DREDGING MANAGEMENT PLAN
SAN DIEGO SHIPYARD SEDIMENT SITE – SOUTH SHIPYARD

Prepared for

San Diego Bay Environmental Restoration Fund – South

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1 INTRODUCTION

1.1 Purpose

This Dredging Management Plan (DMP) was prepared by Anchor QEA, L.P., on behalf of the San Diego Bay Environmental Restoration Fund – South (South Trust) and has been reviewed and adopted by the Contractor to maintain Cleanup and Abatement Order (CAO) schedules. This DMP satisfies the conditions of CAO No. R9-2012-0024 (Water Board 2012a) and Mitigation Measures 4.2.9 and 4.3.2 of the Mitigation Monitoring and Reporting Program (MMRP; Water Board 2012b) for the South Shipyard portion of the San Diego Shipyard Sediment Site (Site).

Specifically, this DMP presents Standard Operating Procedures (SOPs) for various construction elements associated with the Site and outlines best management practices (BMPs) and mitigation measures required to prevent and respond to potential accidental fuel, oil, or dredged material spill and resuspension. Furthermore, it describes personnel, equipment, and procedural requirements of the Contractor to satisfy these mitigation measures. The Regional Water Quality Control Board (Water Board) will be responsible for review and approval of the DMP. The Contractor will be responsible for implementation of the measures to be used during dredging activities. The U.S. Department of the Navy (USN) will be provided an opportunity to review and comment on the DMP, particularly with respect to ordnance and munitions that have been identified in proximity to the Site. Implementation of the DMP will be verified by the Water Board. An updated copy of the DMP will be kept on site at all times throughout construction.

1.2 Background

Discharges of metals and other pollutant wastes to San Diego Bay over the years have resulted in the accumulation of pollutants in marine sediments along the eastern shore of central San Diego Bay in San Diego, California. This accumulation resulted in conditions identified by the Water Board as adversely impacting beneficial uses (aquatic life, aquatic-dependent wildlife, and human health).

The Water Board identified the affected areas as including waters adjacent to two adjoining, active shipyard facilities in San Diego Bay—the North Shipyard and the South Shipyard, together termed the Site (Figure 1).

Dredging will be conducted to remove impacted sediments from accessible portions of the affected areas of the Site in accordance with the Remedial Action Plan (RAP, Anchor QEA 2012)). Dredged material will undergo decanting and will be offloaded to an onshore Sediment Management Area (SMA) where it will undergo any final dewatering, loaded into trucks, and transported to the off-site disposal location (i.e., Otay Landfill). Dredging will be supplemented, where necessary, by localized placement of clean sand cover in cleanup areas (depending on various factors, including the results of post-dredge confirmation sampling) as a mechanism for further enhancing the sediment surface. Cleanup areas below overwater structures will receive a cover layer of sand or gravelly sand rather than being dredged, owing to accessibility issues and the need to maintain stability of the structures.

The upland SMA is available for dredged material and debris offloading, dewatering, sediment management, haul truck loading, water management, and other staging activities. A portion of the U.S. Department of the Navy (USN) property, commonly referred to as the S-Lane Parcel, is the available SMA for the South Shipyard. The USN is the land owner of the SMA, which has been leased to General Dynamics National Steel and Shipbuilding Company (NASSCO). The South Trust has finalized an access arrangement for use of the property during construction operations.

The SMA measures approximately 620 feet by 115 feet (approximately 1.6 acres) and is located on the north side of Chollas Creek. The area will be free of any structures prior to the Contractor commencing construction. The Contractor will be responsible for installing and maintaining a suitable barrier around the perimeter of the SMA to avoid interference with ongoing shipyard activities (Anchor QEA 2012).

1.3 Project Personnel

Key project personnel and their contact information are provided in Table 1.

Table 1
Project Personnel and Contact Information

Name	Title	Phone Number
Mike Palmer	South Trust Representative	(619) 546-8377
Mike Chee	South Shipyard Representative	(619) 544-7778
David Templeton	South Trust Project Manager	(206) 910-4279
Michael Whelan	South Trust Project Engineer	(760) 845-2983
Chad Carpenter	Contractor Project Manager	(619) 233-0178
Ross McDonald	Contractor Quality Control	(619) 233-0178
Mike Johnson	Contractor Site Safety and Health Officer	(619) 233-0178

SOPs and BMPs outlined in this Plan will be performed by the Contractor. All personnel will be trained in site-specific BMPs to reduce the potential for accidental fuel/oil, sediment, and surface water discharge to waters of the bay. Personnel will be trained for the following activities:

- Identifying potential hazards resulting from accidental oil and/or fuel spills. This operational control shall provide personnel with an awareness of materials they are handling as well as the potential impact to the environment.
- Inspecting equipment by the Contractor and equipment operators prior to starting each shift. These inspections are intended to identify typical wear or faulty parts.
- Visual monitoring for oil or fuel spills during construction operations.
- Using a spill kit including storage location, deployment methods of oil sorbent pads, and proper disposal guidelines.
- Using proper silt curtain deployment techniques. Proper silt curtain deployment techniques are further described in Section 2.3.
- Using proper dredging equipment operation (as applicable).
- Observing loading of wide pocket haul barges and monitoring for overtopping or unexpected release of sediment or dredge-generated water to waters of San Diego Bay. Proper sediment management techniques to reduce the likelihood of such a release are further described in the Sediment Management Plan (SMP; Anchor QEA 2013a).

- Properly responding in the event that munitions or ordnance are encountered. Proper responses to such encounters are further described in the Contingency Plan (Anchor QEA 2013b).

2 DREDGING ACTIVITIES

This section describes the areas and quantities to be dredged, equipment used for dredging activities, a plan for executing dredging, BMPs to follow, and sequence of dredging. Methods for mitigating release of dredged material are also presented throughout this section.

2.1 Areas and Quantities

Dredging and cover placement will occur within the CAO-mandated remedial footprint. The remedial footprint was subdivided into individual sediment management units (SMUs) for the South shipyard to create an orderly and systematic dredge plan for implementation of the remedy by the Contractor (Figure 2). Development of the dredge plan accounted for technical feasibility and site restrictions that may affect the construction process and methods for meeting all cleanup objectives. Important design considerations included sediment properties, physical constraints, equipment selection, and dredging performance criteria.

2.2 Equipment

The Contractor will use the in-water equipment provided in Table 2. Equipment will include instrumentation/means to avoid spillage of dredging material, as applicable.

Table 2
Equipment List

Equipment Name	Equipment Type	Equipment Size	Instrumentation/Means to Avoid Spillage
The D.B RES 180	Mechanical dredge equipped with environmental clamshell bucket	54 feet x 150 feet 54 feet x 180 feet	• Means of determining if bucket is fully closed • Administrative controls to limit swing arm of crane to the extent feasible and safe.
Kileen	Tugboat	30 feet x 64 feet	N/A
Metoloa	Tugboat	15 feet x 58 feet	N/A
John Drake	Crew boat	28 feet x 12 feet	N/A
Clarence D	Haul barge	Capacity = 1,100 CY	• Markings on barge to identify maximum load point

Equipment Name	Equipment Type	Equipment Size	Instrumentation/Means to Avoid Spillage
CSM 30	Haul barge	Capacity = 2,700 CY	• Markings on barge to identify maximum load point
Harold M	Haul barge	Capacity = 1,100 CY	• Markings on barge to identify maximum load point

Note:
CY = cubic yards

The ability to avoid accidental release of fuel/oil, sediment, and dredge water is closely tied to the operation and maintenance of in-water equipment. BMPs and controls for proper fueling and maintenance of these pieces of equipment are further described in Section 2.4. Potentially hazardous materials expected to be encountered during fueling and maintenance of this equipment includes diesel fuel, gasoline, hydraulic fluid, brake fluid, antifreeze, and lubricants. Waste materials generated from equipment oil changes and servicing will be collected, drummed, and staged for recycling or disposal. These materials will be hauled off site by a state-licensed vendor. In the event that any of these materials are released during the operation of equipment, SOPs described in Section 2.3 will be performed.

