

**STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

ORDER NO. R4-2010-XXXX

**WASTE DISCHARGE REQUIREMENTS
FOR
PORT OF LONG BEACH
(MIDDLE HARBOR REDEVELOPMENT PROJECT)
(FILE NO. 09-204)**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) finds:

1. The Port of Long Beach (POLB) filed an application for Waste Discharge Requirements for dredging, disposal and construction activities within the Middle Harbor area of Long Beach Harbor (Figure 1).
2. In April of 2010, POLB plans to begin construction of the Middle Harbor Redevelopment Project (Project), which includes the expansion and modernization of existing marine terminals and other Port land and water areas (Figure 2) to accommodate a portion of the forecasted increase in containerized cargo. The Project comprises a number of activities at existing terminal facilities within the Middle Harbor area (Figure 3), including consolidating terminals on Piers E and F; repairing and modernizing Port facilities; implementing Green Port policies and the Clean Air Action Plan; improving terminal traffic flow and cargo handling operations; and increasing intermodal railyard facilities. The Project is estimated to take 10 years for completion and will be accomplished in two phases, each with multiple stages. The construction elements that are relevant to water quality include: 1) Slip 3 and East Basin dredging; 2) Piers D and E demolition; 3) Piers D and E excavation and dredging; 4) rock dike construction; and 5) filling of Slip 1 and the East Basin to create new land.
3. Slip 3 and East Basin Dredging – The primary dredge footprint is within Slip 3, which lies between Piers D and E in the Middle Harbor (Figures 2 and 3). Slip 3 runs north-south and is approximately 2,500 feet in length and approximately 350 feet across, with existing water depths ranging from -36 to -54 feet mean lower low water (MLLW). Slip 3 will be widened by 117 feet and deepened to -55 feet MLLW (with a 2-foot overdredge allowance to -57 feet MLLW) to accommodate deep-draft cargo ships that require sufficient width to maneuver safely up to and away from berths. Minor dredging will occur in Slip 1 and the East Basin to prepare the sites of the landfill containment dikes. The Project is estimated to generate approximately 290,000 cubic yards (cy) of dredged material, including bulking factors. Material

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generated from dredging activities will be beneficially reused as fill for Slip 1 and the East Basin extension area.

4. Piers D and E Demolition - The existing wharf structures (e.g., concrete pilings, sheetpile and concrete retaining structures, and rock dikes) at Berths D29 to D31, E12 to E13, and E23 to E27 (Figures 2 and 3) will be demolished as one of the first steps in the construction process to widen Slip 3 by approximately 148 feet and deepen the slip to -55 feet MLLW (-57 feet MLLW, including the 2-foot overdredge allowance). Additional demolition would occur at Berth F210 late in the Project to remove a small land area needed for the final wharf configuration (Figure 2). Construction of the new wharves, re-construction of new shorelines, and improvements to portions of existing wharves will include placement of quarry-run rock dikes with armor rock revetments or armor stone, installation of concrete piles, construction of 4,200 lineal feet of steel-reinforced concrete wharf deck, sheetpiles, tiebacks, and anchors, and installation of shore-to-ship infrastructure.
5. Piers D and E Excavation and Dredging - Approximately 1,500,000 cy of material (1,250,000 cy from D28 to D31, and E23 to E24, and 250,000 cy from E25 to E27) will be excavated and dredged from existing Berths D29 to D31 and E24 to E26 to widen Slip 3 by approximately 148 feet and deepen the slip to -55 feet MLLW (-57 feet MLLW, including the 2-foot overdredge allowance). An additional 500,000 cy of material would be dredged or excavated at Berth F210 late in the 10-year duration of the Project to remove a small land area needed for the final wharf configuration (Figure 2).
6. Rock Dike Construction – During the first phase of construction, rock will be placed in Slip 3 to support the new wharves and placed in Slip 1 and the East Basin to create two containment dikes (Figure 3). New dikes will consist of quarry-run rock with armor-rock revetments. One rock dike will be constructed in Slip 1 for truck access to the wedge fill, and another containment dike will be constructed in the East Basin and at the southern boundary of Slip 1 to prevent the movement of newly placed material and contain the final fill.
7. Filling of Slip 1 and the East Basin - The Middle Harbor fill site, located in the Slip 1 and East Basin fill areas, will create approximately 65 acres of new land and require approximately 4.8 million cy of fill material to complete the Project. Dredging and excavation activities within the Project are estimated to generate approximately 2.3 million cy. Given the consolidation that will occur as dredged material is placed into fill areas, approximately 3.2 million cy of material will be needed from other non-project (i.e., third-party) sources to complete the fill.

