For example, the highest sediment concentrations of AH, PCB, and Cu were found at the sites in San Diego bay and Elliot Bay. Both of these sites were located near current or historical sources of contaminants.

Because of their mobility, bottomfish species can be exposed to chemical contaminants over a broad geographical area. Thus, fish reflect the integration of many more sources of contaminants than do composites of individual sediment samples. In most cases, the concentrations of PCB in stomach contents of fish were 10 to 80 times those found in sediments taken from the site from where the fish were captured. In fish from most urban-associated sites, the concentration of AH in stomach contents were less than, or equivalent to, the levels in the sediment; however, fish from most of the reference sites had AH concentrations in stomach contents at least 10 times higher than those in sediment.

Series pathological conditions were found in some fish from all of the urban locations. With the exception of high prevalences of fin erosion in barred sand bass from the San Diego site and hepatocellular degeneration/necrosis in English sole and flathead sole in Puget Sound, the prevalence of many conditions were relatively low. However, some serious liver conditions were detected only in fish from urban-associated sites.

CWA DISPATCH

Local 9509

From the desk of Douglas J. Woodbury, President

10U

ENVIRONMENTAL HEALTH COALITION

1717 Kettner Boulevard, Suite 100 • San Diego, CA 92101 • (619) 235-0281 Fax (619) 232-3670

September 15, 1995

Dear Members of the Interagency Panel for San Diego Bay:

In the wake of the discovery of radioactive and hazardous waste in San Diego Bay on the shore of Naval Air Station, North Island (NASNI), Environmental Health Coalition (EHC) requests that the Bay Panel make a formal request to the Navy and the Port District to jointly fund the follow-up studies recommended in the 1990 Fish Health Risk Study.

BACKGROUND

In June, large amounts of radioactive slag was found by a state regulator on the beach on NASNI. The radiation was determined to have come from a now-dismantled smelter that smelted spare airplane parts, including radium dials. Radium-226 is thought to be the emitter of concern. Radium-226 is primarily an alpha emitter. The bulk of the slag has been removed but follow-up tests remain to be done and lead above the hazardous waste level remains within influence of the Bay.

The 1990 Fish Health Risk Study on San Diego Bay fish found "consistently elevated" levels of alpha radiation and some elevated beta radiation in bay fish. A series of recommendations were made to follow-up on that testing. To date, in spite of numerous requests by EHC in many different fora, the follow-up testing has not been done.

Sincerely,

Laura Hunter

Laura Hunter, Director
Clean Bay Campaign

PTI

ENVIRONMENTAL SERVICES

Campbell Shipyards

Preliminary Design Plan
Bay Sediment, Upland Soil, and
Groundwater Remediation

Prepared for

MARCO Seattle
Seattle, Washington

September 1995

PTI
ENVIRONMENTAL SERVICES
4000 Kruse Way Place
Building #2, Suite 285
Lake Oswego, Oregon 97035

Campbell Shipyards

Preliminary Design Plan
Bay Sediment, Upland Soil, and Groundwater Remediation

Prepared for

MARCO Seattle
2300 West Commodore Way
Seattle, Washington 98199

PTI Contract C541-04-01

September 1995

CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

CFG	California Department of Fish and Game
EPA	U.S. Environmental Protection Agency
PAH	polycyclic aromatic hydrocarbon
RWD	Report of Waste Discharge
RWQCB	California Regional Water Quality Control Board
TPH	total petroleum hydrocarbons
WDR	waste discharge requirements

INTRODUCTION

This plan has been prepared in response to the California Regional Water Quality Control Board's (RWQCB) is Cleanup and Abatement Order No. 95-21 issued to Campbell Industries Marine Construction and Design Company, San Diego, California. The Order requires that contaminated bay sediment, upland soils, and groundwater at the Campbell Shipyards site located at 501 East Harbor Drive, San Diego, California be cleaned up to levels specified in the Order. Directive No. 7a of the Order requires submittal of a preliminary design plan by October 1, 1995. The preliminary design plan must include a description of all remediation activities to be conducted, a map depicting the area to be remediated, the permits and other governmental approvals needed, and a schedule for completion of each task. This plan addresses those requirements and complies with Directive No. 7a of the Order.

DESCRIPTION OF REMEDIATION ACTIVITIES

This section describes the remediation activities for sediment, soil, and groundwater.

SEDIMENT REMEDIATION ACTIVITIES

Sediment remedial action involves dredging selected areas of contaminated sediments and transporting and disposing of the sediments at a local commercial fill site. Sediment cleanup will be completed using a mechanical (clamshell) dredge. Sediments will be brought to the surface with the clamshell and stockpiled on the barge, after which water will be allowed to passively drain from the sediment. Sediments stockpiled on the barge will be transferred to an upland staging area, loaded on dump trucks, and transported to a local commercial fill site (Burns & Sons Trucking's Brown Field site) for disposal.

Assumptions for remediation of the sediment, which were used to estimate preliminary remediation costs, include:

- An estimated 16,900 yd^3 (in-place) of sediment will require dredging and upland disposal at a nearby commercial fill site
- The density of the dredged sediments will be approximately 1.5 $tons/yd^3$
- The sediments are not a hazardous waste, will not require stabilization, and a waiver for disposal at a local commercial fill site will be approved by the RWQCB
- No expansion factor is required to estimate the volume of sediment requiring transfer and disposal
- Passive sediment dewatering will be allowed during the time the sediments are placed on the barge and transferred to the upland staging area; no handling or disposal of water from sediment was assumed.

SOIL REMEDIATION ACTIVITIES

Soil remedial action involves excavating areas of contaminated soil that exceed soil - cleanup levels and treating the soil at a thermal desorption facility. Excavated soils will be stockpiled on the site prior to transport and treatment. In some areas, clean surface soils will be removed to reach underlying soil contamination. To the extent possible, clean and contaminated soils will be segregated and stockpiled separately to reduce the volume of soil requiring treatment.

Abandoned diesel pipelines that extend several hundred feet along the seawall will also be removed during soil cleanup activities. The pipelines will be drained of any remaining free product, cleaned, and properly disposed of. If possible, the pipe will be recycled as scrap metal to reduce cleanup costs. Buildings and other structures will be demolished and removed as necessary to excavate soil that exceeds soil cleanup levels and remove the abandoned diesel pipelines. Demolition debris will be properly disposed of offsite.

Assumptions for remediation of the soil, which were used to estimate preliminary remediation costs, include:

- An estimated 11,000 yd^3 (in-place) of soil will require excavation and stockpiling during soil cleanup activities
- A swell factor of 1.2 was used to estimate yardage for hauling and treating contaminated soils
- An estimated 13,200 yd^3 of contaminated soils will require hauling and treatment at the offsite treatment facility
- A new thermal desorption facility operated by TPS Technologies will be operable and will be able to accept the soils from the Campbell Shipyards site
- Soils will be certified as clean and will be used as fill by TPS Technologies after treatment.

GROUNDWATER REMEDIATION ACTIVITIES

Groundwater remedial action involves removing floating product that is present in the vicinity of MW-5 and the Coast Guard recovery well. The floating product will be removed using either recovery wells or pits excavated to the groundwater table and a vacuum truck to skim the floating product off the groundwater surface. The recovered product will be transported offsite for recycling or disposal.

Initial removal of floating product will include the use of existing recovery wells to achieve some mass removal prior to remediation of the remainder of the site. Recovered product will be stored in an aboveground storage tank. The product in the tank will be periodically removed and transported to an offsite treatment/recycling facility. However, control of petroleum hydrocarbon sources that could dissolve and continue to contaminate groundwater will likely be necessary to attain the groundwater cleanup levels (i.e., removal of free product). Potential sources of petroleum hydrocarbons include soils with elevated total petroleum hydrocarbon (TPH) contamination and the underground diesel pipelines. It is expected that additional groundwater cleanup will be conducted when these potential sources of product are removed (i.e., at the same time as the soil cleanup remedy). Soil excavated from the areas around MW-5 and the Coast Guard well will be segregated and stockpiled on the site based on field evidence of TPH contamination. Once excavation to the groundwater surface is completed, the floating product will be removed using a vacuum truck and the product will be transported to an offsite treatment/recycling facility following appropriate regulations. The excavation will be allowed to stand overnight to accumulate additional product. If floating product reappears, the vacuum truck will again be used to remove all floating product. This procedure will be repeated until no measurable floating product returns to the excavation.

The groundwater cleanup remedy does not involve active pumping or treatment of dissolved-phase groundwater contaminants. It is assumed that the removal of the floating product and contaminated soils in the areas around MW-5 and the Coast Guard well will remove petroleum hydrocarbon sources that could dissolve and continue to contaminate groundwater.

Assumptions for remediation of the groundwater, which were used to estimate preliminary remediation costs, include:

- The vacuum truck will be required to make five trips to remove floating product from the excavation
- 10,000 gal of floating product are assumed to be removed from soil excavations; the actual quantity will be determined during the remedial activities.

AREAS TO BE REMEDIATED

Sediment cleanup levels are summarized in Table 1. The associated cleanup area and volume estimates based on these cleanup levels are summarized in Table 2 and shown in Figure 1. Soil cleanup levels are summarized in Table 3. Associated cleanup areas and volumes estimates based on these cleanup levels are summarized in Table 2 and shown in Figure 2. In addition, abandoned underground pipelines that would be removed as part of the overall remedial action at the site are shown on San Diego Unified Port District utility maps (Figure 3). Groundwater cleanup areas and volume estimates are summarized in Table 2 and shown in Figure 2.

PERMITS AND OTHER NEEDED GOVERNMENT APPROVALS

Table 4 provides a preliminary determination of permit and project approval requirements for remediation activities at the Campbell Shipyards site. Only appropriately permitted units/facilities will be used for thermal desorption of soil, treatment/recycling of recovered product from the groundwater, and disposal or recycling of the diesel pipelines.

SCHEDULE

A schedule for the remediation activities is presented in Table 5.

TABLE 1. BAY SEDIMENT CLEANUP LEVELS

Constituent	Cleanup Level (mg/kg dry weight)
Copper	810
Zinc	820
Lead	231
Tributyltin (TBT)	5.75
High-molecular-weight polycyclic aromatic hydrocarbons (HPAH)	44
Polychlorinated biphenyls (PCBs)	0.95
Total petroleum hydrocarbons (TPH)	4,300

TABLE 2. AREA AND VOLUME ESTIMATES FOR SEDIMENT, SOIL, AND GROUNDWATER CLEANUP

	Total Area		Total Volume
Medium	ft^2	acres	yd^3
Sediment	180,000	4.2	17,000
Soil	42,000	1.0	11,000
Groundwater	NA	NA	—[a]

Note: NA - not applicable

[a] 10,000 gal of free product assumed.

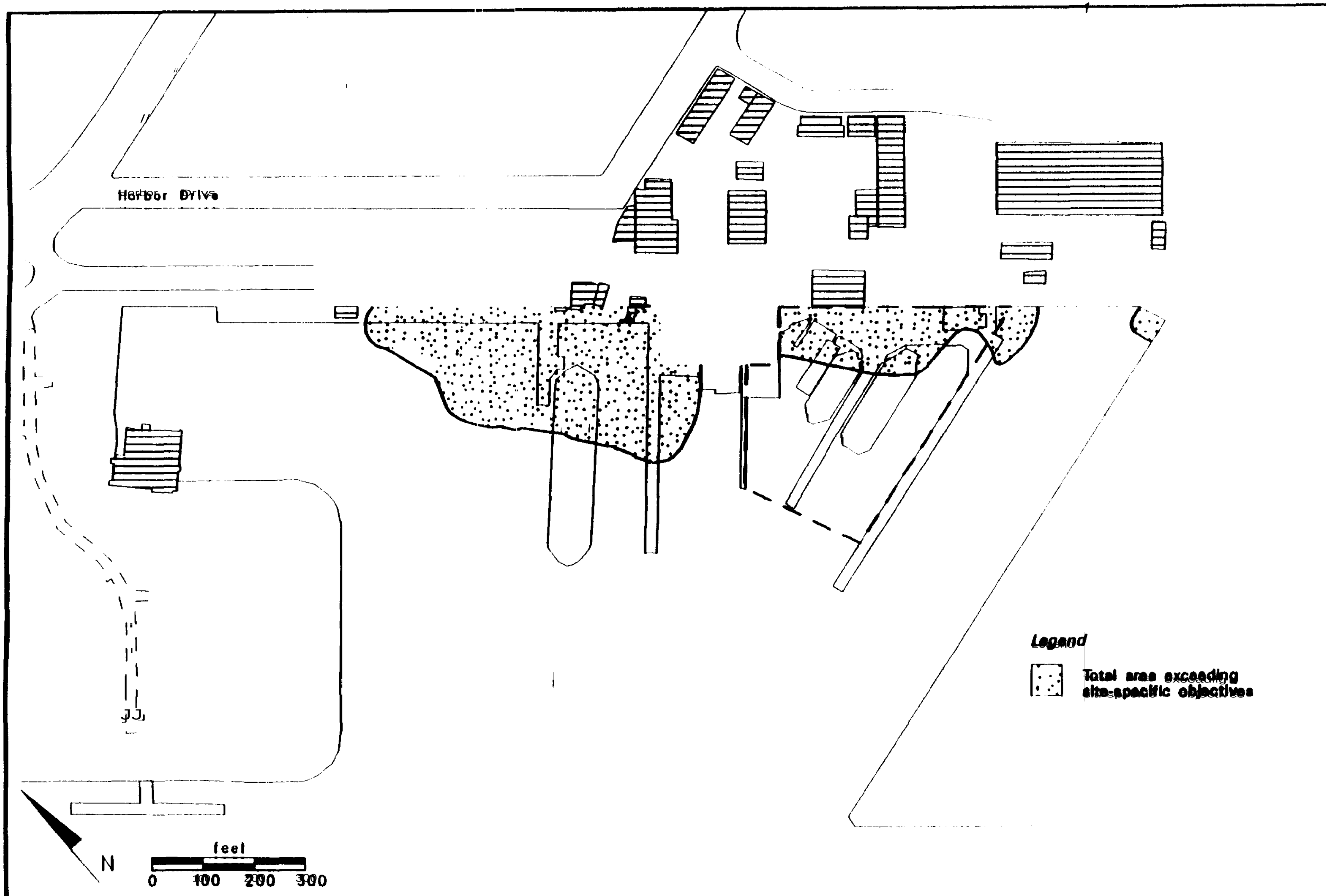

Figure 1. Sediment remediation areas.

TABLE 3. SOIL CLEANUP LEVELS

Constituent	Cleanup Level (mg/kg dry weight)
Polycyclic aromatic hydrocarbons (PAHs)	3.9
Total petroleum hydrocarbons (TPH)	1,000

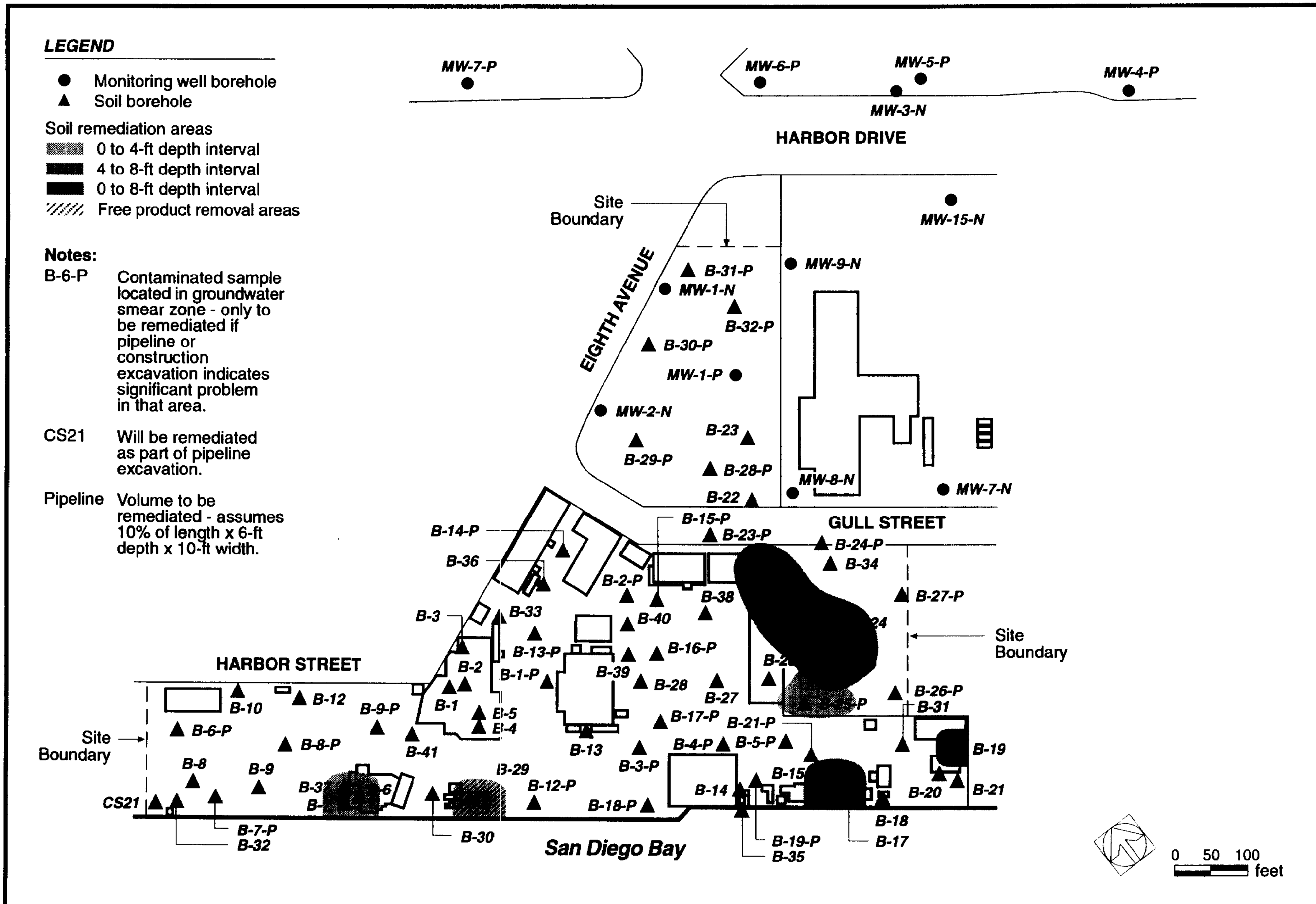

Figure 2. Soil and groundwater remediation areas.

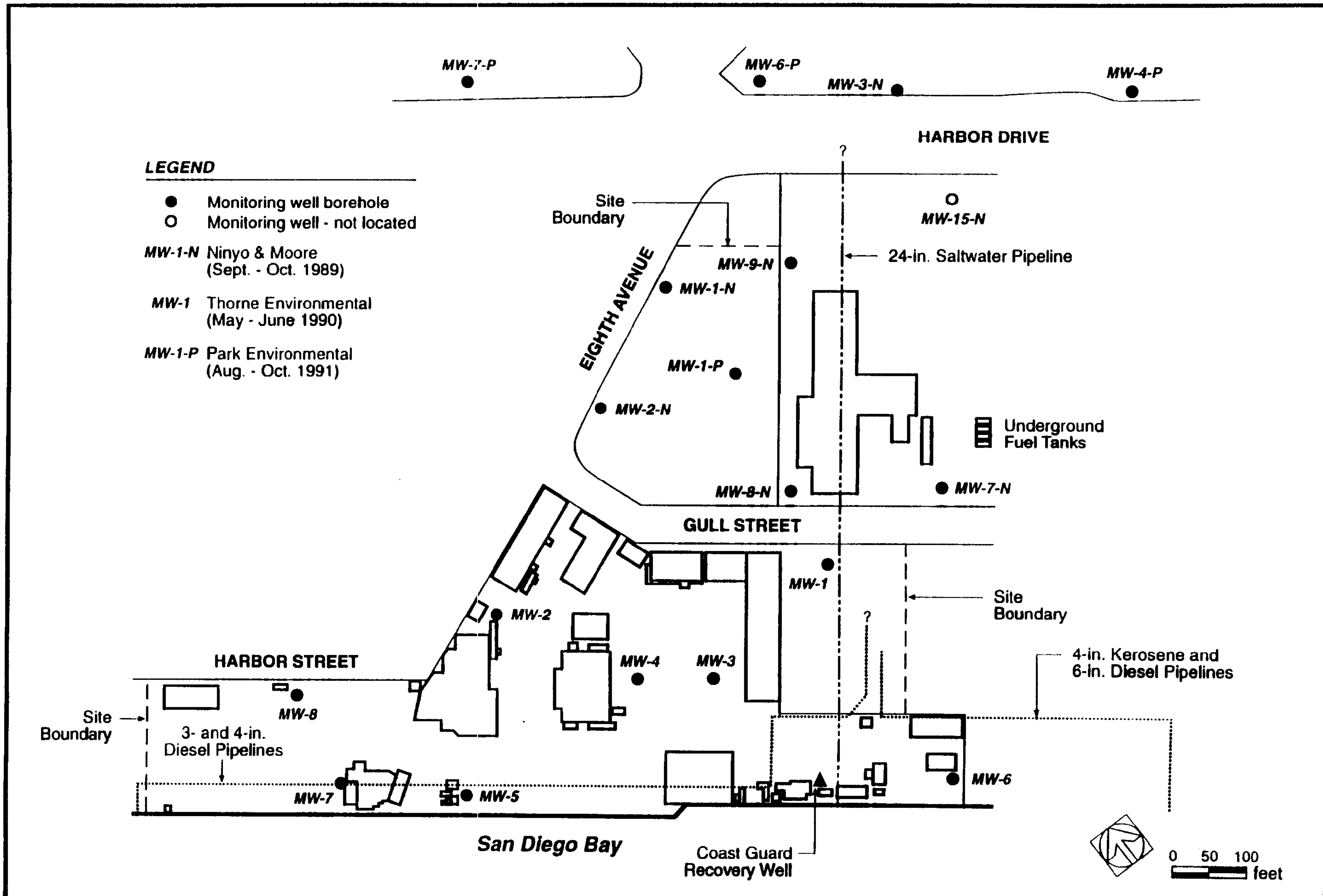

Figure 3. Locations of selected underground pipelines.

TABLE 4. AGENCY PERMIT AND PROJECT APPROVAL REQUIREMENTS

Agency	Permit/Approval
Port of San Diego	Property Engineering Department reviews Tenant Improvement Project plans. Plans are approved, conditionally approved, or denied. Applicants must provide proof of compliance with all relevant regulatory programs prior to commencing work. The Port is also the lead agency for environmental review under the California Environmental Quality Act (review for possible need for an Environmental Impact Report).
U.S. Army Corps of Engineers (Corps)	The Corps approves permits for dredging and disposal of dredged material (Section 10 of the Rivers and Harbors Act of 1899). The Corps also approves permits for disposal of dredged material into waters of the United States [Section 404(b) of the Clean Water Act]; however, this permit is probably not applicable if land disposal is used. The Corps permit process involves public notice and review by agencies such as the U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service, National Marine Fisheries Service, RWQCB, and California Department of Fish and Game (CFG).
California Department of Fish and Game	CFG provides review of Corps permit(s) and may also require a special permit for dredging (i.e., a special permit for the operation of vacuum or suction dredges is needed for rivers, streams, and lakes).
RWQCB	RWQCB is responsible for issuing state water quality certification (Section 401 of the Clean Water Act). In addition, prior to disposal in California of contaminated bay sediments and soils, a Report of Waste Discharge (RWD) must be submitted to the Executive Officer pursuant to California Code of Regulations, Title 23, Division 3, Chapter 15. Upon determining the RWD to be complete, the RWQCB may issue either waste discharge requirements (WDRs) or a waiver of WDRs.

Note: RWQCB - California Regional Water Quality Control Board — San Diego Region

TABLE 5. SCHEDULE FOR REMEDIATION ACTIVITIES

Task	Date
Conduct initial groundwater cleanup as appropriate	June 1, 1996
Submit all necessary applications for permits and other governmental approvals necessary to complete the cleanup project	February 1, 1998
Submit a final design plan for the cleanup project	March 1, 1998
Submit a post-cleanup sampling plan to verify conformance with the cleanup levels required in the Order	May 1, 1998
Complete bidding and award of a contract for the cleanup project	September 1, 1998
Complete cleanup of the site in conformance with the Order	June 1, 1999
Submit the results of a post-cleanup sampling plan	July 1, 1999

PTI
ENVIRONMENTAL SERVICES

4000 Kruse Way Place
Building #2, Suite 285
Lake Oswego, Oregon 97035
(503) 636-4338 FAX (503) 636-4315

September 28, 1995

Mr. David Barker
California Regional Water Quality Control Board
San Diego Region
9771 Clairemont Mesa Boulevard
Suite B
San Diego, CA 92124

Subject: Preliminary Design Plan Submittal
Campbell Shipyards, San Diego, California
Cleanup and Abatement Order No. 95-21
PTI Contract C541-04-01

Dear Mr. Barker:

Please find enclosed a copy of the Preliminary Design Plan for the Campbell Shipyards site in San Diego, California. This plan is being submitted on behalf of Campbell Shipyards in fulfillment of Directive 7a. of Cleanup and Abatement Order No. 95-21. Statements of qualifications for Mr. Mark Whitson and me are included with this letter as required under Directive 12.

Feel free to call Mr. Kipland Howard of Allegis Development Services, Inc. at 238-5466 or me at (503) 636-4338 if you have any questions about this submittal.

Sincerely,

David G. Livermore, R.G.
Senior Hydrogeologist

Enclosures

cc: Vincente Rodriguez, RWQCB
Kipland Howard, Allegis Development
Allen Fernstrom, MARCO Seattle
Peter Schmidt, MARCO Seattle
Bob Allen, Campbell Shipyards
Mark Whitson, PTI
Lucinda Jacobs, PTI

DAVID G. LIVERMORE, R.G.
Senior Hydrogeologist

Experience Summary

Mr. David Livermore is a hydrogeologist with 11 years of experience specializing in hydrogeology, geochemistry, and geology. As a hydrogeologist and project manager, he has managed or had senior technical direction on the investigation and cleanup of hazardous waste sites throughout the Pacific Northwest. Mr. Livermore has successfully managed projects in the Oregon Department of Environmental Quality Voluntary Cleanup Program, UST cleanup, site response, and site assessment sections.

Mr. Livermore's technical expertise includes the investigation of soil and groundwater contamination at sites affected by petroleum hydrocarbons, creosote, pentachlorophenol, and other chlorinated solvents, as well as inorganic contaminants such as cadmium, arsenic, chromium, copper, lead, and zinc. He is also familiar with current RCRA, CERCLA, and Oregon Department of Environmental Quality regulations with respect to the monitoring and cleanup of groundwater and soil contamination. Mr. Livermore has also designed and reviewed field sampling, monitoring, and remediation programs in support of potential litigation. In addition, Mr. Livermore has expertise in the design and use of electronic pressure transducer/data logger equipment for remote groundwater monitoring, pumping tests, and slug tests.

Credentials

M.S., Geology - University of Oregon (1990)

B.A., Geology - Macalester College (1982)

Registered Professional Geologist - Oregon (#G1174), Idaho (#828), California (#6072); registered to perform UST site assessments in Washington (1990); Oregon UST soil cleanup license (#1845); Hazardous Waste Operations and Emergency Response 40-hour training program; Hazardous Waste Operations Management and Supervisor 8-hour training program; American Geophysical Union; National Ground Water Association

Key Projects

Managed a project at the 500-acre Alkali Lake Chemical Waste Disposal Area in south-central Oregon, where pesticide waste disposal has affected soil and groundwater for many years. Key issues included contaminant transport from groundwater to surface water, contamination of surface soils and the food chain by dioxins, and potential effects on rare or threatened species (e.g., Tui chub and snowy plover). Conducted a detailed characterization of the subsurface hydrogeology in the area in order to assess the potential effectiveness of a vertical containment wall, including characterization of groundwater flow in shallow and deep groundwater zones and numerical modeling of the groundwater flow system.

Managing the investigation of chlorinated organic compounds at the former Production Parts, Inc. metals machining facility located in Milwaukie, Oregon. The Phase I soil and groundwater site investigation is being conducted under Oregon Department of Environmental Quality's waste management and cleanup site response section.

Managing the remediation of petroleum hydrocarbon-contaminated soils at a former 48,000-gal-capacity tank farm and marine fueling facility owned by Cavenham Forest Industries in Warrenton, Oregon. The site cleanup is being conducted through the Oregon Department of Environmental Quality Voluntary Cleanup Program, which has reviewed and approved the investigation, work plan, sampling and analysis plans, and QA/QC documentation. The site investigation and removal of contaminated soils have been completed. Onsite soil biotreatment and groundwater monitoring are ongoing.

Principal hydrogeologist in charge of the uplands investigation of a shipyard construction and repair facility located in San Diego, California. The site, located in a historically industrial area, has been affected by historical site uses including a city garbage incinerator, tank farm, and marine fueling facility. Contaminants of concern include diesel and crude oil fuels which are present as light non-aqueous-phase liquid on the groundwater surface, in addition to lead and TPH contamination in soils.

Served as lead geologist for an RI/FS of the McCormick & Baxter Creosoting Company site in Portland, Oregon. Tasks included serving as field team leader for field investigations including surface and subsurface soil sampling; the installation, development, and sampling of more than 25 new monitoring wells; river sediment coring; groundwater measurements; air investigation tasks; and residuals management. Office tasks included preparation of remedial investigation report sections and field team scheduling and coordination.

Managing the monitoring and closure of a wood waste landfill owned by Pope & Talbot in Oakridge, Oregon. Ongoing tasks include the monitoring of groundwater and surface water quality in the vicinity of the landfill and addressing Oregon Department of Environmental Quality compliance issues.

Served as hydrogeologist and geochemist for completion of the remedial investigation report for the Old Works East Anaconda Area operable unit of the Anaconda Smelter NPL site located in Anaconda, Montana. Tasks included reviewing and evaluating soil and pore water data, and preparing geochemical evaluations of the mobility of arsenic, cadmium, copper, lead, and zinc in vadose zone soils and pore waters.

Managed an emergency response action to mitigate accumulations of explosive levels of gasoline vapors in storm drains at the former Sandy Oil Company site in Sandy, Oregon. Emergency response actions included the design and installation of two groundwater interceptor trenches and the installation of groundwater and vapor extraction equipment. A site soil vapor survey was conducted to investigate potential sources of gasoline vapors. Explosive levels of gasoline vapors were reduced to safe levels within 72 hours of the initial discovery. Site management included monthly monitoring of the vapor extraction and groundwater treatment systems.

Managed the identification and disposal of more than three dozen drums and containers of petroleum-hydrocarbon oils, solvents, oil-based paints, and acid wastes and associated soil contamination at a lumber mill. Tasks included the proper identification and coding of wastes to facilitate legal waste disposal or treatment and to reduce client liability while achieving the lowest possible disposal cost.

Managed the compliance monitoring of groundwater quality for a UST removal for Oregon Cherry Growers in The Dalles, Oregon. Site closure was recommended to and granted by the Oregon Department of Environmental Quality after 1 year of compliance monitoring was completed.

Served as field liaison for an RI/FS of the McCormick & Baxter Creosoting Company wood-treating facility, a state Superfund site located in north Portland, Oregon. Tasks included assisting with project management, field logistics, preparing progress reports and statements of work for subcontractors, subcontractor coordination and scheduling, and scheduling of up to 20 field staff.

Served as site safety officer for the RI/FS field investigations at the McCormick & Baxter Creosoting Company in Portland, Oregon. Tasks included management of site safety plan administration, implementation, and record keeping. At the site, surface and subsurface soil, surface water, and groundwater were contaminated with inorganic (arsenic, chromium, copper, and zinc), and organic (PAH, PCP, and dioxin) compounds. Oversaw daily health and safety routines including field investigations using Level C personal protective equipment.

Managed a screening site inspection of Oregon-California Chemical Company, a pesticide and herbicide formulator/distributor located in Junction City, Oregon. Investigation included developing a sampling plan; performing field sampling of soils, groundwater, and a nearby slough; reporting levels of pesticides and herbicides found at the site; and tabulating data and ranking the site using the HRS.

Managed a screening site inspection of the Macleay Landfill, a closed municipal waste landfill located near Salem, Oregon. Investigation included developing a sampling plan; performing field sampling of site soils and nearby groundwater and surface water; reporting levels of organic and inorganic contaminants found at the site; and tabulating data and ranking the site using the HRS.

Provided litigation support and technical review of consultant reports for a Mobil station located in Portland, Oregon, with petroleum-contaminated soil and groundwater.

Assisted in litigation support for an investigation of elevated nitrate levels in groundwater near a chicken farm in rural Deer Park, Washington. Tasks included developing and sampling existing monitoring wells and nearby domestic wells, mapping groundwater flow directions, and integrating the data into a conceptual model of groundwater flow and contaminant source relationships.

Performed senior technical review for more than five state preliminary assessments to evaluate the release or threat of a release of hazardous substances to industrial sites located across Oregon.

Managed state Parts I and II preliminary assessment of an illicit drug laboratory site near Central Point, Oregon. Investigation included the collection of existing site use and environmental data, including an evaluation of the process used to synthesize amphetamines at the site, a site visit, and the preparation of a report to evaluate whether a release or a threat of a release of hazardous substances had occurred and whether further investigation was required at the site.

Managed state Parts I and II preliminary assessment of Selmet, Inc., a titanium and rare metal casting facility located near Albany, Oregon. Investigation tasks included the collection of existing site use and environmental data, a site visit, and the preparation of a report to evaluate whether a release or a threat of a release of hazardous substances had occurred and whether further investigation was required at the site. Through the review of existing data, extensive soil and groundwater contamination by organic solvents was identified at the site.

Managed state Part I preliminary assessment of Molecular Probes, Inc., a producer/developer of fluorescent dyes and research chemicals used in the biochemical and medical research industry located in Eugene, Oregon. Investigation tasks included the collection of existing site use and environmental data, a site visit, and the preparation of a report to evaluate whether a release or a threat of a release of hazardous substances had occurred and whether further investigation was required at the site.

Managed a Phase I environmental property transfer assessment of a northwest Portland, Oregon, site, which was used to manufacture and mill large metal parts. Investigation included a review of historical data and federal, state, and local environmental records; a title search; and a site visit. Results were incorporated into a final report that evaluated, within the limitations of the data, the probability of a release of hazardous substances to the site soils or groundwater.

Managed the investigation of several sites in Oregon for Cavenham Forest Industries. Site investigations included two UST decommissioning evaluations and an investigation and cleanup of a spill of an unknown oily substance in a remote forested area.

Served as principal investigator for the Oregon Department of Environmental Quality in Superfund investigations into the source of VOC contamination in municipal water supply wells in Milwaukie, Oregon, and Lake Oswego, Oregon.

Provided technical oversight for the development of a work plan and field sampling plan for a groundwater and soil RI/FS at the Umatilla Army Depot Activity in Hermiston, Oregon.

Prepared a screening site inspection work plan and sampling and analysis plan for the Oregon Department of Environmental Quality state Superfund lead investigation of the Macleay Landfill site in Marion County, Oregon.

Conducted batch partitioning experiments with americium-241 and neptunium-239 and natural humic substances for estimating radionuclide mobility in Columbia River basalt aquifers.

Assisted in site investigation to develop a model of the geology and hydrogeology of the site and to estimate aquifer parameters for a proposed low-level radioactive waste repository in Illinois.

Developed and implemented a detection monitoring program for chromic acid contamination of soil and groundwater at the Boomsnub chrome plating facility, Vancouver, Washington.

Developed a hydrogeological model of groundwater and surface water flow systems, and evaluated the existing groundwater monitoring program. Also evaluated the development of a leachate plume from the St. Johns Landfill and its effect on the wetland area near Smith and Bybee lakes, Portland, Oregon.

Conducted or assisted in more than 20 environmental site assessments and collected soil and groundwater data at industrial, private, and government properties in the Pacific Northwest.

Assisted in developing drilling specifications, provided drilling supervision, and conducted testing of a deep, basalt water supply well near Boardman, Oregon.

Conducted a geohydrological investigation of the Lake Oswego, Oregon, area and the effect of groundwater discharge from the underlying basalt aquifers on the water quality in Lake Oswego.

Conducted soil and groundwater investigations into the release of petroleum hydrocarbons and volatile organic hydrocarbons from USTs or other systems in Oregon, Washington, and Idaho.

Developed and conducted innovative slug test methods using casing pressurization and pressure transducers with automated data collection equipment for use in the aquifer parameter estimation.

Selected Publications

Boggs, S., Jr., D. Livermore, and M.G. Seitz. 1985. Humic macromolecules in natural waters. J. Macromol. Sci. 25(4)599-657.

Boggs, S., Jr., D. Livermore, and M.G. Seitz. 1984. Humic substances in natural waters and their complexation with trace metals and radionuclides: a review. Argonne National Laboratory Report. ANL-84-78.

Siegel, D.I., and D.G. Livermore. 1984. A chloride budget for the Mississippi River, headwaters to mouth. Water Resources Bulletin No. 20:503-509.

Livermore, D.G., and D.I. Siegel. 1983. A mass budget for chloride in the Mississippi River from headwaters to mouth (abs.). EOS. 64:700.

MARK W. WHITSON, P.E.
Environmental Engineer

Experience Summary

Mr. Whitson is a registered civil engineer with 15 years of experience conducting and managing site investigations and remediations. He works as an environmental engineer and serves as a consulting engineer on sites undergoing investigation and remediation. Mr. Whitson is experienced with conducting detailed evaluations and costing of soil and groundwater remediation alternatives, preparing remedial action plans, and providing oversight of remediation activity. He also has extensive experience with environmental laws and regulations including CERCLA, RCRA, SARA Title III, Clean Water Act, and state environmental cleanup rules.

Credentials

M.S., Civil Engineering - University of Washington (1987)

B.S., Civil Engineering - Oregon State University (1980)

Registered Professional Engineer - California (#C053767), Illinois (#062-049857), Montana (#11947), Oregon (#12605), Washington (#23590)

Key Projects

Managed the feasibility study and remedial design for the area surrounding a former zinc smelter in Bartlesville, Oklahoma. Project is being conducted under the Superfund Accelerated Cleanup Model to expedite remediation of the site. Site contaminants include arsenic, cadmium, lead, and zinc. Media of concern are soil and sediment, including associated surface waters. Developed preliminary remediation goals using site-specific information where available, such as the relationship between outdoor and indoor dust concentrations, oral absorption factors, and outdoor air concentrations. Conducted a comprehensive ecological risk assessment including collection and analysis of benthic and terrestrial invertebrates, aquatic and terrestrial vegetation, fish, and small mammals, as well as sediment and water toxicity bioassays. Investigating potential application of phosphate amendments to soil to reduce the bioavailability of the metals and to reduce remediation costs. Conducting bench- and pilot-scale treatability studies to verify reduced bioavailability. Drafted the proposed plan to submit to the regulatory agency.

Reviewed the feasibility study, proposed plan, record of decision, and cost estimates for the Harbor Island Superfund site in Seattle, Washington. Site contaminants include TPH, PCBs, and metals. Commented on appropriateness of selected remedy and associated costs, and examined other potentially less costly remediation options. The review will enable a potentially responsible party to position themselves during cost allocation negotiations.

Provided engineering review of remedial design documents and remedial action for a former wood treating site in Portland, Oregon. Project included the bidding of a turnkey wastewater treatment contract to treat approximately 350,000 gal of water contaminated with pentachlorophenol, PAHs, and metals including arsenic, chromium, copper, and zinc. Project also included the bidding and oversight of the operation of another wastewater treatment system to treat extracted groundwater containing pure-phase creosote and trace amounts of pentachlorophenol.