2.2.1 Equipment Restrictions

Propeller use may have the potential to disturb sediments. The Contractor's vessels shall be operated in a manner that minimizes disturbance of the sediment surface. These measures will include operating at reduced speeds and controlling trim of outboard engines (as applicable) to avoid directing thrust at the sediment surface. Additionally, the Contractor shall select appropriate line attachments and barge movement speeds and methodologies to avoid resuspension.

Wide pocket haul barges will also be restricted in the volume of material that they receive. Barge load limits are identified in Table 2 and the appropriate draft level will be marked on the materials barge hull. Such restrictions will reduce the chance of overtopping during the loading and transportation process.

2.2.2 Project Control and Operation of Dredging Equipment

Horizontal and vertical positioning will be achieved through the use of project control points. The project horizontal datum is California State Plane, Zone 6, North American Datum of 1983 (NAD 83) in U.S. feet. The project vertical datum is mean lower low water (MLLW). Table 3 provides established project control points for the Site.

Table 3
Project Control Points

Control Point	Northing	Easting	Elevation in Feet (MLLW)
BAE 101	1832671.63	6287091.01	15.23
NASSCO Tide Gage BM	1832564.03	6286833.58	12.11
BAE 104	1833384.02	6286410.96	14.95
CLE 100	1832071.33	6287095.56	12.5

Tide control will be maintained using a Caplan tide gauge. The tide gauge will be installed at the NASSCO dry dock pier and will be calibrated prior to dredging and inspected and calibrated (as necessary) on a daily basis. Dredges will be equipped with Global Positioning System (GPS) for the operator of the dredge to monitor the position and elevation of the dredge bucket in real time. Table 4 provides the dredging equipment and its respective control devices.

Table 4
Dredging Control Equipment

Equipment	Position Control	Vertical Control	Azimuth Control	Software/Hardware
Trimble SPS361	DGPS			2 GA530 antennas
Trimble SPS351	DGPS			GA530 antenna
WINOPS Caplan Tide Gauge				
WINOPS Dredge Positioning Software				

2.3 Dredging Plan and Procedures

Dredging operations at the Site will be conducted follow the general dredging plan provided below.

- **Project startup:** Prior to commencing dredging at the Site, a project dredging plan or layout will be developed where dredging cuts and limits are imported into a dredging tracking system for use by the operator and a schedule for completing the dredging will be established. This plan will be updated, as necessary, as dredging progresses. The project dredging plan will be developed by incorporating both sequencing of dredge removal to meet the shipyard schedule (see Section 2.5) and consideration of site-specific elements (e.g., shallow areas).
- **Mobilization:** Equipment and personnel will be mobilized to the Site to prepare the SMA and implement dredging.
- **Preparation of the in-water construction area:** Prior to beginning in-water work, lighting equipment for night work will be installed, such that it points to the dredging area and avoids areas outside of the construction zone, as possible. Additionally, double silt curtains will be deployed around the construction area, using techniques generally described in the U.S. Army Corps of Engineers (USACE) Technical Note ERDC TN-DOER-E21 (2005) and provided here:
  - The silt curtain will be installed by raising the skirt of the curtain such that it is bunched up against the floats, moving the floats and curtain into position, dropping the skirting to the desired depth, and attaching the curtain float to a series of spud barges and/or piles spaced at various points along the alignment as well as on-shore anchors or piers (where applicable).
  - The bottom of the silt curtain shall be weighted with ballast weights or rods affixed to the base of the fabric. Where feasible and applicable, the floating silt curtains shall be anchored and deployed from the surface of the water to just above the substrate.
- **Utility location:** Utilities will be identified or verified by the following methods:
  - Meet with South Shipyard representatives to identify and relocate utilities (as necessary).
  - Meet with appropriate companies to locate utilities at the Site.

  - Use magnetometer, as appropriate, in nearshore areas.

- **Demolition and debris removal:** Demolition of the timber pier, temporary removal of the underwater saltwater fire main pipeline, and removal of identified debris will be completed prior to dredging in a specific SMU.
- **Dredging:** Dredging will follow the schedule presented in Section 2.5 to accommodate shipyard operations.

Sediment Mixing: Sediment mixing will be conducted within the scow, at the Sediment Mixing Area, located north of SMU-1 (as shown on Figure 3). It is anticipated that Portland cement slurry trucks will be unloaded to a pump and transferred by an excavator directly into the scow.

- SOPs have been established by the Contractor and are included in Appendix A. These SOPs will be performed by properly trained project personnel as described in Section 1.3. SOPs establish construction means and methods as well as pre-coordinated measures to be implemented in response to accidental fuel/oil, sediment, or dredge water releases. SOPs have been developed for the following construction actions:
- Mobilization and demobilization
- Utility location/relocation
- Dredging
- Heavy equipment operations
- Treatment system operations and maintenance
- Spill management

2.4 Quality Assurance Project Plan

Dredging operations at the Site will be conducted in accordance with the Quality Assurance Project Plan (an appendix to the RAP; Anchor QEA 2012). The purpose of the QAPP is to ensure that the work complies with regulatory requirements, as described in project permits, and with technical design parameters.

2.5 Best Management Practices

The Contractor shall implement BMPs to prevent release of hazardous materials and dredged material during construction. These BMPs include activities and measures to be performed by personnel as well as controls to be maintained to prevent releases. These BMPs will be modified as necessary during dredging activities to ensure that unforeseen causes of hazardous material or sediment resuspension are mitigated. Additionally, the Contractor will adhere to all regulatory permit conditions required by the Water Board, USACE, and San Diego Unified Port District.

The Contractor will use BMPs discussed below for all fueling (Section 2.5.1) and dredging (Section 2.5.2) activities to limit the potential for release of materials (e.g., gasoline, oil, transmission fluid). All personnel associated with dredging activities (Contractor and Construction Management Team) will be required to visually monitor for oil, fuel spills, or sheens during construction operations. In the event that a sheen or spill is observed, procedures identified in the Contingency Plan (Anchor QEA 2013b) will be implemented. In general, equipment will be immediately shut down and the source of the spill will be identified and contained. Additionally, the spill will be reported to the applicable agencies presented in the Contingency Plan (Anchor QEA 2013b).

2.5.1 Fuel and Oil Handling Best Management Practices

Measures to be employed by the Contractor to limit the potential for release of materials associated with fuel and oil include the following:

- House all oil and fuel in a secondary containment structure to ensure that any spill or leakage is prevented from entering the water column. Secondary containment structures are anticipated to positioned on the dredge crane barge and support tugboats during site activities.
- Install overflow protection devices on tank systems to: 1) warn the operator to shut down transfer pumps, or 2) automatically shut down transfer pumps when the tank reaches full capacity.
- Utilize proper administrative controls to prevent fuel discharge if hoses are dropped or severed.