Fill activities will include placement of material dredged and excavated from Pier D, Pier E, the East Basin, and Slip 3 during the first phase of construction (as

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described above) and the placement of additional material imported from outside the Project and from the excavation of land at Berth F210. The Pier E extension and north wedge sites will be filled first. The fill retention dike will be built to +11 feet MLLW on the northwest portion of the East Basin (around the Pier E extension area, Figure 3). The containment dike will transition from +11 feet MLLW to a subsurface berm (-5 feet MLLW). The easternmost portion of the containment dike will be submerged to an elevation of -20 feet MLLW to allow barge access to the fill site and to facilitate removal of existing wharf structures on Pier F as part of a subsequent construction phase. Final construction designs will raise the fill to approximately +15 MLLW.

It is expected that barges or scows maneuvered by tugboats will transport the dredged material to the Slip 1 fill site; material excavated as part of wharf demolition may be brought to the fill site by trucks that would dump directly into the fill. Barges would deposit the dredged material behind the containment dike inside the slip. When the fill site reaches an elevation of approximately -10 feet MLLW, it will be infeasible for certain types of bottom-dump barges to enter the fill area. From this point forward, rehandling of dredged material will be necessary; it is assumed that the dredged material will be lifted over the dike and into the fill by a clamshell bucket, a hydraulic offloader, a material conveyor, or a similar methodology, at the contractor's discretion. A Fill Plan has been developed to describe the logistical and technical considerations associated with maintaining water quality during the placement of materials in the Middle Harbor fill site.

8. POLB recognizes that the Middle Harbor Development Project can provide benefits to the region by accepting and beneficially reusing dredged material. It is the POLB's intent to accommodate as much dredged material from third-party projects (i.e., projects undertaken by entities other than POLB) as possible within the constraints of the Project's schedule. Unlike most typical dredge disposal locations, the Middle Harbor fill site is a key component of a much larger, time-critical POLB redevelopment project. The timing of the placement of material is critical to the subsequent terminal construction activities, but also is dependent on the timing of preceding construction activities. As a result, the temporal window for fill construction, and hence the acceptance of third-party material, is both narrow and subject to change as the project advances. The main fill activity within Slip 1 and the East Basin currently is scheduled for the 20-month window between November 2010 and June 2012. This schedule is dependent on the construction of the fill retainment dike, which is expected to be completed in late 2010. Placement of material prior to the completion of the dike may be possible if all required regulatory approvals for early placement are obtained by the third party.
9. While POLB will be generating fill material as part of the project, POLB will be accepting fill from outside sources to both benefit the Project and the region. POLB

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will evaluate every potential fill source in accordance with the priority protocol established in the Middle Harbor Sediment Management Plan. The final decision as to whether a given material can be accepted will be made on a case-by-case basis but will be based upon four criteria:

- Schedule: the timing of its delivery relative to the progress of fill construction.
- Fill Composition: the nature of the fill material, both chemical and geotechnical.
- Documentation: the required permits, insurance, licenses, and agreements.
- Fill Source: the geographic source of the material.

The interplay of these four factors will determine the priority of each potential opportunity. In each case, POLB will document the decision-making process. The Middle Harbor fills will include material from other elements of the Project, other Port dredging projects, and projects elsewhere in southern California; however, if sufficient material cannot be obtained from those sources, material will be borrowed from the Port Outer Harbor.

The material to be used as fill must meet minimum chemical criteria and have certain structural characteristics, depending upon its destination in the fill. POLB will not accept material that: 1) constitutes “hazardous waste” as termed by the USEPA or the California Department of Toxic Substances Control (DTSC); 2) is deemed unsuitable for confined aquatic disposal by the USEPA; or 3) has land use restrictions or other long-term operations and maintenance requirements imposed by California DTSC or other regulatory agency. Therefore, contaminated sediments from river and harbor dredging are, in general, chemically acceptable, but very heavily contaminated sediments that would be subject to long-term monitoring and land-use restrictions once it is placed in a disposal facility would not be acceptable.

