

PIER 70

RISK MANAGEMENT PLAN

FACT SHEET

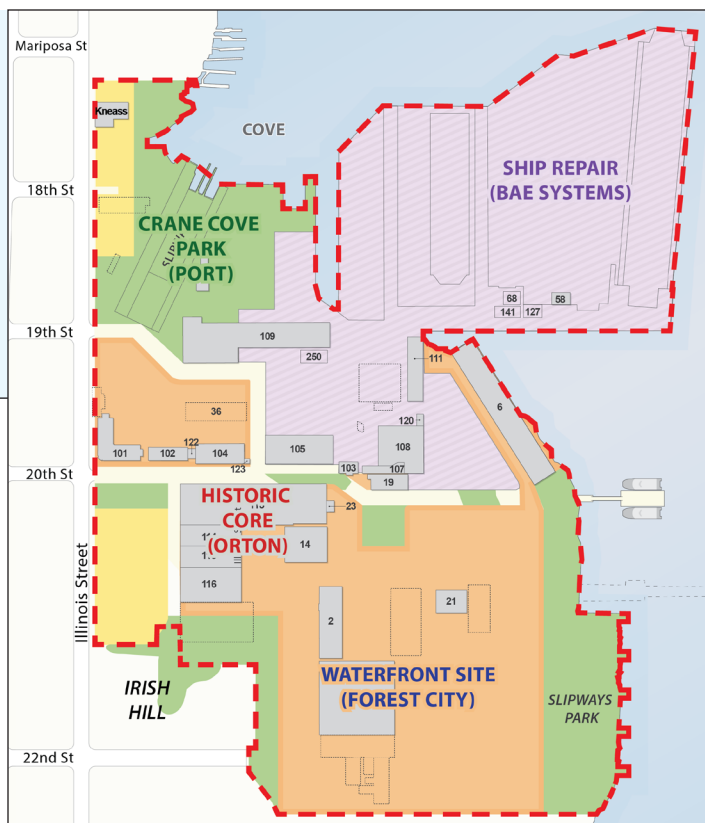
BACKGROUND

This fact sheet informs tenants of the Port of San Francisco's Risk Management Plan (RMP) for Pier 70. The RMP describes how workers, the public, and the environment will be protected from environmental pollutants in soil and groundwater at Pier 70. The RMP applies to the area within the dotted line shown on the map to the right. All tenants and their agents (i.e. contractors) within this area must comply with the RMP, which can be found at www.sfport.com/pier70. This fact sheet presents an overview of RMP mandates, but tenants will need to refer to the RMP itself to fully understand all requirements.

CONTAMINATION AT PIER 70

Pier 70 was created by placing fill in the bay beginning in the mid-1800s, using rock from shoreline bluffs, and other rock, soil, and debris. Pier 70 has been occupied by industrial use almost continuously since then. This fill material makes up the native soil present at Pier 70 today. Chemicals that occur naturally in the bedrock and former rock bluffs, were present in other fill material placed at the shoreline to create new land, or released from historic industrial activities are present in the soil and groundwater at Pier 70.

The Port has investigated the level of contamination in soil, soil gas, and groundwater at Pier 70 and found that the soil is contaminated with metals, petroleum hydrocarbons, polycyclic aromatic hydrocarbons, and polychlorinated biphenyls. Exposure to contaminants by eating, breathing, or prolonged direct skin contact with native soil could be harmful to human health.



Pier 70

RMP Boundary: - - - - -

WHAT IS A RISK MANAGEMENT PLAN?

An RMP describes measures that must be taken to protect human health and the environment from potential risks associated with exposure to contaminants. The Port's approved RMP contains risk management measures for Pier 70, including the following three components:

- **Durable Cover:** Physical barriers to prevent human contact with native soil or exposure of contaminants in the soil to the environment. Durable cover may be in the form of buildings, streets, sidewalks, paved areas, and new landscaping with imported clean soil.
- **Maintenance and Monitoring:** Regular inspections and repairs of the durable cover to ensure the physical barrier is maintained.
- **Land Use and Activity Restrictions:** Certain activities are prohibited at Pier 70 to prevent the contaminants in the soil from contact with people or release into the environment. Groundwater may not be used for any purpose other than dewatering. Growing edible plants for human consumption in native soil is prohibited.

WHAT DOES THE RMP MEAN FOR THE TENANTS OF PIER 70?

The California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), the San Francisco Department of Public Health (DPH), and the Port require that all ground-disturbing activities comply with the RMP, in addition to all other applicable federal, state, and city permitting and environmental regulations and procedures, and Port permit requirements. All tenants and their contractors and other agents, and other workers and occupants at Pier 70 must abide by the RMP. **The following are summaries of some of the RMP requirements. In all cases, tenants should refer to the RMP for details.**