- Enforce "No topping-off" policy with fuel dispensing attendants and vehicle operators.
- Post clear written instructions for attendants and vehicle operators on correct fuel dispensing procedures.
- Locate cleanup materials (e.g., absorbent pads and drying material, brooms, plastic bags, etc.) for drips and small spills near fuel dispensing station.
- Ensure that attendants and vehicle operators know proper procedures for cleaning small spills and that "washdowns" of spills are not permitted.
- Daily inspection of pumps, dispensing hoses, fittings and all related equipment for leaks and situations that could result in leaks.
- Use containment pans or pads underneath machinery during any scheduled maintenance activities.
- Utilize silt curtains containing built-in oil booms or deploy oil booms around dredging activities along the entire length of the outer silt curtain so that oil and/or fuel will be contained within the oil boom boundary in the event of a spill.
- Employ a full complement of oil/fuel spill kits on board all barges to allow for quick and timely implementation of the spill containment.
- Other administrative controls, which shall include insuring that all equipment is maintained according to product requirements.

2.5.2 Dredging Best Management Practices to Maintain Water Quality Requirements

Measures to be employed by the Contractor to limit the potential for release or resuspension of sediments during dredging activities include the following:

- Inspect all equipment prior to starting each shift. These inspections shall identify typical wear or faulty parts that may contain oil or fuel.
- Limit the speed of bucket movement (to the extent practical) in the water column of dredging to minimize disturbance of sediments and resuspension of materials.
- Use low engine thrust while working in shallow areas to minimize resuspension due to propeller wash. The Contractor shall work with boat operators to understand the importance of throttle control and minimizing thrust to move a barge or while operating a vessel.

- Remove debris ahead of dredging when feasible. See Section 3 for more detail on this process.
- Optimize the "bite" of the clamshell to minimize the total number of passes needed to dredge the required sediment volume.
- Prevent dragging of the dredge bucket along the sediment surface.
- Minimize the height from which the bucket releases its load by placing material deliberately into the hopper barge before releasing the load to prevent spillage of material overboard.
- Incorporate markings on barges to indicate maximum load point as water discharges to San Diego Bay are prohibited. The barge shall implement all measures necessary to capture all return water and prevent discharge. These measures may include pumping free water from scows to frac tanks on the dredge.

The Contractor shall implement following BMPs in the event of equipment malfunction:

- Immediately communicate with personnel.
- Provide proper signs and/or barriers alerting others of potentially unsafe conditions.
- Preform all repair or maintenance on land, not over water. If repairs must be conducted over water, the Contractor shall submit a plan to safely complete these items without impacting water quality to the Construction Management Team for approval.
- Provide proper spill containment equipment (e.g., spill kit) for repair work involving use of liquids.
- Follow measures identifying availability of other equipment or subcontracting options as outlined in the Contingency Plan (Anchor QEA 2013b).

2.6 Sequence

The work is expected to be performed in one construction season, in which dredging will span from September 17, 2013, to March 31, 2014. This in-water work window avoids the California least tern nesting season. Dredging will minimize resuspension of surface sediment to the extent possible. Areas most susceptible to sediment resuspension are the shallowest areas within the SMUs, where drafts of fully loaded haul barges and propeller wash could potentially cause sediment resuspension. When feasible, planned barge haul

routes will be used to reduce equipment and machinery travel over such areas to avoid shallower areas within the SMUs. Use of these in-water barge haul routes will be enforced by the Contractor and provided to dredge and tugboat operators for review prior to movement across SMU footprints. Shallow areas will therefore be avoided to the extent possible to prevent propeller wash resuspension of the sediment. A conceptual haul route map (subject to revision or clarification by the Contractor) is shown on Figure 3. Areas with elevation less than -16 feet MLLW have been identified.

2.6.1 Method for Determining Dredging Priorities and Scheduling

The Contractor will be responsible for adhering to the schedule requirements, which are summarized below:

- September 13 through 15, 2013: No vessels operating at the Site
- September 17, 2013: Dredging starts
- March 31, 2014: Work shall be substantially complete
- April 15, 2014: Final completion

In addition, the Contractor shall be in constant contact with South Trust representatives to ensure additional schedule limitations are known.

2.6.2 Requirements for Expedited Permitting

All permits will or have been obtained by the South Trust.

3 INCIDENTAL DREDGING DEBRIS MANAGEMENT

3.1 Debris Handling

Identified surficial debris will be removed prior to the start of dredging activities. Debris will be removed by a crane or excavator equipped with one of the following attachments:

- Open bucket with opposable thumb
- Grapple or similarly appropriate attachment to facilitate work
- Cable operated clamshell bucket

Alternatively, the Contractor may employ other debris removal techniques based on field experience if it limits the potential for sediment resuspension.

Other previously unidentified debris may be encountered during dredging activities. When debris is encountered during dredging, it will be removed alongside sediment. If debris encountered during dredging cannot be removed, then it will be marked for later removal by appropriate removal equipment.

3.2 Disposal

Debris, including treated wood waste, removed from the SMU will either be recycled or disposed of in a landfill following appropriate waste characterization procedures.

3.3 Munitions and Ordnance

In the event of the unexpected recovery of munitions and ordnance, the Contractor shall immediately isolate and evacuate the area. The Contractor shall notify Naval Facilities Engineering Command (NAVFAC) Southwest Division at (866) 793-8226 to report the encounter in accordance with the Contingency Plan (Anchor QEA 2013b).

4 REFERENCES

Anchor QEA, L.P., 2012. *Remedial Action Plan.* San Diego Shipyard Sediment Site. October 2012.

Anchor QEA, 2013a. *Sediment Management Plan.* San Diego Shipyard Sediment Site – South Shipyard. August 2013.