Prepared a remedial action plan for remediation of a shipyard site in San Diego, California. Site contaminants include total petroleum hydrocarbons, PCBs, PAHs, lead, and benzene. The remedial action plan was prepared in coordination with a comparable plan for sediments. A focused evaluation of remedial action alternatives was conducted in the remedial action plan.

Managed the investigation and remediation of a manufacturing facility in the Portland area that was conducted under the Oregon Department of Environmental Quality Voluntary Cleanup Program.

Site contaminants included VOCs, metals, and petroleum hydrocarbons. The site was successfully remediated and exited the Oregon Department of Environmental Quality program.

Served as project engineer for the RCRA facility investigation, corrective measures study, and preparation of remedial action plans for a manufacturing plant located in southwest Washington along the Columbia River. Soil, groundwater, and sediments were contaminated with dieldrin, aldrin, 4,4′-DDT, and other pesticides. A phased approach for remediation of the site was used to accelerate construction of a new building on the site.

Managed a feasibility study for a wood treating site in The Dalles, Oregon. Site contaminants included PAHs and arsenic. Dense nonaqueous-phase liquids were present at the site. Evaluated soil and groundwater remedial action alternatives. Successfully negotiated cleanup levels above the Oregon Department of Environmental Quality requirement of cleanup to background. Cleanup levels for the shallow aquifer were based on the potential ecological effects of discharge of groundwater to the Columbia River. This project included conducting an interim remedial action for contaminated soil to expedite the implementation of a wetlands mitigation project along the Columbia River.

Prepared a RCRA Part A application for an industrial furnace at a steel mill in Portland, Oregon. The application was prepared in accordance with RCRA's new rules for boilers and industrial furnaces.

Assisted with a focused groundwater investigation using temporary well points at an electronics manufacturing facility in Oregon. The investigation showed that the source of benzene in soil and groundwater at the site was likely a petroleum pipeline that had an easement through the property.

Managed a feasibility study for the Eagle Harbor, Washington, Superfund site. Site contaminants included mercury and PAHs. Intertidal and subtidal sediments were contaminated. Evaluated various aquatic disposal and containment alternatives as well as upland treatment and disposal alternatives. Evaluation included detailed examination of natural recovery, environmental effects of dredging, and biological recovery of dredged and capped areas.

Managed amendment of a RCRA closure plan, prepared a sampling plan, and conducted closure activities for a waste tank and drum storage area at an industrial site in Seattle, Washington. The waste was designated a dangerous waste because it failed the Washington Department of Ecology's bioassay test. The main chemical of concern was copper.

Managed an investigation of a hydrocarbon-contaminated site in Seattle, Washington. Conducted soil and groundwater investigation for Stoddard solvent spill. Conducted preliminary review of remedial technologies. Conducted site investigation for property transfer to determine extent of TPH in soil. Provided general regulatory assistance in preparing SARA Title III reports; providing assistance in preparing Dangerous Waste annual reports; identifying waste streams; and providing hazardous material information to fire departments.

Prepared a RCRA closure plan for groundwater monitoring wells, extraction wells, and interceptor drain at a chemical plant in Tacoma, Washington. Assisted with RCRA corrective measures study for soil contaminated with PCBs and pentachlorophenol.

Managed a feasibility study at the North Landfill Superfund site in Spokane, Washington. Groundwater was contaminated with tetrachloroethylene. Evaluated various capping and groundwater pump-and-treat alternatives. Recommended that groundwater pumping and treating be implemented only if capping did not result in significant improvement.

Managed an investigation at a metals processing plant in southwest Washington. Prepared revisions to RCRA closure plan for surface impoundment. Conducted site investigation to determine extent of spent pot liner in soils and effect on groundwater. Evaluated preliminary remedial action alternatives. Site contaminants included PAHs and fluoride.

Managed the preparation of a RCRA closure plan for a metal processing facility in eastern Washington. The closure plan addressed clean closure of a large waste pile of metal-processing waste and was prepared in accordance with the Washington State Department of Ecology Dangerous Waste Regulations. The waste was designated a state-only dangerous waste because it failed the state's bioassay testing procedures. Negotiations with Ecology resulted in elimination of the requirement for preparation of a contingent closure plan and a contingent postclosure plan.

Assisted with a feasibility study for a chemical manufacturing facility in Southern California. Soil and groundwater were contaminated with benzene, chlorobenzene, phenols, aliphatic hydrocarbons, and other volatile and semivolatile organic compounds. A layer of light nonaqueous-phase liquid (LNAPL) was identified beneath a portion of the site. The estimated volume of LNAPL was 60,000 gal. The LNAPL contained 8-percent benzene. Remedial alternatives were developed to primarily address mass removal, mitigation of releases of volatile organic compounds into the air, and minimization of migrating contamination from offsite sources to onsite.

Prepared hazardous waste generator plans and Spill Prevention, Control, and Countermeasures plans, and assisted with all of the SARA Title III reporting requirements for a large manufacturer in Seattle, Washington.

Managed a focused feasibility study to evaluate remedial action alternatives for TPH-contaminated soil at Ft. Lewis, Washington. Approximately 20,000 yd^3 of soil required remediation. The focused feasibility study developed and evaluated four remedial alternatives: no action, land farming, thermal desorption, and removal and offsite disposal.

Provided litigation support services for the owner of a former commercial flower bulb growing and processing facility. Reviewed documents concerning previous site investigation and provided expert witness background information on environmental cleanup regulations and estimated costs for remedial action. The litigation support services resulted in a successful settlement of the case.

Selected Publications

Whitson, M.W., and W.A. Wallace. 1989. Managing uncertainty in hazardous waste site remediation. Presented at HAZMACON, April 1989, Santa Clara, CA.

NASSCO NATIONAL STEEL AND SHIPBUILDING COMPANY

November 1, 1995

RECEIVED
NOV 02 1995
SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD

John Norton
Acting Executive Officer
California Regional Water
Quality Control Board
San Diego Region
9771 Clairemont Mesa Blvd., Suite B
San Diego, California 92124-1331

Re: Agenda Item No. 11 Shipyard Sediment Study, RWQCB Meeting November 9, 1995

Dear Mr. Norton:

Enclosed with this letter please find a Memorandum of Discussion which has been prepared to reflect our discussions at the meeting held at the Regional Board's offices on October 16, 1995 between yourself, Art Coe and David Barker and representatives of NASSCO, Southwest Marine, Inc. (SWM) and Continental Maritime of San Diego, Inc. (CMSD) regarding the sediment assessment and remediation project which has been requested by Board Staff.

I apologize for the lateness of this letter; however, discussions between each of the shipyards has only recently revealed certain differences in our approaches to this matter which were not apparent during our October 16 meeting. Accordingly, this letter and the accompanying memorandum have been revised to reflect these changes.

The purpose of our meeting was to request a suspension of this project in order to allow the shipyards to participate in an industry/government coalition focusing on bay wide solutions to the environmental management of San Diego Bay. However, recent discussions between the shipyards have left only NASSCO as an active participant at this time in the bay wide planning effort. I understand that as of this date, each of the other shipyards is reserving its position and future participation in any bay wide plan for future consideration. Further, I understand that each of the other shipyards will be communicating with you and the Board directly in this regard.

The shipyards continue to believe, however, that the site assessment study as currently requested by the Board is not compelled by scientific fact or law and that its cost greatly outweighs the need for such a study and the benefit to be obtained.

File: NASSCO

NASSCO will make a presentation to the full Board on November 9, 1995 of our analysis and offer. NASSCO believes that the issue of contaminated sediment is best addressed as part of a comprehensive approach, and hope the Board will look favorably upon our request.

Very truly yours,

R. A. Sackett

Richard A. Sackett
Counsel

cc: All Board Members
Southwest Marine, Inc.
Continental Maritime of San Diego, Inc.
Ralph Hicks, San Diego Unified Port District

MEMORANDUM OF DISCUSSION

This memorandum confirms the substance of the meeting held on October 16, 1995 at the Regional Board's offices between John Norton, Art Coe and David Barker and representatives of NASSCO, Southwest Marine, Inc. (SWM) and Continental Maritime of San Diego, Inc. (CMSD) regarding the shipyards response to the Board staff's request that the shipyards perform a site assessment study of the bay sediment in their leaseholds. This memorandum also confirms the telephone conversation of October 18, 1995 in which John Norton confirmed staff's response to the proposals made by the shipyards in that meeting.

Present for the shipyards were Richard A. Sackett, Counsel and T. Michael Chee, Environmental Manager for NASSCO, Dana Austin of Austin Environmental Inc. on behalf of Southwest Marine, Inc. (SWM) and Sandor Halvax, Manager of Facilities and Environmental Systems and Lee Wilson, Vice President and General Counsel of Continental Maritime of San Diego, Inc. (CMSD). Richard A. Sackett acted as spokesperson for the group.

We initially emphasized that the purpose of the meeting was to discuss issues which jointly affect all three shipyards with regard to the study, and while acknowledging that each yard has or may have individual issues, (particularly with regard to the issues raised by CMSD) our meeting was to discuss only the joint issues shared by all the shipyards.

A) Key Event Review.

We began with a review of the key events which had transpired since staff's initial request that the shipyards voluntarily perform a sediment study, made by letter in January 1991. We discussed the subsequent correspondence between the shipyards and staff in which the shipyards denied responsibility for any contamination, raised the issue of other sources of contamination, and reserved all legal issues for future resolution. While we are now raising those legal issues for resolution, we prefer to discuss them in the broader context of policy issues and questions which may help resolve those questions in a manner supportive of each of the respective interests of the Board and the shipyards.

We noted that the staff, despite our objections, has insisted that we perform the study, and that we agreed to proceed as a group while reserving our objections.

We discussed the fact of the three year hiatus in the study from October 1991 to October 1994 which was caused by staff's redirection to other efforts; that during this time, surficial sediment monitoring has been performed by the shipyards, producing results which we believe cast doubt on the conclusion that the contamination originated from the shipyards; that in late 1994 when staff requested the shipyards resume the project, the shipyards promptly acted to reconstitute our team of scientists and experts, and respond to staff's request. Finally, we discussed the August 1995 "Minimum Criteria" required by the staff for the study which prompted the shipyards to estimate the cost impact and our available options in light of current knowledge about San Diego Bay sediment conditions.

B) Shipyard Concerns.

Our review of the "Minimum Criteria" has raised two primary concerns: one, the significant cost burden of performing the study when compared to the uncertainty of any environmental benefit; and two, the significant issue of sediment transport when assessing responsibility for sediment contamination and as a factor in evaluating the effectiveness of remedial strategies.

1. Cost Burden.

The cost of this study has been estimated to exceed $1 million for NASSCO alone and approximately $500,000 each for the other shipyards. This is a significant burden, both in the absolute sense, and relative to the financial condition of each of the shipyards. NASSCO, despite a large backlog of work, has experienced a profit only once in the last three years, resulting in a net three year loss. Southwest Marine, Inc. has had two consecutive loss years. CMSD has recently completed (April 1995) an employee buyout which has left the company with a significant debt burden. The ship construction, overhaul and repair industry in San Diego, employing over 6,000 people, is one of very slim profit margins at best, where cost controls are critical to the survival of our businesses. It is in light these facts and the mandates of the California Water Code that the need and benefit of this study should be reviewed, with an eye toward its scientific efficacy.

2. Sediment Transport.

Sediment transport is a scientific fact that has been the subject of increasing focus in remediation projects throughout the country. As I said in our meeting (1) it is not reasonably subject to dispute that sediment in San Diego Bay moves to the point that it could affect assumptions about responsibility for contamination, and (2) this further justifies a reexamination of the efficacy of certain remedial strategies. Bay sediment is subject to a variety of influences, including vessel propeller wash, tidal influences, storm surges and storm drain outfalls.

With particular regard to the shipyards, the effect of vessel traffic is significant. All three yards front the bay channel where U.S. Navy vessels and automobile carriers regularly and frequently pass. Vessels are frequently moved in and out of the shipyards, both under their own power, and by tugboat. In many of these situations, significant sediment resuspension is visible to the naked eye. The effect of this sediment resuspension has not been determined.

Studies conducted elsewhere in the United States have confirmed the significant effect of vessel traffic and the attendant prop wash on sediment resuspension, transport and the fate of contaminants contained therein.

We further asserted that we believe the results of the NPDES surficial sediment monitoring program supports the notion that sediments are being transported into our shipyards by vessel propwash, storm drain outfalls, tidal and other bay currents. We discussed briefly the impacts of Chollas Creek and associated stormwater runoff on sediment contamination.

Our concern then, stated simply, is that the mere existence of contaminants in sediment proximate to our shipyards, in light of the significant impact of sediment transport is not alone sufficient evidence to conclude that the shipyards <u>discharged</u> those contaminants. Further, in light of the existing evidence of sediment transport, we question whether a sequential site by site approach is the best way to achieve a solution to the environmental health of the Bay. This approach appears to provide only a temporary benefit at best, leaving bay lease holders and the Board with future responsibilities.

We believe it is incumbent upon the Board staff to demonstrate in the first instance, that actual recorded discharges from the shipyards are now located in the sediment which is the subject of any requested study/remediation project. As you are aware, administrative findings must be based on substantial evidence in the record indicating that the named party has responsibility for the discharges.

C) Policy and Regulatory Goals.

We proceeded to discuss the larger context in which the current shipyard study is being conducted. We believe that this larger context dictates a different course of action for the Board and the staff than the currently requested study, especially in light of the previously discussed concerns.

1. Preventing Degradation of Beneficial Uses.

We discussed the distinction between this project and others where degradation of beneficial uses was a concern. Here, we believe that it cannot reasonably be argued that there is any degradation. Certainly, staff's redirection for a three year period in this project is indicative that they believed there had been no such degradation. If staff now asserts such degradation, it is imperative that the staff produce facts justifying such a conclusion.

2. Long Term Water Quality Goals.

We discussed the Board's interest in providing for improved water quality objectives in San Diego Bay, and in particular the plans and programs to achieve these goals, e.g. the Basin Plan, stormwater management, best management practices. Certainly San Diego Bay leaseholders are increasingly aware of the costs of not supporting these goals. It is thus in the interest of both industry and the Board to support the objective of long term water quality in San Diego Bay.

3. Comprehensive Bay Planning.

Finally, we discussed the history and status of comprehensive planning on San Diego Bay. While efforts past and current have had, at the least, mixed results, it cannot be denied that there is an ever-increasing awareness and focus on the Bay as a whole ecosystem, and to view that ecosystem within a larger watershed approach. In light of our knowledge of the role of sediment transport, there is now reason to believe that such an approach is superior to a sequential site specific approach to historical contamination issues.

D) Options for Future Action.

We then proceeded to discuss what our options were for the future. We discussed a somewhat traditional approach when private interests believe that regulatory action is unwarranted: litigation. We emphasized that the shipyards do not want to take this approach - it is clearly a last resort, and we stressed that we are committed to finding an alternative approach that will satisfy the Board's regulatory and policy goals as well as address the shipyards concerns and our overall needs for predictability and certainty in the future. We discussed, solely for the purpose of understanding, the risks and costs in a litigation context. We believe there are risks to both sides and significant costs to both sides in this route which should be avoided if at all possible.

Moreover, as we discussed and have outlined here, there is a larger context which we believe compels a different approach.

1. Industry-Government Partnership.

   We discussed that representatives of the NASSCO, the San Diego Unified Port District, the U.S. Navy and San Diego Gas & Electric have recently met and begun discussions to create an industry and government coalition on San Diego Bay to stimulate comprehensive management planning for San Diego Bay. While these discussions are in their infancy, we believe there is reason to believe that they will have a positive and significant result. As was said before, current Bay wide planning has had mixed results at best. We believe that an industry/government coalition of major stakeholders on San Diego Bay can invigorate this process, and create positive, lasting results. It is the intention of this group to define its goals, solidify its membership and produce the results required for sound environmental planning for the future of San Diego Bay. NASSCO believes that a principal goal of this group should be to produce a sediment transport study which would assist in locating and defining future remediation projects.

2. Suspend--not Terminate the Shipyard Sediment Study.

   We are requesting that staff suspend the current shipyard sediment study on an indefinite basis. During this time NASSCO will report to staff, not less frequently than every three months, on the status of the efforts as described above. If staff believes at any time during this process that no appreciable progress is being made in this regard, staff may request the Board issue orders as the Board deems appropriate.

D) <u>Conclusion</u>.

We concluded by emphasizing that the shipyards current financial condition will not allow us to pursue <u>both</u> courses of action, i.e. an individual site assessment <u>and</u> participation in the bay wide approach. We believe that the individual site assessment approach is not supported by the facts, the law or, more importantly, the larger policy context on San Diego Bay. Accordingly, should the Board seek to compel an individual site assessment, we will have no choice but to vigorously resist that action. Finally, we requested staff's thoughts and comments.

In our meeting you indicated you were intrigued by the bay wide approach but felt that there were concerns, both with the likelihood of success of such an approach and the need for a site specific approach. We acknowledged your concerns, and offered to further discuss them and possibly provide further support for our position. Your staff indicated they felt it best to defer to the Board for a decision.

On Wednesday, October 18, 1995 you called to inform me that staff has indeed decided to defer to the Board on this matter. I understand that staff will place on the Board's agenda for November 9, 1995, a status report (information only) in which staff will discuss this proposal and make its recommendation. You indicated that staff will recommend that the shipyard study continue, and that while you are supportive of a bay wide approach, certain conditions must be met before you can recommend the current study request be suspended.

NASSCO will make a presentation to the Board on November 9, 1995, which reflects our discussions and the issues raised in this memorandum.

PTI
ENVIRONMENTAL SERVICES

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Bellevue, Washington 98007
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SAN DIEGO REGIONAL WATER
QUALITY CONTROL BOARD

August 30, 1996

Mr. David Barker
California Regional Water Quality Control Board
San Diego Region
9771 Clairemont Mesa Boulevard, Suite A
San Diego, California 92124

Subject: NASSCO Sediment Investigation
PTI Contract No. CA9B0301

Dear Mr. Barker:

This letter provides PTI's perspective on the goals and objective of the sediment study conducted as part of the ongoing Bay Protection and Toxic Cleanup Program (SWRCB 1996) and the role of the follow-up evaluation of the sediment data conducted by PTI. This letter supplements the letter provided to you on August 23, 1996 during our discussion of the appropriateness of including TBT and PAH as chemicals of concern in the NASSCO investigations.

It is our understanding that the SWRCB study was designed to provide a general assessment of sediment quality in San Diego Bay that could then be used as one screening tool in making future sediment management decisions. As noted in the document, "Stations were prioritized to assist SWRCB and RWQCB staff in meeting sediment quality management objectives for San Diego Bay. These recommendations were based on a scientific evaluation of data collected between 1992 and 1994. They are intended to focus future efforts toward scientifically and economically responsible characterization of locations which have a high probability of causing adverse effects to aquatic life."

The follow-up evaluation of SWRCB sediment data conducted by PTI was intended to further refine the analysis of potential problem stations in the vicinity of NASSCO, and to apply to those data relevant site-specific and matrix specific information unique to shipyard facilities. This evaluation is consistent with the guidance provided in SWRCB (1996); which states: "This report should be evaluated in conjunction with all available information and additional research when management and policy decisions are made by SWRCB and RWQCB staff."

As discussed in previous correspondence, 13 BPTCP stations were determined by RWQCB staff to be in the vicinity of the NASSCO site. A more detailed assessment of the locations of these stations using GIS mapping indicated that 5 stations were located approximately 1/2 mile north of the facility. Of the remaining stations, only 4 of were assigned a moderate priority and none were assigned a high priority by the BPTCP. In all cases, the priority ranking of "moderate" was assigned on the basis of chemical concentrations, which exceeded the sediment screening criteria specified by the BPTCP.

Site-specific sediment criteria were developed for the Campbell Shipyards investigation on the basis of empirical relationships between sediment chemical concentrations and biological effects. These "no-effects" criteria were applied to the BPTCP data to determine if the stations initially determined by the SWRCB to have a moderate potential to have adverse biological effect were in fact a potential problem for the NASSCO investigation. The Campbell no-effects criteria are applicable to the NASSCO site for the following reasons:

- Campbell and NASSCO are comparable in terms of site activities, waste material, and matrices (i.e., paint)
- Campbell and NASSCO are in the same hydrodynamic and biogeographic zones
- Campbell and NASSCO are influenced by a similar suite of contaminants
- Statistical pattern analysis demonstrates that the relative abundance's of different metals is similar at the Campbell and NASSCO sites.

All of the chemicals concentrations at the stations in the vicinity of the NASSCO site identified as having moderate priority were found to be present at levels below the site-specific no-effects criteria. While the BPTCP study results provide a good starting point for identifying areas of potential concern, application of these site-specific criteria to the NASSCO site is more appropriate for the reasons stated above. Therefore, as discussed in greater detail in Wendy Graham's letter to you (dated August 23, 1996), because the TBT and PAH site-specific criteria were not exceeded at any of the stations in the vicinity of NASSCO with a moderate priority rating, we do not think that TBT and PAH should be included as analyses of concern for the NASSCO investigation.

Feel free to give me or Wendy Graham a call if you have any questions.

Sincerely,

Lucinda Jacobs, Ph.D.
Principal Geochemist

cc. Kristen Schwall, RWQCB
Mike Chee, NASSCO
Ron Miller, NASSCO
Wendy Graham, PTI

PTI
ENVIRONMENTAL SERVICES

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August 23, 1996

Mr. David Barker
California Regional Water Quality Control Board
San Diego Region
9771 Clairemont Mesa Boulevard, Suite A
San Diego, California 92124

Subject: BPTCP sampling stations in the vicinity of the NASSCO leasehold
PTI contract No. CA9B0301

Dear Mr. Barker:

PTI is pleased to provide this letter report to the San Diego Regional Water Quality Control Board (RWQCB) staff. We hope that the technical issues and recommendations presented in this report will be considered by the RWQCB staff for the upcoming investigation of sediments adjacent to the National Steel and Shipbuilding Company (NASSCO) facility.

This letter report addresses issues associated with the 13 Bay Protection and Toxic Cleanup Program (BPTCP) sediment sampling stations determined by the RWQCB staff to be in the vicinity of the NASSCO facility. Issues addressed in this report include:

1. The location of the 13 stations relative to the NASSCO leasehold and the TBT and PAH concentrations associated with each of these stations, and
2. Rationale for not including TBT and PAH as analytes of concern for the site investigation.

RESULTS OF GIS MAPPING

PTI has digitized the NASSCO facility and leasehold boundaries into our GIS database, entered the 13 BPTCP sampling locations and associated TBT and PAH concentrations into the database, and generated a GIS map illustrating the location of these sampling stations relative to the NASSCO leasehold boundary. The station coordinates and TBT and PAH concentrations were provided to PTI by the RWQCB staff. The results of this mapping exercise are described below and are illustrated on the enclosed GIS map (Figure 1).

As noted on Figure 1, no TBT or PAH data were available for stations 90005, 90031 or 90032. In addition, station 93180 and 93181 (with replicates) were determined to be located to the northwest of the NASSCO facility and well outside of the NASSCO leasehold (approximately 1/2 mile northwest of the northern leasehold boundary). For this reason we believe that these stations should not be considered to be related to activities at NASSCO. Furthermore, although the 93180 and 93181 stations have been assigned a "moderate" priority designation by the BPTCP, none exceed Campbell shipyard TBT or PAH cleanup levels that have been proposed for application at the NASSCO facility as well.

The remaining 4 stations (90030 and three replicates) have also been assigned a "moderate" priority designation by the BPTCP, however, only 2 of them raise any particular concerns with regard to remediation of the NASSCO site based on exceedences of cleanup levels developed for the Campbell Shipyard and proposed for application at the NASSCO facility. These stations are identified as 90030 Site F, which exceeds the Campbell Shipyard cleanup level for PAHs, and 90030 Site F Rep 1, which exceeds the Campbell Shipyard cleanup level for TBT. As illustrated on Figure 1, the GIS mapping results indicate that these two stations do fall within the NASSCO leasehold. Station 90030 Site F Rep 2 also falls within the NASSCO leasehold, and station 90030 Site F Rep 3 falls just outside of the leasehold boundary.

When reviewing the PAH information provided to PTI by RWQCB staff, we discovered that the staff had made some minor miscalculations when comparing the BPTCP analytical results for PAHs to the Campbell Shipyard cleanup level for PAHs. In particular, the Campbell Shipyard PAH cleanup level was derived using only the nine most commonly analyzed high molecular weight PAH compounds. When comparing the BPTCP data to the Campbell Shipyard PAH cleanup level, however, the RWQCB staff considered *all* PAHs evaluated by the BPTCP, which included twelve high molecular weight PAHs and twelve low molecular weight PAHs. This comparison is not valid and would indicate an exceedence of the Campbell Shipyard high molecular weight PAH cleanup level when it did not in fact occur.

When correctly comparing only the same high molecular weight PAHs, the Campbell Shipyard PAH cleanup level (44,000 μg/kg) is not exceeded at station 90030 Site F (the total is 28,833 μg/kg). Even if the additional high molecular weight PAHs evaluated by the BPTCP are included, the Campbell Shipyard PAH cleanup level is still not exceeded (33,823 μg/kg). Based on this analysis, it would be appropriate to drop PAHs as a contaminant of concern at the NASSCO site.

TECHNICAL ANALYSIS

A variety of technical considerations indicate that TBT and PAH should not be considered contaminants of concern at the NASSCO site. For TBT in particular the following considerations apply:

1. NASSCO is not a source of TBT

   - The single station with the TBT exceedence is located in an isolated area where no NASSCO production activities are conducted.

   - The TBT cleanup level has not been exceeded in any of the 7 NPDES sediment sampling events at any of the sediment sampling stations which are located along the shoreline within the NASSCO leasehold very near to where NASSCO production activities are conducted.

2. It is likely that the elevated TBT at this single location is from another source and/or a historical release

   - The above two sub-bullets suggest that another source of TBT may be responsible for the TBT cleanup level exceedence at the BPTCP station Site F Rep 1. Possible other sources in the vicinity of this station include stormwater runoff from street traffic outside of the NASSCO leasehold, the Chevron Storage Tank facility which is located adjacent to the NASSCO leasehold and is known to have leakage problems to groundwater, the Atchison Topeka Santa Fe Railroad which runs through the area, and Southwest Marine which is located just to the northwest of NASSCO.

   - Even if the elevated TBT level at this station is the result of either NASSCO or Southwest Marine activities, it is likely to have been the result of historical activities because TBT-containing paints are no longer used at these facilities. The use of TBT throughout San Diego Bay has substantially declined since federal regulations restricting the use of organotin antifouling paints were adopted in 1988.

3. TBT in sediments has limited bioavailability and is not persistent

   - If TBT containing paint is the source of TBT at this station, this may not present any significant ecological concern because metals encapsulated in a paint matrix are less bioavailable than metals sorbed to sediment surfaces.

   - Even the best TBT-containing paints are effective as biocides for periods of no more than 5 years because the weathering of paint or paint chips further reduces the bioavailability.

   - TBT rapidly degrades to less toxic forms in sediments. In San Diego Bay, the half life of TBT in sediment was determined to be approximately 5 months (Stang & Seligman, 1986).

Similar arguments can be made for PAHs, especially those related to other sources and comparison of BPTCP data to NPDES sampling data. However, as discussed above, recalculation of the BPTCP PAH data supports the conclusion that PAH should be dropped from consideration as a potential contaminant of concern at the NASSCO site.

RECOMMENDATION

Based on the above analysis, we recommend that TBT and PAHs be dropped from further consideration and not included in NASSCO's sediment study.

Please feel free to contact me or Lucinda Jacobs at (206) 643-9803 if you have any questions with regard to this report or the attached figure.

Sincerely,

Wendy Graham

Wendy Graham
Project Manager

Enclosure

cc: Kristen Schwall, RWQCB
Mike Chee, NASSCO
Ron Miller, NASSCO
Lucinda Jacobs, PTI

State of California
Regional Water Quality Control Board
San Diego Region

EXECUTIVE OFFICER SUMMARY REPORT
February 8, 1996

ITEM: 22

SUBJECT: Status Report on San Diego Bay Shipyards and CALTRANS Site Assessment

DISCUSSION: No Regional Board action is necessary on this status report.

At the December 14, 1995 Regional Board meeting, the Board heard a discussion on the San Diego Bay Shipyard Voluntary Site Assessments for NASSCO, Southwest Marine, and Continental Maritime. The Board directed staff to:

1. Continue negotiations with NASSCO to develop a mutually agreeable cleanup level, cleanup area, and fast track cleanup schedule;

2. Continue working with CALTRANS to do an assessment of bay sediment contamination that may have resulted from the Coronado Bay Bridge; and

3. Temporarily defer consideration of the Southwest Marine site assessment.

Negotiations with NASSCO on an expedited cleanup of the contaminated sediment are proceeding satisfactorily. Staff is meeting with NASSCO on February 5, 1996 to discuss proposed cleanup levels and a draft workplan for the dredge first, sample later strategy.

Staff is continuing negotiations with CALTRANS to develop an acceptable sampling plan. Staff plans to finalize a letter before the February 8 Board Meeting to CALTRANS detailing written guidelines for the sediment sampling around the Coronado Bay Bridge.

RECOMMENDATION: Receive and file.

File: NASSCO
Continental
SWM

ENVIRONMENTAL HEALTH COALITION
1717 Kettner Boulevard, Suite 100 • San Diego, California 92101 • (619) 235-0281

NEWS

FOR IMMEDIATE RELEASE

DATE: April 14, 1997
CONTACT: Laura Hunter, 235-0281

NEW REPORT REVEALS 'DEATH ZONES' IN SAN DIEGO BAY

Report finds significant contamination of San Diego Bay sediments

The State Water Resources Control Board and the National Oceanic and Atmospheric Administration (NOAA) have released their *Final Report on Chemistry, Toxicity, and Benthic Community Conditions in Sediments of the San Diego Bay Region.* Today, Environmental Health Coalition (EHC) released a summary of the report's findings and recommended actions to clean up and prevent future contamination of San Diego Bay. Diane Takvorian, EHC Executive Director stated "It is no coincidence that the Bay sediments are most contaminated where the most polluting industries are operating. This speaks to the need for immediate cleanup and stricter operating standards for those industrial and Naval operations that pollute San Diego Bay." The report clearly shows that the most toxic areas are located adjacent to 32nd Street Naval Station, NASSCO, Southwest Marine, Continental, Campbell shipyards, and the Navy Submarine Base. Another toxic hotspot was found at the foot of the Laurel Street storm drain where chlordane, a persistent pesticide, is suspected in the toxicity. This is a storm drain that drains a large urban area and may include runoff from the airport and adjacent industries.

(more)

This study of three estuaries in the San Diego Region; San Diego Bay, Mission Bay, and the Tijuana Estuary was a multi-year, multi-faceted, multi-agency $500,000 effort. The project, funded through the State's Bay Protection and Toxic Cleanup Program, had a dual purpose to 1) characterize the general state of sediments in the Bay and 2) to find toxic sediment hotspots.

Outlining EHC's recommended plan of action Laura Hunter, Director of EHC's Clean Bay Campaign stated, "This is the most important study that has been done on San Diego Bay. The toxic hotspot areas in the Bay are functioning as 'death zones' for marine life. If not removed, these chemicals bioaccumulate in fish and will continue to threaten human health and the environment for hundreds of years. Clean up of these contaminated sediments needs to be a priority. " EHC's recommendations for action include emergency cleanup for the most toxic sites, a fish tissue study to assess the safety of fish consumption, stricter discharge prohibitions for industries and Navy facilities located next to the most toxic areas, and establishment of pollution prevention programs for all discharges to the Bay so that this problem does not recur in the future.

EHC's recommendations for action are based on the following significant findings of the sediment study:

-- Bay sediments have significant contamination of mercury, copper, zinc, PAH, chlordane, PCBs.

-- Over 56% of the Bay sediment is estimated to be acutely toxic to marine organisms.

(more)

- As much as 74% of the area exhibited chronic toxicity impacts to marine organisms.
- There are four sites designated as having the highest priority due to high toxicity and degradation of marine life. They are the Seventh Street Channel (Naval Station), two commercial shipyards, and the outflow of the Laurel Street storm drain. The most toxic sites in the entire San Diego region were in the Seventh Street Channel.
- 20 stations in six general areas were rated as moderate meaning that they demonstrated toxicity and elevated chemistry and/or degraded marine life.
- Several chemicals of concern at elevated levels in the Bay are known to biomagnify and bioconcentrate in tissue of marine species. These are of special concern for human health.
- The study represents the best case scenario due to very conservative assumptions used. The results narrowed concern from 164 suspected sites to 4 critical sites and 6 areas that need immediate attention.
- Of 63 Bay stations sampled for benthic communities, over half were degraded.
- San Diego Bay ranked seventh highest for PCB contamination in the country.
- Compared to other West Coast bays, San Diego Bay had the highest concentrations of metals, PAHs, chlorinated hydrocarbons and was most toxic in two out of three toxicity tests.
- Compared with other East Coast bays, San Diego Bay had higher overall toxicity.

A copy of the full report is available at EHC offices at 1717 Kettner, Suite 100, San Diego. Excellent maps are available of the toxic hotspot locations in the Bay.

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ENVIRONMENTAL HEALTH COALITION'S

PLAN OF ACTION
FOR REMEDIATION AND PREVENTION OF TOXIC HOTSPOTS IN SAN DIEGO BAY

Environmental Health Coalition (EHC) makes the following recommendations in response to the Findings of the *Final Report on Chemistry, Toxicity, and Benthic Community Conditions in Sediments of the San Diego Bay Region* by the State Water Resources Control Board and National Oceanic and Atmospheric Administration (NOAA) as part of the Bay Protection Toxic Cleanup Program:

1. Regional Water Quality Control Board should require emergency cleanup actions for the four highest priority sites: Seventh Street Channel, Laurel Street Drain and sites near the commercial shipyards. The elevated levels of bioaccumulative and persistent chemicals such as chlordane, PCBs, and mercury indicate the pressing need to remove these toxic sediments in order to achieve improvement in the health of San Diego Bay.

2. Regional Board should issue Cleanup and Abatement Orders for the sites designated with "moderate" status and require characterization of the extent of the contamination and propose cleanup plans: Navy SubBase, Campbell Shipyard, 24th Street Marine Terminal, Downtown piers.

3. Given the bioaccumulative and persistent nature of the chemicals of concern, Office of Health Hazard Assessment and the County Department of Environmental Health Services should conduct a comprehensive fish tissue study to assess the safety of consuming San Diego Bay fish.

4. The reissuance of the General Shipyard NPDES permit by the Regional Board should include a requirement for pollution prevention plans, stricter discharge prohibitions, and more strict water runoff requirements at facilities near the most toxic areas. This would offer an additional measure of protection for the Bay and public health given the pollution associated with these facilities. Regional Board should further insure that all discharges from vessels that are undergoing repair at the shipyards be covered under the permit.

5. The new permits for Navy facilities that will soon be adopted by the Regional Board should include a requirement for pollution prevention plans and stricter discharge prohibitions at facilities near the most toxic areas.

6. The reissuance of the Municipal Urban Runoff NPDES permit for the San Diego Region by the Regional Board should require pollution prevention plans for municipal operations and residential areas and strengthened educational plans for the general public.

7. In light of the significant contamination from PAHs, the Air Pollution Control District should initiate aggressive pursue pollution prevention activities in the watershed and air basin of San Diego Bay.

8. Regional Board should utilize sediment levels listed in the report as having impacts to marine life (i.e. ERM and PEL standards) as interim comparison standards for sediment cleanups until sediment quality standards are adopted.

9. A regional effort including all cities and county governments and other agencies should establish pollution prevention programs for all Bay dischargers and discharges to prevent future and on-going sediment contamination.

10. The Bay Protection and Toxic Cleanup Program should be extended by the State Legislature as outlined in Assemblyman Sweeney's bill AB 1479 in order to complete the work required in the original legislation.

11. In all new permits, "pollution prevention" should be defined to mean a reduction of the <u>generation</u> of pollutants consistent with existing federal and state law. Pollution prevention is accomplished through changes in processes and materials used. This precludes the need for traditional end-of-pipe control, treatment, disposal, and cleanup.

S9)

SUMMARY
SAN DIEGO BAY SEDIMENT STUDY
STATE BAY PROTECTION TOXIC CLEANUP PROGRAM

Prepared by Environmental Health Coalition
April 1, 1997

The State Water Resources Control Board and the National Oceanic and Atmospheric Administration (NOAA) has released their *Final Report on Chemistry, Toxicity, and Benthic Community Conditions in Sediments of the San Diego Bay Region.* This study of three estuaries in the San Diego Region; San Diego Bay, Mission Bay, and the Tijuana Estuary was a multi-year, multi-faceted, multi-agency $500,000 effort. The project was funded by both the State and NOAA and had the dual purpose to 1) characterize the general state of sediments in the Bay and 2) to find toxic hotspots. This is the most important and comprehensive scientific study done ever done on San Diego Bay sediments.

229 Directed Point Samples from 164 stations to find discrete toxic hotspots
121 Random Samples from 56 stations to assess general condition of sediments in the Bay
350 total region samples.
350 samples had bioassay, TOC, and grain size testing.
217 samples had metals analysis
229 samples had organic analysis
75 stations were sampled for benthic diversity

tox)

Please note that one **station** can be the site of many **samples**.

Not all tests were run at all stations or for each sample.

Sites were prioritized for further action as follows:

Stations with repeat toxicity and elevated chemistry and/or degraded benthic communities were assigned a moderate or high priority.

Stations with a single toxicity hit were considered moderate or high priority when associated with elevated and/or degraded benthic communities.

Stations with single or repeat toxicity but lacking elevated chemistry or degraded benthic communities were assigned low priority.

97)

CHEMISTRY, TOXICITY AND BENTHIC COMMUNITY CONDITIONS IN SEDIMENTS OF THE SAN DIEGO BAY REGION

FINAL REPORT

September, 1996

California State Water Resources Control Board

National Oceanic and Atmospheric Administration

California Department of Fish and Game
Marine Pollution Studies Laboratory

Moss Landing Marine Laboratories

University of California, Santa Cruz

EXECUTIVE SUMMARY

The following report describes and evaluates chemical and biological data collected from San Diego Bay and its historical tributaries between October, 1992 and May, 1994. The study was conducted as part of the ongoing Bay Protection and Toxic Cleanup Program, a legislatively mandated program designed to assess the degree of chemical pollution and associated biological effects in California's bays and harbors. The workplan for this study resulted from a cooperative agreement between the State Water Resources Control Board and the National Oceanic and Atmospheric Administration (NOAA). Monitoring and reporting aspects of the study were conducted by the Environmental Services Division, of the California Department of Fish and Game, and its subcontractors.

The study objectives were:

1. Determine presence or absence of adverse biological effects in representative areas of the San Diego Bay Region;

2. Determine relative degree or severity of adverse effects, and distinguish more severely impacted sediments from less severely impacted sediments;

3. Determine relative spatial extent of toxicant-associated effects in the San Diego Bay Region;

4. Determine relationships between toxicants and measures of effects in the San Diego Bay Region.

The research involved chemical analysis of sediments, benthic community analysis and toxicity testing of sediments and sediment pore water. Chemical analyses and bioassays were performed using aliquots of homogenized sediment samples collected synoptically at each station. Analysis of the benthic community structure was made on a subset of the total number of stations sampled.