- **Regulated Activities:** All activities where the durable cover may be compromised or native soil may be exposed are regulated by the RMP. Tenant activities that may disturb native soil may include grading, demolition of paving or below-grade features, utility installation or maintenance, landscaping, light construction, or other activities that expose or disturb soil.
- **Notification and Reporting:** Requirements vary based on the extent of work to be performed and may include 45 days' prior notice to the Port, preparation of a pre-construction plan prepared by a California-licensed Professional Engineer or Geologist, or notification to and approval by the Water Board or DPH. Refer to the RMP for details.
- **Contracting:** If a tenant is hiring a contractor to perform construction or maintenance work that will expose or disturb soil, the tenant must provide the contractor with a copy of the RMP and ensure compliance with all provisions. Tenant and contractor must evaluate the activities prior to start of work to determine notification and reporting and other applicable requirements. Refer to RMP for project-specific requirements when planning any soil-disturbing activity.
- **Protective Measures:** For all ground-disturbing activities, tenants must implement measures to protect human health and the environment, which include controlling access to work areas, requiring personal protective equipment for workers, controlling dust and runoff properly, storing and disposing of excess soil, and protecting existing groundwater monitoring wells.
- **Annual Inspection:** Tenants are required to inspect their premises and submit an "Annual Reporting and O&M Checklist" [the form is included in Appendix A to the RMP] to the Port by March 31 of each year. The Port may also conduct its own inspections of tenants' premises and activities to monitor RMP compliance.

WHERE CAN I GET MORE INFORMATION?

Pier 70 Websites:

For the complete Risk Management Plan and additional site condition information, visit: www.sfport.com/pier70

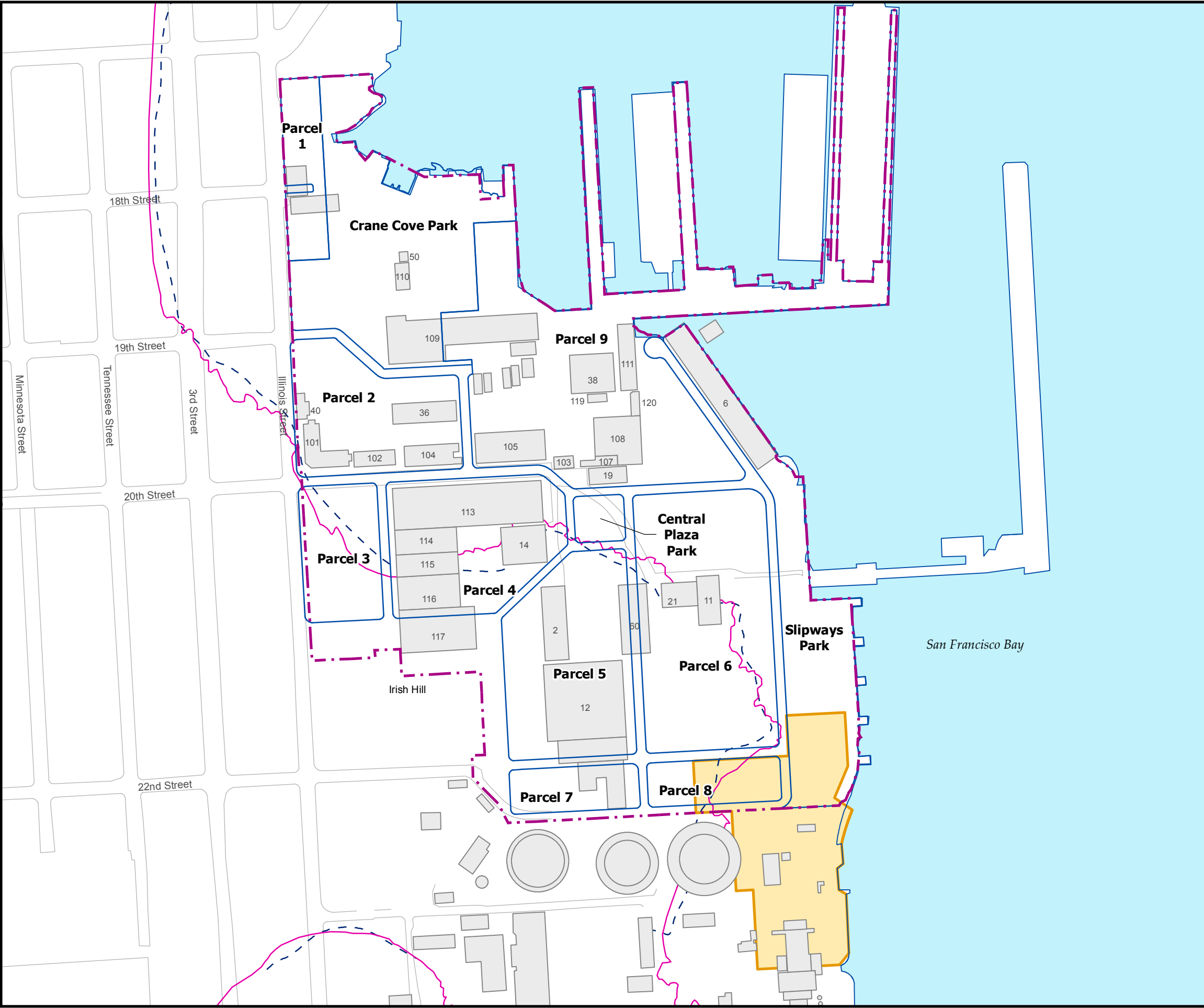
For the *Pier 70 Preferred Master Plan* and additional information regarding Pier 70 redevelopment, visit: www.pier70sf.org

Contact Information:

Carol Bach | Environmental Affairs, Planning & Development Division | carol.bach@sfport.com | (415) 274-0568

Mark Johnson | California Regional Water Quality Control Board, San Francisco Bay Region | mjohnson@waterboards.ca.gov | (510) 622-2493