POLB can accommodate a certain amount of fine-grained material, regardless of its chemical composition, in its fills, but that amount is limited by the needs to ensure that the fill is structurally sound and to avoid compromising the construction schedule. Fine-grained material is structurally poor, and its incorporation into the fill generally increases costs and takes more time to dewater than the use of sandy material. Generally speaking, fine-grained material may be placed in the bottom and inner layers of the fill, but the higher the material is in the fill, the higher the sand content must be. Only a limited amount of fine-grained material can be accepted at a given point in fill construction and that amount decreases as the elevation of the fill rises.

Accordingly, the POLB will evaluate proposed material to determine, based on a geotechnical analysis, if the material can be incorporated into the fill and, if so, where it must be placed. POLB has developed a Middle Harbor Sediment Management Plan which outlines the decision process that POLB will use to accept material for fill, as well as the logistical, technical and legal requirements that must be met.

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10. A sediment characterization study was conducted in 2006 within the area to be dredged within the Slip 3 and East Basin areas (as described in finding 3). The dredge footprint was divided into two sampling areas (Area PE 1 and Area PE 2), each containing six different sediment core locations, respectively (Figure 4). The top layers of sediment from Areas PE 1 and PE 2 are comprised largely of clay and silt (86 and 61 percent fine-grained materials, respectively); the bottom layers have high proportions of sand and gravel (48 and 67 percent coarse-grained materials, respectively). In the top layers of Slip 3 sediments, several constituents were present at concentrations exceeding effects range low (ERL) levels (metals, DDTs, PCBs, and PAHs). All of those constituents, however, were below effects range median (ERM) values. Other chemicals analyzed were found at concentrations below ERL levels. No phenols and no chlorinated pesticides, except DDT derivatives, were detected, and organotins were detected below concentrations shown to cause toxicity to aquatic organisms. In the bottom layers of sediment, organochlorine pesticides and organotins were below the detection limits, and no other chemicals (metals, PCBs, and PAHs) exceeded ERL values (Table 1).
11. A soil characterization study was conducted in 2006 within the area to be excavated in the vicinity of Piers D and E (as described in finding 5). Samples were collected and analyzed from 45 locations within this area (figure 5). Chemical concentrations in soil samples exceeded one or more ERL values for metals, organochlorine pesticides, and PAHs. All chemicals measured in sediment samples were below ERM values, except copper exceeded the ERM in one sample and p'p-DDT exceeded the ERM value in four samples (Table 2).

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Table 1. Sediment Concentrations in Cores Collected from Slip 3 and East Basin.

Analyte	ERL	ERM	TTLc	Composite Range
Physical Analyses (%)				
Gravel	-	-	-	0.003 – 6.56
Sand	-	-	-	12.4 – 66.7
Silt	-	-	-	27.4 – 57.8
Clay	-	-	-	5.91 – 28.3
Solids, Total	-	-	-	66.3 – 74.6
Chemical Analyses (mg/kg ,or parts per million)				
Arsenic (As)	8.2	70	500	3.7 – 10.6
Cadmium (Cd)	1.2	9.6	1200	0.08 – 0.77
Chromium (Cr)	81	370	-	17.9 – 44.3
Copper (Cu)	34	270	2500	19.4 – 63.8
Lead (Pb)	46.7	218	1000	5.04 – 38.1
Mercury (Hg)	0.15	0.71	20	0.06 – 0.31
Nickel (Ni)	20.9	51.6	2000	14.7 – 25.3
Selenium (Se)	-	-	100	<0.025 – 0.48
Silver (Ag)	1	3.7	500	<0.025 – 0.15
Zinc (Zn)	150	410	5000	45.1 – 118
Organics (µg/kg, or parts per billion)				
4,4'-DDD	2	20	1000	<1 – 2.3
4,4'-DDE	2.2	27	1000	<1 – 15
4'4' DDT	1.0	7.0	1000	<1
Total Detectable DDTs	1.6	46.1		0 – 22.9
Total PCB	22.7	180	50000	0 – 47.1
Total PAH	4022	44792	-	171.4 – 4235.4
Total Detectable Chlordane	0.5	6	2500	0

ERL = Effects Range – Low; ERM = Effects Range – Median
TTLc = total threshold limit concentration
DDD = 1,1-dichloro-2,2-bis(p-chlorophenyl)ethane
DDE = 1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene
DDT = 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane
PCB = polychlorinated biphenyls
PAH = polynuclear aromatic hydrocarbons

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Table 2. Soil Concentrations in Samples Collected from Pier D and E.