Three hundred and fifty stations were sampled between October, 1992 and May, 1994. Areas sampled included San Diego Bay, Mission Bay, the San Diego River Estuary and the Tijuana River Estuary and are collectively termed "the San Diego Bay Region" in the following document. Two types of sampling designs were utilized: direct point sampling and stratified random sampling.

Chemical pollution was demonstrated by using comparisons to established sediment quality guidelines. Two sets of guidelines were used: the Effects Range-Low (ERL)/Effects Range-Median (ERM) guidelines developed by NOAA (Long and Morgan, 1990; Long *et al.*, 1995) and the Threshold Effects Level (TEL)/Probable Effects Level (PEL) guidelines used in Florida (McDonald, 1993; McDonald, 1994). Copper, mercury, zinc, total chlordane, total PCBs and the PAHs were most often found to exceed critical ERM or PEL values

and were considered the major chemicals or chemical groups of concern in the San Diego Bay Region. ERM and PEL summary quotients were used to develop chemical indices for addressing the pollution of sediments with multiple chemicals. An ERM summary quotient >0.85 or a PEL summary quotient >1.29 was indicative of stations where multiple chemicals were significantly elevated. Stations with any chemical concentration >4 times its respective ERM or >5.9 times its respective PEL were considered to exhibit elevated chemistry. Summary quotients and magnitude of sediment quality guideline exceedances were used as additional information to help prioritize stations of concern for Regional Water Quality Control Board staff.

Identification of degraded and undegraded habitat (as determined by macrobenthic community structure) was conducted using a cumulative, weight-of-evidence approach. Analyses were performed to identify relationships between community structure within and between each station or site (*e.g.*, diversity/evenness indices, analyses of habitat and species composition, construction of dissimilarity matrices for pattern testing, assessment of indicator species, and development of a benthic index, cluster analyses, and ordination analyses).

Analyses of the 75 stations sampled for benthic community structure identified 23 undegraded stations, 43 degraded and 9 transitional stations. All sampled stations with an ERM summary quotient >0.85 were found to have degraded communities. All sampled stations with P450 Reporter Gene System responses above 60 μg/g BaPEq. were similarly found to have degraded benthic communities.

The statistical significance of toxicity test results was determined using two approaches: the reference envelope approach and laboratory control comparison approach used by the United States Environmental Protection Agency- Environmental Monitoring and Assessment Program and NOAA- National Status and Trends programs. The reference envelope approach indicated that toxicity for the *Rhepoxynius* (amphipod) sediment test was significant when survival was less than 48% in samples tested. No reference envelope was calculated for the urchin fertilization or development tests due to high variability in pore water data from reference stations.

The laboratory control comparison approach was used to compare test sediment samples against laboratory controls for determination of statistically significant differences in test organism response. Criteria for toxicity in this approach were 1) survival less than 80% of the control value and 2) significant difference between test samples and controls, as determined using a t-test. Using this approach, there was no absolute value below which all samples could be considered toxic, although survival below a range of 72-80% was generally considered toxic.

Using the EMAP definition of toxicity, 56% of the total area sampled was toxic to *Rhepoxynius*. For the *Strongylocentrotus* larval development test, percent of total area toxic was 29%, 54%, and 72% respectively for 25%, 50%, and undiluted pore water concentrations. Samples representing 14%, 27%, or 36% of the study area were toxic to both *Strongylocentrotus* in pore water (25%, 50%, or undiluted, respectively) and *Rhepoxynius* in solid phase sediment.

Linear regression analyses failed to reveal strong correlations between amphipod survival and chemical concentration. It is suspected instead of a linear response to chemical pollutants, most organisms are tolerant of pollutants until a threshold is exceeded. Comparisons to established sediment quality guideline thresholds demonstrate an increased incidence of toxicity for San Diego Bay Region samples with chemical concentrations exceeding the ERM or PEL values. It is further suspected toxicity in urban bays is caused by exposure to complex mixtures of chemicals. Comparisons to ERM summary quotients (multiple chemical indicators) demonstrate that the highest incidence of toxicity (>78%) is found in samples with elevated ERM summary quotients (>0.85).

Statistical analyses of the P450 Reporter Gene System responses versus the PAHs in sediment extracts demonstrated that this biological response indicator was significantly correlated ($r^2 = 0.86$) with sediment PAH (total and high molecular weight) concentration.

Stations requiring further investigation were prioritized based on existing evidence. Each station receiving a high, moderate or low priority ranking meets one or more of the criteria under evaluation for determining hot spot status in the Bay Protection and Toxic Cleanup Program. Those meeting all criteria were given the highest priority for further action. A ranking scheme was developed to evaluate stations of lower priority.

Seven stations (representing four sites) were given a high priority ranking, 43 stations were given a moderate priority ranking, and 57 stations were given a low priority ranking. The seven stations receiving the high priority ranking were in the Seventh Street channel area, two naval shipyard areas near the Coronado Bridge, and the Downtown Anchorage area west of the airport. The majority of stations given moderate rankings were associated with commercial areas and naval shipyard areas in the vicinity of the Coronado Bridge. Low priority stations were interspersed throughout the San Diego Bay Region.

A review of historical data supports the conclusions of the current research. Recommendations are made for complementary investigations which could provide additional evidence for further characterizing stations of concern.

San Diego Regional Water Quality Control Board

MEMO

To: John Robertus
Art Coe
Bruce Posthumus
Sue Pease
Darcy Jones
David Barker — MS — File with NASSCO cleanup
Deborah Jayne
Greig Peters

April 18, 1997

From: Pete Michael

Subject: Ecological Risk Assessment at NASSCO

I contacted the professor at Penn State who recently asked John Robertus for a letter of support for a grant proposal. Dr. Bill Burgos is applying for a grant from WERF (Water Environment Research Foundation) to use WERF software to estimate the risks from various shipyard discharge schemes. The software will model water and sediment transport and compare toxicity data to determine ecological risk of storm water and other discharges.

Dr. Burgos has asked for a letter promising regulatory oversight. Because of the reluctance today of Regional Board staff to endorse the project, I propose instead to e-mail a response which thanks him for the information and offers to assist in locating resources. Please think about what to do next. By the time you read this, I will have already e-mailed this letter:

> Dear Dr. Burgos:
>
> Thank you for providing information on your proposal for demonstration of ecological risk in San Diego Bay. I agree that there is much data available for San Diego Bay and am interested in seeing your results.
>
> To assist you in your project, I can provide reports on sediment chemistry and toxicity and on benthic communities, and on validation of a hydrodynamic model. I recommend you continue to work with the Navy NRaD lab in San Diego and that you also contact Christopher Gonaver of the County of San Diego Dept. of Environmental Health (619 338-2201). Chris chairs the Technical Advisory Committee of the Port of San Diego. This committee is putting together a coordinated ecological monitoring program for San Diego Bay.
>
> Sincerely, Pete Michael

ATTN: CHP) SHIRLEY

#7

PLAINTIFF'S EXHIBIT
CASE NO.
EXHIBIT NO. 139

PTI
ENVIRONMENTAL SERVICES
15375 SE 30th Place, Suite 250
Bellevue, Washington 98007
(206) 643-9803 FAX (206) 643-9827

May 5, 1997

3 pg. via fax: (619) 338-9469

Mr. Sandor Halvax
Material Business Management
Southwest Marine
P.O. Box 13308
San Diego, CA 92170-3308

Subject: Cost Estimate for New Sediment Analysis Support Task
PTI Proposal No. PB70

Dear Shawn:

As requested, this letter is an estimate of the additional costs that would be associated with providing a site-specific technical justification to the RWQCB for application of the Campbell cleanup numbers to Southwest Marine. My apologies for not getting this to you last week; I actually thought I had sent it out early in the week and sheepishly found that I was mistaken.

This change in the planned scope and one of the assumptions in my letter of March 31, 1997, is the result of your discussions with Dave Barker at the RWQCB. PTI will use the same approach that was employed at NASSCO for this justification. It is assumed that the amount of sediment data available for Southwest Marine is similar to that for NASSCO, and that Southwest Marine will provide these data and other relevant information (e.g., outfall information, historical practices) to PTI as needed. The effort required to manage and evaluate the data will be minimized if it can be provided in electronic format (the proposed budget assumes the information will be available in electronic format; i.e., a spreadsheet or other form). Additional cost savings from the effort required for NASSCO will be provided to Southwest Marine in the following ways:

- PTI has already digitized most of San Diego Bay from NOAA charts into our geographic information system (GIS). Only limited additional effort is needed to add the Southwest Marine facility to this San Diego database.
- The strategy to justify use of the Campbell cleanup values has already been developed, and has been accepted by the RWQCB.
- Some of the specific language describing the appropriateness of applying the Campbell Cleanup levels to other locations in San Diego Bay has already been developed.

Att #7
DeLano Letter 3/3/99

- Much of the information developed during this task will feed into the later Sampling and Analysis Plan preparation task, so that cost efficiency has also been considered in our estimate.

It is assumed that a formal report will be prepared for submission to the RWQCB. Required activities for this report are the following:

- Identify which stations from the Bay Protection Toxics Cleanup Program are located within or near to the Southwest Marine facility (PTI already has these data) and add those concentration data to the data available from Southwest Marine's own sampling.
- Evaluate, using data from the 9 sampling events conducted under the National Point Source Discharge Elimination System (NPDES) biannual monitoring program, any changes in concentrations of the seven chemicals for which Campbell cleanup levels have been developed. This evaluation will be done using both regression and trend analyses, to the extent that data warrant these analyses.
- Complete arguments for limiting the number of chemicals to be evaluated in the remediation process to copper, zinc, and lead, which in my previous letter we assumed are the appropriate "indicator chemicals" for this site.
- Prepare GIS maps that identify station locations that exceed the Campbell cleanup levels.
- Develop a proposed pre-remedial sampling strategy that will be used to evaluate Southwest Marine sediments.
- Prepare one client-review draft and discuss any comments during a telephone conference call.
- Incorporate comments on the draft into one final report of findings.

PTI estimates that approximately 108 technical hours and additional 32 clerical, graphics, and editorial support hours will be required for these activities. The estimated budget for this task is $13,000. Therefore, with this added scope to the tasks already identified in my letter of March 31, 1997, a total budget of $103,000 is proposed for the project.

This estimate assumes, however, that chemical concentration have been constant over time or are decreasing, as they are at NASSCO. If this is not the case, it will be necessary to develop other strategies for arguing the appropriateness of applying the Campbell cleanup levels to Southwest Marine sediments. These additional activities could affect the budget required to complete this task.

In addition, we have assumed that there will not be a verbal presentation to the RWQCB for this use of the Campbell numbers. Although such a presentation was provided for NASSCO, and would allow the RWQCB staff to clarify any questions, we assume that Barker is primarily interested in having a written technical justification in the files before granting their approval. If a meeting is required, however, additional funds will be needed to cover our time and expenses for preparation, travel, and meeting attendance. Assuming that only one PTI staff person would be needed at such a meeting, and that there would be no overnight stay in San Diego, we estimate that a maximum of 28 technical hours and 8 graphic support hours will be required. Depending on the complexity of the site and the data, it may be possible to decrease the number of hours needed to prepare meeting materials. The estimated budget for this optional activity, including travel costs, is $4,000.

Please give me or Wendy Graham, our project manager for the NASSCO work, a call at (206) 643-9803 if you have any questions.

Sincerely,

Bob

Robert C. Barrick
Principal

cc: W. Graham / PTI

ENVIRONMENTAL HEALTH COALITION

1717 Kettner Boulevard, Suite 100 • San Diego, CA 92101 • (619) 235-0281 • Fax (619) 232-3670
e-mail: ehcoalition@igc.apc.org • Web address: http://www.moosenet.com/~ehc/

July 1, 1997

Chairman Mike McDade and Board of Port Commissioners
San Diego Unified Port District
P.O. Box 488
San Diego, CA 92124

RE: Request for Actions by the Port District in response to the Bay Protection Toxic Cleanup Report on San Diego Bay

Dear Commissioners:

Environmental Health Coalition (EHC) would like to bring to your attention a very important report that has been recently released by the State Water Resources Control Board. *The Final Report on Chemistry, Toxicity, and Benthic Community Conditions in Sediments of the San Diego Bay Region* by the State Water Resources Control Board and National Oceanic and Atmospheric Administration (NOAA) reports the conclusions from an extensive study conducted on the quality of sediments in San Diego Bay as part of the Bay Protection Toxic Cleanup Program (BPTCP). A summary of the Report's findings is attached to this letter.

EHC has participated in the BPTC as a member of the Policy Advisory Committee for the past two years. EHC views this program as very important and a source of excellent data on the ecological health of San Diego Bay. It is important to remember that, <u>due to the conservative nature of the testing and analysis, the findings of this report represent the</u> **<u>cleanest case scenario</u>** <u>regarding toxic sediments in the Bay</u>.

To date, the Port District's response to contaminated sediment problems has been to react only when prodded or threatened by regulatory actions (i.e. Paco Terminals, Commercial Basin, Convair Lagoon) or when contaminated sediment removal was needed to accommodate a project the District desired (10th Avenue). The serious nature of this significant ecological problem in San Diego Bay speaks to the need for the Port District to begin a proactive and voluntary effort to deal with it.

In response to the report, EHC has developed the attached ***Plan of Action for Remediation and Prevention of Toxic Hotspots in San Diego Bay***. We request that the Port District agendize an item on your next agenda for discussion and adoption of the actions listed in this plan as part of your response to the findings and conclusions of the report. Please call me with any questions at 235-0281.

Thank you for your consideration.

Sincerely,

Laura Hunter

Laura Hunter, Director
Clean Bay Campaign

ENVIRONMENTAL HEALTH COALITION'S

PLAN OF ACTION FOR REMEDIATION AND PREVENTION OF TOXIC HOTSPOTS IN SAN DIEGO BAY

Environmental Health Coalition (EHC) makes the following recommendations to the San Diego Unified Port District in response to the Findings of the *Final Report on Chemistry, Toxicity, and Benthic Community Conditions in Sediments of the San Diego Bay Region* by the State Water Resources Control Board and National Oceanic and Atmospheric Administration (NOAA) as part of the Bay Protection Toxic Cleanup Program.

1. The Port District should undertake emergency cleanup actions for the three highest priority sites located within Port areas of responsibility including the Laurel Street Drain and sites adjacent to commercial shipyard tenants. The elevated levels of bioaccumulative and persistent chemicals such as chlordane, PCBs, and mercury indicate the pressing need to remove these toxic sediments in order to improve the health of San Diego Bay.

2. The Port District should begin immediate voluntary investigations for the sites designated with "moderate" status and require characterization of the extent of the contamination and propose cleanup plans within or adjacent to Port Tidelands. Further, the Port should take a proactive role in sediment cleanup instead of responding only to regulatory direction regarding sediment cleanup.

3. Given the bioaccumulative and persistent nature of the chemicals of concern, Port District should provide funding to the Office of Health Hazard Assessment and the County Department of Environmental Health Services to conduct a comprehensive fish tissue study that has been recommended for a several years to assess the safety of consuming San Diego Bay fish.

4. As part of the reissuance of the General Shipyard NPDES permit by the Regional Board, the Port District should strongly support a requirement for pollution prevention[1] plans, stricter discharge prohibitions, and more strict water runoff requirements at facilities near the most toxic areas. This would offer an additional measure of protection for the Bay and public health given the pollution associated with these facilities. The Port District should also request that the Regional Board include in the NPDES permits all discharges from vessels that are undergoing repair at the shipyards.

---

[1]Pollution prevention should be defined to mean a reduction of the <u>generation</u> of pollutants consistent with existing federal and state law. Pollution prevention is accomplished through changes in processes and materials used. This precludes the need for traditional end-of-pipe control, treatment, disposal, and cleanup.

5. The Port District should support pollution prevention plans for municipal operations and residential areas and strengthened educational plans for the general public as part of the reissuance of the Municipal Urban Runoff NPDES permit for the San Diego Region.

6. In light of the significant contamination from PAHs, the Port District should pursue aggressive pollution prevention activities in the watershed and air basin of San Diego Bay that the Port controls, particularly at the airport and emissions from tenants. Further, the Port should adopt a strict policy that all development will incorporate Best Management Practices in its design to prevent PAHs in polluted runoff. The District should develop an education and training program in BMP design and practice for tenants and developers who do projects around the Bay.

7. Port District should voluntarily adopt sediment contamination levels listed in the report as having impacts to marine life (i.e. ERM and PEL standards) as interim comparison standards for sediment cleanups until sediment quality standards are adopted.

8. The Port should spearhead a regional effort including all cities and county governments and other agencies to establish pollution prevention programs for Bay dischargers and discharges to prevent future and on-going sediment contamination.

9. The Port District should demonstrate support for AB 1479 which would allow the extension of the Bay Protection and Toxic Cleanup Program in order to complete the work required in the original legislation.

10. All Port leases should be revised to include proactive requirements for pollution prevention audits and implementation as requirement of tenancy.

SUMMARY
SAN DIEGO BAY SEDIMENT STUDY
STATE BAY PROTECTION TOXIC CLEANUP PROGRAM

Prepared by Environmental Health Coalition
April 1, 1997

The State Water Resources Control Board and the National Oceanic and Atmospheric Administration (NOAA) has released their *Final Report on Chemistry, Toxicity, and Benthic Community Conditions in Sediments of the San Diego Bay Region.* This study of three estuaries in the San Diego Region; San Diego Bay, Mission Bay, and the Tijuana Estuary was a multi-year, multi-faceted, multi-agency $500,000 effort. The project was funded by both the State and NOAA and had the dual purpose to 1) characterize the general state of sediments in the Bay and 2) to find toxic hotspots. This is the most important and comprehensive scientific study done ever done on San Diego Bay sediments.

229 Directed Point Samples from 164 stations to find discrete toxic hotspots
121 Random Samples from 56 stations to assess general condition of sediments in the Bay
350 total region samples.
350 samples had bioassay, TOC, and grain size testing.
217 samples had metals analysis
229 samples had organic analysis
75 stations were sampled for benthic diversity

Please note that one **station** can be the site of many **samples.**

Not all tests were run at all stations or for each sample.

Sites were prioritized for further action as follows:

Stations with repeat toxicity and elevated chemistry and/or degraded benthic communities were assigned a moderate or high priority.

Stations with a single toxicity hit were considered moderate or high priority when associated with elevated and/or degraded benthic communities.

Stations with single or repeat toxicity but lacking elevated chemistry or degraded benthic communities were assigned low priority.

Fact Sheet

Final Report on Chemistry, Toxicity, and Benthic Community Conditions in Sediments of the San Diego Bay Region

-- Bay sediments have significant contamination of mercury, copper, zinc, PAH, chlordane, PCBs.

-- Over 56% of the Bay sediment is estimated to be acutely toxic to amphipods.

-- As much as 74% of the area negatively impacted larval development of sea urchins.

-- There are four toxic sites designated as having highest priority: Seventh Street Channel (Naval Station), two Commercial Shipyards, Laurel Street Drain.

-- 20 stations in six general areas were rated as moderate meaning that they demonstrated toxicity and elevated chemistry and/or degraded benthic communities.

-- The most toxic site in the entire San Diego region was the Seventh Street Channel (Naval Station).

-- Study found direct correlation between increasing chemical pollution and degraded benthic communities.

-- Several chemicals of concern in elevated levels in the Bay are known to biomagnify and bioconcentrate in tissue of marine species. These are of special concern for human health.

-- The use of the 48% mean survival level for toxicity tests was chosen as a conservative guideline to identify only the most toxic stations for setting priorities for future work. i.e. this report is the best case scenario. Even in light of this very conservative standard, the results narrowed attention from 164 suspected sites to 4 critical sites and 6 areas that need immediate characterization.

-- Of 63 Bay stations sampled for benthic communities 36 were degraded and 8 were transitional.

-- Although no South Bay sites were given high or moderate priority designations there are some stations in South Bay demonstrating high metals concentrations.

-- San Diego Bay ranked seventh highest for PCB contamination in the country.

-- Compared to other West Coast bays, San Diego Bay had the highest concentrations of metals, PAHs, chlorinated hydrocarbons and was most toxic in two out of three toxicity tests.

-- Compared with other East Coast bays, San Diego Bay exhibited higher overall toxicity.

-- This study did not investigate tissue contamination of fish and shellfish. Given the bioconcentrating properties of the chemicals of concern, this study is necessary.

TELEDYNE RYAN AERONAUTICAL
ENVIRONMENTAL AFFAIRS
ENVIRONMENTALLY INTEGRATED PROCESSES
P.O. BOX 85311
SAN DIEGO, CA 92186-5311
PHONE: (619) 260-4392
FAX: (619) 260-5400

October 15, 1997

Ms. Eileen Maher
Senior Hazardous Materials Specialist
San Diego Unified Port District
3165 Pacific Highway
P.O. Box 488
San Diego, California 92112

Subject: **Environmental Assessment for Use of Upland Sand, Convair Lagoon Capping Project, San Diego, California**

Dear Ms. Maher:

Teledyne Ryan Aeronautical (TRA), submits the attached Environmental Assessment (EA) for the Convair Lagoon Capping project. The application has been prepared by Ogden Environmental and Energy Services, Inc. (Ogden), on behalf of TRA to describe the proposed use of sand from an upland source for completion of cap construction. TRA is no longer planning to dredge sand from the Pier J/K area. In May 1997, it was determined that the material at Pier J/K did not meet the requirements for the cap. TRA and Ogden request that the San Diego Unified Port District (Port) review the attached EA and provide approval of this change at the earliest possible date, including issuance of any addendum to the existing Environmental Impact Report, if required. In addition, please advise what, if any, application fees will be required as TRA and Ogden wish to expedite the permit process as much as possible.

Ogden, on behalf of TRA, has also contacted the California Regional Water Quality Control Board, San Diego (RWQCB) and U.S. Army Corps of Engineers (ACOE) regarding the change in sand source. Mr. David Barker and Ms. Kyle Olewnik of the RWQCB has requested a Form 200, Application/Report of Waste Discharge (WDR) be completed for the change in capping material. A copy of this WDR is attached to this letter. Mr. David Zountendyk of the ACOE has indicated that no Section 404 permit modification would be required for this proposed change. Contacts with other involved entities (including the California Coastal Commission, State Lands Commission, US Navy, US Environmental Protection Agency, US Fish and Wildlife Service, National Marine Fisheries Service, and the California Department of Fish and Game) have been summarized in the EA.

TRA and Ogden thank you for your responsiveness and consideration of this application. If you have any questions or require further discussion, please call me at (619) 260-4387 or Mr. Tom Ryan of Ogden at (619) 458-9044.

Very Truly Yours,

J. Randy Venier
Environmental Affairs Administrator
Teledyne Ryan Aeronautical

Enclosures

cc: Ms. Melissa A Mailander, Port
Ms. Vivienne Lamberti, TRA
Mr. David Barker, RWQCB
Mr. Thomas Ryan, Ogden
Mr. Mehdi Miremadi, Ogden
Ms. Stacey Baczkowski, Ogden
Mr. Lawrence Lansdale, Ogden
Project File

ENVIRONMENTAL ASSESSMENT
CONVAIR LAGOON CAPPING PROJECT

to Address Impacts Associated with an Upland Source of Sand

October 15, 1997

Applicant: Teledyne Ryan Aeronautical
2701 North Harbor Drive
P.O. Box 85311
San Diego, California 92186-5311

WORKING PROJECT TITLE: Convair Lagoon Remediation
APPLICANT'S REFERENCE NUMBER (if applicable): SDUPD File #225

EXHIBIT "B"

ENVIRONMENTAL ASSESSMENT

(To be completed by Applicant)

Applicant

J. Randy Venier
(Name)

Environmental Affairs Administrator
(Title)

Teledyne Ryan Aeronautical
(Organization)

2701 N. Harbor Drive, P.O. Box 85311
(Address)

San Diego, California 92186-5311
(State, Zip Code)

(619) 260-4392
(Telephone)

Preparer of EA

Thomas J. Ryan
(Name)

Manager, Engineering Group
(Title)

Ogden Environmental and Energy Services Co., Inc.
(Organization)

5510 Morehouse Drive
(Address)

San Diego, California 92121
(State, Zip Code)

(619) 458-9044
(Telephone)

I. PROJECT DESCRIPTION

A. Describe the type of development proposed, including all phases of project construction and operation, in a self-explanatory and comprehensive fashion. Discuss the need for the project and include site size, square footage, building footprint, number of floors, on-site parking, employment, phased development, and associated projects. If the project involves a variance, indicate the reason and any related information.

SEE SUPPLEMENT TO IA

RESPONSES TO ENVIRONMENTAL ASSESSMENT
CONVAIR LAGOON CAPPING PROJECT
Supplement

I. PROJECT DESCRIPTION

A. In response to Cleanup and Abatement Order No. 86-92 issued by the California Regional Water Quality Control Board, San Diego Region (RWQCB), Teledyne Ryan Aeronautical (TRA) proposed to construct a sand cap in the Convair Lagoon to isolate polychlorinated biphenyls (PCBs) from the environment. The Port Board of Commissioners certified the Final Environmental Impact Report/Remedial Action Plan (EIR/RAP) addressing Convair Lagoon Remediation on October 19, 1993. Subsequently, on November 16, 1993, the Commissioners adopted Addendum No. 1 to the Final EIR/RAP. Addendum No. 1 provided minor revisions regarding the components of the short- and long-term monitoring programs. On January 27, 1995, the RWQCB issued Addendum No. 8 to the Cleanup and Abatement Order, which directed the implementation of the cap. On November 21, 1995, Addendum No. 2 to the Final EIR/RAP was adopted. Addendum No. 2 provided for obtaining sand from a 9.2 acre site located northwest of Pier J/K at Naval Air Station North Island. This Environmental Assessment (EA) has been prepared in support of a request for Addendum No. 3 to the Final EIR/RAP, which addresses the use of upland sand for completion of cap construction, as described below.

In May 1997, it was determined that the material at Pier J/K did not meet the grain size requirements for the cap. Several in-bay sources were evaluated but were found to be unsuitable for this project, therefore, an upland source of sand was selected. This approach is consistent with Section 3.4.5.3 of the EIR/RAP which states that "imported material or clean dredge material would be suitable material for a sand cap". Analytical data from a composite sample of the proposed upland source of sand has been included with this Environmental Assessment (Attachment 1). The data provided are from a sample of material obtained from CalMat's Carroll Canyon facility. If, however, alternate sources of material must be used because of potential production or other problems at the CalMat facility, TRA would submit supplemental data to document compliance with the existing requirements. Also included is a table summarizing the status of orders, permits, permissions, approvals, or environmental clearances applied for or granted by public agencies for this project (Attachment 2).

Use of upland material would involve transportation of approximately 30,000 cubic yards of sand obtained from an existing commercial supplier to the Convair Lagoon site. Transport would involve a combination of trucking a portion of the sand directly to the Convair Lagoon site (estimated to be 14 percent of the total volume) and a portion to the contractor's facility in National City, California (2140 Tidelands Avenue) for transport to the site on barges (estimated to be 86 percent of the total volume). Figure 1 identifies the location of the Convair Lagoon site and the contractor's facility.

B. Describe project appearance, any proposed signs, and how the design of the project would be coordinated with the surroundings.

No change from the Convair Lagoon Remediation Final EIR/RAP.

C. Describe how the public would be affected by the project.

The public will not be affected by the production of the sand because the sand is coming from a commercial quary that has restricted public access. A temporary increase in truck traffic will occur from the delivery of sand to the contractor's facility and the Convair Lagoon site.

D. Describe how the project could attract more people to the area or enable additional people to use the area, and what additional service businesses would be required.

No change from the Convair Lagoon Remediation Final EIR/RAP.

II. ENVIRONMENTAL SETTING

A. Describe the existing project site and surrounding area including: the type and intensity of land/water use; structures, including height; landscaping and naturally occurring land plants and animals, and marine life; land and water traffic patterns, including peak traffic and congestion; and any cultural, historical, or scenic aspects.

No change from the Convair Lagoon Remediation Final EIR/RAP.

III. ENVIRONMENTAL ANALYSIS

A. Compare the existing project area, improvements, and activities with what would exist after implementation of the proposed project. Data concerning the present condition should be entered before the slash (/); those after the project is completed should be given after the slash (/).

See Supplement to III A

(1) Existing/proposed land area: ______/______ sq. ft.

water area: ______/______ sq. ft.

(2) Existing/proposed land area for:

structures: ______/______ sq. ft.

landscape: ______/______ sq. ft.

pavement: ______/______ sq. ft.

undeveloped: ______/______ sq. ft.

(3) Number of existing/proposed floors of construction: ______/______

(4) Principle height of existing/proposed structures: ______/______ ft.

(5) For land development, indicate extent of grading:

excavation: ______ cu. yards., ______ sq. ft.

fill: ______ cu. yards., ______ sq. ft.

Describe method, source of fill, and location of spoil disposal:

______

(6) For water development, indicate extent of dredging and fill:

dredging: ______ cu. yards., ______ sq. ft.

fill: ______ cu. yards., ______ sq. ft.

Describe method and location of spoil disposal:

No change from the Convair Lagoon Remediation Final EIR/RAP.

(7) Describe existing/proposed method of solid waste disposal and amounts involved.

No change from the Convair Lagoon Remediation Final EIR/RAP.

(8) Describe existing/proposed drainage system improvements and what materials other than domestic wastes, are/would be discharged into the sewer system:

No Change from the Convair Lagoon Remediation Fianl EIR/RAP.

(9) Describe the existing/proposed fire protection needs of the site and proposed project, and the nature and location of existing/proposed facilities:

No change from the Convair Lagoon Remediation Final EIR/RAP

(10) Describe existing/proposed public access to San Diego Bay through the project site, including any controlled access:

No change from the Convair Lagoon Remediation Final EIR/RAP.

(11) Existing/proposed slips, piers: -0- / -0-

docks or marine ways: -0- / -0-

RESPONSES TO ENVIRONMENTAL ASSESSMENT

CONVAIR LAGOON CAPPING PROJECT

Supplement

III. ENVIRONMENTAL ANALYSIS

A(1) - A(6) No change from the Convair Lagoon Remediation Final EIR/RAP.

(12) Existing/projected employees per day: -0- / -0-

(13) Existing/ projected customers or visitors per day: -0- / -0-

(14) Explain the projections for (12) and (13): No change from the Convair Lagoon Remediation Final EIR/RAP.

(15) Existing/projected daily motor vehicle round trips associated with the site and the proposed project: -0- / -0- .

(16) Existing/projected mileage for daily motor vehicle round trips associated with the site and the proposed project: -0- / -0- .

(17) Existing/projected total round trip daily motor vehicle miles traveled associated with site and the proposed project: -0- / -0- .

(18) Explain the projections for (15), (16) and (17): No change from the Convair Lagoon Remediation Final EIR/RAP.

(19) Existing/proposed parking spaces: On Site: -0- / -0-

Other if used by project: -0- / -0-

Specify location(s): ______

(20) Explain the parking space requirements and compare with applicable standards: No change from the Convair Lagoon Remediation Final EIR/RAP.

(21) Existing/ projected water consumption: -0- / -0- gal./day

(22) Existing/projected electrical power consumption: -0- / -0- kwhr./month

(23) Existing/projected gas/oil consumption: -0- / -0- therms/day or gal./day

B. Indicate whether or not the following may result from or may apply to the proposed project or its effects.

	YES	NO
(1) Substantial change in the existing land/water use of the site.		X
(2) Incompatibility with approved Port Master Plan.		X
(3) Part of a larger project or series of projects.	X	
(4) Involve the demolition or removal of existing improvements, including landscaping.		X
(5) Substantial change in the existing features of San Diego Bay, tidelands, or beaches.		X
(6) Significant increase in demands on parking or transportation facilities.		X

(7) Substantial increase in demand for municipal services (police. fire, etc.)	____	X
(8) Significant increase in amounts of solid waste or litter.	____	X
(9) Involvement with potentially hazardous materials, such as toxic substances, flammables, or explosives.	____	X
(10) Substantial increase in fossil fuel consumption (electricity, oil, natural gas, etc.) or in water consumption.	____	X
(11) Interference with scenic views or vistas from existing residential areas or from adjacent uplands.	____	X
(12) Decreased access to public facilities or recreational resources.	____	X
(13) Substantial change in the employment base of the community.	____	X
(14) Substantial increase in dust, ash, smoke, fumes, or odors in project vicinity.	____	X
(15) Significant change in San Diego Bay water quality or alteration of existing drainage patterns into San Diego Bay.	____	X
(16) Increase the possibility of erosion of tidelands or siltation of San Diego Bay.	____	X
(17) Substantial increase in existing noise or vibration levels in the vicinity.	____	X
(18) Require any variance from existing environmental standards (air, water, noise, etc.).	____	X
(19) Involve soil stability or geological hazards.	____	X
(20) Substantial decrease in the habitat of any land plants or animals, or marine life.	____	X

IV. ENVIRONMENTAL EFFECTS

Describe environmental effects which could result from the project:

A. **Physiographic changes to San Diego Bay, tidelands, or beaches:**
No change from the Convair Lagoon Remediation Final EIR/RAP.

B. **Increased demands on urban support systems, including: parking, streets, sewers, utilities, and transportation:**
No change from the Convair Lagoon Remediation Final EIR/RAP.

C. **Increased energy consumption due to operation of the project:**
An increase in fossil fuel consumption will occur only during transport of sand to the Convair Lagoon site.

D. **Changes in appearance of the project site and views from/to the site which could be affected by the project:**
None

E. Changes in air quality from both stationary and mobile sources, including any dust, odors, fumes, chemical vapors, water sprays, etc.:

Dust, smoke, fumes, or odors will be generated only during transport of sand to the Convair Lagoon site.

F. Changes in the bay water quality, including those which could result from the removal and/or construction of structures in the water:

The project is being implemented to, in part, improve water quality. During placement of sand on the cap, short term water quality impacts will be monitored in accordance with the Waste Discharge Requirements*

G. Changes in the sound environment which could occur on or off-site, both from construction and operational noise generated by the project:

None at the supplier's facility since sand will be obtained from an existing commercial operation. Minor short-term impacts will result from an increased level of truck traffic during transport of the sand and during sand placement on the cap.

H. Describe any change to plant or animal life, including landscaping:

No change from the Convair Lagoon Remediation Final EIR/RAP.

V. MITIGATING MEASURES

A. Describe **all** proposed mitigating measures, or those already incorporated in the project to mitigate potentially significant environmental effects, if any:

Mitigation measures identified in the original EIR/RAP will be applied. As this amendment is for a change in the source of sand for capping, no additional impacts are expected to occur. Therefore, no additional mitigation measures are required.

B. Specify how and when the mitigating measures will be carried out:

No change from the Convair Lagoon Remediation Final EIR/RAP.

C. Explain the extent and effectiveness of mitigation expected and how this was determined:

No change from the Convair Lagoon Remediation Final EIR/RAP.

*established by the RWQCB.

D. Describe other mitigation measures considered and indicate why they were discarded:
No change from the Convair Lagoon Remediation Final EIR/RAP.

VI. BACKGROUND INFORMATION

A. Pre-Application Project Processing

(1) Indicate if the conceptual plans have been presented to the Board of Port Commissioners or Port Staff. If so, describe in what form, and give date and result:
The Convair Lagoon Final Remedial Action Plan (RAP) and Final Environmental Impact Report (FEIR) was approved by the Board of Port Commissioners on October 19, 1993. The RAP included the concept of a sand cap. The Commissioners certified the FEIR and directed that a Notice of Determination be filed.

(2) Indicate if project plans have been submitted to Port Staff. If so, describe in what form, to whom submitted, give date and result:
An application for Tenant Project Plan Approval (TPP) and Coastal Development Permit (CDP) application were approved on November 21, 1995. The use of the upland material as discussed in this EA is consistent with the TPP and CDP. The existing permits therefore, do not need to be modified.

(3) List all environmental consultations and processing contacts with other agencies, firms or individuals in connection with this project. Give agency, name, phone, date, subject and result of consultation:
See attached Table 1.

(4) Last project plans or working drawings approved by the Port at this site:
Title: Capping and Storm Drain drawings, including cross sections and miscellaneous details.
Date: May, 1996

Port Engineering File Number: 008-001-751

B. Permit Background

(1) List all other public agencies which have approval or permit authority related to this project and indicate type required, e.g., City building permits, Coastal permit, WQCB, APCD, Army Corps, EPA, FAA, Coast Guard, etc.:

See attached Table 2.

(2) Pending permits or variances at this site:

Indicate any permits or variances applied for. Agency, type, file number, date, phone number, and name of person who is processing the permit application or variance request must be included:

See attached Table 3.

VII. CERTIFICATION

A. Certification: This Environmental Assessment was prepared by me for/■ the applicant and I hereby certify that the statements furnished in the above and in the attached exhibits disclose relevant information to determine environmentally significant effects, as required for the San Diego Unified Port District Initial Study. It has been prepared to the best of my ability, and the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

(Signature of Preparer)	16 OCTOBER 1997 (Date)
Thomas J. Ryan (Print Name)	Manager, Engineering Group (Title)
Ogden Environmental and Energy (Organization)	(619) 458-9044 (Telephone)

5510 Morehouse Drive
(Address)

San Diego, CA 92121
(City, State, Zip Code)

B. Applicant Certification: I hereby certify that the project-related facts, statement, and information furnished above and in the attached exhibits, and in any other form to the preparer of this Environmental Assessment or to the San Diego Unified Port District are true and correct to the best of my knowledge and belief. I am duly authorized to and do hereby accept and commit the applicant to the implementation of all mitigation measures listed in this Environmental Assessment and of the project as herein described. I understand that non-compliance with any of the mitigation measures, or changes in the project as herein described shall be grounds to invalidate any or all project approvals or permits regardless of the stage of project development or operation. I will notify the San Diego Unified Port District immediately in writing of any changes in the proposed project, and I acknowledge that project changes may require additional environmental evaluation. I shall hold the San Diego Unified Port District harmless of any cost or damages resulting from consequences of non-compliance or unapproved project changes.

(Signature of ~~Preparer~~ Applicant)	10/16/97 (Date)
J. Randy Venier (Print Name)	Environmental Affairs Administrator (Title)
Teledyne Ryan Aeronautical (Organization)	(619) 260-4387 (Telephone)

2701 N. Harbor Drive, P.O. Box 85311
(Address)

San Diego, California 92186-5311
(City, State, Zip Code)

ENVIRONMENTAL ASSESSMENT
CONVAIR LAGOON CAPPING PROJECT

to Address Impacts Associated with an Upland Source of Sand

Tables

Table 1

RESPONSE TO ITEM VI.A.3, CONSULTATIONS AND CONTACTS

Agency	Contact	Phone No.	Date of Contact	Subject	Results
US Army Corps of Engineers	Mr. David Zoutendyk	(619) 674-5384	10/02/97	Acceptability of using an upland source of sand and need for a 404 Permit modification.	Mr. Zoutendyk indicated that use of an upland source of material would be acceptable and that a 404 Permit Modification would not be necessary. Mr. Zoutendyk was also provided a copy of this EA.
California Regional Water Quality Control Board, San Diego	Mr. David Barker & Ms. Kyle Olewnick	(619) 467-2989 & (619) 467-3272	10/06/97	Acceptability of using an upland source of sand and need for a 401 Permit and/or Waste Discharge Requirement modification.	Mr. Barker and Ms. Olewnick indicated that use of an upland source of material would be acceptable, pendin receipt of data that indicated that the upland material would meet the technical specifications. A Form 200, Application/Report of Waste Discharge describing the change was submitted on October 13, 1997. Mr. Barker and Ms. Olewnick were also provided a copy of this EA.
California Coastal Commission	Ms. Diana Lilly	(619) 521-8036	09/22/97	Acceptability of using an upland source of sand and need for modifying the Coastal Development Permit.	Ms. Lilly indicated that use of an upland source of material would be acceptable, pending receipt of data that indicated that the upland material would meet the technical specifications. Further, Ms. Lilly indicated that the Coastal Development Permit would not need to be modified. Ms. Lilly was also provided a copy of this EA.
San Diego Unified Port District	Ms. Eileen Maher	(619) 686-6254	09/30/97	Acceptability of using an upland source of sand and need for modifying the EIR/RAP via submittal of an Environmental Assessment (EA) describing the change.	Ms. Maher indicated that use of an upland source of material would be acceptable, pending receipt of data that indicated that the upland material would meet the technical specifications. Further, Ms. Maher indicated that the EIR/RAP would need to be amended based on submittal o an EA describing the use of upland material. Submittal oı this EA is a result of this discussion.
State Lands Commission	Ms. Jane Smith	(619) 574-1900	09/22/97	Acceptability of using an upland source of sand and need for modifying the dredging permit.	Ms. Smith indicated that use of an upland source of material would be acceptable. Further, Ms. Smith indicated that the dredging permit would not need to be modified. Ms. Smith was also provided a copy of this EA.