Port of San Francisco | Pier 1, The Embarcadero, San Francisco, CA 94111 | www.sfport.com | Main Line: (415) 274-0400



Legend

- Site Area Included in Pier 70 RMP
- Site Area Included in PG&E FS
- Parcel Boundary
- Shoreline
 - Existing
 - Building
 - Approximate 1851 Shoreline
 - Approximate 1869 Shoreline
 - Road Edge

Notes:

- RMP = Risk Management Plan.
- Pacific Gas & Electric Feasibility Study (FS) Area taken from Haley & Aldrich, Inc., *Draft Report on Upland Feasibility Study Potrero Power Plant Site San Francisco, California*, 22 March 2012.
- Parcels from ROMA Design Group, Draft Preferred Pier 70 Master Plan, 17 July 2009.
- Approximate 1851 shoreline provided by the Port of San Francisco.
- Approximate 1869 shoreline based upon Board of Tidelands Commissioners, *Map of the Salt Marsh and Tide Lands and Lands Lying Under Water South of Second Street and Situate in the City and County of San Francisco*, 1869.
- Map displayed in California State Plane Coordinate System, Zone III, North American Datum of 1983 (NAD83), US Survey Feet.

0 150 300 600
Feet

**PIER 70 RISK MASTER PLAN AREA
RISK MANAGEMENT PLAN
San Francisco, California**

SITE AREA FOR RISK MANAGEMENT PLAN

Date 7/24/2013	Project 730496301	Figure 2
----------------	-------------------	----------

Treadwell&Rollo
A LANGAN COMPANY



City and County of San Francisco
DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH

Edwin M. Lee, Mayor
Barbara A. Garcia, MPA, Director of Health

Richard J. Lee, MPH, CIH, REHS
Acting Environmental Health Director

November 9, 2015

Jack Sylvan
Forest City Residential West
875 Howard Street, Suite 330
San Francisco, California 94103
JackSylvan@ForestCity.net

**Subject: CONDITIONAL SITE MITIGATION PLAN APPROVAL
PIER 70 WATERFRONT SITE
RESIDENTIAL AND COMMERCIAL DEVELOPMENT; OPEN SPACE
LAND USE
PIER 70 – 28 ACRE SITE AND 20TH / ILLINOIS PARCEL
EHB-SAM NO. - SMED: 1357**

Dear Mr. Sylvan:

In accordance with the San Francisco Health Code, Article 22A and the Building Code, Section 106.3.2.4 – Hazardous Substances; the San Francisco Department of Public Health, Environmental Health Branch, Site Assessment and Mitigation (EHB-SAM) has reviewed the following documents:

- Site Evaluation Report and Subsurface Site Mitigation Plan - Article 22A Compliance Program, Pier 70 Waterfront Site, San Francisco, CA, prepared by Geosyntec Consultants, August 31, 2015

Site Description and Proposed Project

Forest City through certain entitlements will be developing a portion of Pier 70 that includes the 28-acre Waterfront Site (28-Acre Site) and the approximately 3.5-acre Illinois & 20th Street Parcel (20th/Illinois Parcel). Both properties are the subject of the Site Mitigation Plan. In addition, the development project includes an approximately 3.5-acre parcel at Illinois Street and 22nd Street (Hoe Down Yard) which is not addressed in the Plan. In total, the three areas encompass the Pier 70 Special Use District (Pier 70 SUD). All construction and soil disturbance will occur within the Site boundaries shown in Figure 2 of the report. The proposed development includes mixed-use commercial, residential, and public open-space land uses.

This multi-phased, mixed-use development with a total area of approximately 35 acres, 31.5 acres of which are the subject of the Plan that envisions a dynamic urban district in which historic resources are repurposed in the southeast corner of the approximately 69-acre Port-owned area known as Pier 70.

Identified areas of excavation are anticipated to accommodate building foundations as well as basements, which may include parking facilities or building services. Development is expected to occur in phases over approximately ten years. Construction would begin near the center of the 28-Acre Site and expand east and west over time. Construction on the 20th/Illinois Parcel would likely occur in the first phase.

The property is identified as San Francisco County Assessor's Parcel Number Block 4110, Lot 1; Block 4111, Lot 4; and Block 4052, Lot 1.

Historical Site Usage

Previously known as the San Francisco Yard and the Bethlehem Steel Shipyard, Pier 70 was established in the 19th century as a ship building and repair facility. Ships built and serviced at Pier 70 served the United States Navy from the Spanish American War in the late 1800s through the two World Wars and into the 1970s. A portion of Pier 70 (north of the Site) remains an active ship repair and dry dock facility.

The eastern portion of the Site was the first to be developed in 1866 in the area to the east of Irish Hill. Pacific Rolling Mills produced roll iron from scrap and manufactured iron products. The deep-water access at the Site was reportedly used for receiving coal to fuel the mills, firebrick and clay for construction, and scrap iron. There was a lack of level ground at the Site and cutting and leveling the hill and filling in the San Francisco Bay began at this time. Within two years, foundries, piers, storehouses and wharves were in place and the first finished iron produced on the west coast came out of the mill. By 1873, the mill turned out rod, wire, shafts, axles, I-beams, wrought iron, and hammered iron of every type.