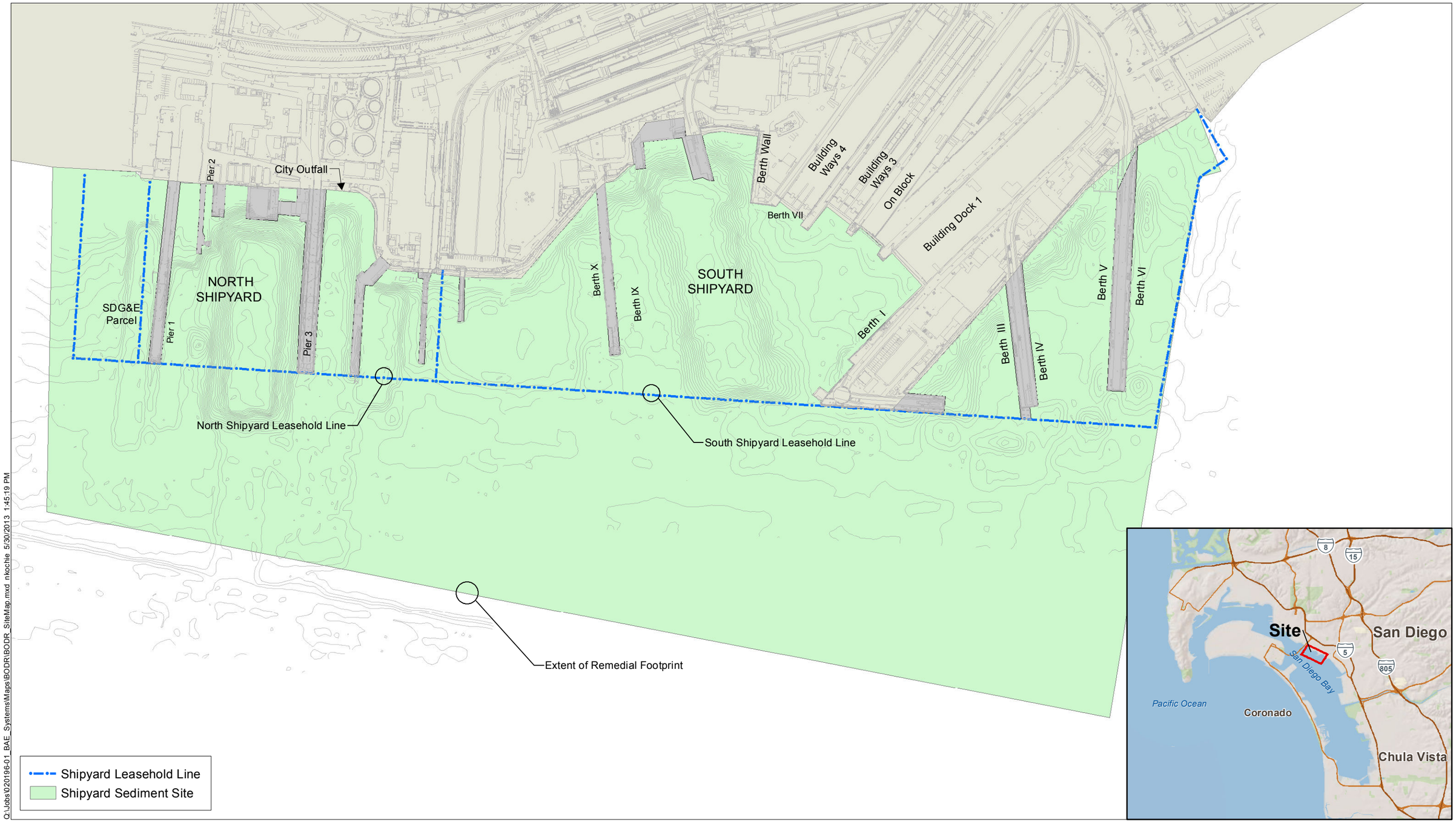
Anchor QEA, 2013b. *Contingency Plan*. San Diego Shipyard Sediment Site – South Shipyard. August 2013.

USACE (U.S. Army Corps of Engineers), 2005. *Silt Curtains as a Dredging Project Management Practice.* ERDC TN-DOER-E21. Dredging Operations and Environmental Research. September 2005.Water Board (San Diego Regional Water Quality Control Board), 2012a. Cleanup and Abatement Order R9-2012-0024 for the Shipyard Sediment Site. March 14, 2012.

Water Board (San Diego Regional Water Quality Control Board), 2012a. Cleanup and Abatement Order R9-2012-0024 for the Shipyard Sediment Site. March 14, 2012.

Water Board, 2012b. *Technical Report for Cleanup and Abatement Order No. R9-2012-0024 for the Shipyard Sediment Site*. March 14, 2012.

FIGURES



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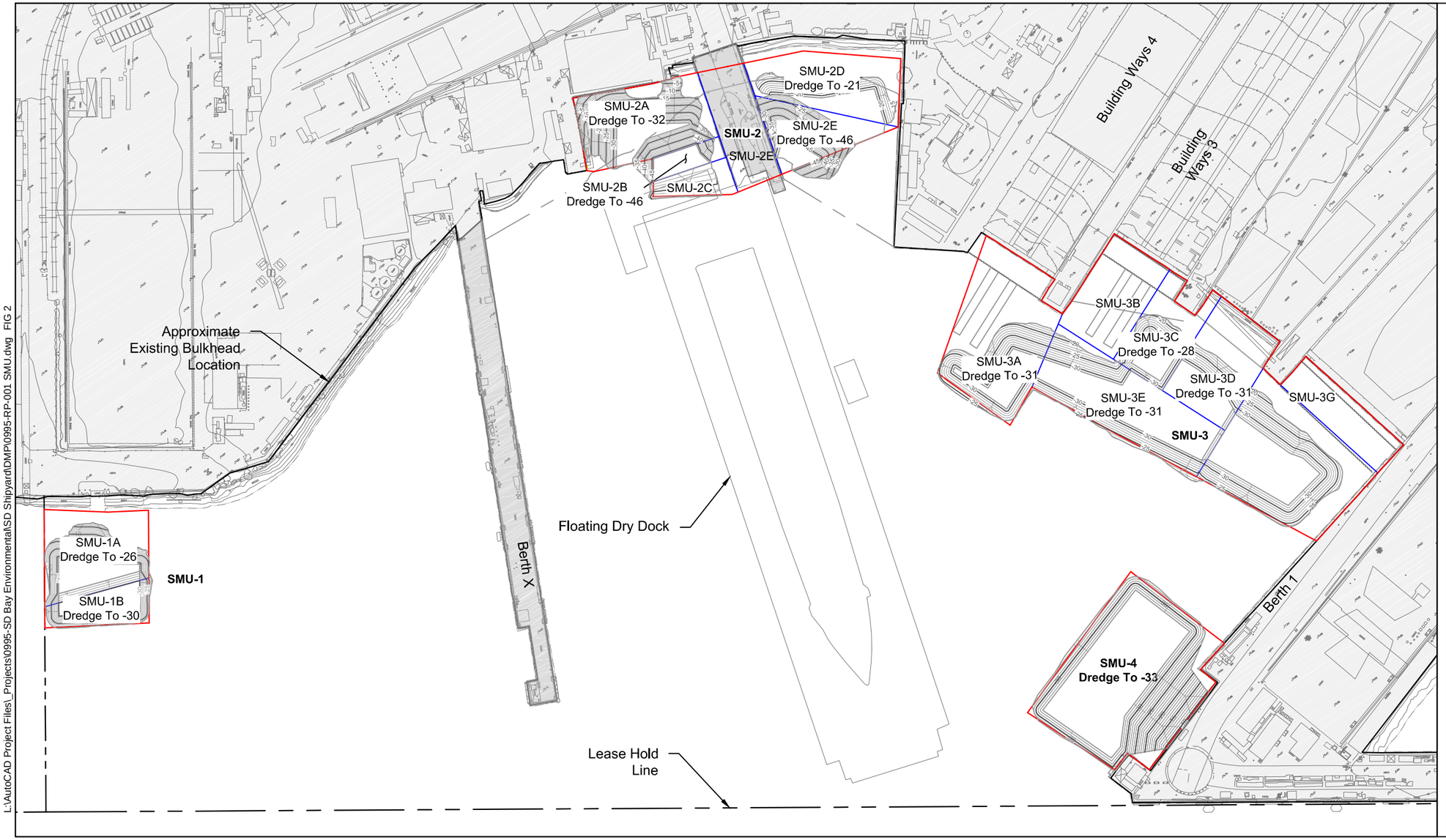
Feet
0 175 350 525 700

Figure 1
Site Map
San Diego Shipyard Sediment Site – South Shipyard



LEGEND:

Remediation Boundary

Sub-SMU Boundary

-20 Proposed Dredging

SOURCE: Upland topography from Digital Mapping Inc., September, 2009 and supplemented by Environmental Data Solutions survey dated April 13, 2013.