Analyte	ERL	ERM	TTLIC	Composite Range
Metals (mg/kg)				
Arsenic (As)	8.2	70	500	3.7 – 5.53
Cadmium (Cd)	1.2	9.6	1200	0.08 – <0.05
Chromium (Cr)	81	370	-	17.9 - 34.8
Copper (Cu)	34	270	2500	19.4 – 1600
Lead (Pb)	46.7	218	1000	5.04 – 41.8
Mercury (Hg)	0.15	0.71	20	0.06 – 0.3
Nickel (Ni)	20.9	51.6	2000	14.7 – 21.4
Selenium (Se)	-	-	100	<0.025 – 1.13
Silver (Ag)	1	3.7	500	<0.025 – 0.73
Zinc (Zn)	150	410	5000	45.1 – 102.0
Organics (µg/kg)				
4,4'-DDD	2	20	1000	<1 – 1.94
4,4'-DDE	2.2	27	1000	<1 – 4.48
4'4' DDT	1.0	7.0	1000	<1 – 36.1
Total Detectable DDTs	1.6	46.1		0 – 42.52
Total PCB	22.7	180	50000	0 – <4.2
Total PAH	4022	44792	-	ND – 4926.5
Total Detectable Chlordane	0.5	6	2500	0 - <0.62

ERL = Effects Range – Low; ERM = Effects Range – Median
TTLIC = total threshold limit concentration
DDD = 1,1-dichloro-2,2-bis(p-chlorophenyl)ethane
DDE = 1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene
DDT = 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane
PCB = polychlorinated biphenyls
PAH = polynuclear aromatic hydrocarbons

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12. POLB has applied to the U.S. Army Corps of Engineers (COE) for renewal of permit number 2004-1053-AOA for the Middle Harbor Redevelopment Project. The COE is expected to issue a final permit following the adoption of Waste Discharge Requirements by the Los Angeles Regional Water Quality Control Board.

13. On April 13, 2009, the Long Beach Board of Harbor Commissioners certified the Middle Harbor Redevelopment Project Environmental Impact Report (Resolution Number HD-2498) in compliance with the California Environmental Quality Act.
14. The Regional Board adopted a revised Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties on June 13, 1994. The Water Quality Control Plan contains water quality objectives for Long Beach Harbor. The requirements contained in this Order as they are met will be in conformance with the goals of the Water Quality Control Plan.
15. The beneficial uses of the Los Angeles-Long Beach inner harbor and marina waters are: industrial service supply, navigation, water contact recreation (potential), non-contact water recreation, commercial and sport fishing, marine habitat, preservation of rare, threatened and endangered species, and shellfish harvesting (potential). The beneficial uses of the outer harbor waters are: navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, preservation of rare, threatened and endangered species, and shellfish harvesting (potential).
16. With proper management of the dredging and disposal operations, the project is not expected to release significant levels of contaminants to the Harbor waters or other State waters nor adversely impact beneficial uses.
17. Dredging and disposal operations will be accomplished through the use of temporary equipment. The Waste Discharge Requirements imposed below will not result in any significant increase in energy consumption.

The Regional Board has notified the Port of Long Beach and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and to the tentative requirements.

IT IS HEREBY ORDERED that the Port of Long Beach, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

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A. Discharge Requirements

1. The removal and placement of dredged/excavated material shall be managed such that the concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses, in particular those identified in Finding number 15 above.
2. Enclosed bay and estuarine communities and populations, including vertebrate, invertebrate and plant species, shall not be degraded as a result of the discharge of waste.
3. The natural taste and odor of fish, shellfish or other enclosed bay and estuarine resources used for human consumption shall not be impaired as a result of the discharge of waste.
4. Toxic pollutants shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health.
5. There shall be no acute toxicity or chronic toxicity in ambient waters as a result of the discharge of waste.
6. POLB shall conduct the monitoring required and comply with the reporting requirements outlined in the attached Monitoring and Reporting Program, which is incorporated by reference as part of these Waste Discharge Requirements.
7. Dredging, excavation or disposal of dredge spoils shall not cause any of the following conditions in the receiving waters:
 - a. The formation of sludge banks or deposits of waste origin that would adversely affect the composition of the bottom fauna and flora, interfere with the fish propagation or deleteriously affect their habitat, or adversely change the physical or chemical nature of the bottom.
 - b. Turbidity that would cause substantial visible contrast with the natural appearance of the water outside the immediate area of operation.
 - c. Discoloration outside the immediate area of operation.
 - d. Visible material, including oil and grease, either floating on or suspended in the water or deposited on beaches, shores, or channel structures outside the immediate area of operation.