On the western portion of the Site, in 1884 the Union Iron Works (UIW) moved to a new ship-building yard at Pier 70 that was located to the north and south of 20th Street (off-Site and on-Site, respectively). At the Site, the steep cliffs of Irish Hill created a physical boundary to the south, east, and west. The machine, erecting, smith shops, and the pattern house stood to the south of 20th Street. Of these, only the Pattern House was on-Site. Buildings 113 and 114 (adjacent to the Site) are the only remaining buildings of this original complex. The shipyard was designed with 20th Street as the dividing line between the machine shop to the north and the fabrication yard to the south. The fabrication portion of the yard dealt with constructing the hull of the vessel. The machine shop portion produced engines, boilers, hardware, and all other components necessary for building or repairing. Little construction associated with UIW occurred on-Site during the late 19th century. Sheds and outbuildings were added near Buildings 112 and 113. Irish Hill continued to be cut and the Bay mudflats filled.

In 1900, Pacific Rolling Mills was purchased by The Risdon Iron & Locomotive Company, who operated on the same property from 1900 until 1911. In 1911, the Risdon yard shut down and a subsidiary of the U.S. Steel Corporation purchased the yard. During World War I, UIW Company built and operated (for the Emergency Fleet Corporation), a United States destroyer plant on the site of the former Risdon yard. The destroyer plant was commonly known as the Risdon Plant. At some point, UIW transitioned to Bethlehem Steel although information on the transition is inconsistent; reportedly the assets of UIW were purchased by Bethlehem Steel in

1905. In 1917, Bethlehem Shipbuilding Corporation leased the UIW plant and purchased it in 1934. After World War I shipbuilding continued but at a much slower pace. By the late 1930s, though, with war looming, the Pier 70 property, including the Site, began to modernize and upgrade. In approximately 1940, the U.S. Navy purchased the destroyer plant (Risdon Plant) from Columbia Steel (a U.S. Steel subsidiary).

Shipbuilding went into immediate decline after the war, but picked up somewhat in the mid-1950s only to decline again. Though shipbuilding had come to an end, Pier 70 continued to build large barges well into the seventies. In 1967, the southern portion of Pier 70 was transferred from the General Services Administration to the State of California. In the 1970s, the Port proceeded to fill the slipways with demolition debris and earthen material, thereby creating a landfill in the southeastern portion of Pier 70 (AMEC, 2012a).

On November 1, 1982, the City of San Francisco became owner of the Pier 70 property, paying Bethlehem one dollar. Todd Shipyards purchased the machinery and other assets and repaired ships at Pier 70 from approximately 1982-1986. Their operations were located to the north of 20th Street (off-Site) with the exception of Buildings 14, 113, 114, 115, 116, 117, which are located adjacent to the Courtyard area of the Site. Todd Shipyard reportedly filed bankruptcy in 1986. In 1988, Southwest Marine started leasing the same areas of Pier 70 for ship repair. Operations were taken over by San Francisco Drydocks Company (a Southwest Marine affiliate) and transitioned to BAE Systems San Francisco Ship Repair (also affiliated). Information on San Francisco Drydocks Company indicates they used all or portions of the adjacent buildings (Building 113, 114, 115, 116, 177, and 19) for machining and storage up until approximately 2003 and 2004. Today, ship repair business continues by BAE on land leased from the Port in the northern portion of the Pier 70 property (off-Site).

Geotechnical Information

The fill underlying the Site is heterogeneous and is comprised primarily of silty, gravelly sands with varying amounts of crushed serpentinite bedrock and construction debris. Past reports (Tetra Tech, 1998; Ecology & Environment, 2001; Treadwell & Rollo, 2011) have noted the presence of glass, brick, plastic, wood, and concrete during field investigations (both boring logs and test pits). Fill thickness varies between 10 to 15 feet thick and increases in thickness towards San Francisco Bay to the east. A maximum fill thickness of 22 feet was encountered in the southeastern portion of the Site (Treadwell & Rollo, 2011).

In the Port's Site Investigation, groundwater at the Pier 70 SUD was observed as shallow as 6.21 feet bgs approximately 50 feet north of the PPP and 450 west of the shoreline and as deep as 13.56 feet bgs approximately 200 feet south of 20th Street and approximately 200 feet east of Illinois Street (Treadwell & Rollo, 2011). The groundwater flow direction is highly variable but the wholesale movement of groundwater is to the east and towards San Francisco Bay. Ten groundwater monitoring wells were installed during phase I and phase II of the Port's Site investigations in the 28-Acre Site. The groundwater gradient ranged from 0.0026 to 0.005 foot/foot (Treadwell & Rollo, 2011).

Subsurface Investigation

Several phases of subsurface investigation have already been conducted by the Port and PG&E at the Site to characterize the presence, nature, and extent of hazardous substances and petroleum hydrocarbons in the soil, soil gas, and groundwater.

A summary of the presence, nature, and extent of hazardous substances identified in the soil and/or groundwater at the Site and the immediately surrounding property, has been documented in previous environmental reports. These reports are referenced throughout the Site Mitigation Plan and listed in the References section of this Report (Section 8). A summary of the analyses performed on soil, groundwater, and soil gas samples collected at the Site are presented in Table 1 and the corresponding analytical data is presented in Tables 2 through 12 of the report. Sample locations are shown on Figure 2 and 3 of the report. A human health risk assessment (HHRA) has been completed for the current parcels at Pier 70 (i.e., the 28-Acre Site and the 20th/Illinois Parcel) and is summarized in Section 5.2 and provided in Appendix D (Appendix L of Environmental Site Investigation Report).