0 150
Scale in Feet

L:\AutoCAD Project Files_Projects\0995-SD Bay Environmental\SD Shipyard\DMP\0995-RP-001 SMU.dwg FIG 2

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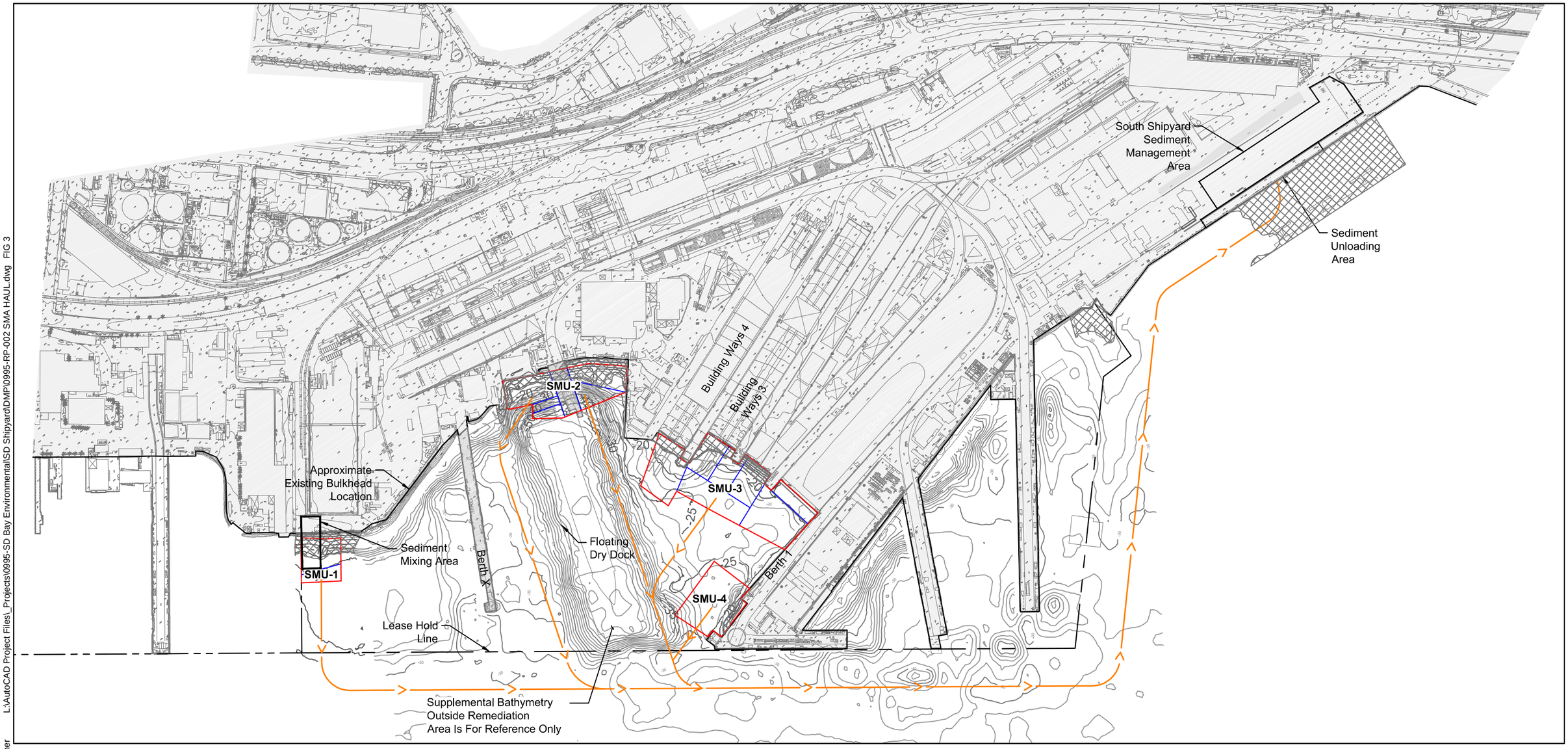
Figure 2
Sediment Management Units
San Diego Shipyard Sediment Site - South Shipyard



SOURCE: Upland topography from Digital Mapping Inc., September, 2009 and supplemented by Environmental Data Solutions survey dated April 13, 2013. Bathymetry from Environmental Data Solutions survey dated April 25, 2013. Bathymetry at Chollas Creek from US Navy NAVFAC DWG. NO. 18086973.
HORIZONTAL DATUM: California State Plane, Zone 6, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

- Remediation Boundary
- Sub-SMU Boundary
- Conceptual Haul Route
- Areas Above -16 (MLLW)

0 350
Scale in Feet

L:\AutoCAD Project Files_Projects\0995-SD Bay Environmental\SD Shipyard\DMP\0995-RP-002 SMA HAUL.dwg FIG 3
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Figure 3
Conceptual Haul Routes from Sediment Management Units
San Diego Shipyard Sediment Site - South Shipyard

APPENDIX A
STANDARD OPERATING PROCEDURES

X. BMP's AND SOP's

SOP-VESSEL FUELING & OIL TRANSFERS

Background:

A vessel owner/operator must provide any and all pollution prevention and emergency response activities associated with spills that occur while fueling or transferring oil. If there is an accidental release, R.E. Staite will provide any resources it may have available, but the vessel owner/operator is responsible for any releases from its operations.

Objective:

Prevent the release of fuel during transfer/fueling operations. Applicability:

The BMP shall be implemented whenever fuel or petroleum products are being transferred to or from a ship. Transfers may occur on or around the piers and dry docks.

Best Management Practices (BMPs):

- *Anyone who sees a discharge of oil going into the Bay shall report it to the environmental department. A supervisor should be notified immediately.*
- An oil spill containment boom will be in place before a vessel takes on petroleum products by hose transfer.
- Receiving stations will be manned with communications established between the pier/barge and the ship's representative (Person In-Charge or PIC).
- Overflow watch shall be posted for the duration of the transfer.
- Emergency response material shall be on hand for immediate use.
- DC plugs shall be in drains surrounding the receiving stations and scuppers shall be blocked.
- The pre-fueling checklist shall be completed for each day of fueling.

The barge superintendent is responsible for giving the environmental department 24-hour. notice.

Background:

Shrouding systems are installed on vessels to minimize accidental discharges where material might enter San Diego Bay either directly or via surface runoff. These discharges may be due to abrasive blasting, hydro blasting/power washing, spray painting, welding/burning, and other operations.

Objective:

To prevent fugitive particulate matter from discharge to surface waters.

Applicability:

This BMP applies to any employee, subcontractor and Ship's force whose work generates dust or particulates exposed to wind or rain, or who perform tasks over the side.

Best Management Practices (BMPs):

- When performing abrasive blasting, spray painting, welding/burning/cutting, deck grinding, or other dust generating operations, shrouding or other means of containment shall be installed.

- Containment may include a plywood barrier along the outside edge of the deck railings and/or a curtain or Visqueen to help prevent fugitive material from entering surface waters.
- When blasting or spray painting a vessel the area shall be contained with Visqueen, shrink-wrap or tarpaulins . The containment must allow the grit to fall onto the deck for proper cleanup or prevent paint overspray from drifting.

- Camels, pontoons, small floating decks, or barges may also be utilized to catch waste pollutant material where the particulate- generating activity is near the waterline of waterborne vessels.

- Containment shall be inspected by the Engineer before the work begins.

- Entity performing work shall ensure containment adequate continuously monitor containment
and immediately shut down if containment breached.