Table 1 (Continued)

RESPONSE TO ITEM VI.A.3, CONSULTATIONS AND CONTACTS

Agency	Contact	Phone No.	Date of Contact	Subject	Results
US Navy	Ms. Wendy Thornton	(619) 556-9759	09/23/97	Advising the US. Navy of the planned use of upland material for cap construction and determining if this change raised any issues of concern with the US Navy to be addressed by TRA.	Ms. Thornton indicated that the Navy's interest results primarily from the previously proposed dredging operations. Ms. Thornton was also provided a copy of this EA.
US Environmental Protection Agency, Region IX	Mr. Steven John	(213) 452-3806	10/07/97	Acceptability of using an upland source of sand and determining if this change raised any issues of concern with the US EPA.	Mr. John indicated that use of an upland source of material would be acceptable, based on his review of testing and analytical data provided. Further, Mr. John indicated that there are no other particular issues to be addressed. Mr. John was also provided a copy of this EA.
US Fish and Wildlife Service	Mr. Martin Kenney	(760) 431-9440	No recent response to date	Acceptability of using an upland source of sand and determining if this change raised any issues of concern with the USFWS.	Sent letter explaining change in sand source and results of chemical analysis of upland sand. Left several messages and waiting to hear on suitability of sand.
National Marine Fisheries Service	Mr. Robert Hoffman	(562) 980-4043	10/10/97	Acceptability of using an upland source of sand and determining if this change raised any issues of concern with the NMFS.	Mr. Hoffman left a message stating that he had reviewe the grain size and chemical data and indicated that "he has no problem with use of the material".
California Department of Fish and Game	Mr. Richard Nitsos	(562) 590-5174	10/09/97	Acceptability of using an upland source of sand and determining if this change raised any issues of concern with the CDFG.	Spoke with Bill Paznokas (619-467-4299) since Mr. Nitsos was unavailable and had indicated that Mr. Paznokas could be contacted with any questions. Mr. Paznokas stated that he did not have any problem with using an upland sand source and indicated that the sand from CalMat's facility was acceptable.
San Diego Air Pollution Control District	No recent contacts	No recent contacts	No recent contacts	No recent contacts	Contractor indicates that APCD permits for applicable equipment to be used for cap construction is current.

Table 2

RESPONSE TO ITEM VI.B.1, APPROVAL AND PERMIT AUTHORITIES

Agency	File No.	Related Permit, Order, Approval, or Environmental Clearance
US Army Corps of Engineers	95-2-124-DZ	- Section 404 Permit - NEPA Environmental Clearance
California Regional Water Quality Control Board, San Diego	86-92	- Cleanup and Abatement Order - Addendum No. 8 to Cleanup and Abatement Order - Addendum No. 10 to Cleanup and Abatement Order - Section 401 Water Quality Certification
	95-123	- Waste Discharge Requirements - Addendum No. 1 to Waste Discharge Requirements
San Diego Unified Port District	83356 EIR-225	- Conceptual Approval of RAP/Sand Cap Alternative - CEQA Environmental Clearance - Final EIR/RAP - Addendum No 1 to Final EIR/RAP, Convair Lagoon Remediation - Addendum No. 2 to Final EIR/RAP, CEQA Environmental Clearance for Dredge Site - Tenant Project Plan Approval - Coastal Development Permit (with the Coastal Development Commission)
San Diego Air Pollution Control District	890318 890994 930075 890518	- Permits for applicable equipment used by contractor for cap construction.

Table 3

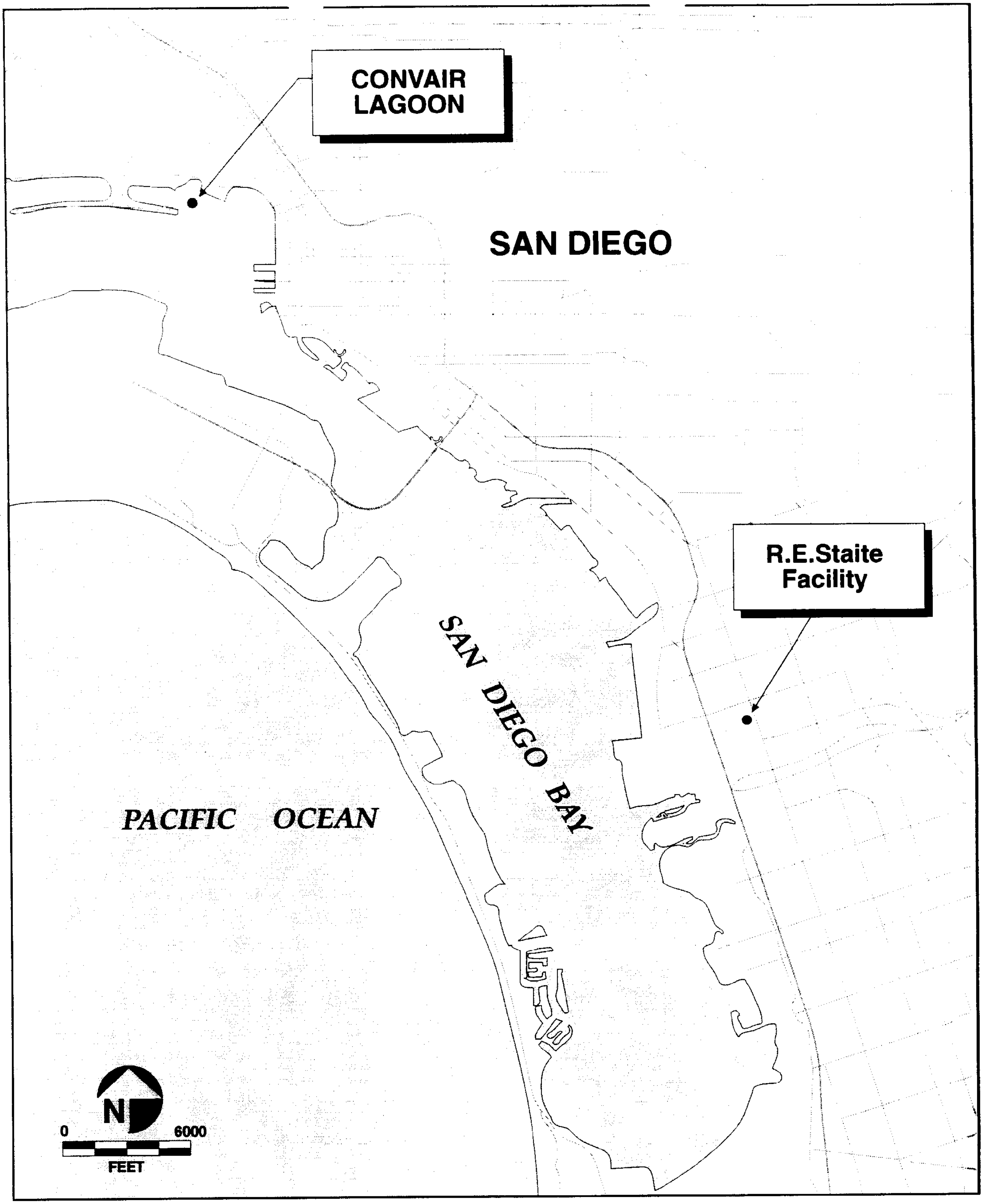
RESPONSE TO ITEM VI.B.2, PENDING PERMITS

Agency	Contact	Phone No.	File No.	Related Permit, Order, Approval, or Environmental Clearance	Date of Submittal for Requested Modification/Addendum
California Regional Water Quality Control Board, San Diego	Mr. David Barker & Ms. Kyle Olewnick	(619) 467-2989 & (619) 467-3272	86-92 95-123	- Cleanup and Abatement Order - Section 401 Water Quality Certification - Waste Discharge Requirements	October 10, 1997
San Diego Unified Port District	Ms. Eileen Maher	(619) 686-6254	83356 EIR-225	- Final EIR/RAP	October 10, 1997
San Diego Air Pollution Control District	No recent contact	No recent contact	890318 890994 930075 890518		Contractor reports that all permits are current.

ENVIRONMENTAL ASSESSMENT
CONVAIR LAGOON CAPPING PROJECT

to Address Impacts Associated with an Upland Source of Sand

Figures



FIGURE

1

OGDEN

Location of Convair Lagoon and R.E. Staite Facility

GRAPHICS\HAZMAT\CONVAIR\Convair & R.E. Staite Locations Map.fh5

ENVIRONMENTAL ASSESSMENT
CONVAIR LAGOON CAPPING PROJECT

to Address Impacts Associated with an Upland Source of Sand

Attachment 1

Results of Sampling and Analysis of Upland Sand

Pacific Treatment
Analytical Services, Inc.

4340 Viewridge Avenue, Suite A • San Diego, CA 92123
(619) 560-7717 • Fax (619) 560-7763
Analytical Chemistry Laboratory

October 8, 1997

Ogden EES
Attn: Tom Ryan
5510 Morehouse Drive
San Diego, CA 92130

Project Name/No.: 710080050 0060
Laboratory Log No.: 1443-97
Date Received: 10/02/97
Sample Matrix: One sand sample
PO No.: None

Please find the following enclosures for the above referenced project identified:

1) Analytical Report
2) QA/QC Report
3) Cooler Receipt Form
4) Chain of Custody Form

Comment: Priority Pollutant Metals (Antimony, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Silver, Thallium, and Zinc) and TOC were performed by subcontract laboratory, results enclosed.

......................Certificate of Analysis....................

Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. Date of extraction, date of analysis, detection limits and dilution factor are reported for each compound analyzed. All samples were analyzed within the method required holding time from sample collection.

A Cooler Receipt Form is utilized upon receipt of sample(s) at PTAS. This helps ensure sample integrity from start to finish.

A minimum of 90% of the data for each analytical method is associated with acceptable quality control criteria. Determinations of completion were made by assessing the following QA/QC functions, as applicable to methodology:

- Surrogate Percent Recovery,
  Laboratory Control Sample (LCS) percent recoveries for all analyses,
- Matrix Spike Recovery/Matrix Spike Duplicate Recovery (MSR & MSDR) and
  Relative Percent Difference (RPD from MSR & MSDR).

I certify that this data report is in compliance both technically and for completeness. Release of the data contained in this hardcopy data report has been authorized by the following signature.

J Columbo

Janis Columbo
Vice President/Laboratory Director

Water • Soil • Waste • Wastewater • Marine Sediment & Tissues • Elutriate

Analyses That Produce Results!

ANALYSIS RESULTS - PRIORITY POLLUTANT METALS

CLIENT: OGDEN EES

PROJECT NAME/No.: 710080050 0060
PTAS LOG #: 1443-97-1
SAMPLE ID: CARROLL CANYON FILLSAND 30

DATE SAMPLED: 10/02/97
DATE RECEIVED: 10/02/97
DATE DIGESTED: 10/03/97
DATE ANALYZED: 10/03/97
MATRIX: SAND

ANALYTE	PREP/ANALYSIS METHODS	DETECTION LIMIT PPM (MG/KG)	DF	RESULTS PPM (MG/KG)
ARSENIC	EPA 7060	2.0	10	12.0
MERCURY	EPA 7471	0.05	1	ND
SELENIUM	EPA 7740	0.3	1	ND

DF = DILUTION FACTOR
ND = NOT DETECTED AT LISTED DETECTION LIMIT
DETECTION LIMITS AND RESULTS HAVE BEEN ADJUSTED ACCORDINGLY TO ACCOUNT FOR DILUTION FACTOR.

Pacific Treatment Analytical Services, Inc. 4340 Viewridge Ave., Suite A • San Diego, CA 92123 (619) 560-7717 FAX (619) 560-7763

ANALYSIS RESULTS - PRIORITY POLLUTANT METALS

CLIENT: OGDEN EES

PROJECT NAME/No.: 710080050 0060
PTAS LOG #: 1443-97-1 (DUPLICATE)
SAMPLE ID: CARROLL CANYON FILLSAND 30 (DUPLICATE)

DATE SAMPLED: 10/02/97
DATE RECEIVED: 10/02/97
DATE DIGESTED: 10/03/97
DATE ANALYZED: 10/03/97
MATRIX: SAND

ANALYTE	PREP/ANALYSIS METHODS	DETECTION LIMIT PPM (MG/KG)	DF	RESULTS PPM (MG/KG)
ARSENIC	EPA 7060	2.0	10	10
MERCURY	EPA 7471	0.05	1	ND
SELENIUM	EPA 7740	3.0	10*	ND

DF = DILUTION FACTOR
ND = NOT DETECTED AT LISTED DETECTION LIMIT
DETECTION LIMITS AND RESULTS HAVE BEEN ADJUSTED ACCORDINGLY TO ACCOUNT FOR DILUTION FACTOR.

* NOTE: SAMPLE DILUTION NECESSARY TO REDUCE INTERFERENCES FROM NON-TARGET ANALYTES.

QA/QC REPORT						
METHOD:	**PRIORITY POLLUTANT METALS-SAND**				**ACCEPTABLE LCS, MS/MSD CRITERIA**	**ACCEPTABLE RPD CRITERIA**
DATE ANALYZED:	10/03/97					
AQC SAMPLE:	PTAS 1443-97					
SPIKED ANALYTE	**LCS % R**	**MS % R**	**MSD % R**	**RPD**	**%**	**%**
ARSENIC	82	10*	7*	35*	75-125	< 20
MERCURY	105	110	110	0	75-125	< 20
SELENIUM	81	57*	42*	30*	75-125	< 20

LCS % R = LABORATORY CONTROL SAMPLE PERCENT RECOVERY

MS % R = MATRIX SPIKE PERCENT RECOVERY

MSD % R = MATRIX SPIKE DUPLICATE PERCENT RECOVERY

RPD = RELATIVE PERCENT DIFFERENCE

* NOTE: POOR MATRIX SPIKE RECOVERIES AND POOR PRECISION ATTRIBUTABLE TO SAMPLE MATRIX EFFECTS. A DUPLICATE LCS WAS ANALYZED WITH THE SAMPLE BATCH AND THE RESULTING RECOVERY AND RPD MET OR EXCEEDED ACCEPTANCE CRITERIA.

Pacific Treatment Analytical Services, Inc. 4340 Viewridge Ave., Suite A • San Diego, CA 92123 (619) 560-7717 FAX (619) 560-7763

ANALYSIS RESULTS - EPA 8080, PCBs ONLY
POLYCHLORINATED BIPHENYLS

CLIENT: OGDEN EES

PROJECT NAME/No.: 710080050 0060
PTAS LOG #: METHOD BLANK
SAMPLE ID: N/A
DILUTION FACTOR: 1

DATE SAMPLED: N/A
DATE RECEIVED: N/A
DATE EXTRACTED: 10/03/97
DATE ANALYZED: 10/03/97
MATRIX: SOIL
SAMPLE VOL./WT.: 30 GM

ANALYTE	DETECTION LIMIT PPB (UG/KG)	RESULTS PPB (UG/KG)
AROCHLOR-1016	20	ND
AROCHLOR-1221	20	ND
AROCHLOR-1232	20	ND
AROCHLOR-1242	20	ND
AROCHLOR-1248	20	ND
AROCHLOR-1254	20	ND
AROCHLOR-1260	20	ND

ND = NON DETECT ABOVE INDICATED DETECTION LIMIT.
DETECTION LIMITS AND RESULTS HAVE BEEN ADJUSTED ACCORDINGLY TO ACCOUNT FOR DILUTION FACTOR.

ANALYSIS RESULTS - EPA 8080, PCBs ONLY
POLYCHLORINATED BIPHENYLS

CLIENT: OGDEN EES

PROJECT NAME/No.: 710080050 0060
PTAS LOG #: 1443-97-1
SAMPLE ID: CARROLL CANYON FILLSAND 30
DILUTION FACTOR: 1

DATE SAMPLED: 10/02/97
DATE RECEIVED: 10/02/97
DATE EXTRACTED: 10/03/97
DATE ANALYZED: 10/03/97
MATRIX: SAND
SAMPLE VOL./WT.: 30 GM

ANALYTE	DETECTION LIMIT PPB (UG/KG)	RESULTS PPB (UG/KG)
AROCHLOR-1016	20	ND
AROCHLOR-1221	20	ND
AROCHLOR-1232	20	ND
AROCHLOR-1242	20	ND
AROCHLOR-1248	20	ND
AROCHLOR-1254	20	ND
AROCHLOR-1260	20	ND

ND = NON DETECT ABOVE INDICATED DETECTION LIMIT.
DETECTION LIMITS AND RESULTS HAVE BEEN ADJUSTED ACCORDINGLY TO ACCOUNT FOR DILUTION FACTOR.

QA/QC REPORT						
METHOD:	**PCB by EPA 8080-SAND**				**ACCEPTABLE**	**ACCEPTABLE**
DATE ANALYZED	10/03/97				**LCS,MS/MSD**	**RPD**
QA/QC SAMPLE:	PTAS 1415-97-6				**CRITERIA**	**CRITERIA**
SPIKED ANALYTE	**LCS % R**	**MS % R**	**MSD % R**	**RPD**	**%**	**%**
AROCHLOR-1254	91	86	115	29	29-131	<30

LCS % R = LABORATORY CONTROL SAMPLE PERCENT RECOVERY
MS % R= MATRIX SPIKE PERCENT RECOVERY
MSD % R= MATRIX SPIKE DUPLICATE PERCENT RECOVERY
RPD = RELATIVE PERCENT DIFFERENCE

AROCHLOR ACCEPTABLE CONTROL LIMITS:

AROCHLOR-1016	50-114
AROCHLOR-1221	15-178
AROCHLOR-1232	10-215
AROCHLOR-1242	39-150
AROCHLOR-1248	38-158
AROCHLOR-1254	29-131
AROCHLOR-1260	8-127

Pacific Treatment Analytical Services, Inc. 4340 Viewridge Ave., Suite A • San Diego, CA 92123 (619) 560-7717 FAX (619) 560-7763

Golden State Analytical
A Subsidiary of Lin & Associates

ANALYTICAL REPORT

GSA Sample No. 941912

Pacific Treatment Analytical Services, Inc.
4340 Viewridge Avenue, Suite A
San Diego, CA 92123

Attn: Mr. Roger Lahr

Project Name: 7100800500060/1443-97

Sample I.D. #: Carroll Canyon Fillsand 30

Date Reported: 10/08/97
Date Collected: 10/02/97
Discard Date: 11/02/97
Collected By: N/A
Date Delivered: 10/07/97
Analyst Initials: PL
Invoice No. 23108
P.O. #: 97706
Sample Type: Soil

Analysis/ Parameter	Analysis Method	Date Analyzed	Units	Results As Received	Detection Limits
Antimony	EPA 6010	10-07-97	mg/kg	ND	3.2
Beryllium	EPA 6010	10-07-97	mg/kg	ND	0.03
Cadmium	EPA 6010	10-07-97	mg/kg	ND	0.4
Chromium	EPA 6010	10-07-97	mg/kg	3.53	0.7
Copper	EPA 6010	10-07-97	mg/kg	10.1	0.6
Lead	EPA 6010	10-07-97	mg/kg	ND	4.2
Nickel	EPA 6010	10-07-97	mg/kg	3.45	0.5
Silver	EPA 6010	10-07-97	mg/kg	ND	0.7
Thallium	EPA 6010	10-07-97	mg/kg	ND	4.0
Zinc	EPA 6010	10-07-97	mg/kg	34.9	0.2

ND: Not Detected; it means less than detection limits
(a) The detection Limits for metals are based upon the instrument specification and assumed that there were no matrix interferences.

Respectfully Submitted,
GOLDEN STATE ANALYTICAL
Reviewed and Approved by:

Ping H. Lin, Ph.D.
Laboratory Director

9823 Pacific Heights Blvd., Suite R....San Diego, CA 92121-4706....Tel: (619) 554-0622....Fax: (619) 554-0819

Golden State Analytical
A Subsidiary of Lin & Associates

QUALITY CONTROL DATA REPORT

Date Reported: 10/08/97
Date Performed: 10/04/97
Analysis Batch: M081
GSA Samples No: 941912
Date Collected: 10/02/97
Date Prepared: 10/07/97

Pacific Treatment Analytical Services, Inc.
4340 Viewridge Avenue, Suite A
San Diego, CA 92123

Attn: Mr. Roger Lahr

Project Names: 7100800500060/1443-97
Sample I.D. : Carroll Canyon Fillsand 30; Soil Sample

Analysis/ Parameter	Analysis Method	Blank Results	Spike % Recovery	Spike Dup. % Recovery	Duplicate % RPD
Antimony	EPA 6010	<3.2 mg/kg	106	107	0.9
Beryllium	EPA 6010	<0.03 mg/kg	94	92	2.1
Cadmium	EPA 6010	<0.4 mg/kg	81	85	4.8
Chromium	EPA 6010	<0.7 mg/kg	93	89	4.3
Copper	EPA 6010	<0.6 mg/kg	93	91	2.2
Lead	EPA 6010	<4.2 mg/kg	92	93	1.1
Nickel	EPA 6010	<1.5 mg/kg	95	90	5.4
Silver	EPA 6010	<0.7 mg/kg	92	92	0.0
Thallium	EPA 6010	<4.0 mg/kg	90	89	1.1
Zinc	EPA 6010	<0.2 mg/kg	92	90	2.2

QC limits for recovery (75%-125%) and Maximum RPD (20%)

Jean Shyr

Jean Shyr
QA/QC Specialist

ASSOCIATED LABORATORIES

806 North Batavia - Orange, California 92868 - 714/771-6900 *FAX 714/538-1209*

CLIENT Pacific Treatment Analytical (4903)
ATTN: Roger Lahr
4340 Viewridge Ave.
Suite A
San Diego, CA 92123

LAB REQUEST 15120

REPORTED 10/ 7/97

RECEIVED 10/ 3/97

PROJECT 710080050006011443-97

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

Order No.	**Client Sample Identification**
40951	Carroll Canyon Fillsand

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Robert A. Webber
Vice President

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
Chemical
Microbiological
Environmental

Order #: 40951	C! Sample ID: Carroll Canyon Fillsan

Matrix: SOLID

Date Sampled: 10/ 2/97

Time Sampled: 14:40

Sample Description: Project #7100800500060

Analyte	Result	DLR	Units	Date/Analyst
CFA S18 0 TOC in Solid Samples				
TOC	0.02	0.01	%	10/ 7/97 HK

DLR = Detection limit for reporting purposes, ND = Not Detected below indicated detection limit

Ninyo & Moore

SIEVE ANALYSIS

Project Name OGDEN/Zab
Project Number #103501-01

Technician MB
Date Tested 10-3-97

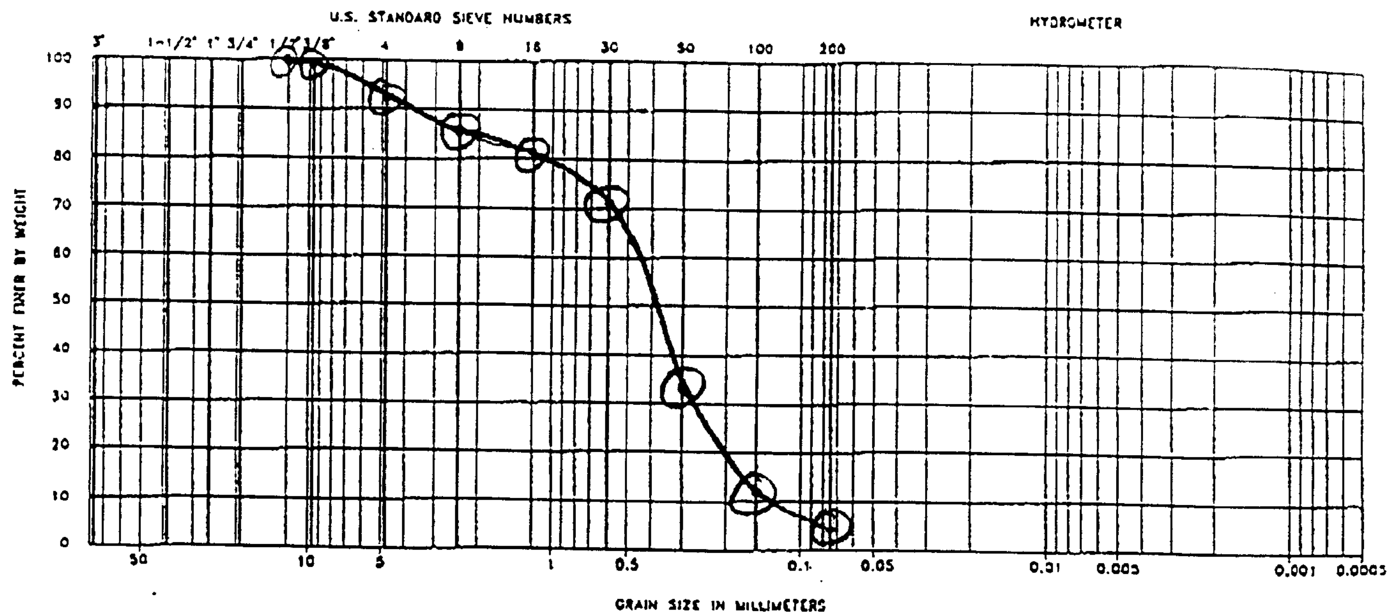
Sample Location #1 PO# 7100800500060
Depth (bulk)

	-#4 Before Wash		-#4 After Wash	
Total Sample Weight	Wet Soil & Tare	885.6		
Soil & Tare	Dry Soil & Tare	802.9	Dry Soil & Tare	770.5
Tare	Tare "60"	122.1	Tare	122.1
Soil	Dry Soil	680.8	Dry Soil	648.4

Sieve Size	Weight Retained	% Retained	% Passing	Corrected % Passing	Spec
6"					
5"					
4"					
3"					
2"					
1-1/2"					
1"					
3/4"					
1/2"	Ø	Ø	100		
3/8"	4.1	Ø.6	99.4		
#4	50.3	7.4	92.Ø		
#8	40.3	5.9	86.1		
#16	37.3	5.5	80.6		
#30	68.5	10.1	70.5		
#50	259.8	38.2	32.3		
#100	144.3	21.2	11.1		
#200	42.9	6.3	4.8		

SIEVEANA.DOC

GRAVEL		SAND			FINES	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Symbol	Hole Number	Depth (Feet)	Liquid Limit	Plastic Limit	Plasticity Index	Soil Type
•	#1	—	—	—	—	SP

c:\ninyo\gradtest.dwg

Ninyo & Moore

GRADATION TEST RESULTS

OWNER/2nd

P.O. #7100800500060

PROJECT NO.	DATE	FIGURE
#103501-01	10-5-97	

ENVIRONMENTAL ASSESSMENT
CONVAIR LAGOON CAPPING PROJECT

to Address Impacts Associated with an Upland Source of Sand

Attachment 2

Status of Orders, Permits, Permissions, Approvals, or Environmental Clearances Applied for or Granted by Public Agencies for the Convair Lagoon Project

ATTACHMENT 2

STATUS OF ORDERS, PERMITS, PERMISSIONS, APPROVALS OR ENVIRONMENTAL CLEARANCE APPLIED FOR OR GRANTED BY PUBLIC AGENCIES FOR CONVAIR LAGOON CAPPING PROJECT

Order, Permit, Permission, Approval, or Environmental Clearance	File Number	Agency/ Contact/Telephone Number	Submittal Date	Action Date
Cleanup and Abatement Order	86-92	Regional Water Quality Control Board David Barker (619) 467-2989	N.A.	10/17/86
Addendum No. 8 to Cleanup and Abatement Order	86-92	Regional Water Quality Control Board Kristin K. Schwall (619) 476-2960	N.A.	1/27/95
Addendum No. 10 to Cleanup and Abatement Order	86-92	Regional Water Quality Control Board Kristin K. Schwall (619) 476-2960	1/16/96	1/23/96
Addendum No. 11 to Cleanup and Abatement Order (a)	86-92	Regional Water Quality Control Board David Barker (619) 467-2989 Kyle Olewnik (619) 467-3272	10/13/97	est. 11/21/97
Section 401 Water Quality Certification	86-92	Regional Water Quality Control Board Kristin K. Schwall (619) 467-2960	4/3/95	4/21/95 Waiver
Waste Discharge Requirements	95-123	Regional Water Quality Control Board David Barker (619) 467-2989	N.A.	12/14/95
Addendum No. 1 to Waste Discharge Requirements	95-123	Regional Water Quality Control Board David Barker (619) 467-2989	4/18/97	5/21/97
Addendum No. 2 to Waste Discharge Requirements	95-123	Regional Water Quality Control Board David Barker (619) 467-2989 Kyle Olewnik (619) 467-3272	10/13/97	est. 10/24/97
Conceptual Approval of RAP/Sand Cap Alternative CEQA Environmental Clearance - Final EIR/RAP	83356 EIR-225	San Diego Unified Port District Ralph T. Hicks (619) 686-6254	N.A.	10/19/93
Addendum #1 to Final EIR/RAP for Convair Lagoon Remediation	83356 EIR-225	San Diego Unified Port District Melissa A. Mailander (619) 686-6254	N.A.	11/16/93
CEQA Environmental Clearance for Dredge Site - Addendum #2 to Final EIR/RAP	83356 EIR-225	San Diego Unified Port District Melissa A. Mailander (619) 686-6254	10/11/95	11/21/95
Addendum #3 to Final EIR/RAP for Convair Lagoon Remediation	83356 EIR-225	San Diego Unified Port District Eileen Maher (619) 686-6254 Melissa Mailander (619) 686-6254	10/16/97	est. 11/21/97
Tenant Project Plan Approval	N.A.	San Diego Unified Port District Clint Kisner (619) 291-3900 ext 364	9/11/95	11/21/95
Coastal Development Permit	N.A.	San Diego Unified Port District Melissa A. Mailander (619)-686-6254	9/11/95	11/21/95
Section 404 Permit NEPA Environmental Clearance (EA)	95-20124 -DZ	U.S. Army Corps of Engineers David Zoutendyk (619) 674-5384	4/4/95	10/17/96
Permit to Operate	890318 890994 930075 890518	Air Pollution Control District Dan Speer (619) 694-3311	(b)	(b)
Letter of Permission - Harvesting of Eelgrass	N.A.	California Department of Fish and Game Richard Nitsos & Bill Paznokas (310) 590-5174	TBD	TBD

N.A. = Not applicable
est. = estimated
TBD = To Be Determined
(a) Addendum No. 11 for the Cleanup and Abatement Order processed by RWQCB with approval of Addendum No. 2 to the Waste Discharge Requirements.
(b) Permit number provided by contractor for applicable equipment planned for use during construction. Contractor advises that all permits are current.

US Army Corps
of Engineers®

LOS ANGELES DISTRICT

PUBLIC NOTICE

APPLICATION FOR PERMIT

NOV 24 1997

Public Notice/Application No.: 97-20072-DZ
Comment Period: November 20 through December 10, 1997
Project Manager: David A. Zoutendyk (619) 674-5384

Applicant
National Steel and Shipbuilding Company
Attn: Mr. Lynwood Haumschilt, Manager
P.O. Box 85278
San Diego, California 92186-5278

Contact
Mr. Ray de Wit
(510) 685-9441

Location In San Diego Bay, City of San Diego, and at the EPA approved LA-5 ocean disposal site (LA-5) approximately six nautical miles offshore of Point Loma, San Diego County, California.

Activity To: 1) dredge approximately 60,000 cubic yards (cy) of material from a 400ft-wide x 400ft-long area immediately south of the existing floating dry dock, and dispose of the dredged material at LA-5; 2) add 260 square feet (sf) of new decking supported by 12, 20 square inch (si) concrete pilings, to an existing 676 sf fender dolphin near the floating dry dock; and 3) add 200 linear feet (37,050 sf) of new floating dry dock to the existing 620-ft long (116,500 sf) floating dry dock (see attached drawings). For more information see page 3 of this notice.

Interested parties are hereby notified that an application has been received for a Department of the Army permit for the activity described herein and shown on the attached drawing(s). Interested parties are invited to provide their views on the proposed work, which will become a part of the record and will be considered in the decision. This permit will be issued or denied under Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403), Section 103 of the Marine Protection Research and Sanctuaries Act of 1972 (33 U.S.C. 1413), and Section 404 of the Clean Water Act of 1972 (33 U.S.C. 1344). Comments should be mailed to:

U.S. Army Corps of Engineers, Los Angeles District
Regulatory Branch - San Diego Field Office
ATTN: CESPL-CO--97-20072-DZ
10845 Rancho Bernardo Rd, Suite 210
San Diego, California 92127

Alternatively, comments can be sent electronically to: dzoutendyk@splgate.spl.usace.army.mil

Evaluation Factors

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof. Factors that will be considered include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people. In addition, if the proposal would discharge dredged or fill material, the evaluation of the activity will include application of the EPA Guidelines (40 CFR 230) as required by Section 404 (b)(1) of the Clean Water Act.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Preliminary Review of Selected Factors

EIS Determination- A preliminary determination has been made that an environmental impact statement is not required for the proposed work.

Water Quality- The applicant is required to obtain water quality certification, under Section 401 of the Clean Water Act, from the California Regional Water Quality Control Board. Section 401 requires that any applicant for an individual Section 404 permit provide proof of water quality certification to the Corps of Engineers prior to permit issuance. For any proposed activity on Tribal land that is subject to Section 404 jurisdiction, the applicant will be required to obtain water quality certification from the U.S. Environmental Protection Agency.

Coastal Zone Management- The applicant has certified that the proposed activity complies with and will be conducted in a manner that is consistent with the approved State Coastal Zone Management Program. The District Engineer hereby requests the California Coastal Commission's concurrence or nonconcurrence.

Cultural Resources- The latest version of the National Register of Historic Places has been consulted and this site is not listed. This review constitutes the extent of cultural resources investigations by the District Engineer, and he is otherwise unaware of the presence of such resources.

Endangered Species- Preliminary determinations indicate that the proposed activity would not affect federally-listed endangered or threatened species, or their critical habitat. Therefore, formal consultation under Section 7 of the Endangered Species Act does not appear to be required at this time.

Public Hearing- Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearing shall state with particularity the reasons for holding a public hearing.

Proposed Activity for Which a Permit is Required

To: 1) dredge approximately 60,000 cubic yards (cy) of material from a 400ft-wide x 400ft-long area immediately south of the existing floating dry dock, and dispose of the dredged material at LA-5; 2) add 260 square feet (sf) of new decking supported by 12, 20 square inch (si) concrete pilings, to an existing 676 sf fender dolphin near the floating dry dock; and 3) add 200 linear feet (37,050 sf) of new floating dry dock to the existing 620-ft long (116,500 sf) floating dry dock.

Additional Project Information

To accommodate the repair of larger ships, National Steel and Shipbuilding Company (NASSCO) proposes to expand existing dry dock operations within its San Diego Bay shipyard property. The three-part expansion consists of: creation of a deep-water area by dredging; modification of an existing fender dolphin; and adding approximately 200ft of structure onto the existing dry dock. The location of NASSCO's facilities and the project area are shown in Figure 1. Initiation of the project is expected in January 1998. Total construction time for all phases is expected to be 12 months with operation of the expanded dry dock expected to start in January 1999. Detailed descriptions of the proposed activities are provided below.

Dredging of Basin and Disposal of Dredge Spoils

In order to provide a basin below the new dry dock, which will allow the dry dock to be submerged during receipt and launching of ships, approximately 60,000 cy of sediments within a 400ft x 400ft area, including slopes, immediately south of the existing dry dock will be removed. Dredge depth will be to the -57ft MLLW, including a two-foot overdredge. Existing depths in the area range from 25 to 40ft MLLW. The side slopes of the dredge area will be at 3:1 which will result in an overall project footprint of approximately 160,000 sf (Figure 2). Sediment removal is proposed to be accomplished with bucket-type dredge. Dredging is expected to take 30 days and will be initiated in January 1997. Dredged spoils will be transported to the LA-5 site via 2,000 - 3,000 cy dump scow barges.

NASSCO conducted a Corps and EPA approved sediment characterization study in the proposed dredging footprint. The surface footprint was divided into two areas: Area 1 (near the dry dock) and Area 2 immediately outboard of Area 1 (Figure 4). Seven cores were taken in Area 1 and six cores in Area 2. Each core was taken to depth of refusal in the Pleistocene sand layer, and was then split horizontally into two parts, the surface 5ft, and the remaining bottom material. The surface material from the seven Area 1 cores and the six Area 2 cores was composited separately into samples for testing. The material from the bottom portion of the Area 1 and 2 cores was composited into a third sample (1/2) for testing.

Each sample underwent full physical, bulk sediment chemistry, bioassay, and bioaccumulation testing as required by the Corps/EPA 1991 testing manual (Green Book). Testing results showed:

1) Physical Analysis: grain size results show Site 1, 2 and 1/2 to be 71%, 66% and 77% sand/gravel, respectively.

2) Bulk Sediment Chemistry (Table 3): low to moderately elevated levels of metals and PAHs for Area 1 and Area 2 compared to LA-5 reference sediments (with Area 2 concentrations higher than Area 1), but no PCBs or pesticides. Results for Area 1/2 show metal levels at or below reference, with no PCBs, PAHs or pesticides detected;

3) Suspended-Particulate Phase Bioassays (Tables 6, 9 and 12): no significant toxicity to mysids or sanddabs for all three Areas; significant toxicity to mussel larvae for Area 2 (LC50 67%), but not at Areas 1 and 1/2; and no significant abnormality to mussel larvae for all three Areas;

4) Solid Phase Bioassays (Tables 15, 18 and 20): no significant toxicity to worms for all three Areas; significant toxicity to amphipods for all three Areas, but only Area 2 more than 20% higher mortality than reference (52% vs. 95%) LPC exceeded (Table 3-4); and significant toxicity to mysids for only Area 1, but less than 10% difference from reference (78% vs. 84%), and LPC not exceeded for all three Areas;

5) Bioaccumulation (Table 23): significant, but low level bioaccumulation of mercury (Area 1, Area 2 and Area 1/2, worms), nickel (Area 1, clams), copper and zinc (Area 1/2, clam). However, difference between reference and test Area levels for metals were low, and test Area levels were near detection limits. Significant bioaccumulation of PCBs seen in worms and clams for Areas 1 and 2, and in clams for Area 1/2. However, test Area PCB levels were low, near detection limits.