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- e. Objectionable odors emanating from the water surface.
- f. Depression of dissolved oxygen concentrations below 5.0 mg/l at any time outside the immediate area of operation.
- g. Any condition of pollution or nuisance.

B. Provisions

1. The Discharge Requirements specified above are valid only for excavation and dredging of a maximum volume of 2,290,000 cubic yards of soil and sediment , and disposal of a maximum volume of 4,800,000 cubic yards of excavated, dredged and imported material at the Slip 1 and East Basin confined fill sites.
2. POLB shall manage the Slip 1 and East Basin confined fill sites to effectively contain chemically contaminated materials and to prevent migration of contaminants from the disposal sites into State waters.
3. POLB shall notify the Regional Board immediately by telephone of any adverse conditions in receiving waters or adjacent areas resulting from the removal of dredge materials; written confirmation by POLB to the Regional Board shall follow within one week.
4. A copy of this Order shall be made available at all times to project construction personnel.
5. POLB shall provide the following information to the Regional Board:
 - a. A copy of the final permit issued by the Department of the Army for the dredge and disposal operations.
 - b. The scheduled date of commencement of each dredging operation and an engineering plan and profile of the excavation and the disposal site at least two weeks prior to commencement.
 - c. Notice of termination of the operation, within one week following the termination date.
6. POLB shall submit, under penalty of perjury, technical reports to the Regional Board in accordance with specifications prepared by the Executive Officer.

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7. In accordance with section 13260(c) of the Water Code, POLB shall file a report of any material change or proposed change in the character, location, or volume of the waste.
8. These requirements do not exempt POLB from compliance with any other laws, regulations, or ordinances which may be applicable: they do not legalize this waste discharge, and they leave unaffected any further restraint on the disposal of wastes at this site which may be contained in other statutes or required by other agencies.
9. In accordance with Water Code section 13263(g), these requirements shall not create a vested right to continue to discharge and are subject to rescission or modification. All discharges of waste into waters of the State are privileges, not rights.
10. This Order includes Attachment N: "Standard Provisions, General Monitoring and Reporting Requirements" ("Standard Provisions") and the attached Monitoring and Reporting Requirements, both of which are incorporated herein by reference. If there is any conflict between provisions stated hereinbefore and said "Standard Provisions", those provisions stated hereinbefore prevail. If there is any conflict between requirements stated in the attached Monitoring and Reporting Program and said "Standard Provisions", the former shall prevail.
11. This Order fulfills the requirements for a Clean Water Act Section 401 Water Quality Certification for the proposed project. Pursuant to section 3860 of title 23 of the California Code of Regulations (23 CCR), the following three standard conditions shall apply to this project:
 - a. this certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the California Water Code and Article 6 (commencing with 23 CCR section 3867);
 - b. this certification action is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought;

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- c. this certification is conditioned upon total payment of any fee required pursuant to 23 CCR division 3, chapter 28, and owed by the applicant.

12. This Order shall expire on February 03, 2014.

I, Tracy J. Egoscue, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on February 4, 2010.