- Shrouds shall be large enough to adequately enclose the working area and isolate it from the Bay.

- Support structures such as scaffolding may be used with shrouding in order to withstand potential wind stress.

SOP-EMPTY CONTAINERS

Containers that previously held hazardous materials are exempt from further regulation after certain conditions are met. Two of the most important conditions are that they be "empty" and properly managed. The Department of Toxic Substance Control (DTSC) defines "empty" based on the type of material the container previously held:

a) If the container held a material that can be easily poured, then all material left in the container must be removed by any practical means such as pumping or draining.

b) If the material is non-pourable, then all material that can be feasibly removed by physical means such as scraping or chipping must be removed.

c) If the container held an acute or extremely hazardous waste, the container should be triple rinsed using a solvent capable of removing the material or cleaned by another method to achieve equivalent removal (performed by a licensed facility}.

Objective:

To manage "empty containers" in accordance with legal requirements.

Applicability:

This BMP applies to all employees and subcontractors who generate hazardous wastes or use hazardous materials.

Best Management Practices (BMPs):

- Subcontractors or employees using hazardous materials are responsible for ensuring container meets definition of “empty" prior to disposal.
- Empty containers holding greater than 5 gallons, shall be marked with the date emptied and reclaimed as scrap, reconditioned, remanufactured within one year of being emptied as per California Code of Regulations Title 22.
- Empty containers holding 5 gallons or less will be disposed of at an approved solid waste facility or reclaimed as scrap, reconditioned or remanufactured.
- Empty aerosol cans shall be segregated from all other waste streams and treated in with law.
- Empty containers shall not be reused to store materials or chemicals, unless the container has been reconditioned and properly labeled.

If empty containers are to be reused, then they shall be labeled "EMPTY" and shall also include a description of the former contents and the date the container was emptied.

BMP- USED OIL FILTERS

Background:

In order for R.E. Staite to avoid the cost of managing and disposing of used filters as hazardous waste, proper management of used oil filters for recycling is required. California Code of Regulations Title 22 sets forth the requirements for handling, storage and transportation of used oil filters with which R.E. Staite must comply.

Objective:

R.E. Staite shall manage used oil filters in accordance with the requirements of Title 22, of the California Code of Regulations.

Definitions:

Free-flowing oil is defined to be a continuous stream of oil exiting the filter when the filter is inverted.

Applicability:

This HMP applies to all employees and subcontractors working with used oil filters.

Best Management Practices (BMPs):

- Used oil filters shall be drained of all free-flowing oil.
- Some oil filters may be equipped with a device which inhibits the drainage of used oil from the filter. This device shall be manipulated (i.e., crushed, opened, drained, etc.) to allow the oil to flow freely.
- All used oil filters shall be accumulated, stored, and transferred to a closed rainproof container.

The container must be capable of containing any used oil that may discharge from the filters.

- Containers of used oil filters should be labeled with the words "drained used oil filters" and include the initial date of accumulation.
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BMP-OIL SPILL CONTAINMENT BOOMS

Background:

Oil spill containment booms shall be used when a vessel is moored. Booms play a crucial role in containing spills on the water and determining accountability. It is therefore necessary to keep them in good working order. Booms are also made available in case of spills or other emergencies.

Objective:

To ensure that all booms are in good operating condition through preventive maintenance and standard operating procedures.

Applicability:

This BMP applies to all employees and subcontractors involved in moorage of ships, especially when oily water or fuel transfers are conducted.

Best Management Practices

- Booms should be monitored for proper buoyancy.
- All gaps, rips and problem areas should be repaired immediately.
- Any breaks observed on booms surrounding ships berthed at R.E. Staite will be repaired immediately.
- If the protection boom is opened to conduct a vessel operation, the boom shall be replaced within 24 hours after the operation is complete, or as soon as practical.
- When a boom is no longer in use as a prevention tool to contain oil spills or accidents occurring during transfer operations, the boom may be removed from the water within.
- Absorbent oil booms deployed to collect spilled oil shall be removed as soon as practical following their use.
- Oil spill boom shall not be cleaned in the water

SOP -SECONDARY CONTAINMENT (CONTAINER)

Background:
Storage of liquids such as paints, thinners, and oil products presents a potential for accidental spillage into storm drains, surface waters, ponds, pavement or underlying soil. Therefore, secondary containment such as drip pans and tarps (plastic, Visqueen, canvas etc.), shall be used to ensure that spillage does not soak into pavement, soil or enter surface waters.

Objective:
Secondary containment techniques will be utilized at R.E. STAITE when working with or temporarily storing all hazardous liquids.

Applicability:
This BMP applies to all employees and subcontractors who work with or store hazardous liquids.

Best Management Practices (BMPs): All employees and subcontractors shall ensure that proper secondary containment is in place at all times. The secondary containment must be capable of holding spilled liquids without leaks. Asphalt is not adequate for use as a surface to contain fuels or other hydrocarbons.

- When a secondary containment area or container accumulates rainwater, it shall be removed as soon as practical following the rain event
- All leaks in primary or secondary containment must be reported to Environmental Services and repaired immediately.
- Incompatible materials shall not be stored in the same secondary containment. Materials to be stored must be compatible with the composition of the secondary containment.
- Secondary containment for containers (paint cans, 55-gallon drum, etc.) shall have a capacity of at least 110% of the largest container. The 110% requirement does not pertain to "transportation related" tanks. However, "transportation related" tanks must have adequate secondary containment to capture reasonably anticipated spills and drips.

Background:

R.E. Staite constructs projects. If not controlled these projects have the potential for discharges into bays, ponds, storm drains, surface waters, pavement or underlying soil. Therefore, best management practices (BMPs) must be observed to control and minimize these risks.

Objective:

When performing work, measures must be taken to prevent construction materials or other substances from entering the Bay, or any other unauthorized location outside the specific work site. These BMPs, in addition to all other R.E. Staite' BMPs, must be implemented as appropriate to control worksite substances and prevent pollution.

Applicability:

This BMP applies to all employees and subcontractors performing work at the direction of R.E. Staite.

Best Management Practices:

Erosion Control- or soil stabilization, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in storm water runoff. Erosion control protects the soil surface by covering and/or binding soil particles. Implement the following practices for effective erosion control:

- To the extent possible avoid scheduling the work to be done during a rain event.
- Maintain sufficient erosion control materials on site before the onset of rain events.
- Use plastic sheeting or tarps to cover stockpiled materials.
- Use silt fence material for work site perimeter protection where practical.
- Use fiber rolls to keep substances and runoff in desirable areas and keep substances and runoff out of undesirable areas.
- Use water or other dust palliatives to prevent or wind erosion and to minimize dust nuisance. Ensure water used for dust control will be applied in such a manner to minimize runoff from the work site.

Tracking Control- preventing or reducing the tracking of sediment off-site by vehicles leaving the construction area. Implement the following practices for effective tracking control:

- Establish and maintain a Stabilized Construction Entrance/Exit in accordance with CASQA TC-1 where appropriate.

- Continually maintain the cleanliness of the area around any Stabilized Construction Entrance/Exit.

- Where a Stabilized Construction Entrance/Exit is not established, monitor vehicles leaving the work site for sediment that could be deposited on roadways .