Based on these results, the Corps, in consultation with the USEPA, has made a preliminary determination that sediments from all three Areas are suitable for LA-5 disposal. LA-5 is located at 32 36'50" N and 117 20'40" W, and includes all area within a 1,000 yard radius of these coordinates (Figure 5). The following quantities of dredged material have been permitted to be disposed of at LA-5 during FY 97-98: 2,073,000 cy for the Navy's CVN Homeporting Project (Corps Permit No. OP94-20861-DZ); 41,719 cy for the Navy's Chollas Creek Project (Corps Permit No. 95-20051-DZ); and 17,835 cy for the Navy's P-211 Project (Corps Permit No. 95-20073-DZ).

Fender Dolphin Modification

The existing dolphin, a 676 sf pile-supported concrete structure, is of insufficient size to support the loads produced by the expanded dry dock. The existing fender dolphin is supported on 16, 20 si concrete pilings. Modifications will consist of adding approximately 260 sf of concrete decking on either side of the existing deck, and installing 12, 20 si concrete pilings to support the new decking (six new pilings on each side). The bottom of the new decking will be at +8ft (MLLW). Installation of the new pilings will be by a barge-mounted pile driver; construction is expected to take six weeks to complete. Cross-section and plan views of the proposed fender modifications are shown in Figure 3.

Construction of Dry Dock Extension

The existing dry dock covers approximately 116,500 sf of water in the northern portion of NASSCO's shipyard; water depths under the existing dry dock range from -45 to -57ft (MLLW). Approximately 200ft of new structure will added to the existing 620ft-long steel facility; total length of the new structure will be approximately 820ft and cover approximately 153,550 sf of water.

Construction of the new dry dock section will occur either at NASSCO's San Diego facilities or at a remote location. The existing dry dock will be moved to NASSCO's graving dock where the new section will be added; the expanded dry dock will then be towed and secured to the existing mooring. Other than the modifications to the fender dolphin discussed above, no changes to the existing dry dock's berth will be made.

Proposed Special Conditions

None at this time.

For additional information please call David A. Zoutendyk of my staff at (619) 674-5384. This public notice is issued by the Chief, Regulatory Branch.

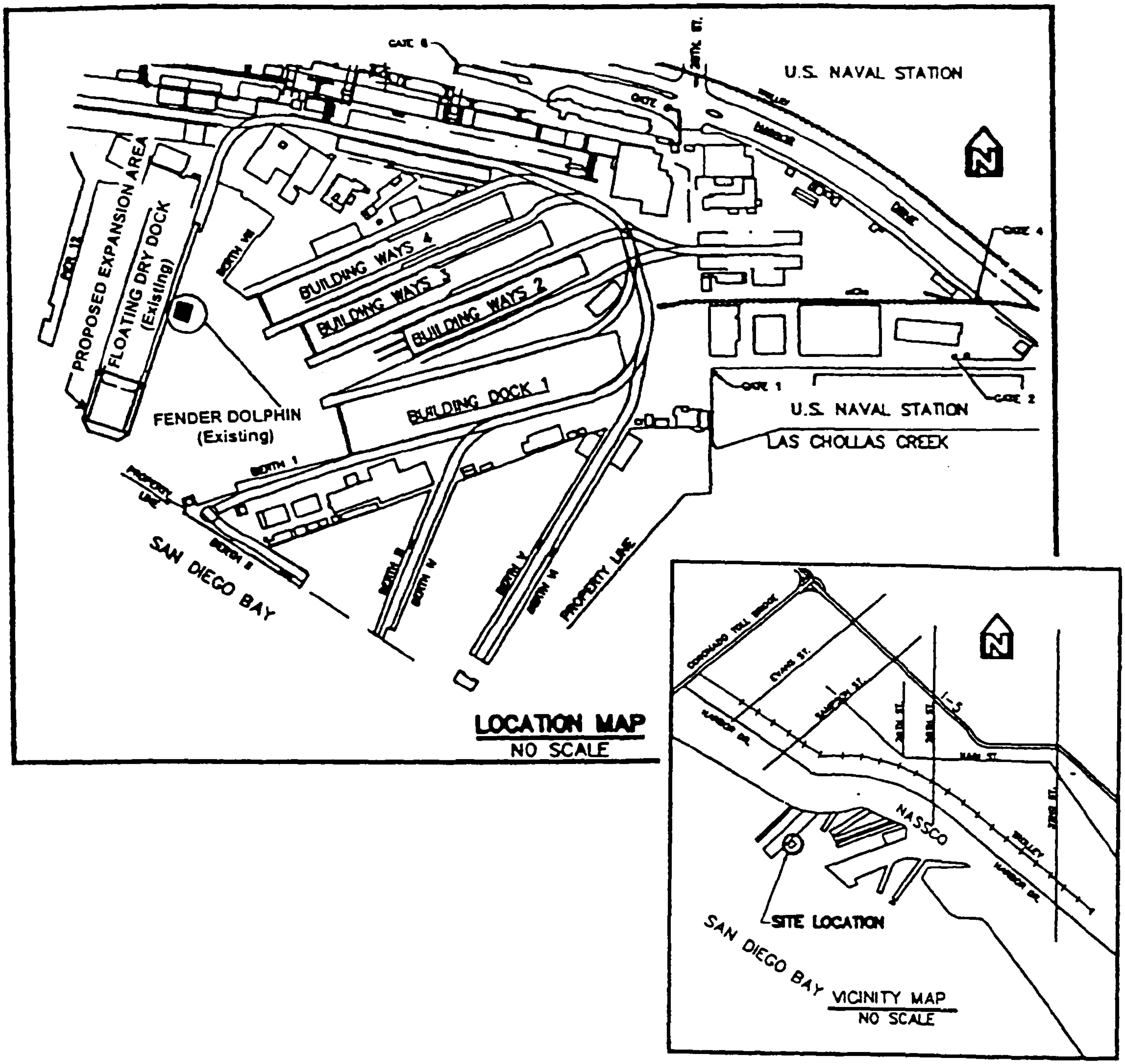


FIGURE 1
REGIONAL AND SITE MAP
FIGURE 1
REGIONAL AND SITE MAP

NASSCO DRY DOCK EXPANSION PROJECT
SAN DIEGO BAY, CALIFORNIA
NASSCO DRY DOCK EXPANSION PROJECT
SAN DIEGO BAY, CALIFORNIA

EHC 004323

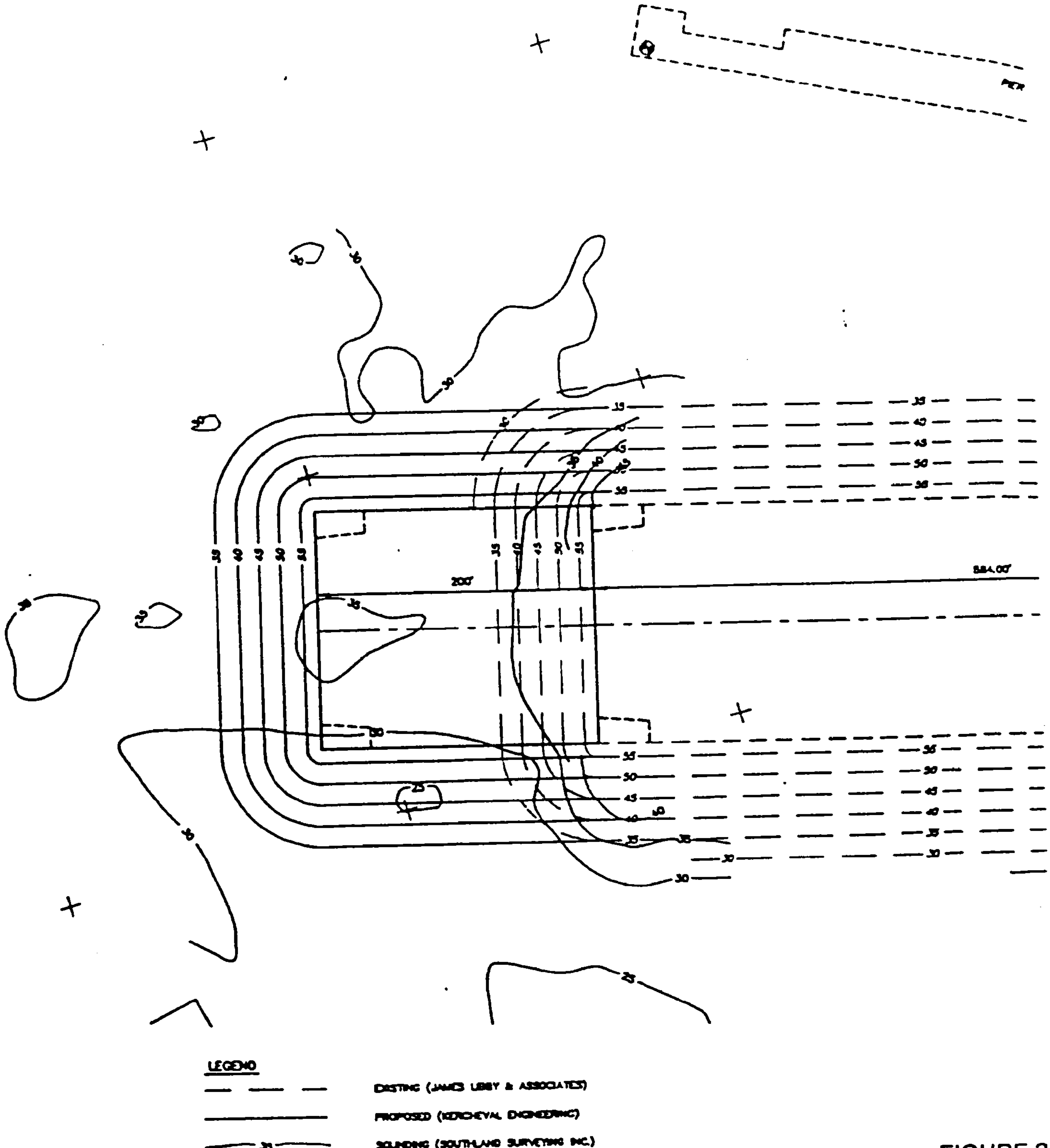


FIGURE 2
PROPOSED DREDGE AREA

NASSCO DRY DOCK EXPANSION PROJECT
SAN DIEGO BAY, CALIFORNIA

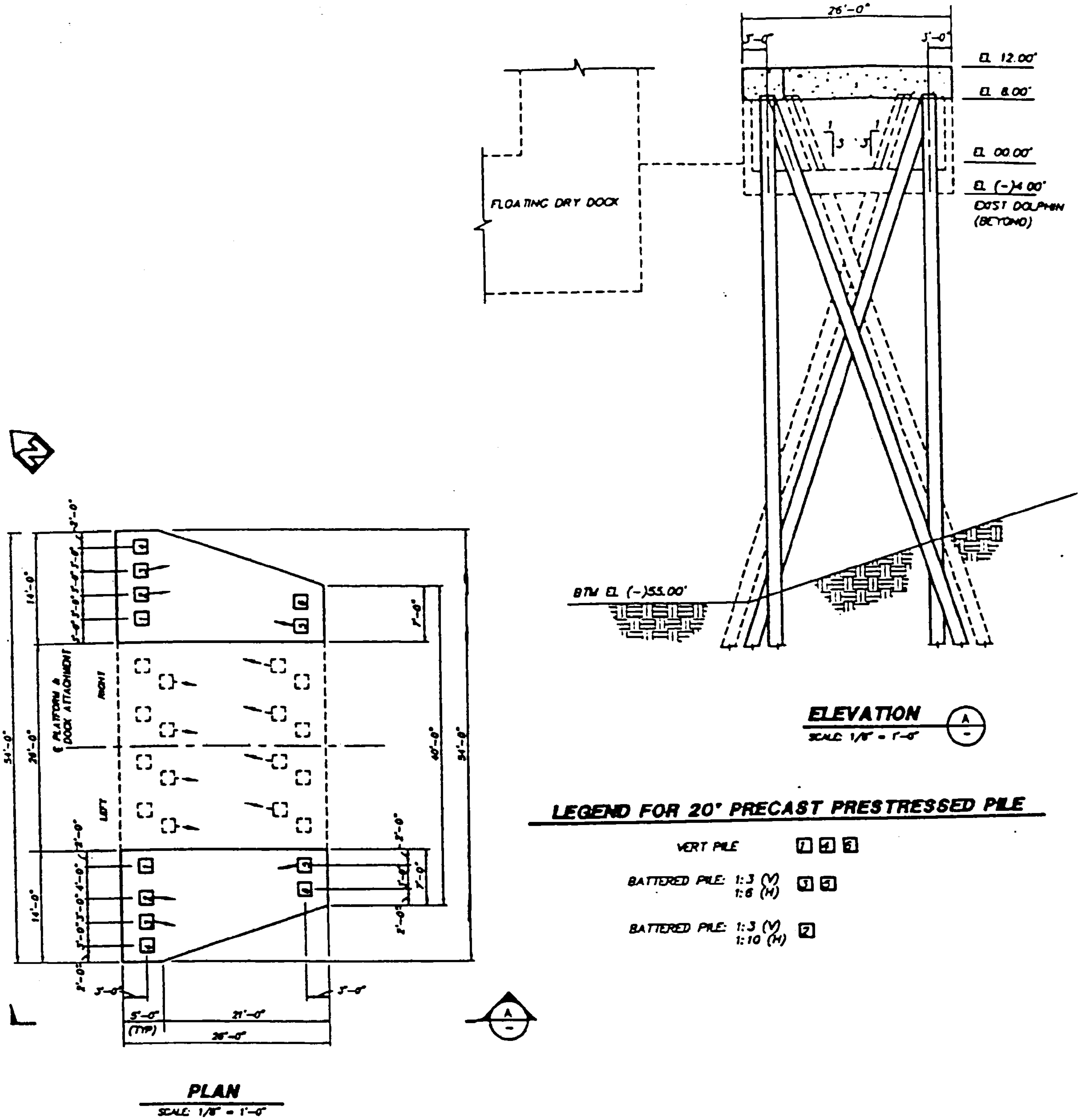
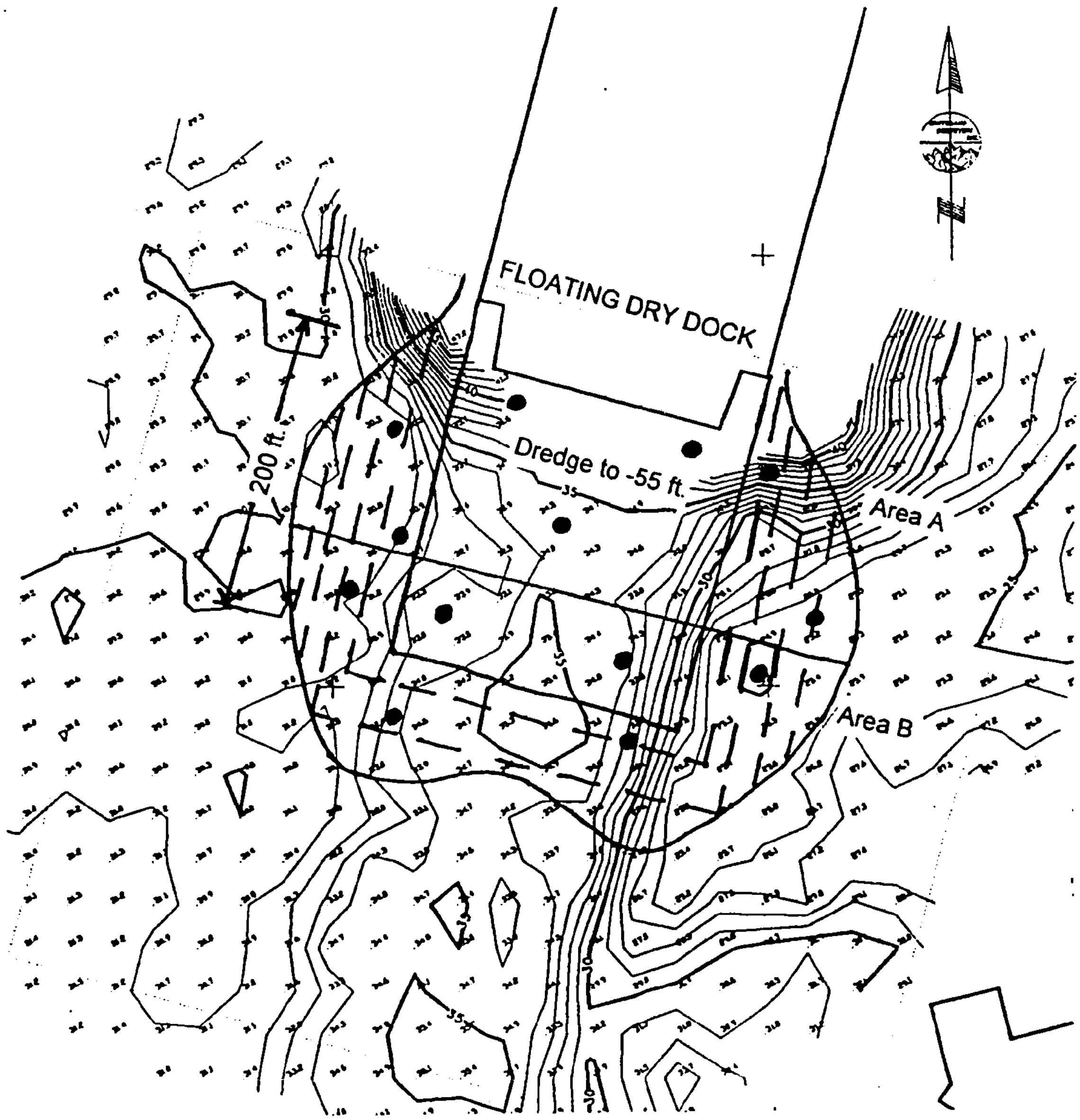


FIGURE 3
CROSS-SECTION AND PLAN VIEWS OF MODIFIED FENDER DOLPHIN

NASSCO DRY DOCK EXPANSION PROJECT
SAN DIEGO BAY, CALIFORNIA



Bathymetry as of February 1997 (Depth in feet, MLLW)

● Core Sample Locations

FIGURE 4 (Revised)

PROJECT SITE AND SAMPLING STATIONS

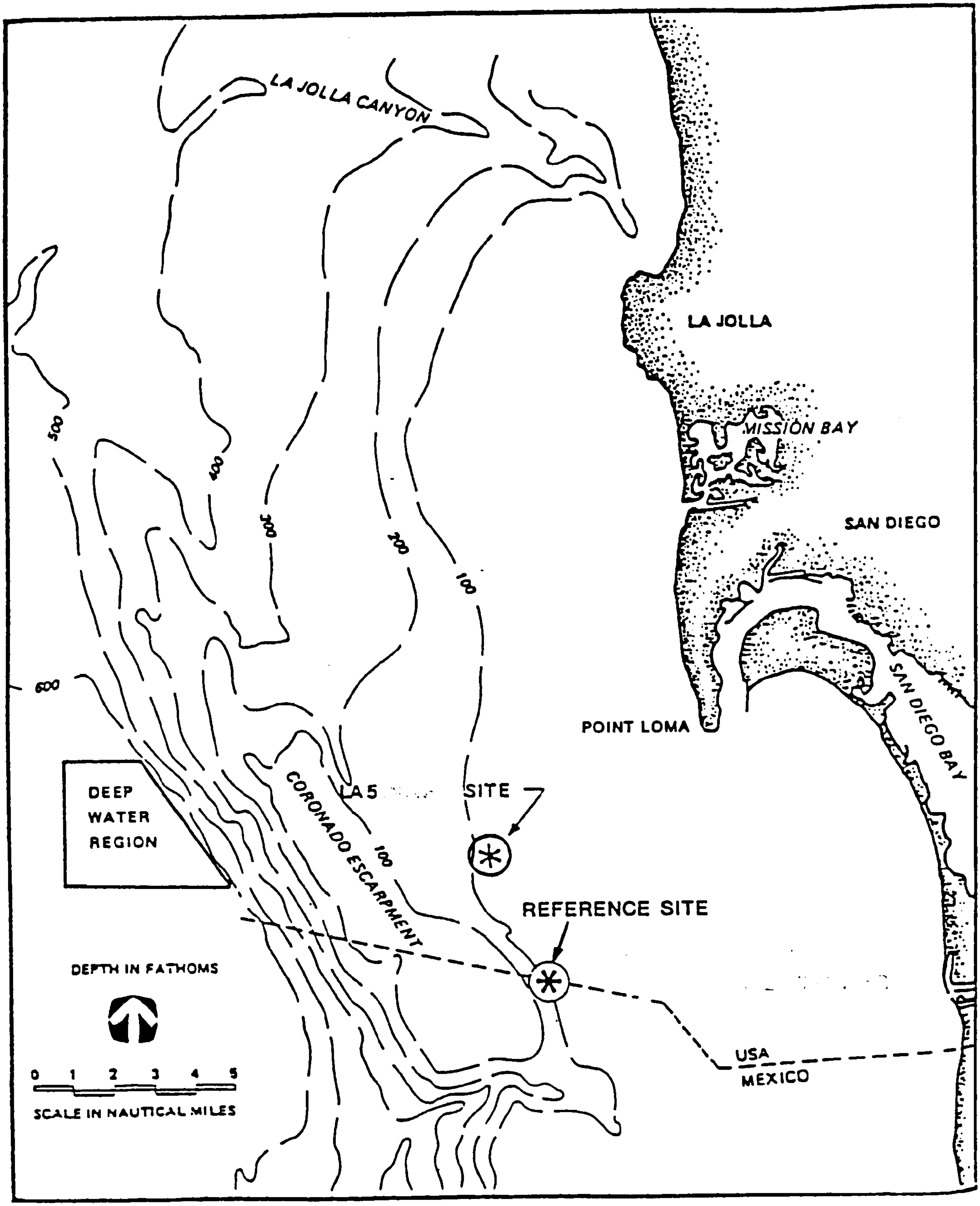


FIGURE 5. MAP OF THE PROJECT AREA

ask
LH
about

TABLE 3

SUMMARY OF SEDIMENT CHARACTERIZATION
NASSCO Drydock

Analyte (1)	Site	LA-5 Reference	1 Top	2 Top	1/2 Bot	Detection Achvd	Limit Reqd (2)
Grain size (%)							
Gravel		0.3	11.3	11.6	4.8		
Sand		34.1	59.5	49.3	72.3		
Silt		53.9	15.9	18.4	16.3		
Clay		11.7	13.4	20.7	6.6		
Solids (%) (Dry Wt.)		66.0	69.9	64.5	83.1		0.1
Sulfides (mg/kg)							
Total		0.2	17.7	28.5	ND	0.1	0.5
Water Soluble		ND	ND	ND	ND	0.1	0.1
Total Organic Carbon (%)		0.97	0.86	1.10	0.25		0.1
TRPH (mg/kg)		6	92	115	42	1.0	0.1
Organotins (ug/kg)							
Tributyltin		ND	ND	ND	ND	1.0	1.0
Dibutyltin		ND	2.1	1.7	ND	1.0	1.0
Monobutyltin		ND	ND	ND	ND	1.0	1.0
Tetrabutyltin		ND	ND	ND	ND	1.0	1.0
Metals (mg/kg)							
Arsenic (As)		1.5	2.9	2.2	1.1	0.1	0.1
Cadmium (Cd)		0.18	0.30	0.67	ND	0.1	0.1
Chromium (Cr)		22	25	37	14		0.1
Copper (Cu)		8.6	80	49	8.1		0.1
Lead (Pb)		3.9	25	31	1.7		0.1
Mercury (Hg)		ND	0.52	0.79	0.05	0.02	0.02
Nickel (Ni)		11	7.2	11	4.3		0.1
Selenium (Se)		ND	ND	ND	ND	0.1	0.1
Silver (Ag)		ND	0.344	0.59	ND	0.1	0.1
Zinc (Zn)		33	120	120	23		0.1
Pesticides and PCBs (ug/kg)							
Aldrin		ND	ND	ND	ND	2.0	2.0
Alpha-BHC		ND	ND	ND	ND	2.0	2.0
Beta-BHC		ND	ND	ND	ND	2.0	2.0
Gamma-BHC		ND	ND	ND	ND	2.0	2.0
Delta-BHC		ND	ND	ND	ND	2.0	2.0
Chlordane		ND	ND	ND	ND	20.0	20.0
4,4' - DDD		ND	ND	ND	ND	2.0	2.0
4,4' - DDE		ND	ND	ND	ND	2.0	2.0
4,4' - DDT		ND	ND	ND	ND	2.0	2.0
Dieldrin		ND	ND	ND	ND	2.0	2.0
Endosulfan I		ND	ND	ND	ND	2.0	2.0
Endosulfan II		ND	ND	ND	ND	2.0	2.0
Endosulfan Sulfate		ND	ND	ND	ND	2.0	2.0
Endrin		ND	ND	ND	ND	2.0	2.0
Endrin Aldehyde		ND	ND	ND	ND	2.0	2.0
Heptachlor		ND	ND	ND	ND	2.0	2.0
Heptachlor Epoxide		ND	ND	ND	ND	2.0	2.0
Methoxychlor		ND	ND	ND	ND	2.0	20.0
Toxaphene		ND	ND	ND	ND	25.0	25.0
PCB Arochlor 1016		ND	ND	ND	ND	20.0	20.0
PCB Arochlor 1221		ND	ND	ND	ND	20.0	20.0
PCB Arochlor 1232		ND	ND	ND	ND	20.0	20.0
PCB Arochlor 1242		ND	ND	ND	ND	20.0	20.0
PCB Arochlor 1248		ND	ND	ND	ND	20.0	20.0
PCB Arochlor 1254		ND	ND	ND	ND	20.0	20.0
PCB Arochlor 1260		ND	ND	ND	ND	20.0	20.0

(1) All chemical analyses are given as dry weight basis.
(2) Detection limits required by USACOE.

TABLE 6

Mytilus edulis
SUMMARY OF RESULTS FOR THE ELUTRIATE TEST
NASSCO Drydock

Concentration (%)	Total Larvae/mL	% Survival	LC50 (%)	% Abnormal	IC50 (%)
Control	24.0	94.9		4.7	
Site 1 - T					
1	18.6	73.5	7? <100	4.0	<100
10	15.4	60.9		0.0	
50	15.8	62.5		2.0	
100	15.6	61.7		1.3	
Site 2 - T					
1	16.0	63.2	67	2.4	<100
10	17.4	68.8		2.3	
50	17.2	68.0		5.6	
100	3.8	15.0		32.2	
Site 1/2 - Bot					
1	17.7	70.0	7? <100	1.9	<100
10	15.2	60.1		2.8	
50	19.1	75.5		5.4	
100	15.3	60.5		3.5	

TABLE 9

Mysidopsis bahia
SURVIVAL DATA FOR ELUTRIATE TEST
NASSCO Drydock

Concentration (%)	Rep	Initial Added	Day 1	Day 2	Day 3	Day 4	% Survival	Average % Survival
Control	1	10	10	10	10	9	90	
	2	10	9	9	9	9	90	
	3	10	10	10	10	10	100	
	4	10	10	10	10	10	100	
	5	10	9	9	9	9	90	94.0
1 - Top								
1	1	10	10	10	10	9	90	
	2	10	10	10	10	10	100	
	3	10	8	8	8	8	80	
	4	10	10	10	10	8	80	
	5	10	10	10	10	9	90	88.0
10	1	10	10	10	10	10	100	
	2	10	10	10	10	10	100	
	3	10	10	10	10	10	100	
	4	10	10	10	10	9	90	
	5	10	10	10	10	10	100	98.0
50	1	10	10	10	10	8	80	
	2	10	10	10	10	10	100	
	3	10	10	10	10	9	90	
	4	10	10	10	10	10	100	
	5	10	10	10	10	9	90	92.0
100	1	10	10	10	10	10	100	
	2	10	10	10	10	9	90	
	3	10	10	10	10	9	90	
	4	10	10	10	10	10	100	
	5	10	10	10	10	10	100	96.0
2 - Top								
1	1	10	10	9	10	9	90	
	2	10	10	10	10	10	100	
	3	10	9	9	9	9	90	
	4	10	10	10	10	10	100	
	5	10	10	10	10	10	100	96.0
10	1	10	10	10	10	10	100	
	2	10	10	10	10	10	100	
	3	10	10	10	10	10	100	
	4	10	10	10	10	9	90	
	5	10	10	10	10	10	100	98.0
50	1	10	10	10	10	10	100	
	2	10	10	10	10	9	90	
	3	10	10	10	10	10	100	
	4	10	10	10	10	10	100	
	5	10	10	10	10	10	100	98.0
100	1	10	10	10	10	10	100	
	2	10	10	10	10	9	90	
	3	10	10	10	10	10	100	
	4	10	10	10	10	10	100	
	5	10	10	10	10	9	90	96.0

TABLE 9 (Cont'd)

Mysidopsis bahia
SURVIVAL DATA FOR ELUTRIATE TEST
NASSCO Drydock

Concentration (%)	Rep	Initial Added	Day 1	Day 2	Day 3	Day 4	% Survival	Average % Survival
1/2 - Bot								
1	1	10	10	10	10	10	100	
	2	10	10	10	10	9	90	
	3	10	10	10	10	10	100	
	4	10	10	10	10	10	100	
	5	10	10	10	10	10	100	98.0
10	1	10	10	10	10	10	100	
	2	10	10	10	10	10	100	
	3	10	10	10	10	10	100	
	4	10	10	10	10	8	80	
	5	10	10	10	10	9	90	94.0
50	1	10	10	10	10	10	100	
	2	10	10	10	10	8	80	
	3	10	9	9	9	8	80	
	4	10	10	10	10	9	90	
	5	10	10	10	10	10	100	90.0
100	1	10	10	10	10	8	80	
	2	10	10	10	10	10	100	
	3	10	10	10	10	9	90	
	4	10	10	10	10	8	80	
	5	10	10	10	10	10	100	90.0

TABLE 12

Citharichthys stigmaeus
SURVIVAL DATA FOR ELUTRIATE TEST
NASSCO Drydock

Concentration (%)	Rep	Initial Added	Day 1	Day 2	Day 3	Day 4	% Survival	Average % Survival
Control	1	10	9	9	9	9	90	
	2	10	9	9	9	9	90	
	3	10	9	9	9	9	90	
	4	10	9	8	8	8	80	
	5	10	9	9	9	9	90	88.0
1 - Top								
1	1	10	9	9	9	9	90	
	2	10	9	9	9	9	90	
	3	10	9	9	9	9	90	
	4	10	9	9	9	9	90	
	5	10	9	9	9	9	90	90.0
10	1	10	10	10	10	10	100	
	2	10	10	10	10	10	100	
	3	10	10	10	10	10	100	
	4	10	10	10	10	10	100	
	5	10	10	10	10	10	100	100.0
50	1	10	10	10	10	10	100	
	2	10	10	10	10	10	100	
	3	10	10	10	10	10	100	
	4	10	10	10	10	10	100	
	5	10	10	10	10	10	100	100.0
100	1	10	10	10	9	9	90	
	2	10	10	10	10	10	100	
	3	10	10	10	10	10	100	
	4	10	10	10	10	10	100	
	5	10	10	10	10	10	100	98.0
2 - Top								
1	1	10	9	9	9	9	90	
	2	10	9	9	9	9	90	
	3	10	9	9	9	9	90	
	4	10	9	9	9	9	90	
	5	10	9	9	9	9	90	90.0
10	1	10	10	10	10	10	100	
	2	10	10	10	10	10	100	
	3	10	10	10	10	10	100	
	4	10	10	10	9	9	90	
	5	10	10	10	10	10	100	98.0
50	1	10	10	10	10	10	100	
	2	10	10	10	10	10	100	
	3	10	10	10	10	10	100	
	4	10	9	9	9	9	90	
	5	10	10	10	10	10	100	98.0
100	1	10	7	7	7	7	70	
	2	10	9	9	9	9	90	
	3	10	10	10	10	10	100	
	4	10	10	10	10	10	100	
	5	10	10	10	10	10	100	92.0

TABLE 12 (Cont'd)

Citharichthys stigmaeus
SURVIVAL DATA FOR ELUTRIATE TEST
NASSCO Drydock

Concentration (%)	Rep	Initial Added	Day 1	Day 2	Day 3	Day 4	% Survival	Average % Survival
1/2 - Bot								
1	1	10	9	9	9	9	90	
	2	10	9	9	9	9	90	
	3	10	9	9	9	9	90	
	4	10	9	9	9	9	90	
	5	10	9	9	9	9	90	90.0
10	1	10	9	9	9	9	90	
	2	10	9	9	9	9	90	
	3	10	9	9	9	9	90	
	4	10	9	9	9	9	90	
	5	10	9	9	9	9	90	90.0
50	1	10	9	9	9	9	90	
	2	10	9	9	9	9	90	
	3	10	10	10	10	10	100	
	4	10	10	10	10	10	100	
	5	10	10	10	10	10	100	96.0
100	1	10	10	10	10	10	100	
	2	10	9	9	9	9	90	
	3	10	9	9	9	9	90	
	4	10	9	9	9	9	90	
	5	10	9	9	9	9	90	92.0

TABLE 15

Ampelisca abdita
10-DAY SURVIVAL IN THE SOLID PHASE BIOASSAY
NASSCO Drydock

Site	Rep	Initial Added	Total Number Surviving	% Survival
Control	1	20	17	85.0
	2	20	16	80.0
	3	20	19	95.0
	4	20	18	90.0
	5	20	20	100.0
				90.0
LA-5 Reference	1	20	18	90.0
	2	20	20	100.0
	3	20	20	100.0
	4	20	18	90.0
	5	20	19	95.0
				95.0
1 - Top	1	20	18	90.0
	2	20	15	75.0
	3	20	19	95.0
	4	20	18	90.0
	5	20	17	85.0
				87.0 *
2 - Top	1	20	11	55.0
	2	20	10	50.0
	3	20	10	50.0
	4	20	10	50.0
	5	20	11	55.0
				52.0 *
1/2 - Bot	1	20	11	55.0
	2	20	19	95.0
	3	20	17	85.0
	4	20	17	85.0
	5	20	18	90.0
				82.0 *

* Significantly different from reference.

TABLE 18

Mysidopsis bahia
10-DAY SURVIVAL IN THE SOLID PHASE BIOASSAY
NASSCO Drydock

Site	Rep	Initial Added	Total Number Surviving	% Survival
Control	1	10	9	90.0
	2	10	9	90.0
	3	10	8	80.0
	4	10	9	90.0
	5	10	10	100.0
				90.0
LA-5 Reference	1	10	9	90.0
	2	10	8	80.0
	3	10	8	80.0
	4	10	8	80.0
	5	10	9	90.0
				84.0
Site 1 - T	1	10	8	80.0
	2	10	8	80.0
	3	10	7	70.0
	4	10	9	90.0
	5	10	7	70.0
				78.0 *
Site 2 - T	1	10	9	90.0
	2	10	9	90.0
	3	10	8	80.0
	4	10	9	90.0
	5	10	8	80.0
				86.0
Site 1/2 Bot	1	10	8	80.0
	2	10	9	90.0
	3	10	9	90.0
	4	10	8	80.0
	5	10	8	80.0
				84.0

* Statistically significant from reference.

TABLE 20

Nephtys caecoides
10-DAY SURVIVAL IN THE SOLID PHASE BIOASSAY
NASSCO Drydock

Site	Rep	Initial Added	Total Number Surviving	% Survival
Control	1	10	9	90.0
	2	10	10	100.0
	3	10	8	80.0
	4	10	10	100.0
	5	10	10	100.0
				94.0
LA-5 Reference	1	10	10	100.0
	2	10	10	100.0
	3	10	9	90.0
	4	10	10	100.0
	5	10	5	50.0
				88.0
1 - Top	1	10	8	80.0
	2	10	10	100.0
	3	10	9	90.0
	4	10	7	70.0
	5	10	10	100.0
				88.0
2 - Top	1	10	8	80.0
	2	10	9	90.0
	3	10	10	100.0
	4	10	8	80.0
	5	10	10	100.0
				90.0
1/2 - Bot	1	10	8	80.0
	2	10	9	90.0
	3	10	7	70.0
	4	10	7	70.0
				77.5

Advanced Biological Testing Inc.

TA Tab6 23

BIOACCUMULATION SUMMARY
NASSCO Drydock
Tissue Burden
(mg/kg wet weight unless indicated)

Species-Rep	*Nephtys caecoides* As	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Zn	Pesticides (µg)	Aroclors (µg)	TRPH	% Lipids
C-1	3.240	0.120	0.480	0.990	0.080	0.010	0.420	1.450	0.160	17.000	1.000	10.000	100	1.070
C-2	2.870	0.173	0.360	1.150	0.130	0.010	0.450	1.430	0.010	21.800	1.000	10.000	1020	2.130
C-3	3.200	0.190	0.410	1.320	0.110	0.010	0.520	1.320	0.010	22.600	1.100	10.000	1230	1.350
C-4	3.760	0.230	0.480	1.910	0.210	0.010	0.590	1.720	0.210	24.100	1.000	10.000	800	1.610
C-5	3.210	0.170	0.400	1.490	0.080	0.010	0.470	1.410	0.010	23.100	0.600	10.000	820	0.920
Mean	3.256	0.177	0.426	1.372	0.122	0.010	0.490	1.466	0.080	21.720	0.940	10.000	794	1.416
Var	0.102	0.002	0.003	0.125	0.003	0.000	0.004	0.023	0.010	7.657	0.038	0.000	180880	0.229
LA-5-1	3.130	0.240	0.430	1.980	0.090	0.010	0.750	1.280	0.010	23.600	1.900	10.000	390	1.700
LA-5-2	3.650	0.170	0.420	1.650	0.120	0.010	0.580	1.460	0.010	22.400	2.000	10.000	610	1.030
LA-5-3	4.310	0.240	0.650	1.660	0.160	0.010	0.760	1.980	0.020	24.700	1.800	10.000	450	1.060
LA-5-4	3.580	0.210	0.470	2.260	0.150	0.010	0.540	1.780	0.010	23.500	1.600	10.000	190	0.790
LA-5-5	2.980	0.210	0.420	1.460	0.130	0.010	0.750	1.550	0.010	21.800	1.800	10.000	410	1.010
Mean	3.530	0.214	0.478	1.802	0.130	0.010	0.676	1.610	0.012	23.200	1.820	10.000	410	1.118
Var	0.272	0.001	0.010	0.100	0.001	0.000	0.011	0.075	0.000	1.275	0.022	0.000	22600	0.117
1 Top-1	3.330	0.190	0.430	1.540	0.190	0.020	0.570	1.450	0.010	23.600	1.000	61.000	190	0.960
1 Top-2	3.100	0.230	0.700	1.650	0.080	0.030	0.430	1.300	0.030	32.300	1.300	68.000	400	0.820
1 Top-3	2.910	0.210	0.450	1.490	0.090	0.010	0.460	1.170	0.020	23.300	1.000	10.000	100	0.300
1 Top-4	3.860	0.190	0.410	2.180	0.110	0.030	0.420	1.320	0.010	19.700	1.100	49.000	110	0.510
1 Top-5	3.500	0.160	0.500	1.950	0.050	0.020	0.410	1.420	0.040	15.400	1.000	54.000	120	0.340
Mean	3.340	0.196	0.498	1.762	0.104	0.022	0.458	1.332	0.022	22.860	1.080	48.400	184	0.586
Var	0.135	0.001	0.014	0.086	0.003	0.000	0.004	0.012	0.000	38.873	0.017	512.300	15830	0.086
2 Top-1	3.340	0.240	0.560	1.210	0.070	0.020	0.390	1.150	0.020	25.100	1.000	49.000	310	0.710
2 Top-2	4.050	0.210	0.650	1.540	0.060	0.020	0.410	1.240	0.020	27.400	1.300	67.000	760	1.330
2 Top-3	2.560	0.180	0.430	1.270	0.050	0.010	0.440	1.640	0.010	25.900	0.900	45.000	860	0.710
2 Top-4	3.470	0.200	0.560	1.220	0.060	0.010	0.670	1.160	0.040	16.400	1.000	68.000	180	0.830
2 Top-5	3.870	0.230	0.420	1.340	0.090	0.010	0.780	1.370	0.010	21.900	1.000	47.000	100	0.500
Mean	3.458	0.212	0.524	1.316	0.066	0.014	0.538	1.312	0.020	23.340	1.040	55.200	442	0.816
Var	0.335	0.001	0.010	0.018	0.000	0.000	0.031	0.041	0.000	19.093	0.023	128.200	119720	0.097
1/2 Bot-1	3.400	0.170	0.470	1.180	0.100	0.020	0.870	1.780	0.000	22.300	1.000	10.000	130	0.300
1/2 Bot-2	3.110	0.210	0.330	1.200	0.060	0.030	0.540	1.860	0.000	24.300	1.000	15.000	640	1.020
1/2 Bot-3	3.890	0.240	0.590	1.270	0.120	0.010	0.660	1.420	0.040	23.800	1.000	60.000	170	0.690
1/2 Bot-4	2.880	0.220	0.390	1.370	0.090	0.010	0.710	1.310	0.030	23.200	1.000	10.000	100	0.210
Mean	3.320	0.210	0.445	1.255	0.093	0.018	0.695	1.593	0.018	23.400	1.000	23.750	260	0.555
Var	0.190	0.001	0.013	0.007	0.001	0.000	0.019	0.072	0.000	0.740	0.000	589.583	65000	0.140

Notes: An underlined number is the detection limit.
Metals and TRPH are in mg/kg dry weight; pesticides and PCBs are in µg/kg dry weight

TABLE [illegible] (cont'd)
Table 23
BIOACCUMULATION
NASSCO Drydock
Tissue Burden
(mg/kg wet weight unless indicated)

Species-Rep	*Macoma nasuta* As	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Zn	Pesticides (µg)	Aroclors (µg)	TRPH	% Lipids
C-1	3.480	0.059	0.730	9.670	0.560	0.024	1.450	0.920	0.080	30.100	2.000	10.000	100	0.810
C-2	3.870	0.087	0.890	13.900	0.510	0.020	1.490	0.900	0.076	26.400	2.000	10.000	340	1.010
C-3	3.910	0.075	0.870	13.500	0.480	0.017	1.610	0.880	0.069	25.100	0.700	10.000	820	0.390
C-4	3.670	0.050	0.730	10.200	0.440	0.016	1.430	0.840	0.055	26.200	2.000	10.000	1050	0.610
C-5	4.700	0.070	0.960	12.300	0.570	0.010	1.540	1.100	0.059	29.600	2.000	10.000	510	0.740
Mean	3.926	0.068	0.836	11.914	0.512	0.017	1.504	0.928	0.068	27.480	1.740	10.000	564	0.712
Var	0.217	0.000	0.010	3.645	0.003	0.000	0.005	0.010	0.000	4.957	0.338	0.000	142530 ?	0.053
LA-5-1	3.990	0.050	0.970	12.600	0.550	0.025	2.010	1.100	0.040	20.100	1.600	10.000	220	0.650
LA-5-2	4.340	0.080	0.890	14.400	0.790	0.015	1.640	1.320	0.100	21.800	9.200	10.000	240	1.390
LA-5-3	3.230	0.057	0.990	15.300	1.130	0.012	1.540	0.880	0.050	31.200	1.200	10.000	100	0.570
LA-5-4	4.340	0.070	0.870	11.600	0.980	0.025	1.790	0.990	0.030	27.800	1.800	10.000	100	0.560
LA-5-5	3.670	0.080	0.980	12.300	0.870	0.024	2.150	1.540	0.078	31.700	0.900	10.000	280	0.420
Mean	3.914	0.067	0.940	13.240	0.864	0.020	1.826	1.166	0.060	26.520	2.940	10.000	188	0.718
Var	0.224	0.000	0.003	2.393	0.047	0.000	0.064	0.070	0.001	28.467	12.368	0.000	6920 ?	0.148
1 Top-1	3.3400	0.0660	0.8500	13.1000	0.5600	0.0100	1.7700	0.9300	0.0600	34.7000	2.000	58.000	100	0.5600
1 Top-2	4.1200	0.0760	0.7600	14.9000	0.9000	0.0200	2.0000	1.1400	0.0800	35.4000	5.800	53.000	560	0.7600
1 Top-3	3.7700	0.0590	0.9900	11.4000	0.4500	0.0200	2.0500	0.9800	0.0700	23.4000	1.800	57.000	190	0.3500
1 Top-4	3.6500	0.0610	1.0000	11.3000	0.5000	0.0300	1.9800	0.8700	0.0300	22.9000	1.100	53.000	220	0.3200
1 Top-5	3.8700	0.0800	0.9600	14.1000	0.4300	0.0100	2.2500	0.8600	0.0900	23.4000	5.100	59.000	250	0.6200
Mean	3.7500	0.0684	0.9120	12.9600	0.5680	0.0180	2.0100	0.9560	0.0660	27.9600	3.160	56.000	264	0.5220
Var	0.0825	0.0001	0.0108	2.5680	0.0370	0.0001	0.0294	0.0129	0.0005	41.9930	4.543	8.000	30530 ?	0.0345
2 Top-1	3.4500	0.0730	0.9300	13.2000	0.3200	0.0300	1.9400	0.8800	0.0400	29.1000	2.400	54.000	350	0.7500
2 Top-2	3.2200	0.0680	0.8900	14.6000	0.2300	0.0200	1.8600	0.9700	0.0300	35.8000	1.300	40.000	410	0.4300
2 Top-3	3.4500	0.0690	0.9400	19.3000	0.5400	0.0100	1.5700	1.0500	0.0700	26.6000	2.200	62.000	1080	0.8300
2 Top-4	3.6600	0.0610	0.9100	15.2000	0.6700	0.0100	1.4900	1.1000	0.0800	25.3000	2.000	33.000	100	0.2300
2 Top-5	3.9800	0.0720	0.9300	11.0000	0.7500	0.0100	1.8300	0.9400	0.0500	28.7000	2.000	49.000	180	0.4600
Mean	3.5520	0.0686	0.9200	14.6600	0.5020	0.0160	1.7380	0.9880	0.0540	29.1000	1.980	47.600 ?	424	0.5400
Var	0.0815	0.0000	0.0004	9.3380	0.0496	0.0001	0.0385	0.0077	0.0004	16.4350	0.172	130.300	150130	0.0607
1/2 Bot-1	3.8000	0.0590	0.9400	16.0000	1.0100	0.0200	1.2100	1.0700	0.0600	32.1000	1.800	28.000	220	0.4000
1/2 Bot-2	3.9100	0.0730	0.7900	24.1000	0.6700	0.0000	1.5600	0.9600	0.0900	31.8000	0.700	16.000	570	0.8100
1/2 Bot-3	3.7100	0.0550	0.8800	21.1000	0.4400	0.0200	1.5900	1.0800	0.1000	33.2[illegible]0	4.500	67.000	100	0.7500
1/2 Bot-4	3.4400	0.0780	0.9300	19.4000	0.4500	0.0100	1.4100	1.0200	0.0400	36.2[illegible]0	5.200	62.000	160	0.6000
Mean	3.7150	0.0663	0.8850	20.1500	0.6425	0.0125	1.4425	1.0325	0.0725	33.3250	3.050	43.250 ?	263	0.6400
Var	0.0403	0.0001	0.0047	11.4300	0.0713	0.0001	0.0302	0.0030	0.0008	4.0358	4.603	630.250 ?	44425 ?	0.0334

Notes: An underlined number is the detection limit.
Metals and TRPH are in mg/kg dry weight; pesticides and PCBs are in µg/kg dry weight

Table 23

BIOACCUMULATION
NASSCO Drydock
Tissue Burden
(mg/kg wet weight unless indicated)

Species-Rep	*Macoma nasuta* As	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Zn	Pesticides (µg)	Aroclors (µg)	TRPH	% Lipids
C-1	3.480	0.059	0.730	9.670	0.560	0.024	1.450	0.920	0.080	30.100	2.000	10.000	100	0.810
C-2	3.870	0.087	0.890	13.900	0.510	0.020	1.490	0.900	0.076	26.400	2.000	10.000	340	1.010
C-3	3.910	0.075	0.870	13.500	0.480	0.017	1.610	0.880	0.069	25.100	0.700	10.000	820	0.390
C-4	3.670	0.050	0.730	10.200	0.440	0.016	1.430	0.840	0.055	26.200	2.000	10.000	1050	0.610
C-5	4.700	0.070	0.960	12.300	0.570	0.010	1.540	1.100	0.059	29.600	2.000	10.000	510	0.740
Mean	3.926	0.068	0.836	11.914	0.512	0.017	1.504	0.928	0.068	27.480	1.740	10.000	564	0.712
Var	0.217	0.000	0.010	3.645	0.003	0.000	0.005	0.010	0.000	4.957	0.338	0.000	142530 ?	0.053
LA-5-1	3.990	0.050	0.970	12.600	0.550	0.025	2.010	1.100	0.040	20.100	1.600	10.000	220	0.650
LA-5-2	4.340	0.080	0.890	14.400	0.790	0.015	1.640	1.320	0.100	21.800	9.200	10.000	240	1.390
LA-5-3	3.230	0.057	0.990	15.300	1.130	0.012	1.540	0.880	0.050	31.200	1.200	10.000	100	0.570
LA-5-4	4.340	0.070	0.870	11.600	0.980	0.025	1.790	0.990	0.030	27.800	1.800	10.000	100	0.560
LA-5-5	3.670	0.080	0.980	12.300	0.870	0.024	2.150	1.540	0.078	31.700	0.900	10.000	280	0.420
Mean	3.914	0.067	0.940	13.240	0.864	0.020	1.826	1.166	0.060	26.520	2.940	10.000	188	0.718
Var	0.224	0.000	0.003	2.393	0.047	0.000	0.064	0.070	0.001	28.467	12.368	0.000	6920 ?	0.148
1 Top-1	3.3400	0.0660	0.8500	13.1000	0.5600	0.0100	1.7700	0.9300	0.0600	34.7000	2.000	58.000	100	0.5600
1 Top-2	4.1200	0.0760	0.7600	14.9000	0.9000	0.0200	2.0000	1.1400	0.0800	35.4000	5.800	53.000	560	0.7600
1 Top-3	3.7700	0.0590	0.9900	11.4000	0.4500	0.0200	2.0500	0.9800	0.0700	23.4000	1.800	57.000	190	0.3500
1 Top-4	3.6500	0.0610	1.0000	11.3000	0.5000	0.0300	1.9800	0.8700	0.0300	22.9000	1.100	53.000	220	0.3200
1 Top-5	3.8700	0.0800	0.9600	14.1000	0.4300	0.0100	2.2500	0.8600	0.0900	23.4000	5.100	59.000	250	0.6200
Mean	3.7500	0.0684	0.9120	12.9600	0.5680	0.0180	2.0100	0.9560	0.0660	27.9600	3.160	56.000	264	0.5220
Var	0.0825	0.0001	0.0108	2.5680	0.0370	0.0001	0.0294	0.0129	0.0005	41.9930	4.543	8.000	30530 ?	0.0345
2 Top-1	3.4500	0.0730	0.9300	13.2000	0.3200	0.0300	1.9400	0.8800	0.0400	29.1000	2.400	54.000	350	0.7500
2 Top-2	3.2200	0.0680	0.8900	14.6000	0.2300	0.0200	1.8600	0.9700	0.0300	35.8000	1.300	40.000	410	0.4300
2 Top-3	3.4500	0.0690	0.9400	19.3000	0.5400	0.0100	1.5700	1.0500	0.0700	26.6000	2.200	62.000	1080	0.8300
2 Top-4	3.6600	0.0610	0.9100	15.2000	0.6700	0.0100	1.4900	1.1000	0.0800	25.3000	2.000	33.000	100	0.2300
2 Top-5	3.9800	0.0720	0.9300	11.0000	0.7500	0.0100	1.8300	0.9400	0.0500	28.7000	2.000	49.000	180	0.4600
Mean	3.5520	0.0686	0.9200	14.6600	0.5020	0.0160	1.7380	0.9880	0.0540	29.1000	1.980	47.600 ?	424	0.5400
Var	0.0815	0.0000	0.0004	9.3380	0.0496	0.0001	0.0385	0.0077	0.0004	16.4350	0.172	130.300	150130	0.0607
1/2 Bot-1	3.8000	0.0590	0.9400	16.0000	1.0100	0.0200	1.2100	1.0700	0.0600	32.1000	1.800	28.000	220	0.4000
1/2 Bot-2	3.9100	0.0730	0.7900	24.1000	0.6700	0.0000	1.5600	0.9600	0.0900	31.8000	0.700	16.000	570	0.8100
1/2 Bot-3	3.7100	0.0550	0.8800	21.1000	0.4400	0.0200	1.5900	1.0800	0.1000	33.2000	4.500	67.000	100	0.7500
1/2 Bot-4	3.4400	0.0780	0.9300	19.4000	0.4500	0.0100	1.4100	1.0200	0.0400	36.2000	5.200	62.000	160	0.6000
Mean	3.7150	0.0663	0.8850	20.1500	0.6425	0.0125	1.4425	1.0325	0.0725	33.3250	3.050	43.250 ?	263	0.6400
Var	0.0403	0.0001	0.0047	11.4300	0.0713	0.0001	0.0302	0.0030	0.0008	4.0358	4.603	630.250 ?	44425 ?	0.0334

Notes: An underlined number is the detection limit.
Metals and TRPH are in mg/kg dry weight; pesticides and PCBs are in µg/kg dry weight

EHC 004339

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December 22, 1997

BY FAX

TO: CHRIS GONOVER 338-2001

FROM: LAURA HUNTER

RE: EHC COMMENTS ON PROPOSED FISH SAMPLING PLAN

Chris,
Please see attached letter from Clean Bay Campaign Director Dan McKirnan regarding the Pilot Sampling Plan for fish in San Diego Bay. Although the letter is not on EHC letterhead, it is official EHC correspondence. We request that the County revise the sampling procedures, processing, and analysis in accordance with these comments. Have a good holiday.

Thank you.

Laura

Laura Hunter

December 19, 1997

Chris Gonaver, Chief
Community Services and Planning Division
Department of Environmental Health
County of San Diego

Dear Chris:

Thank you for responding to my comments regarding the "County Fish Study for the Port of San Diego" in your letter of November 7. Subsequentlyy, we requested a study review and discussion wtih Rusty Fairey of Moss Landing Marine Labs. Several additional questions and comments were generated in this process. They were as follows:

1. You indicated that the study was also designed to be a human health risk assessment. The scope of this pilot study is much too limited to provide a health risk assessment.

2. Are the number of fish sampled the same as the original health risk study? It is important to have the same numbers if these studies are to be compared.

3. Sampling sites for radionuclides will include a potential source site and a non-source site. The source site with the highest potential would be in the sub base. Shouldn't this site be considered.

4. In performing a screen for radionuclides, what is the level of concern? This should be established first and then it should be determined whether the gamma ray spectrometer will measure these levels.

5. Sample processing. Has money also been appropriated for collecting and preparing the samples?

6. Sample processing. Will samples be processed with skin off or on? As you know the fat below the skin accumulates Dioxins and PCBs. Consumption patterns should dictate the approach for this analysis.

7. Does the spotted sand bass serve as a representative species of all fish consumed from the bay? The fat content of the species will determine the Dioxin and PCB levels.

8. Can you provide detections limits for PCBs and congener specific analysis such that toxicity equivalents can be determined.

9. Can you provide an analyte list and detection limits for Dioxins? And PCBs?

10. QA for sample analysis should be included to insure accurate measurements. It has been recomended that 10% of samples be a blinded QA sample.

11. Consideration should be given to the analysis of the pesticide Chlordane since it was found to be in high concentrations in bay sediments. It can be obtained from the same extracted fraction as PCBs and most labs are able to provide this measurement at the same time

I hope you will consider these additional questions and comments as you proceed with the fish study. Thank You!

Sincerely,

Dan McKirnan

M. Dan McKirnan, Ph.D.
EHC, Clean Bay Campaign

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

STAFF REPORT
FOR
CLEANUP AND ABATEMENT ORDER NO. 98-08

ISSUED TO

THE AEROSTRUCTURES GROUP OF BF GOODRICH AEROSPACE (formerly ROHR, INC.) AND THE BF GOODRICH COMPANY

Written By

Karen Travis Zachary
Water Resource Control Engineer
Site Mitigation and Cleanup Unit

March 26, 1998

EXECUTIVE SUMMARY

Cleanup and Abatement Order (CAO) No. 98-08 was issued to require the Aerostructures Group of BF Goodrich Aerospace, formerly called Rohr, Inc. (Rohr) and Rohr's owner, The BF Goodrich Company of Ohio, to address the effects of contaminated discharges to San Diego Bay and sitewide ground water contamination. San Diego Bay waters flow in and out the storm water conveyance system beneath Rohr's operations daily. Rohr has affirmed that approximately 1/3 of the storm water conveyance system has been cleaned to date. Areas of known ground water contamination are in close proximity to these storm drains and other potential preferential pathways and may explain the elevated levels of metals reported in storm water/tidal water at Rohr's property line. While some areas of petroleum, chlorinated solvent, and metals contamination have been identified and characterized over many years, the sources and sitewide extent of all known problems have not been found. The SDRWQCB has asked Rohr, in coordination with the County of San Diego, for improved assessment efforts including performing 'sitewide assessment,' and Rohr has not responded voluntarily.

In addition to the direct and continuing threat to the beneficial uses of San Diego Bay, there are additional reasons why CAO No. 98-08 has been issued:

- Longstanding concerns about historic discharges or infiltration of contamination into the aged storm water conveyance system serving the site,
- Sensitive riparian areas, including a National Wildlife Refuge, lie on three sides of their facility,
- The City of Chula Vista and Port of San Diego has active redevelopment plans for the Chula Vista waterfront area,
- Rohr has already publicly disclosed to shareholders that the SDRWQCB was conducting an investigation, and
- Potential for site management instability due to recent merger with BF Goodrich.

Because protection of the beneficial uses of San Diego Bay and riparian areas are critical, the primary focus of this limited order is to assess both the storm water quality and the integrity of the storm water conveyance system. Presently, in addition to requiring improved storm water testing (already required by the General Industrial Storm Water Permit) and investigation of the storm water conveyance system itself, CAO No. 98-08 requires submissions of environmental 'due diligence' information, a compilation of isolated monitoring data, and a development of a sitewide assessment workplan to prepare for holistically addressing the ground water contamination. Rohr already has an extensive amount of environmental due diligence data, an onsite environmental staff, and sophisticated maps to employ in their efforts to comply with the CAO. Once the required submissions are made and the prospective scope of environmental problems becomes known, future requirements may or may not be issued.

BACKGROUND AND AGENCIES CURRENTLY INVOLVED

Rohr, Inc.(Rohr) was founded in Chula Vista as Rohr Aircraft Corporation in 1940. Still headquartered in Chula Vista, Rohr has continuously engineered and manufactured structural assemblies for aircraft for nearly 60 years. In fiscal 1996, Rohr reported total revenue of $771 million and was a public corporation listed on the New York Stock Exchange. Rohr has eight operations facilities across the United States that variously perform engineering, design, tooling, manufacturing, assembly, and delivery of aircraft engine components. Rohr also operates internationally and manages "an overhaul and repair presence spanning three continents."

Rohr's Chula Vista operational activities include metal parts fabrication, degreasing, cleaning, anodizing, plating, chemical milling, conversion coating, and painting as well as leading edge manufacturing technologies. A zinc and lead foundry and a sludge treatment/recycling facility also operate onsite. In September 1997 Rohr announced a pending stock acquisition by BFGoodrich Company of Richfield, Ohio. In December 1997 BFGoodrich finalized the transaction and incorporated Rohr into the corporation as the Aerostructures Group of the Aerospace Division of BFGoodrich. Since the merger, Rohr has continued operations under the name "Aerostructures Group of BFGoodrich Aerospace" (hereinafter Rohr).

Rohr has operated continuously at this Chula Vista waterfront location. In the early 1950s, the Chula Vista shoreline was expanded by land created from Bay fill. By the mid-1960s, Rohr had expanded westward onto the new tidelands. Subsequent fill activities over the years has resulted in the present shoreline configuration. Rohr has historically owned or leased up to 176 contiguous acres in Chula Vista. By 1969 Rohr had constructed 47 buildings. Today Rohr controls approximately 160 acres although not all the existing buildings are in use.

Rohr is currently regulated by the County Department of Environmental Health's Industrial Compliance Program, Department of Toxic Substances Control (DTSC), the Air Pollution Control District, and the SDRWQCB. Rohr is currently under the *Industrial Activities Storm Water General Permit (NPDES No. CAS000001)* and has been since July 1993. Since 1988, Rohr's known ground water contamination cleanup activities have been overseen by the County of San Diego's Local Oversight Program until July 1997 when Rohr transferred several cases to the SDRWQCB. Presently, the Site Mitigation and Cleanup Unit has taken responsibility for non-tank and chlorinated solvent issues while the County Site Assessment and Mitigation Unit continues toward resolution of tank-related petroleum and one hexavalent chrome contaminant issues.

In addition to experience with local cleanup oversight, Rohr has been directly involved in a number of larger environmental cleanups. In September 1997, Rohr's SEC 10-K disclosed that Rohr has been involved in the Stringfellow and Casmalia CERCLA Superfund cleanups and with the Rio Bravo Deep Injection Well Disposal Site State Superfund cleanup. Rohr reported that the resolution of these matters "will not have a material adverse effect on the financial position or results of operations." In the 10-K Rohr also disclosed that the DTSC was demanding $30,000 in unpaid cost recovery that was still outstanding, and that this was after DTSC had accepted a reduced monetary claim settlement on the site a year earlier. Additional disclosures regarding Rohr's Chula Vista headquarters facility describes that investigations such as spills and underground tank closures are typically conducted and named the SDRWCB and the County of San Diego as two agencies that were already "conducting certain investigations." Rohr reports that they "intend to cooperate fully with the various regulatory agencies."

SITE DESCRIPTION

The site subject to this order, is approximately bounded by F Street to the North, J Street to the South, Bay Boulevard to the East, and Sandpiper Way to the West. Approximately half of the Site is publicly owned, primarily by the San Diego Unified Port District. The balance is privately owned, primarily by Rohr. A narrow strip of land owned by San Diego Gas and Electric and San Diego and Arizona Eastern railway bisects the Site just South of Bay Boulevard. A tidal marsh, protected as a National Wildlife Refuge lies immediately west of Rohr's corporate office buildings.

The site elevation is between approximately 3 -8 feet above mean sea level throughout the site. The ground water is shallow (2' to 5' below surface) and the ground water flow gradient is east/southeast towards San Diego Bay. There are currently no public or private water supply wells located at the site or west of Interstate 5 in the surrounding area. Any sustained well production of shallow ground water at the site would likely result in saltwater intrusion. However, there are ongoing studies by the Sweetwater Authority and the County Water Authority just east of Interstate 5 in Chula Vista on the viability of ground water storage and deep water supply production within the San Diego Formation. The San Diego Formation is a large geologic formation lying approximately 50 feet beneath the surface alluvium and is over 800 feet thick. The San Diego Formation underlies the site.

APPLICABLE WATER QUALITY OBJECTIVES

The Site is located within the La Nacion Hydrologic Subarea (HSA) 9.12 of the Sweetwater Hydrologic Unit *Water Quality Control Plan for the San Diego Region 9* (Basin Plan) as amended, which was adopted by the SDRWQCB on September 8, 1994. The designated beneficial uses for ground water established by the Basin Plan in HSA 9.12 include:

Agricultural Supply (AGR)
Industrial Service Supply (IND)
Municipal and Domestic Supply (MUN)

Because of the direct threat to San Diego Bay, requirements that address surface water concerns will be the initial focus of this order. Federal and State drinking water standards called Maximum Contaminant Levels (MCLs) are used for the protection of municipal beneficial use of ground water. In fact, water quality standards for protecting many surface water beneficial uses (e.g. marine aquatic life) are generally more stringent than drinking water standards applied to ground water.

The following are designated surface water beneficial uses have been established in the Basin Plan for Sweetwater River HSA 9.12 of the Sweetwater River Watershed:

Industrial Service Supply (IND)
Potential Contact Water Recreation (REC1)
Non-contact Water Recreation (REC2)
Warm Freshwater Habitat (WARM)
Wildlife Habitat (WILD)

The Recreation and Habitat beneficial uses are the primary focus of protection in this Order.

The following are designated beneficial uses of San Diego Bay:

Commercial and Sportfishing (COMM)
Contact Water Recreation (REC1)
Estuarine Habitat (EST)
Industrial Service Supply (IND)
Marine Habitat (MAR)
Migration of Aquatic Organisms (MIGR)
Navigation (NAV)
Non-contact Water Recreation (REC2)
Preservation of Biological Habitats of Special Significance (BIOL)
Rare, Threatened, or Endangered Species (RARE)
Shellfish Harvesting (SHELL)
Wildlife Habitat (WILD)

The Commercial, Recreation, Habitats, and Rare Species beneficial uses are the primary focus of protection in this Order.

The following *are USEPA National Ambient Water Quality Criteria Saltwater Aquatic Life Protection* standards which may apply to non-storm water discharges as receiving water quality objectives for San Diego Bay:

(Micrograms/Liter = μg/L)

Constituents	*4 Day Average*	*1-Hour Average*
Arsenic	36	69
Cadmium	9.3	43
Chromium (Hexavalent)	50	1100
Copper	-	2.9
Cyanide	-	1.0
Lead	5.6	140
Mercury (inorganic)	-	2.1
Nickel	8.3	75
Selenium	71	300
Silver	-	[illegible]

Constituents	*4 Day Average*	*1-Hour Average*
Zinc	86	95

The following are select 1997 *California Ocean Plan* Standards which may apply to non-storm water discharges as either effluent limits or receiving water quality objectives or both for San Diego Bay:

(Micrograms/Liter= ug/L and Milligrams/Liter = mg/L)

Constituents	*Daily Maximum*	*Instantaneous Maximum*
Total Chlorine Residual (μg/L)	8	60
Cyanide (μg/L)	4	10
Phenolic Compounds (μg/L)	120	300
Chlorinated Phenolics (μg/L)	4	10
Grease and Oil (mg/L)	-	75
Settleable Solids (mg/L)	-	3.0
Acute Toxicity (TUa)	-	2.5
Chronic Toxicity (TUc)	1	-
pH (no units)	-	6.0 to 9.0

The "California Toxics Rule" (62 FR 42193 Proposed Section 131.*38 Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California*) proposed by US Environmental Protection Agency as replacement for the rescinded SWRCB Enclosed Bays and Estuaries and Inland Surface Water Policies may be adopted in the future. Other water quality standards already established but not listed here may also apply.

Pursuant to SWRCB Resolution No. 68-16, the SDRWQCB is required to ensure that Dischargers are required to clean up and abate the effects of discharges in a manner that promotes the attainment of background water quality, or the highest water quality which is reasonable if background levels can not be restored, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social tangible and intangible; any alternative levels less stringent than background shall:

a) be consistent with the maximum benefit to the people of the state;
b) not unreasonably affect the present and anticipated beneficial use of such water; and
c) not result in water quality less than that prescribed in the Water Quality Control Plans and Policies adopted by the State and Regional Water Boards.

SWRCB regulations governing waste discharges to land, contained in the California Code of Regulations (CCR) Title 27, require that cleanup and abatement actions intended to contain waste at the place of release shall implement the applicable provisions of that chapter, to the extent feasible

(CCR Title 27, §20090(d)). CCR Title 27 §20400 will be considered in establishing cleanup levels and undertaking corrective actions where discharges of waste are subject to CWC §13304

Pursuant to SWRCB Resolution No. 92-49, the SDRWQCB may require Rohr to conduct investigations to determine the nature and horizontal and vertical extent of a discharge(s) in a progressive sequence. The phased sequence is typically comprised of the following steps:

a) preliminary site assessment.
b) soil and water investigation,
c) proposal and selection of cleanup and abatement action (to evaluate feasible and effective cleanup and abatement actions);
d) implementation of cleanup and abatement action; and
e) monitoring of short-and long-term effectiveness of cleanup and abatement.

The requirements of this order to date are for the *preliminary site assessment* phase. Rohr has a relatively large site, a significant amount of isolated data, and apparently few environmental due diligence reports, so the SDRWQCB is initially requiring that all available records be compiled and evaluation on a sitewide approach. One of the requirements in this order is to develop a site assessment workplan for review and approval to initiate the next phase of *soil and water investigation*. Once the required submittals are reviewed and any immediate mitigation measures needed are taken, then a phased investigation that considers all site issues including cost-effectiveness, environmental impacts, and redevelopment priorities will be addressed.

VIOLATIONS

Based on the chronology of events and known contaminant concentrations existing in the environment at the Site, Rohr has caused or permitted to be caused a condition of pollution in both surface waters and ground water. Specifically, Rohr has discharged chlorinated solvents, metals, and fuel hydrocarbons to soil and ground water in multiple locations and metals into the storm water conveyance system serving the site. Other wastes associated with metal melting, metal casting, metal parts fabrication, degreasing, cleaning, anodizing, plating, chemical milling, conversion coating, painting, and sludge treatment/recycling activities may have been discharged. Discharges of waste from the storm water conveyance system (SWCS), whether from within the system or infiltrative, are carried to San Diego Bay by daily tidal flux and storm water. Discharges of waste from Rohr have caused an exceedance of water quality objectives in ground water and surface water.

EVIDENCE OF VIOLATIONS

1. A 1952 San Diego Regional Water Pollution Control Board report entitled *"Extent, Effects and Limitations of Waste Disposal into San Diego Bay"* described the then "Rohr Aircraft Company" as discharging industrial wastes directly into San Diego Bay. The report noted the now Rohr had its own separate storm drain system that discharged into the Bay. Wastes listed as being discharged include

metal-treating rinse solutions, paint, oils and solvents. Sewage and potentially other wastes from Rohr were apparently processed by the City of Chula Vista and discharged to the Bay in close proximity to the Site. In 1963, the City of Chula Vista joined the then San Diego Metropolitan Wastewater system and ceased discharging to the Bay. After 1963 through today, the City of Chula Vista no longer had any storm drain or other point source drainage system discharging to the Bay. It is not known if or when Rohr stopped discharging process wastes into its separate storm drain system.

2. In May 1974, the State Water Resources Control Board (SWRCB) adopted a *Water Quality Control Policy for the Enclosed Bays and Estuaries of California* that essentially prohibited the discharge of industrial wastewaters, exclusive of clean brine, into enclosed bays and estuaries. Subsequently Rohr applied to the SDRWQCB for an NPDES permit to discharge up to 22,500 gallons per day of filtered brine via a storm drain to San Diego Bay. In 1976 NPDES Order No. 76-39 was adopted. The permit was renewed twice (Order Nos. 81-30 and 85-42, entitled *National Pollutant Discharge Elimination System (NPDES) Order No. 85-42 CA0107859 Waste Discharge Requirements for Rohr Industries, Inc.*). Pursuant to these Orders, from 1976 to 1994, Rohr was required to implement Best Management Practices for eliminating non-storm water discharges to all storm drains. However, the Monitoring Program Requirements were limited to sampling for conventional pollutants.

3. In 1989 a San Diego Bay storm drain outfall sediment study was conducted by the San Diego State University Foundation, on behalf of the SDRWQCB. The sediment sampling was conducted outside storm drains around San Diego Bay. The Foundation's report commented on the high concentration and the combination of chromium, zinc, nickel, and copper in one sample taken from a natural Bay channel outside of one of Rohr's storm water outfalls and recommended that a 'metal fabrication' point source be investigated.

4. Since 1987, the San Diego County Department of Environmental Health Site Assessment and Mitigation Unit (County SA/M) has opened nine cases of the reported releases from Rohr. Of the nine cases, six involve fuel hydrocarbons discharged via tanks or sumps, one involves chromium releases from a below-grade salt bath, and two were opened from prior cases because chlorinated solvents were discovered. General practice by the County SA/M is to oversee each release cleanup at a given site as isolated events. County SA/M generally oversees smaller sites than Rohr's large area and Rohr's release cases were located fairly broadly over the site. Apparently since 1994, only the tank cases have been actively overseen and of those, only fuel hydrocarbons and the obvious chrome salt bath constituent releases have been investigated. Rohr has consistently declined the County SA/M and SDRWQCB requests to sample for chlorinated solvents in ground water at fuel release case sites.

5. In May 1991, the San Diego County's Hazardous Materials Management Division (County HMMD) observed zinc-contaminated wastewater entering a storm drain east of Building 1. This problem was described by the County as "recurring" and "first found in 1987." In June, the SDRWQCB joined the County HMMD to have Rohr address zinc waste inside the storm drain system. Analytical results

of storm drain sediment samples indicated that Priority Pollutant Toxic Metals were present in over 35 locations within the storm water conveyance system. Several samples exceeded the Total Threshold Limit Concentration which would characterize the sediment as hazardous waste. By letter Rohr acknowledged the storm water conveyance system contamination and proposed remedial actions including accelerating storm drain cleanout plans, removing various pipelines from the system, and investigating both "upgradient" sources and "possible contamination from coming on-site via the bay and estuary." Rohr reported in July 1992 that a portion of their storm drains had been pressure washed and some drain inlets sealed. To date, no evidence that adequately verifies the degree of cleanliness has been received by the SDRWQCB. Rohr recently concluded that one third of its known storm drain system has been pressure washed and that storm drain catchment basin cleanouts are conducted periodically.

6. Rohr notified the SDRWQCB in July 1991, that it no longer required an NPDES permit because the brine discharge was replumbed to the sanitary sewer. The SDRWQCB subsequently agreed to rescind Order No. 85-42 if Rohr would obtain coverage under the SWRCB *General Industrial Activities Storm waterPermit Order No. 91-13 DWQ* (Industrial Storm Water Permit) since there remained a potential for waste to enter the storm water conveyance system. On April 6, 1992 the SWRCB received Rohr's Industrial Storm Water Permit application. Due to continuing SDRWQCB concerns over storm drain contamination and other outstanding issues, the SDRWQCB did not adopt *An Order Rescinding Order No. 85-42 for Rohr Industries, Inc.* until October 13, 1994.

7. From a 1992 San Diego Bay sediment sampling study, some sample stations in proximity to the Site sediment were assigned a "low priority" ranking relative to other stations in the Bay. However, the *"Chemistry, Toxicity, and Benthic Community Conditions in Sediments in the San Diego Bay Region Final Report"* dated September 1996 recommended that a toxicity identification evaluation be considered in the future for Station No. 90036, the station approximately 400 feet from Rohr storm water Outfall #1). This recommendation was based on the fact that 1992 sediment and porewater toxicity testing was questionable and no benthic community analysis was known to have been performed for the area.

8. In 1996 and 1997, the County HMMD has been concerned about the large number of above ground and underground tanks that Rohr continues to claim are "exempt" from specific state regulations. In August 1997, a County HMMD inspector observed the filling of large vaults (up to 25 feet deep) that formerly held 10,000 -25,000 gallon tanks of Trichloroethane. The inspector's concern was whether proper 'closure sampling' had been performed to ensure that no releases had affected the soil and ground water beneath the deep vaults. Over 25 "tanks" are the subject of ongoing discussions with County HMMD and Rohr.

9. In 1997 the San Diego Unified Port District (Port), in conjunction with the City of Chula Vista Redevelopment Agency, issued proposed changes to the Port's Master Plan for tidelands within the City of Chula Vista. Two proposed redevelopment scenarios involving the Site, including lands

presently occupied by Rohr, are described in the *"Chula Vista Business Park Expansion and Port Master Plan Amendment" Environmental Impact Report"* dated July 1997. The scenarios involve establishing a biomedical/pharmaceutical technology park and resort hotel facilities while planning to preserve marsh areas and encourage further public use of the waterfront. The Port Master Plan Amendment was recently approved. Currently, the Port and City of Chula Vista Redevelopment Agency are actively negotiating with prospective developers and tenants and are planning to begin significant street and utility improvements at the Site.

10. In 1998, the SDRWQCB discovered that the U.S. National Wildlife Service has performed ecological and sediment monitoring of its wildlife preserves in both the Sweetwater and Tijuana River Marshes from 1989 to 1992. There are two monitoring points in the study within the F&G Street Marsh located just west of Rohr. The ecological and sediment data from the intended study is still in raw form due to funding redirections. However, review of the raw data indicates that priority pollutant metal concentrations in the sediment of the F&G Street Marsh ranked among the highest concentrations consistently observed during the monitoring period. Specifically cadmium, chromium, copper, nickel, and zinc were found to be elevated. The study needs to be completed prior to reaching any conclusions from the data however no funding is foreseen in the near future.

FINDINGS OF SURFACE WATER CONTAMINATION:

11. Since 1993, Rohr has submitted Annual Reports of storm water monitoring results pursuant to the Industrial Storm Water General Permit (superceded in April 1997 by updated SWRCB Order No. 97-03-DWQ). Rohr has delineated four primary "catchment" basins for the storm water conveyance system (SWCS). Rohr's SWCS outfall opening(s) are variously lying within the F&G Street Marsh, from 0 to 30 feet into identified tidal marine ecologies, and from approximately 400 to 1500 feet of San Diego Bay. The SWCS from Rohr primarily drains to San Diego Bay and to and several marsh areas tributary to San Diego Bay from six pipes ranging in size from 42" to 84" in diameter. Tidal waters of San Diego Bay are reportedly present inside the storm drains over 1000 feet inland beneath the Site. The SWCS collects runoff only from lands within the Site with two minor exceptions. There are apparently two upgradient or "incoming" drainage areas that contribute runoff to the system. One incoming storm drain collects runoff from a single block of Lagoon Drive. The other incoming storm drain apparently collects runoff from a limited portion of Interstate 5. Currently, Rohr collects 'storm water samples' from six "primary" outfalls near the boundaries of its operating area and also samples "incoming" storm water stations.

12. Rohr recently acknowledged that some of the storm water samples "are diluted to a greater or lesser degree by water from San Diego Bay." Storm water sampling results in Rohr's Annual Reports consistently show elevated concentrations of Total Dissolved Solids (TDS) and Priority Pollutant Toxic Metals (Metals) in nearly all samples. Many samples have TDS concentrations equivalent to seawater concentrations. In other words, Rohr confirmed that its samples results are representative of storm water commingled with tidal water beneath its site. Rohr explains that they had thought the

permit required that storm water *had* to be sampled *at the property line*. [The permit requires sampling at locations which are "representative of runoff from a site during the storm.] The incoming storm water samples from Lagoon Drive and Interstate 5 have low TDS concentrations. In addition, Rohr has not specifically acknowledged the level of metals concentrations in its samples. There has been no decrease in metal concentrations in the commingled storm water/Bay water leaving its property since Rohr began sampling in 1992/93. Of the incoming storm water sample results, the Lagoon Drive location shows relatively low metals and the Interstate 5 location has elevated metals concentrations.

13. The following are the results of commingled storm water/Bay water from recent Rohr Annual Reports submitted under the above described Industrial Storm Water General Permit. The sample results from the two identified incoming storm water flows are also listed. Because there are presently no numerical water quality standards for storm water runoff, for comparison purposes, the 1996 *USEPA National Industrial Storm Water Parameter Benchmark Values* (Benchmark Values) are listed alongside of Rohr. These Benchmark Values represent the national averages of reported storm water quality results for industrial sites across the nation.

	Outgoing Conc.	Incoming Conc:		*USEPA Nat'l Industrial*
Constituent	*Rohr*	*Lagoon Dr*	*Int. I-5*	*Benchmark Values*[1]:
Oil and Grease (mg/L)	<1 - 17	4.6	<1 - 17	15 mg/L & 7.8 mg/L[2]
Tot.Susp.Solids (mg/L)	34 - 815	22	50 - 184	100 mg/L & 163 mg/L
Cadmium (µg/L)	<1 - 38	<100	<5- <100	15.9 µg/L
Total Chromium (µg/L)	<3 - 760	<100	10- <100	(no value)
Copper (µg/L)	<3 - 740	<100	75- <100	63.6 µg/L
Lead (µg/L)	<5 -1700	<100	50- 410	81.6 µg/L
Silver (µg/L)	<5 - 57	<200	<5- <100	31.8 µg/L
Zinc (µg/L)	20 - 8110	<100	160- 590	117 µg/L

USEPA compiled these Benchmark Values for comparison (or benchmarking) purposes. Benchmark Values are <u>not</u> promulgated water quality standards or objectives for protecting water bodies. Review and comparison of these results have lead the SDRWQCB to suspect that, despite a 'dilution' effect of tidal water with Rohr's storm water runoff, the metals concentrations are at anomalously high levels. There is very likely additional sources of contamination that have not yet been identified. The water quality impacts to San Diego Bay and nearby marshes are of significant concern.

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[1] The USEPA has collected multi-sector industrial storm water permit data from states and compiled the data into national averages for use as "benchmarks" for general comparison purposes. California RWQCBs use these published statistics for reviewing industry Sampling Reduction Certification applications.

[2] Statistics from the USEPA National Storm Water Permit results solely from industries in Standard Industrial Classification Codes that manufacture transportation equipment and industrial or commercial machinery.

14. In an effort to compare Rohr's storm drain discharge quality with other San Diego Bay outfall discharges, two City of San Diego municipal storm drain outfalls were selected for comparison. One outfall is located at California Street and one is located at Crosby Street, closer to Rohr. Although these are municipal outfalls with multiple land users discharging into the system, they both discharge to the Bay and have similarly sized drainage basins with a significant proportion draining from industrial and commercial operations. [The previous finding related compared other industrial site dischargers with Rohr's data.]

The chart on the following page displays some storm drain outfall discharge quality results for comparison with Rohr:

Mean Values Measured At Outfalls During Storm Events:
1996/97 Rainy Season

Constituent	*San Diego Municipal Storm Drain at Crosby Street* 11/26/96 (Composite)	*San Diego Municipal Storm Drain at California Street* 11/21/96 (Composite)	*Rohr Sample Date: 11/21/96* (Grab)
	One Drain from ~118 acres (~52% is commercial & industrial land use)	One Drain from ~648 acres (~15% is commercial and industrial land use)	Six Drains measured from total of ~166 ac (~estimated 90% comm./industrial)
Tot. Diss.Solids (mg/L)	24	52	19,900
Tot.Susp.Solids (mg/L)	28	66	161
Cadmium (μg/L)	0.7 (Dissolved)	0.4 (Total Recov)	12 (Total Recov))
Copper (μg/L)	10 "	15 "	59 "
Lead (μg/L)	4 "	17 "	73 "
Zinc (μg/L)	120 "	60 "	1203 "

While the municipal storm drain datasets are not directly comparable, it is a 'red flag' that a single industrial facility might be causing greater impacts to marine waters than municipal storm drains.

FINDINGS OF GROUND WATER CONTAMINATION:

15. Ground water flow direction at the Site flows west-southwest towards San Diego Bay. Depth to ground water reportedly ranges from 2 to 5+ feet below ground surface. Ground water elevation beneath the Site ranges from mean sea level to 3 feet above mean sea level. A Rohr study has documented tidal influence on ground water elevation near Building 57. Contaminated ground water may be hydrologically connected to San Diego Bay through saturated soils, may follow subsurface preferential pathways, or may be entering and/or is influenced by marine and fresh waters in the storm water conveyance system.

16. The following are some of the most elevated ground water concentrations reported to date:

	(micrograms per liter -µg/L)		(4 day average)
Constituent	Max. Conc.at Rohr	California MCLs	Nat'l Ambient Saltwater Aq Life. Std
Arsenic	40	50	36
Barium	420	1000	-
Chromium (Hexavalent)	1800	50 (Total)	50
Copper	40	1300**	-
Lead	50	15**	5.6
Nickel	640	100	8.3
Zinc	140	(no MCL)	86
Benzene	46	1	-
Trichloroethene	320,000	5	
1,1,1-Trichloroethane	10,000	200	-
cis 1,2-Dichloroethene	150,000	6	-
Vinyl Chloride	25,000	0.5	-

** (are USEPA Primary Maximum Contaminant Levels)

Some of the above contaminant concentrations exceed drinking water standards for municipal beneficial use of ground water. If it is determined that contaminated ground water is hydrologically connected to surface waters, all of the above concentrations would also indicate exceedances of water quality objectives for both the neighboring tidal marshes and for San Diego Bay.

CONCLUSIONS

There is a significant amount of evidence on isolated areas ground water contamination and both direct and indirect evidence that more extensive ground water contamination exists. Despite almost 10 years of working on contaminant releases at the site, little is known about the historic source(s) of discharges that have affected ground water quality. There is also a significant amount of water quality data on the commingled storm water/Bay water. Analytical laboratory results on priority pollutant metals from SWCS samples indicate that Rohr has anomalously elevated concentrations, over and above that of others in similar industries and above comparable municipal storm water discharge quality. Rohr's SWCS ultimately discharges to San Diego Bay and, because of the shallow gradient of the aged SWCS, discharges not only during storm events but daily due to tidal flux.

Because storm water runoff from industrial activities has not been tested separately from tidal waters to date, the SDRWQCB does not know if storm water runoff is contaminated prior to reaching the storm drains or if other flows or wastes within the storm drains contribute most of the contamination. Based on recent site inspections by multiple environmental agencies, the SDRWQCB has reason to believe that the quality of Rohr's storm water runoff may turn out to be 'normal' as compared to benchmark levels for similar facilities and that storm water runoff is not the main source of the priority pollutant metals found in the storm drain discharges. A subsurface source or sources of toxic metals, possibly contaminated soil and ground water, is suspected of contributing to the high metals concentrations found in the storm drains.

A subsurface source(s) is suspected because the integrity of the SWCS is unknown, the groundwater is shallow and contaminated in many areas, and San Diego Bay waters ebb and flow daily within the storm drains, and tidal influence has been shown in ground water in at least one portion of the site. It is generally accepted that if the conditions are right, ground water will flow in and along many subsurface preferential pathways (e.g. backfilled utility trenches) throughout a site. Historic releases of zinc and other contaminants into the SWCS have been documented. Further, the SDRWQCB has evidence to suspect that other constituents, including chlorinated solvents, polyaromatic hydrocarbons, other volatile and semi-volatile organic compounds, and other, more exotic aerospace metals may be present in both the ground water and in the SWCS. Since the SWCS has not been fully assessed or cleaned, historic contaminant sources likely still remain in portions of the SWCS.

The SDRWQCB finds the need for Rohr to investigate the site and discover/determine the extent of impacts to the environment.

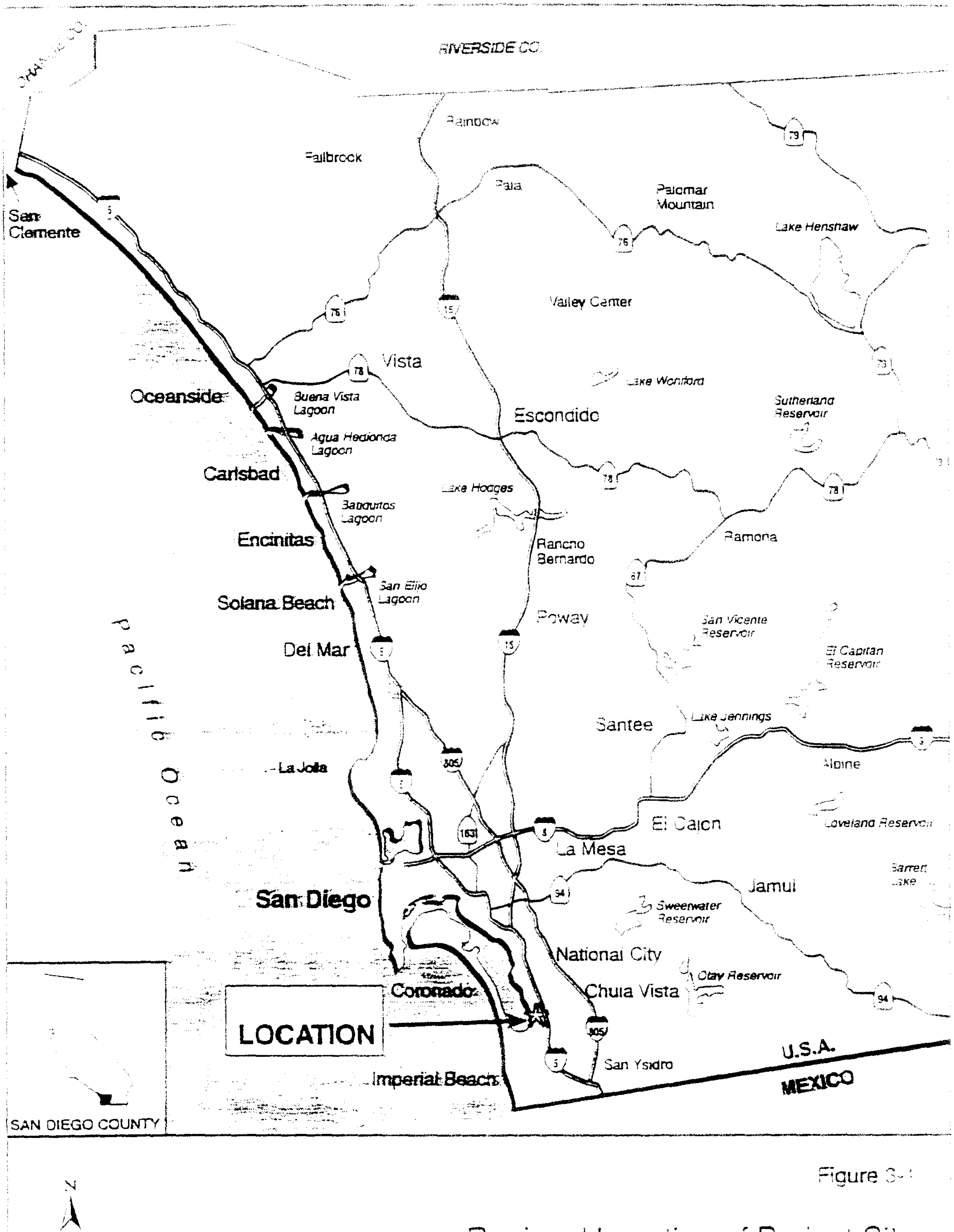
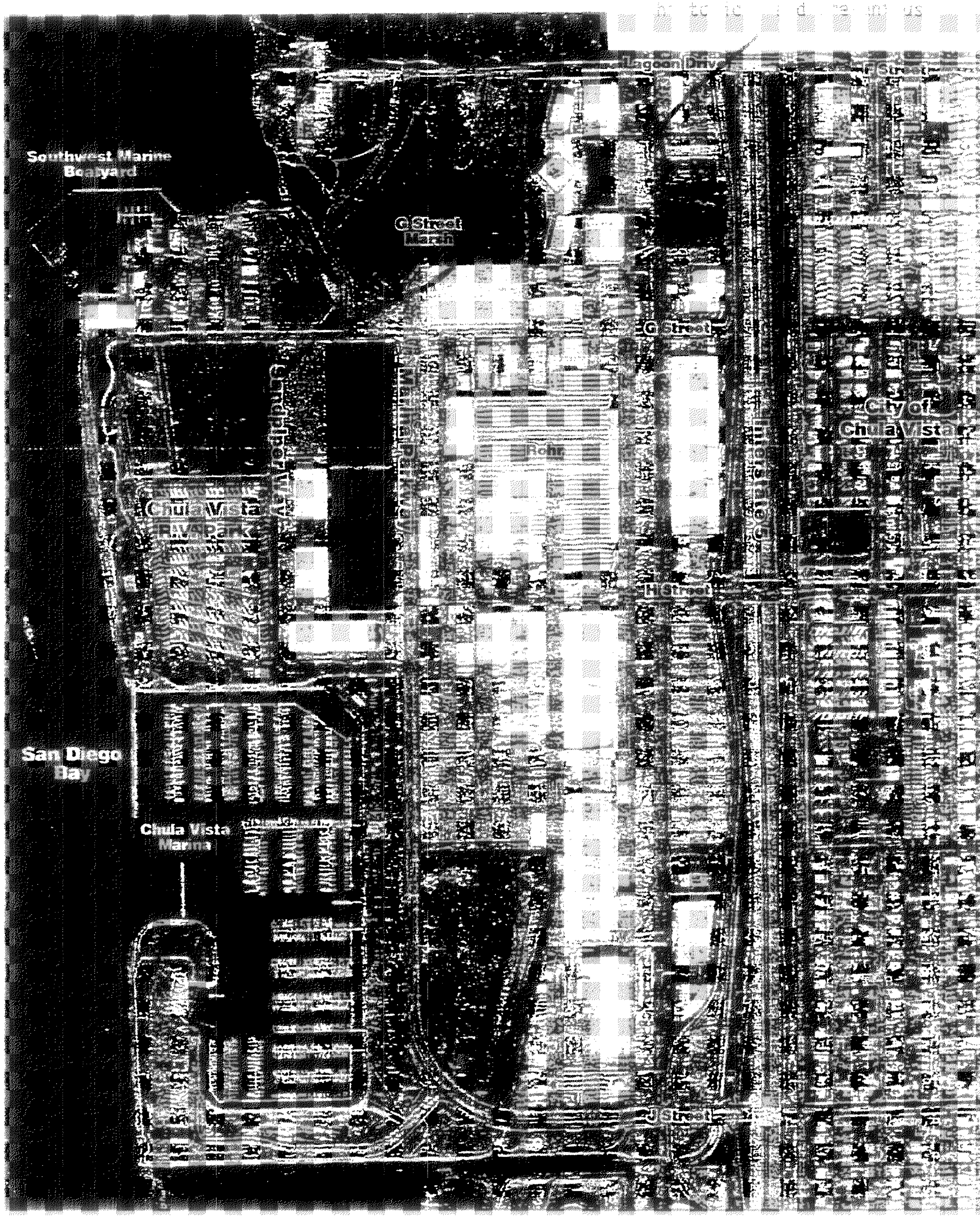


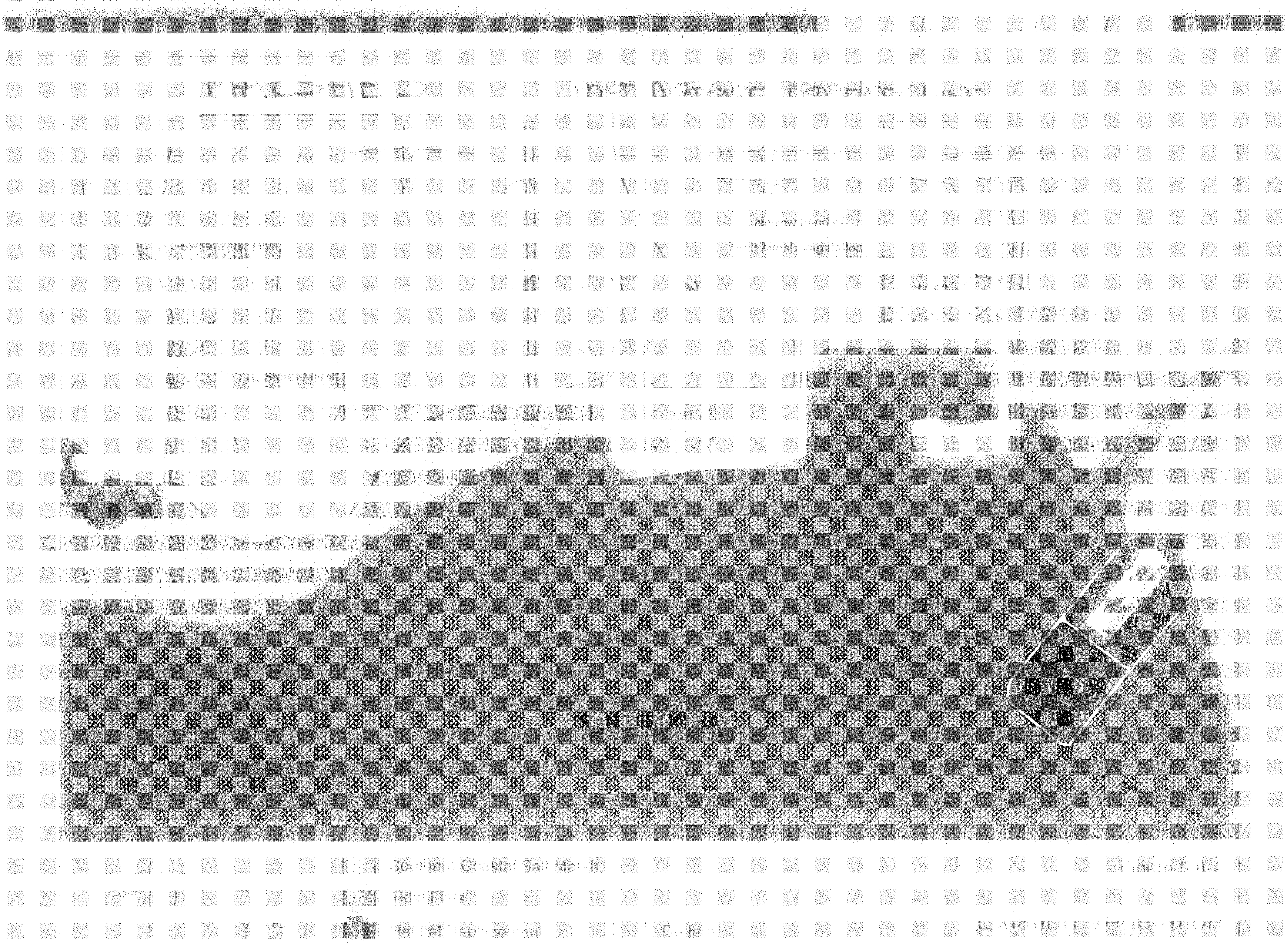
Figure 3-1

Regional Location of Project Site

Not to Scale

CUT 006682


Lagoon Drive
F Street
Southwest Marine Boatyard
G Street Marsh
G Street
City of Chula Vista
Rohr
Chula Vista RV Park
H Street
San Diego Bay
Chula Vista Marina
J Street


Southern Coastal Salt Marsh
Tidal Flats
Habitat Replacement

California Regional Water Quality Control Board

San Diego Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov/~rwqcb9
9771 Clairemont Mesa Boulevard, Suite A, San Diego, California 92124-1324
Phone (619) 467-2952 ♦ FAX (619) 571-6972

Gray Davis
Governor

CERTIFIED MAIL -- RETURN RECEIPT REQUESTED
P 222 406 859

February 17, 1999

FEB 19 1999

Mr. Sandor Halvax
Southwest Marine
P.O. Box 13308
San Diego, CA 92170-3308

Dear Mr. Halvax:

TENTATIVE SHIPYARD SEDIMENT CLEANUP LEVELS AND DREDGING WASTE DISCHARGE REQUIREMENTS

Enclosed is a copy of tentative Resolution No. 99-12, *A Resolution Establishing Shipyard Sediment Cleanup Levels for Southwest Marine, Inc., San Diego County* with staff report and tentative Order No. 99-14, *Waste Discharge Requirements for Southwest Marine, Inc., Sediment Remediation Project, San Diego County*." Also for your information is a copy of tentative Resolution No. 99-20, *A Resolution Establishing Shipyard Sediment Cleanup Levels for National Steel and Shipbuilding Company, San Diego County.* The Regional Board will consider adopting tentative Resolution Nos. 99-12 and 99-20, and tentative Order No. 99-14 on March 10, 1999. If adopted Resolution No. 99-12 would establish shipyard sediment cleanup levels for Southwest Marine, Inc. If adopted, Order No. 99-14 would establish requirements for dredging of approximately 25,000 cubic yards of material from Southwest Marine, Inc. in San Diego Bay to remediate sediment. You are welcome to comment on the tentative Resolutions and Order at or before the time of the March 10 meeting.

The March 10 Regional Board meeting will begin at 9:00 a.m. at the Rancho California Water District Board Room, 42135 Winchester Road, Temecula, California. If you have questions or comments on these tentative Resolutions, staff report, or tentative Order, please call Mrs. Kristin K. Schwall of my staff at (619) 467-2960.

Very truly yours,

David T Barker

DAVID T. BARKER
Senior Engineer

Attachments: Resolution No. 99-12 and Resolution 99-20 with staff report
Order No. 99-14 with Monitoring and Reporting Program 99-14

cc interested parties list w/ enclosures

California Regional Water Quality Control Board
San Diego Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

CERTIFIED MAIL -- RETURN RECEIPT REQUESTED
P 222 406 860

February 17, 1999

T. Michael Chee, Manager
Environmental Engineering
National Steel and Shipbuilding Company
P.O. Box 85278, MS 20-J
San Diego, CA 92186-5278

Dear Mr. Chee:

TENTATIVE SHIPYARD SEDIMENT CLEANUP LEVELS AND DREDGING WASTE DISCHARGE REQUIREMENTS

Enclosed is a copy of tentative Resolution No. 99-20, *A Resolution Establishing Shipyard Sediment Cleanup Levels for National Steel and Shipbuilding Company, San Diego County* with staff report. Also enclosed for your information is tentative Order No. 99-14 *Waste Discharge Requirements for Southwest Marine, Inc., Sediment Remediation Project, San Diego County* and tentative Resolution No. 99-12, *A Resolution Establishing Shipyard Sediment Cleanup Levels for Southwest Marine, Inc., San Diego County.* The Regional Board will consider adopting the tentative Resolutions and tentative Order on March 10, 1999. If adopted Resolution Nos. 99-20 and 99-12 would establish shipyard sediment cleanup levels for National Steel and Shipbuilding Company and Southwest Marine, Inc. If adopted, Order No. 99-14 would establish requirements for dredging of approximately 25,000 cubic yards of material from Southwest Marine, Inc. in San Diego Bay to remediate sediment. You are welcome to comment on the tentative Resolutions and Order at or before the time of the March 10 meeting.

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Very truly yours,

David T Barker

DAVID T. BARKER
Senior Engineer

Attachments: Resolution No. 99-12 and Resolution No. 99-20 with staff report
Order No. 99-14 with Monitoring and Reporting Program 99-14

cc interested parties list w/ enclosures

ENVIRONMENTAL HEALTH COALITION
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March 25, 1999

Mr. John Robertus
Regional Water Quality Control Board
9771 Clairemont Mesa Blvd, Suite A
San Diego, CA 92124

RE: Opposition to proposed sediment cleanup levels for NASSCO and SWM

Dear Mr. Robertus:

Environmental Health Coalition (EHC) **strongly opposes** the cleanup levels for the shipyard remediation projects as proposed by the staff. These levels will not provide adequate protection for the beneficial uses of San Diego Bay and their adoption will not expedite cleanup at the shipyards. These lenient standards will allow highly toxic sediments to remain in the Bay. If not remediated, toxic sediments become a on-going source of bay water quality pollution. Sediments become resuspended and chemicals can re-dissolve in the water and, thus, continually contaminate the food chain and impair the beneficial uses of the Bay. Many of the chemicals in these areas are persistent and bioaccumulative in nature. These kinds of chemicals do not "go away"; they must be removed.

Campbell and Shelter Island sediment cleanup levels are inappropriately applied.

Campbell's levels were adopted under different circumstances, were part of a larger cleanup level package, and were developed as site-specific levels for a yard that is very different than the other commercial shipyards. They are not applicable without site specific analysis to the other shipyard areas. The wastes at the larger shipyards are present in larger amounts and of a different type. Further, the current voluntary effort did not adopt all of the levels for Campbells including such constituents as HPAH, Total PAH, and TBT.

We also wish to remind all parties that the Campbell's levels were **never intended** for broad based application at other areas in the Bay. The last provision in CAO 95-21 states *"The cleanup levels in the order are applicable for cleanup at the Campbells Shipyard and shall not be construed* *to be applicable or transferable to any other location"* The intention of the Board was clear, without new site-specific data, these levels were not to be transferred.

The staff has already acted improperly by allowing the shipyards to base their sediment investigations on two Campbell's cleanup levels. This means the investigation of the site is too limited to be adequate.

New standards should reflect the most updated knowledge.

There were many differences about the collective knowledge of the condition of San Diego Bay between now and 1995 when the levels were adopted. When the Campbell's levels were established we **did not have:**

- the benefit of the Bay Protection and Cleanup Report results and analysis,
- the peer reviewed article on the findings that found that the most heavily contaminated site in the Bay were the commercial and naval shipyards,
- the 1998 NOAA assessment that found that San Diego Bay has the second most toxic sediments in the nation,
- a sense of the magnitude of other assaults on the Bay including records of the excessive oil spills from the Navy,
- an assessment of the impacts of the amount of new nuclear activity that would be present in the Bay, and finally,
- we didn't have the benefit of independent expert analysis other than from the dischargers.

We also did not have an independent assessment of the appropriateness of the AET levels for the Southwest Marine site. We now have additional information that the AET levels **are not** protective of the Bay. We refer you to the letters filed on this subject by San Diego Baykeeper. Especially note the testimony of experts that found the area near Southwest Marine to be **"devoid of life"**.

Further, we know that there are continuing pollutant contributions from the shipyards. In its February 24, 1999 letter, NASSCO states *"We believe we have demonstrated that these sediment conditions were created as a result of past practices ..."*. We now know that this is not the case. We also know through the findings of the court case and testing results that have been taken at SWM, highly toxic runoff has come off of the shipyards and has continued to pollute the Bay. Recent inspection reports from NASSCO reveal continued poor housekeeping practices.

The staff needs to integrate the Bay Protection results with all other data collected in the area.

In the hearing, we heard several statements that needed clarification or more complete analysis. There are several areas in and near the shipyard leaseholds that demonstrated toxicity in the Bay Protection data as well as data collected by the shipyards and compliance monitoring results. All of this data should be collated, located on one map and considered together so that a very protective sediment cleanup standard can be established. Staff should analyze the findings of the Environmental Toxicology and Chemistry article (Vol.17, No. 8, pp1570-

81,1998), the Bay Protection Report, and the NOAA study carefully. Stations like 93211 demonstrated degraded benthics and station 93179 demonstrated repeat toxicity. Also, if a station is a Site of Concern according to the Regional Board's Toxic Hotspot Cleanup Plan, such as station 93181, it should also be considered. We refer staff to the chart on page 138 and 139 in the San Diego Bay Protection Report. Further, the staff should revisit the mussel watch data which found that mussels at the four shipyards were accumulating metals in mussels.

Standards should protect all designed beneficial uses, not just marine habitat (MAR)

EHC disputes the claim in the response to comments document that *"If the MAR use is protected, the other uses will also be protected"* This is not necessarily the case. Fish contaminated with PCBs do not automatically die. If levels are low enough, it may not even effect their reproduction. However, with bioaccumulative and bioconcentrating chemicals, several of which are contaminating the shipyard sites, the cumulative impact to other beneficial uses such as fish consumption are of grave concern. The sediment levels should be selected with the explicit goal of protecting **all** of the designated beneficial uses of the Bay.

The Bay needs stronger action than ~~we~~ was determined to be necessary in 1995

Due to the new independent data collected by the state that tells us the Bay is worse than we knew, the Board should require **more protective** cleanup actions for all future cleanups of the Bay. Further, the standards need to protect more than one beneficial use (the current plan attempts to "protect" only one). This is an especially important point when establishing level for bioaccumulative and persistent toxics like mercury, PCBs, and TBT as mentioned above.

Interim levels will not result in immediate cleanup activities as envisioned by the Board.

EHC believes the interim levels will not result in early cleanup action. We expect that the Shipyards will not move forward with cleanup under "interim" cleanup standards for two reasons. First, the cost of mobilizing dredging equipment will not want to be incurred more than once. Second, the shipyards will want to limit, or at least know the limits, of their cleanup liability. This will cause them not to proceed until the shipyards know the full extent of the cleanup that they will be required to do. Therefore, in the name of establishing "interim" cleanup limits that are not protective of San Diego Bay, the cleanup will not begin as outlined in the "voluntary" agreement. And, because it is not enforceable, the Board cannot compel activity.

The Shipyards "have the money"

Almost daily the newspaper carries more information about how many huge contracts NASSCO and SWM have been awarded. Both shipyards have a backlog of orders. NASSCO has a $1.6 **billion** backlog of work orders that will ensure work until 2006. Southwest Marine has ~$65 million in back orders. The yards also share a $500 million Navy contract. With the coming of the nuclear carriers, the workload and contract awards are likely to increase even further. It is also possible that the two shipyards may consolidate and become one mega-repair facility under one national company. All claims of we-can't-afford-full-and-protective-cleanup, should fall of deaf ears.

In short, the shipyards have the money and the responsibility to clean up this problem

once and, we hope, for all.

The Regional Board has an obligation to direct cleanup of pollution in San Diego Bay and to protect **all** its designated beneficial uses. The "interim" levels do not provide an adequate level of protection. Therefore, we make the following recommendations which would protect San Diego Bay:

EHC recommends:

1. Regional Board issue a Cleanup and Abatement Order so that progress and compliance can be ensured.

A voluntary approach will not result in protective cleanup of the Bay. In its January 21, 1998 letter to the Regional Board, NASSCO discusses their commitment to "voluntary" cleanup. It states, in part, *"NASSCO has indicated that they are prepared to make a written offer to perform the remediation on a voluntary basis, subject to approve of the Campbell sediment criteria, upon which their assessment is based."* This means that NASSCO is only interested in cooperating if the cleanup levels are sufficiently weak to require hardly any cleanup. This is not how we will achieve a clean San Diego Bay.

2. Regional Board adopt the most protective sediment cleanup level, the ER-L or a 10% effect.

The Regional Board should try to improve the quality of the Bay as a result of this cleanup action. Adoption of the ER-L levels would go far to protect and restore health to San Diego Bay.

3. Regional Board should include a full range of protective levels for the various pollutants presently contaminating the site.

These additional levels should include TRPH, TBT, HPAH, and PCBs,

EHC vigorously opposes these "interim" levels given our current level of knowledge of the degraded state of the Bay's sediments. If the Bay is to be protected, we have got to map a different future for San Diego Bay. This is your opportunity to do so.

Sincerely,

Laura Hunter

Laura Hunter, Director
Clean Bay Campaign
cc.
Felicia Marcus, Region IX Administrator, EPA
Chairwoman Patricia McQuater and Port Commissioners
Mr. Dennis Bouey, Executive Director, San Diego Unified Port District

ENVIRONMENTAL HEALTH COALITION

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May 12, 1999

Commissioner David Malcolm
Board of Port Commissioners
San Diego Unified Port District
PO Box 120488
San Diego, CA 92112

RE: Request for Support for Designation of San Diego Bay Hotspots as High Priority for Action by the State Water Resources Control Board.

Dear Commissioner Malcolm:

Environmental Health Coalition (EHC) would like to raise an important issue for your consideration regarding the health of San Diego Bay. EHC is requesting your support for designating all five of San Diego Bay's toxic hot spots as high priority for cleanup action by the State Water Resources Control Board (State Board). The State Board will make their decision on June 3 in Sacramento.

Already the San Diego community has expressed its overwhelming support for designating all of our hot spots a high priority. Senators Dede Alpert and Steve Peace, as well as Assemblymembers Susan Davis and Howard Wayne, have each written letters of support. In addition, over 800 citizens and numerous environmental and community groups have sent postcards, letters, or e-mails to the State Board to support listing of our hotspots as a high priority for action. Further, this action is fully supported by the goals of the Comprehensive Management Plan for San Diego Bay.

Background

As you may know, the Regional Water Quality Control Board (Regional Board) recently completed a comprehensive investigation of San Diego Bay sediments as part of a statewide program to identify and cleanup toxic hot spots. This study found that we have severe to moderate toxicity throughout the Bay. The main chemicals of concern are copper, zinc, mercury, PAHs, PCBs and chlordane. A recent report from NOAA found that San Diego Bay was the second most toxic of 18 bays studied in the nation, second only to Newark Bay, New Jersey. The Regional Board identified five sites as toxic hot spots, the "worst of the worst" contaminated areas.

Unfortunately, the Regional Board only gave one of our toxic hot spots a high priority for cleanup action (see attached map). High priority for all of the Bay's five toxic hot spots is critical because only high priority sites get plans for cleanup and prevention. If no change is made to these rankings, San Diego Bay's four moderate priority sites will not get plans for remediation or prevention of recontamination under this program – even though they are still toxic hot spots. There has been no registered opposition to a high priority designation for all five sites.

Action Supports Comprehensive Management Plan for the Bay

As you know, the Bay Panel's Comprehensive Management Plan (CMP) represents years worth of effort and dedication by those interested in protecting and preserving San Diego Bay. The CMP is a great roadmap for determining policies and actions needed to safeguard the Bay's health. The recent creation of the South San Diego Bay as a National Wildlife Refuge is tangible evidence that the CMP has provided valuable guidance on the management of the Bay.

Taking action on contaminated bay sediments is also consistent with the goals and objectives of the CMP (see attached pages from CMP). Two main goals of the CMP are to protect public health and fish and wildlife. One major identified threat to human health and the environment are the contaminated condition of the Bay's sediments. Thus, the CMP assigns a high priority to cleaning up toxic sediments in its tactics. The CMP lists remediating toxic sediments as a public health priority, stating,

- Tactic 19: In the cleanup of sediments, priority should be given to sites where sediments contain elevated levels of persistent or bioaccumulative toxic contaminants.

Under the goal of protecting fish and wildlife, the CMP recommended the following actions:

- Tactic 88: Identify and remediate, where appropriate, areas of sediment contamination that adversely impact fish and wildlife resources;
- Tactic 80: Maintain water and sediment quality at levels that allow healthy and stable populations of fish, wildlife and other biota to be maintained in San Diego Bay; and
- Tactic 84: Remove pollutants prior to and/or after discharge into San Diego Bay.

Clearly, remediating our toxic sediments is a great opportunity to implement another important aspect of the CMP that follows the Panel's goals and objectives.

Requested Action

We have one last chance to change the priority rankings of our hot spots. The State Water Resources Control Board (State Board) is currently in the process of reviewing the regional cleanup plans and can change the priority ranking of our hot spots. Given that our Bay has severe toxicity of persistent, bioaccumulative contaminants, we must take action to clean these sites now.

We strongly request that you, as trustees of San Diego Bay and leaders with a demonstrated commitment to protecting the Bay, agendize this item for your next meeting and adopt a resolution supporting redesignation. In the alternative, we urge you to write the State Board individually asking them designate all of the Bay's hot spots as high priority for action. We have attached letters from local legislators and community groups for your consideration. This program allows us to take the first steps towards cleaning our Bay and making our waters "fishable and swimmable," as mandated by the Clean Water Act. We believe this action is critical to swiftly remediate these "worst of the worst" toxic sites.

We cannot afford to let pass up this opportunity to clean up our Bay. We urge your support on this important issue. Please feel free to call me or Clean Bay Associate Nicole Capretz with any questions. Thank you for your continued leadership and dedication to protecting water quality.

Sincerely,

Laura Hunter

Laura Hunter, Director
Clean Bay Campaign

cc: Dennis Bouey
Dan Wilkins
David Merk

PORT OF SAN DIEGO

Operator of Marine Terminals and San Diego International Airport
BOARD OF PORT COMMISSIONERS

May 24, 1999

Chairman James Stubchaer and State Water Resources Control Board Members
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

RE: Support for designation of toxic hotspots in San Diego Bay as a high priority for action.

Dear Chairman Stubchaer and Board Members:

I am very supportive of the State and Regional Water Boards efforts to protect water quality and to develop plans to clean up and prevent toxic hot spots in San Diego Bay. I am concerned, however, about the priority ranking of four of the known toxic hotspots as only moderate in priority. Contaminated sediments in San Diego Bay are a serious challenge for us as we try to improve the ecological health of the Bay. In addition to the state's Bay Protection and Toxic Cleanup Program study of the Bay, a recent NOAA study found significant sediment contamination problems that need to be addressed. The known toxic hotspots in San Diego Bay are a high priority for action and should be designated as such.

We are spending tremendous amounts of time and resources locally to protect San Diego Bay. Last year, as San Diego Unified Port District Chairman, I initiated and implemented several measures to protect the environmental quality of San Diego Bay. These include the creation of the South San Diego Bay National Wildlife Refuge, establishment of an Urban Runoff Task Force, and the adoption of an Integrated Pest Management Plan by the Port District. High priority designation of the existing toxic sediment hotspots are a necessary part of a comprehensive plan to restore the health of the Bay.

There is also strong community support for remediation of the sediments of San Diego Bay. The Interagency Panel for San Diego Bay, a group of more than thirty agencies and institutions, spent ten years developing a plan for protecting and preserving San Diego Bay. The *Comprehensive Management Plan* for San Diego Bay identifies cleaning up contaminated sediments as a high priority for safeguarding human health and marine life.

LH

PORT OF SAN DIEGO

Operator of Marine Terminals and San Diego International Airport

BOARD OF PORT COMMISSIONERS

Given the severe toxicity shown throughout San Diego Bay, I urge the State Board to rank all five of San Diego's hot spots in high priority. This will help us safeguard water quality and restore the Bay's health.

San Diego Bay is one of the most precious economic and environmental resources in our region. Its protection is a high priority for all of us in San Diego. Thank you for your consideration.

Sincerely,

David L. Malcolm
Commissioner

cc: Laura Hunter

(619) 686-6200, Post Office Box 488, San Diego, California 92112

ENVIRONMENTAL HEALTH COALITION
1717 Kettner Boulevard, Suite 100 • San Diego, California 92101 • (619) 235-0281 Fax (619) 232-3670

URGE STATE WATER BOARD TO DESIGNATE TOXIC HOTSPOTS IN SAN DIEGO BAY AS A HIGH PRIORITY FOR ACTION

BACKGROUND:

- The Bay Protection and Toxic Cleanup Program (BPTCP) is a statewide program intended to identify and clean up toxic hot spots in all California bays.
- While the BPTCP does not mandate cleanup and is set to expire in June 1999, primary attention will be given only to high priority sites.
- San Diego is the second most toxic bay in the nation, second only to Newark Bay, New Jersey.
- San Diego Regional Water Quality Control Board (Regional Board) designated five hot spots in the Regional Cleanup Plan. But only one was listed as a high priority, even though all five qualify.
- There are a total of over 20 high priority sites in California; San Diego has only one of those 20 high priority sites.
- According to NOAA and the state data, the most severely toxic area of the Bay is the central, industrialized portion of the Bay with shipbuilding and maintenance activities.