Summary of Investigation Results

Environmental investigations conducted at the 28-Acre Site and the 20th/Illinois Parcel were conducted by the Port and summarized in the Environmental Site Investigation Report (Treadwell & Rollo, 2011) and the RMP (Treadwell & Rollo, 2013).

Soil

Two-hundred ninety-two soil samples from the Pier 70 SUD were analyzed with the following distribution of sample depths:

Sample Depth Interval (feet bgs)	Number of Samples
Less than or equal to 5	100
Greater than 5 and less than or equal to 10	54
Greater than 10 and less than or equal to 15	14
Greater than 15 and less than or equal to 20	10
Greater than 20	6

Analyses performed on soil samples from the Pier 70 SUD include, but are not limited to, metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), asbestos, and cyanide. Soil results were compared against the San Francisco Bay Regional Water Quality Control Board's (SFRWQCB) Environmental Screening Levels (ESLs) for a construction worker scenario, as stated by the consultant.

Results for metals in soil are presented in Table 2 of the report. Concentrations exceeded construction worker ESLs for arsenic, cobalt, lead, mercury, and thallium at a subset of sample locations in the 28-Acre Site, and for cobalt and lead in the 20th/Illinois Parcel. Concentrations

of all other metals were below construction worker ESLs (note that an ESL for total chromium is not defined) as written in the report. The maximum sample depth analyzed for metals was 34.0 feet below ground surface (feet bgs) at sample location B-01-GR.

ESL exceedances for multiple SVOCs were observed at boring B-02-GR, SPSB-05, TGU-16, and TGU-23, which are located within an area of reported continuous dense non-aqueous phase liquid (DNAPL) in the southeast corner of the 28-Acre Site adjacent to the PPP (AMEC, 2012a). Exceedances of benzo(a)anthracene and benzo(a)pyrene were observed at other locations in the 28-Acre Site, as shown in Table 3 of the report. The only ESL exceedances for SVOCs in the 20th/Illinois Parcel were at SB-01-TT.

VOC results in soil are shown in Table 4 of the report. Benzene and trichloroethene exceeded ESLs at multiple locations in the 28-Acre Site and the 20th/Illinois Parcel. Naphthalene exceeded the ESL only at location G-46. TPH results are shown in Table 5 of the report. ESLs were not exceeded for gasoline or motor oil fractions, but multiple exceedances of TPH-diesel were observed, generally from borings near the continuous DNAPL in the southeast corner of the 28-Acre Site.

Thirty soil samples from the two parcels (i.e., 27 from the 28-Acre Site and 3 from the 20th/Illinois Parcel) were analyzed for polychlorinated biphenyls (PCBs), as shown in Table 6 of the report. The only detections were of Aroclor 1260 at locations P6SB-02 (multiple depths with a maximum concentration of 220 micrograms per kilogram) and at P5SB-01 (single depth with a concentration of 43 micrograms per kilogram). No ESL exceedances were observed.

Asbestos was analyzed in 10 soil samples throughout the Pier 70 SUD. The presence of naturally occurring asbestos (NOA) is often associated with serpentinite rock, which is present at the Pier 70 SUD as weathered serpentine bedrock used historically in fill at the Site. Of the ten soil samples collected from the Site that were analyzed for asbestos, fibers were not detected in five samples and the other five contained 1% chrysotile, the most common form of NOA. Asbestos results in soil samples are summarized in Table 7 of the report. Cyanide was analyzed in 16 soil samples throughout the Pier 70 SUD, as shown in Table 7, and was only detected above the reporting limit in the sample at P6SB-01 in Parcel 6. The detected concentration of 1.1 mg/kg was well below the construction worker ESL of 98 mg/kg.

Groundwater

Analyses performed on groundwater samples include, but are not limited to, metals, SVOCs, VOCs, TPH, and cyanide; results are presented in Tables 8, 9, 10, and 11 in the report, respectively. ESLs for a construction worker scenario are not defined for groundwater samples. Site investigations conducted by the Port and PG&E have found a hydrocarbon-based dense non-aqueous phase liquid (DNAPL) within some portions of the fill adjacent to and beneath the Slipways which form the edge of the three southernmost historical dry docks on the Pier 70 Property (AMEC Geomatrix, 2011a). PG&E has delineated the extent of DNAPL beneath Pier 70 associated with former MGP operations and anticipates completing remediation activities at the former power plant and within the Site in 2017.

The SI found that residual petroleum is present in the form of non-aqueous phase liquid (NAPL), generally beneath and adjacent to the BAE Ship Repair facility. The NAPL is present in discontinuous globules that are nonvolatile, insoluble, highly viscous, highly degraded and essentially immobile, and does not pose a significant risk to human health or migration to San Francisco Bay (T&R, 2011). Activities that would potentially encounter impacted groundwater will be governed by the RMP.

Soil Gas

Soil gas samples were collected from nineteen samples throughout the 28-Acre Site and the 20th/Illinois Parcel and were analyzed for VOCs. Soil gas sample results are presented in Table 12 of the report. The maximum concentration of VOCs detected in soil gas was 0.78 micrograms per liter, and the VOCs detected at the highest concentrations included ethylbenzene, xylenes, naphthalene, and 1,1-difluoroethane.

Soil gas samples from the Site were also analyzed for methane. Methane concentrations ranged from non-detect to 0.18%, well below the lower explosion limit of 5.0%, as stated by the consultant. The ESL for methane for a hypothetical construction worker is not defined, as stated in the report.

Site Mitigation Plan

In response to the estimated risks to human health, as described in Section 5 of the report, the Port developed a scope of mitigation measures that would be implemented before, during, and following completion of the initial Site development construction. The mitigation measures were documented in the RMP, which serves the function of the Article 22A Site Mitigation Plan. Plans for mitigating potential exposure by human receptors resulting from development at the Pier 70 SUD are summarized below and are provided in Appendix E of the report. The RMP was developed by the Port and applies to activities that occur on Pier 70 property that is currently under the ownership of the Port. The RMP applies to the owner, tenants, ground lessees, and sublessees that operate on Pier 70. Upon execution of a ground lease and a Disposition and Development Agreement (DDA) between the Port and Forest City, which are co-project sponsors of the Pier 70 SUD, Forest City will be bound to the conditions and requirements of the RMP.

Ground Disturbing Activity Notification and Reporting

Due to the presence of residual COPCs in the soil and groundwater, as described in Section 5, the RMP applies to any future construction work that involves ground disturbing activity. “Ground disturbing activities”, also referred to as “intrusive work”, includes activities that increase the potential for exposure by human and ecological receptors to residual COPCs in the soil and groundwater beneath the Site. The procedures for notification and reporting of ground disturbing activities or intrusive work are contained in Section 4 of the RMP (Appendix E) of the report. The RMP provides mitigation measures that are organized into pre-development, development, and post-development project phases. The mitigation measures to be implemented during each of these phases are described in the following Sections.

Risk Management Measures prior to Development

Prior to development, risk management measures will be implemented to avoid the unauthorized or uncontrolled exposure of COPCs in the subsurface to the public. These measures will include:

- Maintenance of existing protections: access control measures such as fencing and door locks, signage such as no trespassing or hazardous materials notification, and existing durable covers such as streets and sidewalks and hardscaped or paved areas, shall be maintained;
- Access control: access shall be controlled by implementing and/or maintaining new perimeter security measures including fencing and posting warning signs where none currently exist;
- Notification and reporting: fact sheets and/or copies of the RMP shall be provided to the appropriate parties (e.g., tenants, project proponents, building owners and operators, etc.), and the Port shall report on Site conditions to the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the SFDPH on an annual basis; and
- Maintenance of existing cover: any activity that disturbs more than 10,000 square feet of existing cover must comply with measures described in Section 6.3 of this Plan, and any activity that disturbs more than 1,250 square feet or greater than 50 cubic yards of native soil requires the project proponent to notify the Water Board and SFDPH and comply with Articles 22A and B.

Risk management measures prior to development are described in greater detail in the RMP, provided in Appendix E of the report.

Risk Management Measures during Development

During development, the following risk management measures will be implemented:

- Access to the Site during construction and maintenance activities will be limited. Potential access and perimeter security measures include the following:
 - security fencing around portions of the site that are under construction;
 - K-rails or similar barriers and fences with locked gates in streets;
 - Posting “No Trespassing” signs every 200 feet;
 - Posting signs warning that contamination within the fenced areas may be harmful to health.
- Following completion of any work that disturbs any durable cover, the integrity of the existing durable cover shall be reestablished in accordance with the operation and maintenance plan for the Site. Any disturbance of durable cover must be done in accordance with the RMP.
- The project proponent shall notify the Port, Water Board, and/or SFDPH prior to conducting ground disturbing activities below a depth of 10 feet bgs in accordance with RMP Sections 4.2 and 6.3.

- Construction and maintenance contractors, whose workers may contact native soil, soil vapor, or groundwater with the RMP area during activities disturbing 50 cubic yards or more are required to prepare project-specific Environmental Health and Safety Plans (EHSPs) under the direction of a Certified Industrial Hygienist and in a manner consistent with applicable occupational health and safety standards, including but not limited to OSHA 1910.120.
- Protocols for managing soil, outlined in Section 6.5 of the RMP and applicable to the movement and stockpiling of site soil and the import of soil from an off-site source, shall be followed.
- The Dust Control Plan (DCP), provided as Appendix B to the RMP, shall be followed. If applicable, additional requirements including preparation of an asbestos dust mitigation plan (ADMP) for approval of the Bay Area Air Quality Management District (BAAQMD), shall also be satisfied.
- A Construction Stormwater Pollution Prevention Plan that complies with the requirements of the California State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS 00002, Waste Discharge Requirements (WDRs) for Discharges to Stormwater Runoff Associated with Construction and Land Disturbance Activities shall be implemented.
- All activities associated with off-site soil disposal will be conducted in accordance with the RMP.
- Unknown conditions encountered during the course of development will be subject to the Unanticipated Conditions Response Protocol, presented in Section 6.9 of the RMP and includes the following:
 - Field screening: upon discovery of affected soil or other unanticipated condition, field screening shall be initiated.
 - In accordance with the EHSP, appropriate measures will be undertaken to ensure worker safety in areas where unknown conditions are encountered.
 - Upon discovery of a non-emergency unanticipated subsurface condition, the project proponent shall notify the Port, the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), and SFDPH as soon as practicable, but in no case more than 5 days after discovery.
- Groundwater management shall be conducted in accordance with Section 6.10 of the RMP, which includes procedures for activities associated with temporary construction dewatering, preventing the creation of subsurface conduits that could promote the migration of NAPL or contaminated groundwater, and ensuring that the pipe joints of any new subsurface utilities are adequately sealed to prevent groundwater intrusion.
- The installation of new groundwater monitoring wells or replacement of damaged or abandoned groundwater wells shall require notification of the SFBRWQCB. Reports of

well installation or demolition shall also be reported to the California Department of Water Resources (DWR).

- Any shoreline construction shall be subject to existing regulatory and permitting requirements, and in the case of shoreline construction that is part of a remedial action, shall be regulated by the SFBRWQCB. The Port and SFBRWQCB must be contacted during the planning phase of any shoreline construction to obtain information concerning the nature of the sediments to be disturbed, potential activities being performed in these areas by others, and requirements for work plan and other specific requirements.

Risk Management Measures after Development

Subsequent to completion of development of the Pier 70 SUD, risk management measures will include the following:

- Notification: building or facility operators/owners and/or tenants shall notify any future contractors of existing conditions and hazards of exposure to native soil or groundwater if routine maintenance that would impact durable cover is required.
- Durable cover disturbance: any disturbance to existing durable by maintenance or repair work requires that the integrity of the previously existing durable cover be re-established in accordance with Section 7.2 of the RMP and the operation and maintenance plan for the Site.
- Health and safety: contractors that will perform any activity that will disturb native soil or impacted groundwater must develop an EHSP to protect their workers during subject activities.
- Annual inspection and reporting: In accordance with Section 4.4 of the RMP, the ground lessee, or the owner in the absence of a ground lessee, will complete the annual reporting and O&M checklist (RMP Appendix A) by 31 March of each year.

Conclusions made by the Consultant

Based on Geosyntec's review of the available data collected by the Port and PG&E and considering the scope of future construction activities, it is their opinion that the soil, soil gas, and groundwater conditions beneath the 28-Acre Site and the 20th/Illinois Parcel have been adequately investigated to a depth of 10 feet bgs; and the potential health risks to hypothetical future construction workers for earthwork between ground surface and 10 feet bgs have been adequately evaluated. Geosyntec concludes that the potential risk to future construction workers is well characterized and submits that this Plan satisfies Sections 22A.6 (Site History), 22A.7 (Subsurface Sampling and Analysis), and 22A.8 (Subsurface Analysis Report) of the San Francisco Health Code, as well as Section 4.2 of the RMP (notification), for earthwork anywhere on the Site to a maximum depth of 10 feet bgs.

No additional sampling is recommended at this time and SFDPH will only be notified of future soil disturbing activities that extend below a depth of 10 feet bgs. Based on Geosyntec's understanding of the Site conditions and their review of the provisions, specifications, and requirements presented in the RMP, it is their opinion that the mitigation measures presented in these documents adequately meet the requirements of Article 22A.10 of the San Francisco

Health Code and no other mitigation measures are recommended at this time, as stated by the consultant. Should Site conditions change, the development plan change, or should unexpected conditions be encountered during development, the site characterization, potential health risks, and mitigation measures should be reviewed for adequacy.

Based upon the submitted documentation, the Site Mitigation Plan has been **conditionally approved**. Review of the information provided by the documents submitted to date, further investigation and/or documentation is warranted.

1. In future documents, please provide a narrative summary and ranges of analytical findings in your report (e.g. Lead concentrations range from X to Y ppm); in addition to the attached laboratory results and/or tables referenced in the appendices for the analysis.
2. A Dust Control Plan Addendum shall be developed and submitted to EHB-SAM. Though a Langan, Treadwell and Rollo Dust Control Plan dated July 2013 has been submitted and approved; too much time has passed prior to work activity addressed in this SMP. New requirements and standards have been established for an adequate Dust Control Plan for a large site and must be updated to incorporate the current guidelines. Please submit a Dust Control Plan **addendum** to address the following. This information will be requested in all future projects across the City and County of San Francisco.

The goal of the Dust Control Plan is **NO VISIBLE DUST**. It is understood that soil disturbance and excavation activities produce dust, dust controls will be used to mitigate visible dust as it occurs. In the event that visible dust from soil disturbance or excavation is observed onsite, but does not cross the construction area boundary, the following procedures or comparable actions shall be followed. All activities listed herein, shall be addressed by the revised DMP.

- A. The DMP shall specify that when wind speeds gauge 20 miles per hour, whenever a ten minute time-weighted average equals or is exceeded; the Forest City Residential West and/or their representatives shall implement specified steps to abate blowing dust within 30 minutes total. If the abatement measures fail, that specific activity contributing to the dust generation shall cease. Work shall not commence, until the Forest City Residential West and/or their representatives can demonstrate adequate dust control activities at the site is effective, due to changed conditions, or are no longer necessary.
- B. Please specify in detail what these abatement activities will entail. Every time wind speeds have been documented at 20 miles per hour, whenever a ten minute time-weighted average equals or is exceeded via wind monitoring, produce and specify in a log what activities were implemented to correct the problem(s). These logs may be requested in the future and should be made available to SFDPH upon request.
- C. Please provide the wind speed data gathered by the on-site weather station presented as daily or half-day average wind speeds since the inception of weather data

collection. The collection points shall be collected every 10 minutes, and set the audible signal to 20 mph, rather than 25 mph.

- D. Site work shall cease and/or site activities shall prevent and remedy **any** dispersion of dust across the project boundary. Should dust suppression remedies fail or the project scope changes, the EHB-SAM may re-visit and change any DMP requirements at a later date.
 - E. Please provide actions to be taken, utilizing best management practices prior to winds increasing from 20 mph. Please indicate the person responsible to make this determination; and at what point will they make the decision to cease operations creating fugitive dust. How will this order be communicated and carried out? Please specify in detail.
 - F. A written description and reference table / chart format will be helpful when outlining the actions taken by the Forest City Residential West and/or their representatives, when implementing dust control activities for each of the 15, 20, 25 plus miles per hour wind speeds. Outline strategies to apply BMPs for the different wind speeds.
3. In addition, the active piles will be thoroughly wetted at the end of each weekday and excess material will be removed and/or consolidated regularly to limit the extent. The time schedule shall be adjusted when meteorological and / or site conditions warrant.
4. Please include mitigation of dust control measures from construction traffic, paved and unpaved roads, parking lots and construction staging areas shall include a maximum vehicle speed limit of ~~ten~~ (10) miles per hour and include one or more of the following:
- A. Watering every 2 hours and at a minimum 3 times per 8 hour shift during active operations or sufficiently often to keep the area adequately wetted. Watering may be increased during above average temperatures, when activities intensify or wind speeds.
 - B. Applying chemical dust suppressants consistent with manufacturer's directions. Address reapplication for non-active stockpiles when needed.
 - C. Maintaining a gravel or asphalt cover with a silt content that is less than five (5) percent to a depth of three (3) inches on the surface being used for travel.
 - D. Paved roads within a construction site will be swept at least twice daily with a wet sweeper during dust-generating activities.
 - E. At least the first 500 feet of any public roadway exiting from the construction site will be at a minimum swept twice daily during dust generating activities. End of work day activities shall include inspection and/or remedy of this area.

- F. Implementation of erosion control BMPs will control dust emissions from public roadways, parking areas and any above grade unpaved staging areas or roadways.
 - G. Construction employees will park in paved or graveled laydown areas, to reduce dust emissions.
 - H. To the extent possible, heavy equipment will be left on the construction site and not staged outside the construction site to minimize potential for track out.
 - I. Reduced vehicle trips through efficient truck and equipment usage by minimizing equipment mobilization and demobilization and using full truck loads, etc.
 - J. Utilize a rumble strip at all exits around the project area.
 - K. Additional watering schedule will be added for weekends and end of workdays, should dust issues and complaints arise.
 - L. To reduce dust, dirt or concrete fines from causing eye injuries during high winds, ensure that employees and onsite visitors have proper eye protection and access to an eye wash station. The Cal/OSHA requirements for personal protection and safety should be established throughout the site, if not already in place.
 - M. Please provide actions to be taken, utilizing best management practices prior to winds increasing to 20 mph. The San Francisco Health Code, Article 22B, Section 1242 (c)(16) specifies that termination of excavation, grading, and other construction activities may be initiated when wind speeds exceed 25 miles per hour.
 - N. Some of these requirements may have already been addressed in the DMP dated July 2013.
- 5. Onsite signage shall be in English, Spanish and the predominate language of persons used in the area. The signage shall include pertinent contact information of the project proponents and be clearly seen at a distance of 25 feet.
 - 6. A Health and Safety Plan shall be submitted a minimum of two weeks prior to the start of work.
 - 7. Please submit a Final Report at completion of the project.
 - 8. Please identify all future documents and correspondence with the associated **SMED 1337** number and address of the project. Please submit all documents as a final .pdf and the Word.doc for the text portion of the reports on a labelled CD; otherwise your information will be returned to you.

Should you have any questions please contact Martita Lee M Weden, Senior Inspector at (415)

252-3938 / martita.lee.m.weden@sfdph.org or Stephanie Cushing, Principal Environmental Health Inspector at (415) 252-3926 / stephanie.cushing@sfdph.org.

Sincerely,



Martita Lee M Weden, MS, CA USTI
Senior Environmental Health Inspector



Stephanie K.J. Cushing, MSPH, CHMM, REHS
Principal Environmental Health Inspector

cc: Randolph C. Brandt, P.G.
Anthony Smith, Ph.D., P.E.
Geosyntec Consultants, Inc.
1111 Broadway, 6th Floor
Oakland, California 94607
RBrandt@Geosyntec.com
TSmith@Geosyntec.com

Mark Johnson
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
mjohnson@waterboards.ca.gov

Carol Bach, Environmental Affairs Manager, Port Planning & Development
Port of San Francisco, Pier 1 – The Embarcadero
San Francisco, CA 94111
Carol.Bach@sfport.com

Jeanie Poling, Planner
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103-2479
jeanie.poling@sfgov.org

Ed Sweeney, Deputy Director
San Francisco Department of Building Inspection
1660 Mission Street
San Francisco, CA 94103
edward.sweeney@sfgov.org