Non-Stormwater Discharge Controls- source control BMPs that prevent pollution by limiting or reducing potential pollutants at their source or eliminating off-site discharge from sources other than stormwater. Implement the practices listed below as appropriate:

- Conduct concrete finishing in accordance with Shipyard EMP

Waste Management and Materials Pollution Controls- source controls that prevent pollution by limiting or reducing potential pollutants at their source before they come in contact with stormwater. Waste management consists of implementing procedural and structural controls for handling, storing and disposing of wastes generated by a construction project to prevent the release of waste materials into stormwater runoff or discharges through proper management wastes. Implement the following practices for effective waste management controls:

Inspection and Maintenance-- In addition to normal pollution prevention monitoring of the shipyard, inspections of facility project work sites will be conducted by the R.E. Staite representatives as follows:

- Weekly

- Prior to a forecast storm event

- After a rain event that causes runoff from the construction site

- At 24-hour intervals during extended rain events.

Inspections will be performed to verity that the appropriate pollution prevention measures and BMPs are being implemented with the following being emphasized :

- Areas where active construction is occurring (including staging areas)

- Ensuring that road surfaces are cleaned of excavated material and construction materials such as chemicals by either removing or storing the material in protective storage containers at the end of every construction day

- Ensuring land areas disturbed during construction are returned to preconstruction conditions or an equivalent protection is used at the end of each workday to eliminate or minimize erosion and the possible discharge of sediment or other pollutants during a rain event.

If deficiencies are identified during an inspection, repairs or design changes to BMPs must be initiated within 72 hours of identification and need to be completed as soon as possible.

SOP-PREVENTATIVE MAINTENANCE

R.E. Staite PM program applies to all equipment and operations. R.E. Staite has implemented and maintains a preventive maintenance ("PM") program that establishes specific procedures and requirements to prevent breakdowns and failures by adjustment, repair, and replacement. R.E. Staite PM program revolves around inspections, testing of plant equipment and systems, and includes a detailed record keeping program. This records system helps to ensure scheduling of tests, inspections, test results, and corrective action.

High Risk Areas are defined as having either large volumes or highly toxic materials and have ready access to a pathway leading to surface or groundwater. Inspection areas include: storage facilities, transfer pipelines, loading and unloading areas, pipes, pumps and valves, tank corrosion (internal and external), tank supports or foundation deterioration, primary and secondary containment, housekeeping, tank drain valves, docks, and storm water collection systems.

Only qualified personnel are designated to inspect equipment and plant areas. These foremen in R.E. Staite have been trained to perform visual inspections of their respective systems and equipment.

R.E. Staite is responsible for all discharges associated with construction, repair, and maintenance activities at its other facility, except those caused by vessel owners, operators, and crew. However, R.E. Staite may also be responsible for the consequences (i.e. clean up) of all discharges within and from its construction sites.

To ensure the timely response and mitigation of spills, all R.E. Staite employees are required to notify R.E. Staite project manger's or foremen immediately, but no later than 30 minutes following the discovery of environmental incidents such as spills and leaks. The implementation of response actions shall not delay notification. Those spills and leaks reported to R.E. Staite management team shall be investigated immediately to determine what containment and clean-up actions are necessary. In the event that a clean-up effort is deemed necessary, R.E. Staite shall respond with appropriate on-site resources, or may seek outside assistance from a spill response subcontractor. A record of the date, time, location, size of the spill, and action taken shall be maintained by the project manager.

All new employees at R.E. Staite are initially indoctrinated into the risks of working with hazardous materials and how their work activity can cause environmental impacts. This training, termed New Hire Employee Orientation is conducted prior to allowing the employee to start construction work. All employees are made aware of R.E. Staite Best Management Practice (BMP) objectives, the processes and materials with which they are working, the safety hazards, practices for preventing discharges, and procedures for responding properly and rapidly to toxic and HAZMAT incidents in a shipyard environment. Additional specialized training is also conducted where that employee participate in activity that is of a greater threat to the environment, or is regulated for that employees job requirements. Examples include, Spill Prevention Control and Countermeasure ("SPCC") Program, Over-water transfer of oil, and hazardous waste management , to name a few. Subsequent recurring training for all employees is conducted on a weekly basis (Safety Meetings) to ensure that employees are updated in policy, procedure and legislative changes as they relate to safety and environmental practices. Training is incorporated into company related Hazard Communication and other safety training. In addition to full time employees, subcontractors or temporary personnel working at the shipyard in areas where pollutants or hazardous materials are stored, used, and/or present in significant quantities, are educated on the policies and procedures of R.E. Staite BMP objectives before commencing production activities. Records of training including name and position of employee, lesson plan, subject material covered, BMP instructors' names and positions are kept on file in the R.E. Staite home office. There will be specialized training for the Shipyard project of all crew team members to avoid impacts to wildlife and marsh habitat; these training lessons should aid the construction crew in identification of endangered or rare species and habitat construction methods in avoiding impacts to the Bay.

SUBCONTRACTORS and THIRD PARTIES

In order to ensure the safety and welfare of all workers and the environment, subcontractors and third parties receive training on the federal, state, and local environmental regulatory ordinances, statutes, laws, rules and regulations that must be adhered to at R.E. Staite.

Areas of primary concern include compliance with R.E. Staite the Shipyard EMP, Storm Water Pollution Prevention Plan (SWPPP), Spill Prevention Control and Countermeasures (SPCC), and Industrial Wastewater Discharges. These various regulatory requirements are successfully achieved at R.E. Staite through the implementation of Best Management Practices (BMPs).

SOP-INSPECTIONS AND RECORDS

R.E. Staite keeps an inspection and records system designed to detect actual or potential BMP incidents. R.E. Staite inspections and records system includes written instructions and procedures regarding both appropriate time intervals and evaluation criteria. R.E. Staite records also show both the completion date and the results of each inspection. These results in turn are signed by the appropriate supervisor and maintained for a minimum of three years. Furthermore, R.E. Staite routinely examines its many logs/records for any needed improvements, corrections or overall redesign.

Inspection areas include: Material Storage areas, Liquid Storage areas, In-Plant Transfer and Materials Handling, Loading and Unloading Operations and Plant Runoff, while any other procedures and inspection criteria are considered on a site-specific basis. Moreover, R.E. Staite has instituted various tracking procedures that ensure immediate response and corrective actions are taken when inspections reveal deficiencies.

For the Shipyard project all deficiencies will be reported to the Engineer and NASSCO and referred for correction on a weekly and monthly basis if not sooner.

BMP-DISCHARGE PROHIBITIONS

R.E. Staite is currently operating under a variety of local, state, and federal environmental laws, rules and regulations. To ensure the safety and welfare of workers and the environment, it is required that all pertinent regulatory ordinances, statutes, laws, rules and regulations be adhered to. To successfully accomplish this, R.E. Staite operates under Best Management Practices ("BMPs").

No hazardous material/substance/waste or miscellaneous debris shall be allowed to enter receiving waters. It is R.E. Staite position that any violation of these prohibitions and/or specifications will be cause for immediate shutdown of any operation at cause. Furthermore, under R.E. Staite BMPs governing storm water pollution prevention, it is required that all materials/areas which have the potential for contaminating storm water runoff be managed in such a way to prohibit contamination from entering R.E. Staite storm/pond water conveyance system.

Regular inspections of facility operations are conducted to ensure that operational controls (BMPs) are implemented.

DISCHARGE PROHIBITIONS

A. The Discharger shall comply with all requirements of the Basin Plan Waste Discharge Prohibitions which are hereby included in this Order be reference.