STATUS:

- The Regional Board has refused the request of 14 individuals and organizations, including the Dept. of Fish and Game, to designate all five hot spots as a high priority.
- The State Water Board is currently developing the requisite consolidated cleanup plan that will be a final listing of the hot spots and their priority. It is tentatively scheduled for release in April 1999.
- The BPTCP does not mandate cleanup and is set to expire in June 1999. A new bill sponsored by Assemblyman Ted Lempert, (D-San Carlos), AB 641, will extend the funding and implementation of the BPTCP.

RECOMMENDED ACTION:

- Support the listing of all five San Diego Bay hot spots as a high priority through at letter to the State Water Board on the consolidated statewide cleanup plan.
- Support AB 641, which will help ensure the cleanup of the hot spots.

BENEFITS:

As the second most toxic bay in the nation, it is imperative that we remediate the toxic sediments and ensure these sites do not become recontaminated. This program is the first step in restoring the ecological health of San Diego Bay.

CONTACT: EHC staff: Nicole Capretz, 619-235-0281

California State Senate

SENATOR
STEVE PEACE
FORTIETH SENATORIAL DISTRICT

STATE CAPITOL
SACRAMENTO, CA 95814
(916) 445-6767

7877 PARKWAY DRIVE · SUITE 1B
LA MESA, CA 91942
PHONE 619-463-0243
FAX 619-463-0240

430 DAVIDSON STREET · SUITE E
CHULA VISTA, CA 91910
PHONE 619-427-7080
FAX 619-426-7369

EMAIL:
SENATOR.PEACE@SEN.CA.GOV

CHAIRMAN OF:
COMMITTEE ON ENERGY, UTILITIES AND COMMUNICATIONS

BUDGET AND FISCAL REVIEW SUBCOMMITTEE #4 ON LEGISLATIVE, EXECUTIVE, PUBLIC SAFETY AND GENERAL GOVERNMENT

JOINT COMMITTEE ON WORKERS' COMPENSATION

MEMBER OF:
AGRICULTURE AND WATER RESOURCES

BUDGET AND FISCAL REVIEW

INSURANCE

JOINT COMMITTEE ON LEGISLATIVE AUDIT

SELECT COMMITTEE ON MARITIME INDUSTRY

April 26, 1999

Jim Stubchaer, Chair
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

Dear Chairman Stubchaer:

I am adding my name to those in support of ranking all 5 designated San Diego Bay hot spots as "high priority" for purposes of inclusion in the proposed Consolidated Toxic Hot Spots Cleanup Plan. As you are aware, this plan is pursuant to the 1989 Bay Protection Toxic Cleanup Program (BPTCP) which I supported as an Assemblyman.

It is my understanding that the State Water Resources Control Board will adopt a final plan sometime after the requisite June 3rd public hearing on the proposed Consolidated Toxic Hot Spots Cleanup Plan.

While I fully support the efforts of the State and Regional Boards to clean up and prevent toxic hot spots in San Diego and other coastal areas, I question the proposal's ranking of the San Diego Bay's 5 designated hot spots. Of 18 bays nationwide recently studied by NOAA, San Diego Bay is second only to Newark Bay in New Jersey in toxicity. However, only one San Diego Bay hot spot has been designated by the proposal as a high priority; ie: one that will receive plans for remediation and prevention.

The severe degredation of San Diego Bay has been scientifically established. I urge the Board to act accordingly and rank all five San Diego Bay hot spots as high priority sites. The health and water quality of San Diego Bay for future generations depends on your actions.

Sincerely,

STEVE PEACE

SP/sm

California State Senate

SENATOR
DEDE ALPERT
THIRTY-NINTH SENATORIAL DISTRICT

STATE CAPITOL
SACRAMENTO, CA 95814
(916) 445-3952
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SENATOR.ALPERT@SEN.CA.GOV

COMMITTEES
CHAIR, REVENUE AND TAXATION
APPROPRIATIONS
APPROPRIATIONS SUBCOMMITTEE
ON FISCAL OVERSIGHT
EDUCATION
ENVIRONMENTAL QUALITY
NATURAL RESOURCES AND
WILDLIFE

SELECT COMMITTEES
CHAIR, EDUCATIONAL STANDARDS
AND TEACHER TRAINING
GENETICS AND PUBLIC POLICY
CALIFORNIA'S WINE INDUSTRY
COMMUNITY DEVELOPMENT
CRITICAL THINKING AND PROBLEM
SOLVING IN OUR SCHOOLS
ECONOMIC DEVELOPMENT

April 13, 1999

Jim Stubchaer
Chairman, State Water Resources Control Board
P.O. Box 100
Sacramento CA 95812

COPY

Dear Chairman Stubchaer:

I am pleased that the state and regional water boards are developing plans to clean up and prevent toxic hot spots in San Diego and other coastal areas. These contaminated areas must get cleaned up to protect both marine life and public health.

I am concerned, however, about the priority ranking of San Diego Bay's hot spots. There are 48 toxic hot spots in the state, 21 of those ranked as a high priority for action. A recent NOAA study determined that San Diego Bay is the second most toxic of 18 bays studied in the nation, second only to Newark Bay, New Jersey. San Diego Bay has five equally toxic hot spots, and despite this national infamy, only one has been designated a high priority. These rankings are pivotal because only high priority sites are given plans for remediation and prevention. No action is identified for moderate- or low-priority sites, despite the fact that they are still toxic hot spots.

Given the severe degradation shown throughout San Diego Bay, I urge the State Board to rank all five of San Diego's hot spots a high priority to help safeguard water quality and restore the bay's health. We must also assure these sites have adequate pollution prevention plans so recontamination is prevented.

Sincerely,

Dede

SENATOR DEDE ALPERT
39th District

DA:nl

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0001
(916) 319-2076

DISTRICT OFFICE
1010 UNIVERSITY AVENUE
SUITE C-207
SAN DIEGO, CA 92103
(619) 294-7600

Assembly California Legislature

SUSAN A. DAVIS
ASSEMBLYWOMAN, SEVENTY-SIXTH DISTRICT

CHAIR,
CONSUMER PROTECTION,
GOVERNMENTAL EFFICIENCY /
ECONOMIC DEVELOPMENT

APPROPRIATIONS
EDUCATION
TRANSPORTATION

April 22, 1999

Chairman Jim Stubchaer and Boardmembers
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

Re: Reconsideration of Toxic Hot Spot Rankings for San Diego Bay

Dear Chairman Stubchaer and Boardmembers:

I am pleased that the State and Regional Water Boards are developing plans to clean up and prevent toxic hot spots in San Diego and other coastal areas. It is critical that these contaminated areas get cleaned up to protect marine life and public health.

I am concerned, however, about the priority ranking of the San Diego hot spots. Throughout the state, there are 48 toxic hot spots, with 21 ranked as a high priority for action. A recent NOAA study determined that San Diego Bay is the second most toxic of 18 bays studied in the nation, second only to Newark Bay, New Jersey. Yet while San Diego Bay has just five toxic hot spots, only one is designated a high priority. These rankings are pivotal because only high priority sites are given plans for remediation and prevention. No action is identified for moderate or low priority sites, despite the fact that they are still toxic hot spots.

Given the severe degradation shown throughout the San Diego Bay, I urge the state Board to rank all five of San Diego's hot spots a high priority to help safeguard water quality and restore the Bay's health. We must also ensure these sites have adequate pollution prevention plans so recontamination is prevented. Thank you for your attention to this important matter.

Sincerely,

Susan A. Davis

SUSAN A. DAVIS
Assemblywoman, 76th District

SAD: bda

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0001
(916) 319-2092
FAX (916) 319-2192

CHIEF CONSULTANT
Sally Magnani Knox

SENIOR CONSULTANTS
Scott H. Valor
Maureen Rose

COMMITTEE SECRETARY
Aurora Wallin

California Legislature

Assembly Committee on Natural Resources
HOWARD WAYNE
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Alan Lowenthal
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Carole Migden
Ricó Oller
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NC

APR 30 1999

April 27, 1999

Jim Stubchaer, Chairman
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

Dear Chairman Stubchaer:

I am writing to echo the concerns of my colleagues, Senator Dede Alpert and Assembly Member Susan Davis, regarding the priority ranking of toxic "hot spots" in San Diego Bay (please see letters dated April 13, 1999 and April 22, 1999, respectively). I request that the state water board rank all five of the hot spots identified in San Diego Bay as "high priority" for remediation.

As the immediate past chair of the Environmental Safety and Toxic Materials Committee (1997-98 legislative session), I am well aware of the lack of resources available for the full implementation of the Bay Protection and Toxic Cleanup Program (BPTCP). It is highly likely that primary attention will be given only to the sites identified as high priority. However, only one of the 20 sites designated by the state board as high priority is in San Diego, even though federal studies have shown that San Diego Bay is the most toxic bay in California (second in the nation only to Newark Bay, New Jersey).

Effective implementation of the BPTCP is the first step in restoring the water quality and ecological health of the San Diego Bay. I respectfully request that you rank all five of San Diego's hot spots as high priority and, further, that the state board take aggressive steps to ensure that additional contamination is prevented.

Sincerely,

Howard Wayne

HOWARD WAYNE
Chair, Assembly Natural Resources Committee

bcc: Nicole Capretz
Environmental Health Coalition

NC

San Diego-Imperial Counties Labor Council

AFL-CIO

May 11, 1999

Jim Stubchaer
Chairman, State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

Dear Chairman Stubchaer:

I am pleased that the state and regional water boards are developing plans to clean up and prevent toxic hot spots in San Diego and othe coastal areas. These contaminated areas must get cleaned up to protect both marine life and public health.

I am concerned, however, about the priority ranking of San Diego Bay's hot spots. There are 48 toxic hot spots in the state, 21 of those ranked as a high priority for action. A recent NOAA study determined that San Diego is the second only to Newark Bay, New Jersey. San Diego Bay has five equally toxic hot spots, and despite this national infamy, only one has been designated a high priority. These ranking are pivotal because only high priority sites are given plans for remediation and prevention. No action is identified for moderate- or low-priority sites, despite the fact that they are still toxic hot spots.

Given the severe degradation shown throughout San Diego Bay, I urge the State Board to rank all five of San Diego's hot spots a high priority to help safeguard water quality and restore the bay's health. We must also assure these sites have adequate pollution prevention plans so recontamination is prevented.

Sincerely,

Jerry Butkiewicz
Secretary-Treasurer

JERRY BUTKIEWICZ, *Secretary-Treasurer* DAVE MOORE, *President*
4265 Fairmount Ave. • Suite 100 • San Diego, CA 92105 • (619) 283-5411 • Fax (619) 283-2782

MAY 19 1999

City of Imperial Beach, California

OFFICE OF THE MAYOR

Diane Rose

May 3, 1999

Chairman Jim Stubchaer and Boardmembers
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

RE: RECONSIDERATION OF TOXIC HOT SPOT RANKINGS FOR SAN DIEGO BAY

Dear Chairman Stubchaer and Boardmembers:

As a member of the San Diego Bay Interagency Water Quality Panel (Bay Panel), I am pleased that the State and Regional Water Boards are developing plans to clean up and prevent toxic hot spots in San Diego. The Bay Panel, a group of more than thirty agencies and institutions, spent ten years developing a plan for protecting and preserving San Diego Bay. The Comprehensive Management Plan identifies cleaning up contaminated sediments as a high priority for safeguarding human health and marine life.

I am concerned, however, about the priority ranking of the San Diego hot spots. A recent NOAA study determined that San Diego Bay is the second most toxic of 18 bays studied in the nation, second only to Newark Bay, New Jersey. Yet San Diego Bay has just five toxic hot spots, and only one designated a high priority. Under current law, only high priority sites are given plans for remediation and prevention. No action is identified for moderate or low priority sites, despite the fact that they are still toxic hot spots.

Given the severe toxicity shown throughout San Diego Bay, we urge the State Board to rank all five of San Diego's hot spots a high priority. This will help us safeguard water quality and restore the Bay's health in keeping with the goals and objectives of the Bay Panel's Comprehensive Management Plan.

Sincerely,

Diane Rose

Diane Rose
Mayor

C: Dede Alpert
✓Environmental Health Coalition

825 Imperial Beach Boulevard • Imperial Beach, California 91932 • (619) 423-8303 • (619) 628-1352 • Fax (619) 429-9770

SHIPYARD UNITY

UNITED WATERFRONT COUNCIL OF SAN DIEGO
2842 MAIN STREET
SAN DIEGO, CA 92113
(619) 231-2093 FAX: (619) 231-2096

May 7, 1999

Chairman Jim Stubchaer and Boardmembers
State Water Resources Control Board
PO Box 100
Sacramento, CA 95812

Dear Chairman Stubchaer and Boardmembers:

The United Waterfront Council (UWC) is a coalition of seven labor unions at National Steel and Shipbuilding Company (NASSCO). The UWC represents approximately 3,000 workers and is organized for the purpose of protecting the health, safety and welfare of shipyard workers at NASSCO. Members of UWC also use and enjoy San Diego Bay. I have seen workers at NASSCO fishing off the piers at the facility and eating the fish for lunch. The cleanup and prevention of toxic hot spots in San Diego Bay will help ensure the members of UWC can continue to fish and swim in San Diego Bay with confidence, and we are pleased to learn of plans to restore the Bay's health.

However, we do not understand why only one of our toxic hot spots has been ranked a high priority for cleanup action. Any toxic hot spot is harming marine life and potentially human health, and needs to receive immediate attention. And, since we have severe toxicity throughout the Bay, we need to at least give a high priority to cleaning our five toxic hot spots.

In addition, only high priority hot spots receive plans for preventing recontamination. The scientific peer review of San Diego's hot spot study identified the shipyards as the main area of concern for polluting the Bay, and one of the hot spots is adjacent to the NASSCO facility. As shipyard workers who risk exposure every day to the dangerous materials, processes and operations used to build, repair and convert large vessels, we seek to implement protective measures for workers and the environment. Since workers are the first to be exposed to toxic chemicals, we would welcome plans to reduce the amount of pollution generated at the yard.

For the aforementioned reasons, <u>we urge the State Water Board to give all of San Diego's toxic hot spots a high priority</u>. Remediating our five hot spots will get us one step closer to making our Bay fishable and swimmable again, and help us implement measures to reduce worker exposure to toxins.

Sincerely,

Manuel Valencia NC

Manuel Valencia
United Waterfront Council

PORT OF SAN DIEGO

Operator of Marine Terminals and San Diego International Airport
BOARD OF PORT COMMISSIONERS

May 24, 1999

Chairman James Stubchaer and State Water Resources Control Board Members
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

RE: Support for designation of toxic hotspots in San Diego Bay as a high priority for action.

Dear Chairman Stubchaer and Board Members:

I am very supportive of the State and Regional Water Boards efforts to protect water quality and to develop plans to clean up and prevent toxic hot spots in San Diego Bay. I am concerned, however, about the priority ranking of four of the known toxic hotspots as only moderate in priority. Contaminated sediments in San Diego Bay are a serious challenge for us as we try to improve the ecological health of the Bay. In addition to the state's Bay Protection and Toxic Cleanup Program study of the Bay, a recent NOAA study found significant sediment contamination problems that need to be addressed. The known toxic hotspots in San Diego Bay are a high priority for action and should be designated as such.

We are spending tremendous amounts of time and resources locally to protect San Diego Bay. Last year, as San Diego Unified Port District Chairman, I initiated and implemented several measures to protect the environmental quality of San Diego Bay. These include the creation of the South San Diego Bay National Wildlife Refuge, establishment of an Urban Runoff Task Force, and the adoption of an Integrated Pest Management Plan by the Port District. High priority designation of the existing toxic sediment hotspots are a necessary part of a comprehensive plan to restore the health of the Bay.

There is also strong community support for remediation of the sediments of San Diego Bay. The Interagency Panel for San Diego Bay, a group of more than thirty agencies and institutions, spent ten years developing a plan for protecting and preserving San Diego Bay. The *Comprehensive Management Plan* for San Diego Bay identifies cleaning up contaminated sediments as a high priority for safeguarding human health and marine life.

LH

PORT OF SAN DIEGO

Operator of Marine Terminals and San Diego International Airport
BOARD OF PORT COMMISSIONERS

Given the severe toxicity shown throughout San Diego Bay, I urge the State Board to rank all five of San Diego's hot spots in high priority. This will help us safeguard water quality and restore the Bay's health.

San Diego Bay is one of the most precious economic and environmental resources in our region. Its protection is a high priority for all of us in San Diego. Thank you for your consideration.

Sincerely,

David L. Malcolm
Commissioner

cc: Laura Hunter

(619) 686-6200, Post Office Box 488, San Diego, California 92112

LH

SAN DIEGO UNIFIED PORT DISTRICT

DAVID L. MALCOLM - COMMISSIONER

FACSIMILE TRANSMITTAL SHEET

TO: Laura Hunter	FROM: David Malcolm
COMPANY: Environmental Health Coalition	DATE: May 24, 1999
FAX NUMBER: 232-3670	TOTAL NO. OF PAGES INCLUDING COVER: 3
PHONE NUMBER: 235 0281	SENDER'S REFERENCE NUMBER:
RE:	YOUR REFERENCE NUMBER:

☐ URGENT ☑ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

If you should have any problems receiving this facsimile, please contact Shelby Roos at 619 874-4400

5205 KEARNY VILLA WAY, SUITE 205
SAN DIEGO, CALIFORNIA 92123
TELEPHONE 619 874 4400 — FACSIMILE 619 874 4404

NATURE SAVER™ FAX MEMO 01616

Date 5-24-99	# of pages ▶ 2
To Laura Hunter	From David Merk
Co./Dept. EHC	Co. SDUPD
Phone #	Phone #
Fax # 232-3670	Fax # 686-6467

SAN DIEGO UNIFIED

INTER-STAFF COM

Date: May 13, 1999

To: Dan E. Wilkens, Senior Director, Strategic Planning Services

From: David Merk, Director, Environmental Services

Subject: Toxic Hot Spots in San Diego

The purpose of this memo is to address issues related to the ranking of toxic hot spots in San Diego Bay. This memo is written in response to the Environmental Health Coalition's (EHC) May 12, 1999, letter to members of the Board of Port Commissioners.

The Regional Water Quality Control Board (RWQCB) recently completed a comprehensive investigation of San Diego Bay sediments as part of a statewide program to identify and cleanup toxic hot spots. The RWQCB identified five sites in San Diego Bay that qualified for ranking and recommended that four of these five be given a ranking of "moderate" priority, with one ranked "high." In its letter of May 12, 1999, the EHC asked that the Board of Port Commissioners support an appeal of this decision to the State Water Resources Control Board.

Several weeks ago, the EHC approached District staff with the same request. You and I discussed the issue with EHC and advised them that we were not inclined to actively support this change in the ranking. We offered as justification for this position our concern that such a request might be construed by the RWQCB as calling into question their ability to make these technical evaluations. As you know, in the last year the District has been successful in building excellent relationships with the RWQCB. We would not want to jeopardize that relationship unnecessarily.

At the same time, we wanted to be clear that the District is concerned about environmental conditions in the Bay and takes seriously our role in its protection. To that end, we offered to the EHC our proposal to recommend to the Board of Port Commissioners that the FY 99/00 budget include $100,000 for each of the five sites to be used for further evaluation. Specifically, our goal would be to attempt to determine the source of the contamination found at each of these sites and to take actions to prevent further contamination in the future. It is our impression, based on both the types of contamination identified and the location of the sites (i.e., three of the five are located at the mouths of creeks entering the

POLLUTION PREVENTION OPPORTUNITIES FOR SAN DIEGO BAY SHIPYARDS

TASK 1 - MAJOR SHIPYARD PROCESSES

Prepared for:

Environmental Health Coalition

San Diego, CA

Bay and a fourth is located near a major urban storm drain) that the source of contamination may be upland urban runoff. I have described this effort to John Robertus, the Executive Director of the RWQCB, who expressed support and enthusiasm for the concept.

Last week, I arranged a meeting with key officials of the U.S. Navy and the City of San Diego. I told them about recent events in this matter and expressed my desire to have all three entities work together on the proposal I described in the previous paragraph. They were very excited about the concept. We will meet with the RWQCB tomorrow (May 14, 1999) to discuss the matter.

At the same time, John Robertus contacted me last week and advised me that he intended to take simultaneous action at each of the five sites. We engaged in a short discussion about this action and whether it was consistent with the direction of his Board. We agreed to discuss it in greater detail at tomorrow's meeting. This information will be useful to us in evaluating our position on this matter.

DM:rlg
File: Toxic Hot Spots
H:/Documents DM/Wilkens Memo 5-12-99

TABLE OF CONTENTS

WHILE YOU WERE OUT

TO: Susan

DATE: 5/25

TIME: 8:45

FROM: Don Wilkens

AREA CODE

NUMBER

OF

EXTENSION

MESSAGE

Check fax

SIGNED

URGENT! ☐ RETURNED CALL ☐ CALL BACK ☐ WILL CALL AGAIN ☐ PHONED ☐ WANTS TO SEE YOU ☐ WAS IN ☐

AMPAD NO. 23-776 400 SETS RECYCLED PAPER

Port of San Diego

and Lindbergh Field Air Terminal
P. O. Box 488, San Diego, California 92112-0488
Tel: (619) 686-6426 Fax: (619) 686-6403

COMPANY: Environmental Health Coalition

ATTENTION: Laura Hunter

FAX NO.: 232-3670

FROM: Dan E. Wilkens, Senior Director, Strategic Planning Services

DATE: May 25, 1999

SUBJECT: **Toxic Hot Spots in San Diego Bay**

No. of Pgs. Incl. this cover sheet: 3

Please see attached memo dated May 24, 1999.

Dan

Date: Fri, 17 Sep 1999 16:41:15 -0700
From: "John Robertus" <robej@rb9.swrcb.ca.gov>
To: <NicoleC@environmentalhealth.org>
Cc: "David Barker" <barkd.RB9Post.Region9@rb9.swrcb.ca.gov>,
"Kristin Schwall" <schwk.RB9Post.Region9@rb9.swrcb.ca.gov>
Subject: Re: sediments
Reply-To: robej@rb9.swrcb.ca.gov

Nicole,

Thanks for your interest in the sediment cleanup issue in your recent E-mail. We look forward to seeing you at the workshop on the 28th. I want to respond to your 3 questions.

First, I have not seen your request to review the shipyard files but David Barker can make arrangements for the files to be available to you and I spoke to him today. Please verify that he has recieved your request at (858)-467-2989.

Second, the "peer review" process that I am pursuing is an informal one using several experts that will attend the workshop on the 28th. I plan to discuss the issue openly and if there is a need to have further follow up, I will request written comments after the workshop. Not withstanding the paragraph 3 on page 2 of my letter of March25, 1999 to the shipyards, I do not, at this time intend to seek the formal Peer Review process currently reserved for certain actions by the SWRCB and Regional Boards. I do not think the action to approve a sediment cleanup level should trigger this formal process. I will await the results of our first workshop to determine the need for further peer review.

Third, I intend to review the memorandum from Fish and Game (24 March, 1999) again to assess whether new information is presented. I am most interested in the prospect of improving our post cleanup evaluation to verify that beneficial uses are protected. Our current procedure consists of verification by residual sediment chemistry levels. This issue will be discussed at the workshop. If I can offer more information please contact me.
Respectfully,
John Robertus

>>> Nicole Capretz <NicoleC@environmentalhealth.org> 09/16/99 02:33PM >>>
Hi John:

4 things:

1. I am RSVP'ing for the sediment workshop

2. Did you get my request to review the shipyard files? I really want to find that '95 letter you keep mentioning, and review it before the workshop.

3. What is the status of the peer review for the AET values? In the order from the last BOard meeting on this topic, it says that a peer review panel will evaluate the levels. Have they done that and is it in writing?

4. The "new" information that I was talking about was articulated very well in the Dept. of Fish and Game's letter. That, to me, is clear evidence that the current AET values are not protective enough.
Do you not agree?

help shape

Attach
ment A

STATE WATER QUALITY CONTROL BOARD, SAN DIEGO REGION

INFORMAL PEER REVIEW DOCUMENT

A Review of Sediment Cleanup Levels for 3 Shipyards in San Diego Bay

Submitted by: ______________________________

Part A -- Background and Certifications

Background.
Discharges of waste from shipyard operations at several shipyards in San Diego Bay have resulted in the presence of high concentrations of pollutants in the sediments at the shipyards. Pollutants associated with San Diego Bay shipyard activities include: copper and tributyltin from antifouling paints; and petroleum and PAHs from bilge waste. Other paint wastes may contain zinc, chromium and lead. Wastes which appear to be associated with general industrial activity around San Diego Bay include PCBs and PCTs (polychlorinated terphenyls such as Aroclor 5460); and antimony. The California Regional Water Quality Control Board, San Diego Region (SDRWQCB) has set a sediment cleanup level for Campbell Shipyard based on the Apparent Effects Threshold (AET) established by soil chemistry and toxicology studies undertaken at that shipyard.

The SDRWQCB has tentatively approved the applicability of the Campbell Shipyard AET sediment cleanup levels for use at two additional locations, which are the San Diego Bay sites occupied by NASSCO and Southwest Marine shipyards. These cleanup levels are presently considered by the Regional Board to be "interim cleanup levels". The application of the Campbell AET cleanup level to these other shipyards is based on an assumption that conditions at these two additional shipyards are sufficiently similar to the conditions at the Campbell Shipyard. It is also based on the assumption that such an extension is reasonable, even though the two additional shipyards have not undertaken the same level of site specific analysis that were done by Campbell. This determination is based upon the presumed similarity of the wastes in the sediments at all three shipyards, the similarity of the sediments themselves, and the similarity of the marine and benthic biota that would be anticipated to exist at all of the shipyards in the absence of pollution.

The peer review task is to consider the scientific validity of extension of sediment cleanup levels based on AET values derived from and for sediments at the Campbell shipyard at the other two shipyards. The Regional Board has given preliminary approval of this application, however it has requested a peer review to allow a reassessment of the application. If the peer review confirms the validity of the scientific basis of this action, the Regional Board will likely take action to remove the "interim" designation from the present designation of the NASSCO and Southwest Marine sediment cleanup levels. If the scientific basis for the Regional Board action was found to be deficient, the Regional Board will require additional development of a more appropriate sediment cleanup level for NASSCO and Southwest Marine shipyards.

Personal Qualifications
Please summarize your professional qualifications by education and personal experience involving the analysis of bay sediments including studies of benthic communities, sediment chemistry and sediment toxicity.

Educational Qualifications:
(Undergraduate)

___

(Graduate_Study)

___

Professional Qualifications:

___

Publications:

___

Certification of Objectivity & Disinterest

I certify that I have not been involved in the scientific studies used to establish the AETs for sediments at the Campbell shipyard in San Diego Bay; and that I have not been involved in any work associated with the cleanup of sediments at the NASSCO or Southwest Marine shipyards in San Diego Bay, nor will I accept such employment within 24 months. I do not have any economic or financial interest in the selection or determination of cleanup levels for sediments at any shipyard, boatyard, industrial facility, municipal storm drain, or Toxic Hot Spot in San Diego Bay.

Signed: ______________________ Date: ______________

Part B -- The Peer Review Charge

The charge for this peer review is to write a response to the following question:

> "Is it appropriate to apply the Campbell Shipyard Apparent Effects Threshold (AET) as the sediment cleanup level for the NASSCO and the Southwest Marine Shipyards?"

Reference materials for this review are to be provided exclusively by the Regional Board

Any deficiency in the scientific basis should be clearly specified to allow the Regional Board to appreciate the significance thereof.

Part C -- The Peer Review Response

Statement of ________________________ Date________________

(TEXT OF RESPONSE)

Signed ____________________________--------------

December 15, 1999

Mr. Steven Bay
So. Cal. Coastal Water Research Project
7171 Fenwick Lane
Westminster, CA 92683-5218

Mr. Russell Fairey
Moss Landing Marine Laboratories
P.O. Box 747
Moss Landing, CA 95039

Mr. Todd Thornburg
Hart Crowser, Inc.
1910 Fairview Ave. E.
Seattle, WA 98102-3699

PEER REVIEW FOR USE OF SEDIMENT CLEANUP LEVELS AT TWO SAN DIEGO BAY SHIPYARDS

The California Regional Water Quality Control Board, San Diego Region (Regional Board), requests your participation as a peer reviewer of the scientific basis for a matter that will be further considered by the Regional Board. You have been nominated as one of three candidates for this review due to your professional experience and reputation concerning bay sediment analysis, and benthic chemistry and toxicity.

This peer review process is intended to implement the principles described in the State Water Resource Control Board (SWRCB) document "Guidelines for Obtaining External Scientific Peer Review". This peer review will consider only one issue and will entail the use of only those materials that will be provided by the Regional Board. I anticipate that each of you will be agreeable to providing a response to the question listed in the attachment to this letter. Responses are requested in the format shown in the attachment and are to be submitted to the Regional Board office by February 25, 2000.

The attachment also includes a request for your own statement of educational and professional qualifications to review the scientific basis for this matter. The attachment also includes a declaration that you do not have a personal bias, or conflict-of-interest concerning the issue of sediment cleanup for the NASSCO or Southwest Marine shipyards in San Diego. Further, that no such bias or conflict would preclude you from providing the Regional Board with an objective assessment of the scientific basis for its actions in this matter.

The Peer Review Coordinator for this review is Mr. David Barker, of the Regional Board Basin Planning Unit. Your assistance in this effort is invaluable to the continuing process to seek improved methods to determine appropriate cleanup levels for sediments at the San Diego shipyard sites. Your participation is a considerable contribution to the larger effort to clean up contaminated sediments in San Diego Bay.

Sincerely,

/s/
John H. Robertus
Executive Officer

Date: Mon, 01 May 2000 09:38:30 -0700
To: NicoleC@environmentalhealth.org, LauraH@environmentalhealth.org,
HumbertoT@environmentalhealth.org
From: Mariana Lopez <MarianaL@environmentalhealth.org>
Subject: Peer Review for the proposed NASSCO and Southwest
Marineshipyards sediment cleanup levels.
Reply-To: MarianaL@environmentalhealth.org

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>To: <bpaznoka@dfg.ca.gov>, <ehc@environmentalhealth.org>,
<rmiller@nassco.com>,
> <sdbaykeeper@sdbaykeeper.org>, <Halvaxs@swmarine.com>
>Cc: "Tom Alo" <alot.RB9Post.Region9@rb9.swrcb.ca.gov>,
> "David Barker" <barkd.RB9Post.Region9@rb9.swrcb.ca.gov>,
> "John Robertus" <robej.RB9Post.Region9@rb9.swrcb.ca.gov>
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SAN DIEGANS TO WATCH IN '83

By The Editors of San Diego Magazine *Photographs by Jim Coit*

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Reader response was overwhelming. Judging from the mail, phone calls and comments to our staff, we know you were impressed, concerned, opinionated and, in some instances, disappointed. But, overall, you were involved. As a result, we're back with a new list for 1983.

Of course, you'll recognize some familiar names. These highly visible individuals are on our watchable list because of recent changes in their careers. For example, Pete Wilson will unquestionably be making headlines as a newly elected member of the United States Senate. Ron Mix, a former Charger, is a successful attorney in the city, but now he's making news as the chairman of the board of a brand new financial institution he's recently organized and opened.

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EHC 001993

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Environmental Health Coalition
COALICION de SALUD AMBIENTAL
1717 Kettner Blvd., Suite 100 ◆ San Diego, CA 92101 ◆ (619) 235-0281 ◆ FAX: (619) 232-3670
ehc@environmentalhealth.org ◆ www.environmentalhealth.org

July 31, 2000

Chairman Wayne Baglin and Boardmembers
Regional Water Quality Control Board
9771 Clairemont Mesa Blvd., Suite A
San Diego, CA 92124

RE: SEDIMENT CLEANUP VALUES AT NASSCO AND SOUTHWEST MARINE

Dear Chairman Baglin and Boardmembers:

This letter is in regards to the establishment of final sediment cleanup levels at National Steel and Shipbuilding Company (NASSCO) and Southwest Marine. We are deeply concerned about how the Regional Board is currently developing these values. While we understand this issue is complex and controversial, we do not believe the Regional Board is following state or federal law, or policies adopted by the State and Regional Board, in determining appropriate levels.

<u>The Regional Board Has Not Set the Required Cleanup Goals and Objectives to Protect Water Quality</u>

The Regional Board is responsible for establishing cleanup and abatement goals and objectives for the protection of water quality and the beneficial uses of waters. The Regional Board must set cleanup goals based on the State's *Antidegradation Policy* set forth in State Board resolution No. 68-16, the State's *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304*, and the Regional Board's Cleanup and Abatement Policy. (See *Basin Plan*, 4-86). **Those policies require the Regional Board to set goals based on background levels**. If, however, the Regional Board finds that clean up goals based on background levels are not technologically or economically feasible, the Regional Board may set cleanup goals based on protection of beneficial uses. (See *Antidegradation Policy*).

At NASSCO and Southwest Marine, the Regional Board has failed to find that cleanup goals based on background levels are not technologically or economically feasible. The Board, as far as we know, has not done any analysis to answer this threshold question. Thus, the Board must either provide evidence to show why background levels are not technologically or economically feasible, or must set the cleanup standard at background concentrations in accord with state law and policy.

If the Board does provide evidence as to why background levels are not attainable, the Board must still set cleanup goals and objectives that are as close to background as feasible. (*Basin Plan*, 4-86). These goals and objectives must, at a minimum, restore and protect all designated beneficial uses of the waters. They must also "consider all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." (*Resolution No. 92-49*). Furthermore, such cleanup levels must meet water quality standards prescribed in the Basin Plan and State and Regional Board policies, and must be consistent with maximum benefit to the people of the State. (*Basin Plan*, 4-86 and 4-87).

In this case, there are many beneficial uses impacted by the sediment contamination at the shipyards. The Regional Board staff has identified one, the Marine Habitat Beneficial Use (MAR), but there are others, including commercial and sportfishing, estuarine habitat, wildlife habitat, migration of aquatic organisms, and shellfish harvesting. The Regional Board must set cleanup goals to ensure all of these beneficial uses are protected and the public has maximum benefit of the waters in San Diego Bay. These goals, or levels, must also be as close to background level as possible and consider all the tangible and intangible values of water quality in San Diego Bay. **Practically, this means the Regional Board must determine the acceptable percentage of samples that can be toxic, if any, to protect beneficial uses. This is commonly referred to as setting the "management objective." The Regional Board must make this assessment *before* establishing a numerical cleanup level. Thus far, the Regional Board has failed to do this.**

Regional Board Staff Incorrectly Says All Proposed Cleanup Options Are Legal and Acceptable

Currently, in the draft staff report, staff maintains that all of their proposed cleanup options, except for natural attenuation, will protect beneficial uses. Thus, the reasoning goes, the Regional Board can protect water quality no matter which option they choose. There is no scientific or technical basis for this conclusion. Board staff appears to be relying on the validity of the Campbell's Apparent Effects Threshold (AET) values to support this assertion. This is untenable. As you know, two expert peer reviewers have identified the inadequacies of the Campbell's AET values. Thus, they cannot be used as a baseline for acceptable cleanup levels.

Most importantly, even if the Campbell's AET values were found to be adequately developed, **AETs do not safeguard beneficial uses and are not even close to background levels**. AETs tell you when you will always see an adverse effect higher than that level. You will likely see a toxic effect at a lower level, but not in every sample. There is a lot of room for false positives and false negatives. Thus, the sediments remaining after cleanup will probably still impair marine life. And if the AETs do not consider chronic impacts, like Campbell's did not, then levels lower than the AETs will not only have potential acute impacts, but long-term adverse impacts as well. Consequently, post-sampling will probably reveal that the contamination and degradation of beneficial uses persists. This only leads down a worse path of having to dredge again and resuspend sediments once more. This is not a scenario anyone wants to see occur.

The inappropriateness of AETs are particularly true for pollutants which bioaccumulate, such as mercury and PCBs. These pollutants can harm at levels much lower than the acute toxicity level. As recommended by one of the expert peer reviewers, Russell Fairey from Moss Marine Laboratories, the Regional Board must be extra sensitive to potential human health hazards from exposure to mercury and PCBs. Thus, the Regional Board should consider bioaccumulation models or human health protection when evaluating cleanup levels for these sites.

<u>Regional Board, Without Evidence to the Contrary, Must Remediate to Background Levels</u>

It is imperative the Regional Board affirmatively demonstrate that the final cleanup level established will indeed be final, such that it will remediate all the contamination and protect all the beneficial uses. Anything less is a violation of Porter-Cologne and the Clean Water Act.

The shipyards have contaminated San Diego Bay sediments for at least 40 years without any recompense to the environment. They have been allowed to significantly degrade the ecosystem and benthic communities of a public resource while reaping billions of dollars in profits. They have not only profited from the privilege of conducting their operations on our Bay, but they have also profited from not having to clean up their toxic discharges or having to put pollution control mechanisms to stop this pollution. Further, when amortized, the cost to the shipyards to clean up to background reference levels for 40+ years of bad practices is minuscule (only about $140,000 a year). Finally, this begs the fundamental question of what price we can possibly place on having a healthy and functioning benthic community at the shipyards. Asking them to return the health of the sediments to the same level they were at before polluting them seems like the bare minimum of reparations.

We urge the Regional Board to follow state and federal law and policies regarding cleanup and abatement. The law dictates that the Regional Board clean to background levels, and only allows a minor deviation from those levels if the Board can show they are not technically or economically feasible. Here, we have seen no evidence that cleaning to background levels will not be attainable. We expect the Board's recommended levels to be at background concentrations.

Thank you for your time and attention to this critical matter. We look forward to working with you as the Board develops these standards and we begin to restore the health of San Diego Bay.

Sincerely,

Nicole

Nicole Capretz
Policy Associate

cc: John Robertus, David Barker

PUBLIC NOTICE

US Army Corps of Engineers®

APPLICATION FOR PERMIT

LOS ANGELES DISTRICT

Public Notice/Application No.: 199915091-SKB
Comment Period: September 7 through September 28, 2000
Project Manager: Shannon K. Bryant (858) 674-6784 sbryant@spl.usace.army.mil

Applicant
Southwest Marine
Attn: Mr. Sandor Halvax
Foot of Sampson Street
P.O. Box 13308
San Diego, California 92170-3308

Contact
Mr. Sandor Halvax
(619) 238-1000 X2060

Location
At the foot of Sampson Street west of Harbor Drive in San Diego Bay in the City of San Diego, San Diego County, California (see attached figures 1 and 2).

Activity
To remediate sediments contaminated with elements as indicated on pages 2 and 3 of this PN per Waste Discharge Requirements (WDR) approved by the California Regional Water Quality Control Board (RWQCB) including dredging approximately 25,000 cubic yards (cy) of sediment from several shipyard locations approximately 2.49 acres (ac), repairing riprap in dredge Area 1 and 2 if necessary, and upgrading of Pier 1 that incorporates the fill of 0.77 ac of the bay adjacent to Pier 1 on the north and south sides for additional upland service area (see attached drawings). For more information see page 3 of this notice.

Interested parties are hereby notified that an application has been received for a Department of the Army permit for the activity described herein and shown on the attached drawing(s). Interested parties are invited to provide their views on the proposed work, which will become a part of the record and will be considered in the decision. This permit will be issued or denied under Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act of 1972 (33 U.S.C. 1344). Comments should be mailed to:

U.S. Army Corps of Engineers, Los Angeles District
Regulatory Branch
ATTN: CESPL-CO-R-199915091-SKB
P.O. Box 532711
Los Angeles, California 90053-2325