TRACY J. EGOSCUE
Executive Officer

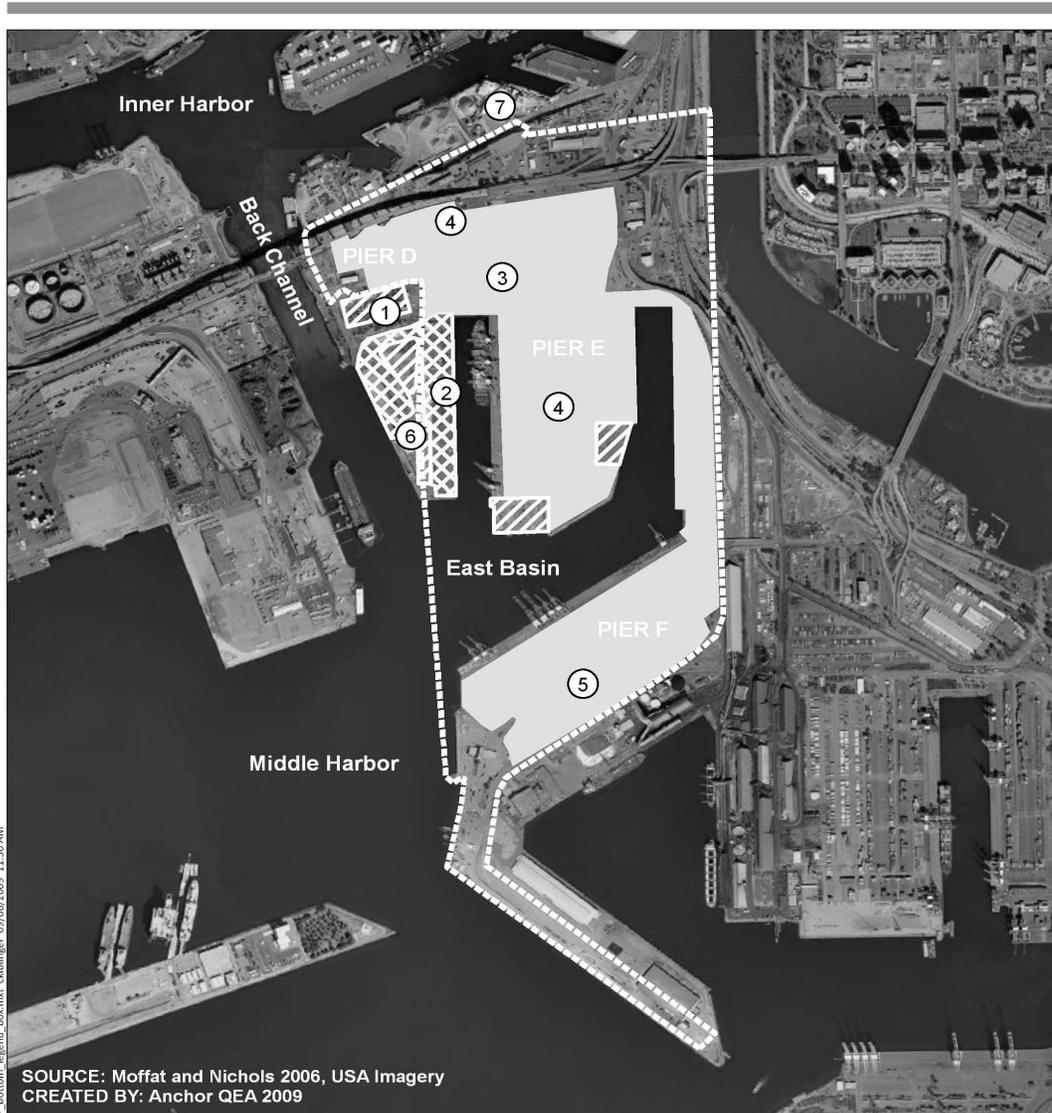
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Figure 1. Site Location

Figure 1. Port of Long Beach and Middle Harbor Redevelopment Project site location.



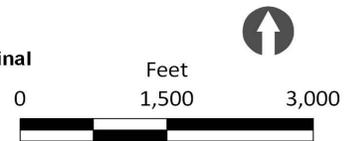
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Figure 2. Existing Conditions

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| Project Area Boundary | ③ Seaside Railyard |
| Oil Properties | ④ California United Terminals |
| Container Yard | ⑤ Long Beach Container Terminal |
| Breakbulk Area | ⑥ Cemex USA |
| ① Tideland Oil Production Co. | ⑦ G-P Gypsum Corp. |
| ② Baker Commodities | |



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Figure 2. Existing Conditions within Project Area.



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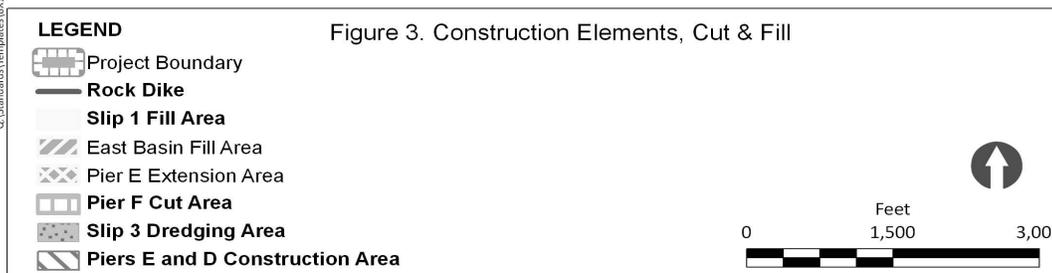


Figure 3. Construction Elements for Middle Harbor Redevelopment Project.

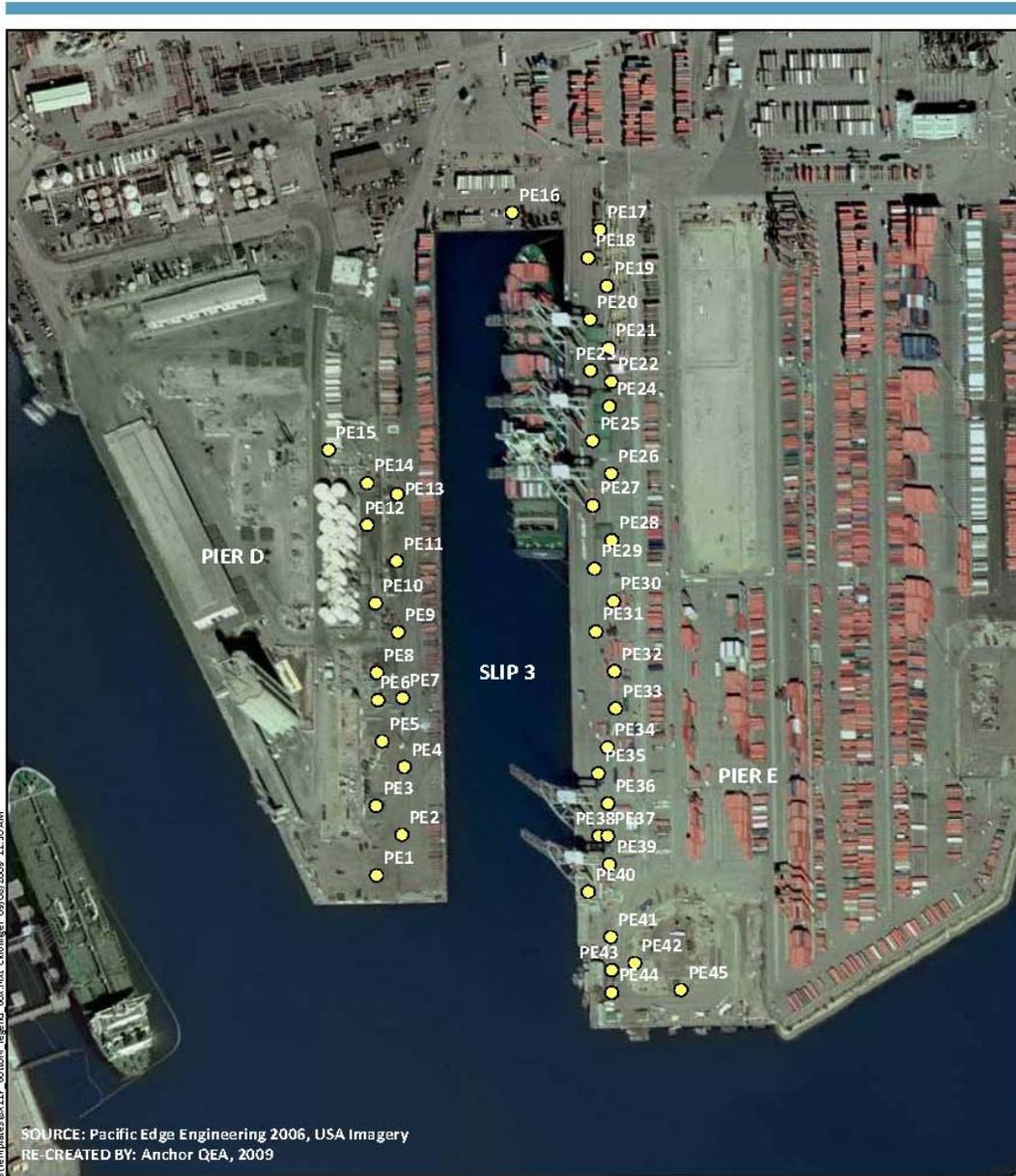
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Figure 1. Sampling Locations Within Slip 3 of the Port of Long Beach

Figure 4. Sediment Sampling Locations within Slip 3 and East Basin.

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Figure 5. Soil Sampling Locations within Pier D and Pier E areas.