B. The discharge of sewage to San Diego Bay is prohibited.

C. The discharge of industrial process water, to San Diego Bay is prohibited.

D. The discharge of the flush of storm water runoff from high risk areas is prohibited.

E. The discharges of municipal and industrial waste to San Diego Bay is prohibited.

F. The discharge of rubbish, refuse, debris, materials of petroleum origin, waste zinc plates, abrasives, primer, paint, paint chips, solvents and marine fouling organisms, and the deposition of such wastes at any place where they could eventually be discharged is prohibited. This prohibition does not apply to the discharge of marine fouling organisms removed from unpainted, uncoated surfaces by underwater operations and discharges that result from floating booms that were installed for "Force Protection" purposes. Rubbish and refuse include, but are not limited to, any cans, bottles, paper, plastic, vegetable matter, or dead animals deposited or caused to be deposited by man.

G. The discharge of materials of petroleum origin in sufficient quantities to be visible is prohibited.

H. The discharge of bypassing of untreated waste to San Diego Bay is prohibited.

I. The discharge of polychlorinated biphenyl compounds, such as those used for transformer fluid, is prohibited.

J. The discharge of wastes and pollutants from underwater operations, such as underwater paint and coating removal and underwater hull cleaning, is prohibited . This prohibition and uncoated surfaces by underwater operations, or to discharges that result from the cleaning of floating boons that were installed for "Force Protection" purposes.

K. The discharge of wastes that cause or contribute to the violation of water quality standard (designated beneficial uses and water quality objectives developed to protect beneficial uses) is prohibited.

R.E. Staite will implement good site management (i.e., "housekeeping") measures for construction materials that could potentially be a threat to water quality if discharged. At a minimum, the good housekeeping measures shall consist of the following:

1. Identify the products used and/or expected to be used and the end products that are produced and/or expected to be produced. This does not include materials and equipment that are designed to be outdoors and exposed to environmental conditions
(i.e. poles, equipment pads, cabinets, conductors, insulators, bricks, etc.).

2. Cover and berm loose stockpiled construction materials that are not actively being used
(i.e. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.). Inactive areas are defined as stockpiled materials: not scheduled to be re-disturbed for at least 14 days. Note: with the onset of precipitation all stockpile materials shall be protected.

3. Store chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage or in a storage shed providing complete enclosure.

4. Minimize exposure of construction materials to precipitation (not applicable to materials designed to be outdoors and exposed to the environment).

5. Implement BMPs to control the off-site tracking of loose construction and landscape materials.

R.E. Staite will implement good housekeeping measures for waste management, which at a

minimum shall consist of the following:

1. Preventing disposal of any rinse or wash waters or materials on impervious or pervious site surfaces or into the storm drain system.

2. Ensuring the containment of sanitation facilities (e.g., portable toilets) to prevent discharges of pollutants to the ponds or receiving water.

3. Cleaning or replacing sanitation facilities and inspecting

them regularly for leaks and spills.

4. Covering waste disposal containers at the end of every business day and prior to a rain event.

5. Preventing discharges from waste disposal containers to the stormwater drainage system or receiving water. Containing and securely protecting stockpiled waste material from wind and rain at all times unless actively being used.

6. Implementing procedures that effectively address hazardous and non-hazardous spills.

7. Developing a spill response and implementation procedure prior to commencement of construction activities. To these require that:

- Equipment and materials for cleanup of spills shall be available on site and that spills and leaks shall be cleaned up immediately and disposed of properly.

- Appropriate spill response personnel are assigned and trained.

8. Ensuring the containment of concrete washout areas and other washout areas that may contain additional pollutants to prevent discharge into the underlying soil and onto the surrounding areas.

R.E. Staite will implement good housekeeping for vehicle storage and maintenance, which at a minimum, shall consist of the following:

1. Preventing oil, grease, or fuel from leaking into the ground, storm drains or surface waters.

2. Implementing appropriate BMPs whenever equipment or vehicles are fueled, maintained, or stored.

3. Cleaning leaks immediately and disposing of leaked materials properly.

R.E. Staite will implement good housekeeping for landscape materials, which at a minimum shall consist of the following:

R.E. Staite will implement good housekeeping measures on the construction site to control the air deposition of site materials and from site operations. Such particulates can include, but are not limited to, sediment, nutrients,

trash, metals, bacteria, oil and grease and organics.

Non-Stormwater Management

R.E. Staite will practice proper management of non-stormwater by:

1. Implementing measures to control all non-stormwater discharges during construction.

2. Washing vehicles in such a manner as to prevent non-stormwater discharges to surface waters or Municipal Separate Storm Sewer System (MS4) drainage systems.

3. Cleaning streets in such a manner as to prevent unauthorized non-stormwater discharges from reaching surface water or MS4 drainage systems.

Erosion Control

R.E. Staite will practice proper and effective erosion control by:

1. Implementing effective wind erosion control

2. Providing effective soil cover for inactive areas, all finished slopes, and utility backfill.

3. Limiting the use of plastic materials when more sustainable, environmentally friendly alternatives exist. Where plastic materials are deemed necessary, R.E. Staite will consider the use of plastic materials resistant to solar degradation.

Sediment Controls

R.E. Staite will practice proper and effective sediment control by:

4. Establishing and maintain effective perimeter controls as needed, and implementing effective BMPs for all construction entrances and exits to sufficiently control erosion and sediment discharges from the site.

Wind Erosion Control

Wind erosion control consists of applying water or other dust palliatives to prevent or minimize dust nuisance. This project will implement the following practices for effective wind erosion control:

- WE-1: Wind Erosion Control

Water trucks and/or a portable tank shall be made available to the field crews with an adequate supply of water to be used as necessary to mitigate the generation of airborne dust particulates.

BMP-INSPECTION AND MAINTENANCE

Inspections of active construction areas will be conducted by the Site biologist or their qualified designee who has received project specific training as follows:

- Weekly to monthly
- Prior to a forecast storm event
- After a rain event that causes runoff from the construction site
- At 24-hour intervals during extended rain events.
- Quarterly non-stormwater visual inspections

Daily inspections will be performed by the Foreman or a designee with appropriate training to verify that the appropriate BMPs for pond and non-stormwater are being implemented in the following construction site locations:

- Areas where active construction is occurring (including staging areas)
- Project excavations are closed, with properly protected spoils, and that road surfaces are cleaned of excavated material and construction materials such as chemicals by either removing or storing the material in protective storage containers at the end of every construction day
- Land areas disturbed during construction are returned to preconstruction conditions or an equivalent protection is used at the end of each workday to eliminate or minimize erosion and the possible discharge of sediment or other pollutants during a rain event.

If deficiencies are identified during BMP inspections, repairs or design changes to BMPs must be initiated within 72 hours of identification and need to be completed as soon as possible.

Pre-Storm, During Storm, and Post-Storm Inspection

Pre-storm, during storm, and post-storm inspections shall be conducted to:

- Inspect all drainage areas for the presence or absence of

floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants;

- Identify any spills, leaks, or uncontrolled pollutant sources that have or may discharge from the site;
- Inspect all BMPs;
- Identify all BMPs that need maintenance to operate effectively;
- Identify all BMPs that have failed;
- Identify all BMPs that could fail to operate as intended;
- Identify the need for additional BMPs;
- If needed implement appropriate corrective action items to repair all BMPs that need maintenance or have failed (include updates in SWPPP); and
- Inspect all locations for the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants.