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PORT OF OAKLAND

June 13, 2014

Mr. Keith E. Nowell, P.G., C.H.G.
Hazardous Materials Specialist
Alameda County Environmental Health Department
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6507

Subject:

Alameda County Environmental Health Department ("ACEH") Fuel Leak Case Numbers
RO0000010/RO0000187

Dear Mr. Nowell:

Please find enclosed our document entitled "Soil and Groundwater Management Plan", Port of Oakland, 651 Maritime Street, Oakland, California, dated June 15, 2014. This document is being submitted in accordance with ACEH requirements as specified in your e-mail dated May 20, 2014, that summarizes our meeting on May 14, 2014 and associated documents ACEH has required for submittal for the above referenced site¹.

The Port of Oakland ("Port") has retained ARCADIS, U.S., Inc. ("ARCADIS") to prepare this document on behalf of the Port. If you have any questions or comments regarding the content of this document, please do not hesitate to contact Jeff Rubin at (510) 627-1134.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document prepared by ARCADIS are true and correct to the best of my knowledge. Please note that the report is stamped by a Professional Geologist in the State of California.

Sincerely,

Jeffrey R. Jones
Supervisor
Environmental Programs and Planning

Jeffrey L. Rubin, CPSS, REPA
Port Associate Environmental Scientist
Environmental Programs and Planning

Enclosure: ARCADIS document dated June 15, 2014 entitled: "Soil and Groundwater Management Plan", Port of Oakland, 651 Maritime Street, Oakland, California

Cc: Dilan Roe, P.E. (ACEH)
Katherine Brandt, P.G. (ARCADIS)

¹ The Site has been referred to historically as the "Shippers" and "Ringsby" sites, based on the Port tenants that occupied the site at the time of release discoveries. Prior to site redevelopment in 2004, the site was also referred to as 2277 and 2225 Seventh Street. After redevelopment, the Site address became 651 and 555 Maritime Street, although referenced hereafter as only 651 Maritime Street.

Port of Oakland

**Soil and Groundwater
Management Plan**

651 Maritime Street
Oakland, California
Case No. RO0000010/RO0000187

June 13, 2014



Katherine Brandt

Katherine Brandt, P.G.
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Soil and Groundwater Management Plan

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Date:
June 13, 2014

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Appendix A Environmental Health and Safety Protocol for Shallow Excavations for Port Facilities

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1. Introduction

ARCADIS U.S., Inc. (ARCADIS) is updating this soil and groundwater management plan (SGMP) on behalf of the Port of Oakland (Port) for the property located at former 2277 Seventh Street and 2225 Seventh Street, in Oakland, California (the Site; Figure 1). Environmental activities at the Site are overseen by the Alameda County Department of Environmental Health (ACEH). This is an update to the Risk Management Plan prepared by BASELINE Environmental Consulting dated February 2009 (BASELINE 2009).

The Site is currently being used as the Harbor Facilities Complex (HFC) at 651 Maritime Street and a portion of the Maritime Support Center (MSC) at 555 Maritime Street (BASELINE 2009, Figure 2). The Site occupies 13.8 acres; the eastern 8 acres are 651 Maritime Street and the western 5.8 acres are a portion of 555 Maritime Street. The HFC is composed of maintenance shops, warehouses, and administrative support; a vehicle washing and fueling facility with an aboveground storage tank; and asphalt paved areas for vehicle parking and equipment and supplies storage for the Port maintenance and construction activities. The MSC is a container storage yard.

The purpose of this SGMP is to document risk management measures to minimize the exposure of future construction and maintenance workers and the general public to residual chemicals in the soil and groundwater at the Site and to control off-site migration, which could impact the environment. The risk management measures consist of both institutional and engineering controls. The SGMP includes the following components:

1. Overview of existing Site and the purpose of the report
2. Explanation of the site characteristics including historical investigations and chemicals of potential concern (COPCs)
3. Protocol for soil and groundwater management if impacts are encountered during construction
4. Key contacts, notification procedures, and documentation.

2. SGMP Background

2.1 Site Description and Development

The Site is shown on Figure 1. The Site is located at former 2277 Seventh Street and 2225 Seventh Street in Oakland California; currently, 651 Maritime Street and a portion of 555 Maritime Street.

2.2 Summary of Environmental Conditions

Petroleum hydrocarbons have been detected at the Site in both soil and groundwater samples. Site investigation and oversight have been the responsibility of ACEH under the Local Oversight Program (LOP).

Remedial activities have taken place at the Site since 1997 and have included a free-product recovery system with active and passive skimmer pumps as well as recovery wells. New chemicals of concern are not expected to be encountered during future construction.

2.2.1 On-Site Environmental Conditions

Site History

From the late 1960s through the early 1990s, the Site contained underground storage tanks (USTs). Between 1990 and 1992, Dongary Investments (the Port tenant at the time) removed nine USTs adjacent to former Building C-407 (seven diesel USTs and two oil USTs) at 2225 Seventh Street (Figure 2; IRIS 2003a). At 2277 Seventh Street, the Port removed four USTs (one waste oil UST, two gasoline USTs, and one oil UST) adjacent to former Building C-401 in 1993 (Figure 2; IRIS 2003a). Subsurface investigations have indicated that the groundwater underlying the Site contains commingled plumes consisting of free-phase petroleum hydrocarbons in the diesel range.

Because of the historical separation of the two leaseholds, the ACEH LOP originally managed the Site as two Leaking Underground Storage Tank (LUST) sites, with LOP case numbers for 2277 and 2225 Seventh Street as RO0000010 and RO0000187, respectively. The two sites are now combined as one LUST site with the address of 651 Maritime Street under RO0000010.

At 2225 Seventh Street, the National Environmental Service Company (NESCO) removed a UST in March 1990 on behalf of Dongary Investments after it failed a tank integrity test in 1989. Ramcon Engineering and Environmental Contracting (Ramcon) removed the remaining eight USTs in 1992.

In 1993, on behalf of the Port, Uribe and Associates (Uribe) removed four USTs historically operated as gasoline and waste oil tanks at 2277 Seventh Street (IRIS 2003a). Uribe collected soil samples from the waste oil UST excavation; analytical results did not indicate the presence of diesel; gasoline; or benzene, toluene, ethylbenzene, and xylenes (BTEX) at concentrations above detection limits. However, analytical results of soil samples from the gasoline UST excavation indicated the presence of gasoline, diesel, and BTEX. Additionally, free product was observed on the groundwater in the gasoline UST excavation area.

In 1994, Uribe (on behalf of the Port) installed three groundwater monitoring wells at the 2277 Seventh Street site, and in 1995 Alisto Engineering Group (on behalf of the Port) installed five additional monitoring wells (IRIS 2003a). Quarterly groundwater monitoring was initiated in 1996 in accordance with an approved ACEH workplan. Petroleum hydrocarbons in the gasoline range have been detected in a monitoring well located on the western edge of the 2277 Seventh Street property. In 1998, ACEH requested that groundwater samples be analyzed for methyl tert butyl ether (MTBE). Uribe installed (on behalf of the Port) a free-product recovery system in 1997, consisting of one active skimmer pump and two passive skimmer pumps. Operation of the recovery system ceased in 2003 to facilitate redevelopment of the Site.



Soil and Groundwater Management Plan

Port of Oakland

The HFC and the MSC were constructed on Port property in 2003 and 2006, respectively. In 2002, Phase I and Phase II environmental site assessments were prepared by IRIS Environmental (IRIS) for the Port in support of the proposed HFC (IRIS 2003a). Three monitoring wells located at the 2225 Seventh Street site were abandoned during development of the HFC. A new free-product recovery system was installed by Dillard Construction on behalf of the Port at the Site in 2004, consisting of nine recovery wells, a 250-gallon aboveground storage tank, and associated equipment. IRIS also prepared a Human Health Risk Assessment (HHRA) for the Site (IRIS 2003a). The HHRA concluded that future construction workers could be exposed to residual chemicals in the groundwater and soil. The Water Board, which had been assisting ACEH on the Site, requested that a Risk management Plan (RMP) be developed to protect future construction workers (Water Board 2002).

In December 2008, ENV America Inc. installed four new groundwater monitoring wells (MW-9, MW-10, MW-11, and MW-12) to replace the wells abandoned during the Site redevelopment. The Port continues to recover free-phase product from the subsurface using the product recovery system and perform semi-annual groundwater monitoring.

2.3 Chemicals of Potential Concern

The primary COPCs at this Site are 27 volatile organic compounds (VOCs), 11 semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), five metals, and methane as identified by the HHRA performed by IRIS.

2.4 Site Hydrogeology

The depth of groundwater below the surface at the Site has ranged from 9.74 to 14.34 feet below ground surface (bgs) since the Site was redeveloped (MSE 2009). The hydraulic conductivity at the Site may be low, as slow recharge of groundwater into temporary wells has been observed (IRIS 2003a).

2.5 Groundwater Monitoring Wells

There are currently 10 groundwater monitoring wells on site. In addition to the 10 groundwater monitoring wells, there are nine recovery wells. The well locations are shown on Figure 2. These monitoring wells are sampled semi-annually by the Port.

3. Soil and Groundwater Management

The following sections outline the established process of identifying and properly disposing of contaminated soil and groundwater that may be encountered during various construction activities. Worker safety as well as contents of a Site-specific Health and Safety Plan (HASP) will also be covered.

3.1 SGMP Applicability

Construction contractors (Contractors and Subcontractors) hired to perform any construction work which disturbs the soil on site are responsible for their workers and are required to have their own Site-specific HASP. The Port of Oakland developed a Health and Safety Protocol for Shallow Excavations (Appendix A) to protect Port employees. Contractors will follow soil and management protocols at least as protective as those presented in this SGMP. Should a Contractor observe potentially impacted soil or groundwater while performing construction work, they will implement the following protocols to properly handle the waste.

3.2 Risk Management

3.2.1 Pre-Construction Planning and Notification

Prior to beginning any subsurface work at the Site, an exposure assessment will be performed by a Certified Industrial Hygienist (CIH) as well as the Port Safety Officer as referenced in Section 2.2.2 in the Port of Oakland Health and Safety Protocol for Shallow Excavations. Information will be provided by the Port Engineering Department about the proposed work location, dates of work, description of the work, and total depth of excavation, as identified in the Exposure Assessment Form provided in Appendix B. The CIH will review the information provided to determine if there is a potential for worker exposure to Site COPCs. If the work is confined to the upper 3 feet (3 feet or less below the asphalt and baserock), the work may be performed under the Port's Maritime Environmental Health And Safety Plan For Shallow Excavation For Port Facilities Staff And Port Contractors. If the work involves excavations deeper than 4 feet bgs, or contact with groundwater, the specific health and safety procedures in this SGMP must be followed. The Exposure Assessment Form must be signed and dated by the CIH before subsurface work can proceed.

Prior to the start of field activities, a Tailgate Safety Meeting is required to be performed as referenced in Section 3.2.2 and in Sections 2.2.3 and 2.2.3.1 in the Port of Oakland Health and Safety Protocol for Shallow Excavations.

3.2.2 Site-Specific Health and Safety Worker Requirements

All work that involves subsurface excavations in excess of 3 feet bgs will be undertaken in accordance with the HASP, prepared in accordance with Title 8 California Code of Regulations (CCR) Section 5192 and Title

29 Code of Federal Regulations 1910.120. These sections specifically apply to: 1) cleanup operations or hazardous substance removal work required by a governmental body; 2) corrective actions involving hazardous waste cleanup operations at sites covered by the Resource Conservation and Recovery Act of 1976 (RCRA); 3) voluntary cleanup operations at sites recognized by federal, state, local, or other governmental bodies as uncontrolled hazardous waste sites; 4) operations involving hazardous wastes that are conducted at treatment, storage, and disposal (TSD) facilities; or 5) emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the hazard. Because subsurface work in excess of 3 feet bgs would potentially put workers in close proximity to COPCs and may require incidental cleanup of COPCs by excavation and disposal, the Port will require that workers have Hazardous Waste Operations and Emergency Response (HAZWOPER) training and medical surveillance.

The Port will require that all relevant Port staff have site-specific health and safety training either at a department safety meeting or at the first Tailgate Safety Meeting prior to the start of field work. Attendance will be documented. Employees will also be trained on an ongoing basis as outlined in the Port's Injury and Illness Prevention Program (IIPP) and Safety Manual (Port of Oakland 2014).

The HASP preparation and implementation is the responsibility of individual contractors engaged by the Port or its lessees; the HASP must be submitted to the Port prior to any excavation deeper than 3 feet bgs in accordance with the Exposure Assessment (Section 3.2.1).

3.2.3 Construction Impact Mitigation Measures

Mitigation measures are established to protect on-site maintenance and construction workers from exposure to residual COPCs in the soil and groundwater present in the subsurface. Specific engineering controls must be implemented when the work extends deeper than 3 feet bgs. This section describes the requirements for HASPs, dust control measures and stockpile management, equipment decontamination, and storm water pollution control.

3.2.3.1 Site Control

The Contractor will provide control measures to limit access to the Site, such as fences and appropriate signage, to prevent unauthorized personnel from entering during construction activities. All entrances should have signs posted instructing visitors to sign in at designated areas during operational hours. These control measures will further limit the spread of COPCs from the Site by keeping unnecessary vehicles and personnel out.

The HASP will identify the work zones where workers may come into direct contact with contaminated soil. The work zones will be delineated by tape, fencing, and/or definitive access controls. Outside the work zone(s), the support zone will be identified in the HASP. The support zone will be large enough to provide

opportunities for decontamination of workers and equipment, including removal of dirt from truck tires prior to exiting the Site.

3.2.3.2 Equipment Decontamination

Decontamination procedures will be implemented by the Contractor to limit transfer of contaminated materials off site. The HASP should identify the proper decontamination procedures to be employed for workers who have come into direct contact with contaminated soil and also decontamination of equipment (including sampling equipment). Construction equipment and vehicles used during the breach of the cap that would excavate to a depth greater than 3 feet bgs may have deposits of soil containing COPCs adhering to surfaces, particularly on the wheels and wheel wells. Vehicles will be inspected and soil deposits removed prior to the equipment or vehicles leaving the Site. Soil removed from vehicles will be placed in stockpiles with other excavated material.

3.2.3.3 Personal Protective Equipment

Personal Protective Equipment (PPE) is used to protect the worker from exposure to COPCs. The HASP will describe the types of personal protective equipment to be donned by workers who come into direct contact with contaminated soil and/or are exposed to dust. The types of appropriate PPE will be specified by the preparer of the HASP and relate to the specific COPCs present at the Site. The Contractor will determine the most appropriate level of PPE based on the conditions at the Site and the type of work to be done. A minimum of Level D PPE is required (Port of Oakland 2014). Level D PPE requirements are listed below.

- Long-sleeved shirt and long pants or coveralls
- Safety glasses
- Steel-toed boots (ASTM 2412)
- Hard hat (worker on ground within reach of excavation equipment)
- High-visibility safety vests (ANSI Class 3)
- Hearing protection as needed

In addition to PPE, the HASP will include requirements for medical surveillance of those workers who will be involved in activities that involve “cleanup operations” or “hazardous substance removal work,” as defined in the California and federal regulations, identified above.

3.2.3.4 Dust Control

Construction or maintenance activities that breach the cap and would excavate to a depth greater than 3 feet bgs may generate visible dust, especially during the dry season. Dust emissions may result from excavation and grading activities, vehicle or equipment movement, wind blowing across the Site or over soil

stockpiles, and loading or unloading of soil. Dust control would minimize worker exposure to dust containing COPCs and reduce off-site migration of both COPCs and nuisance dust. The following dust control measures will be implemented during construction activities:

- Dampen soil by spraying water over soil when performing dust-creating activities.
- Limit the number of soil-disturbing activities being performed at one time.
- Minimize drop heights while loading or unloading soil.
- Manage and stockpile contaminated soil separately from other soil generated during construction activities. The contaminated soil must be placed on 10-mil visqueen or other impermeable material.
- Cover all soil stockpiles when they are not being added to or removed. This measure will include providing an effective technique of ensuring that the cover is not blown off the stockpile by the wind (e.g., sand bags, tires).
- Sweep paved roadways on site and off site near exit routes daily, or more frequently if necessary.
- Cease soil-disturbing activities when wind speed exceeds 25 miles per hour.

Additional dust control measures may be required if air monitoring or when observation indicates that dust emissions from the Site exceed levels defined in the HASP or exceed the legally permissible discharge limits, if any, established by state or local requirements.

3.2.3.5 Storm Water Pollution Controls

Storm water runoff from the Site during a breach of the cap may contain sediments due to exposure of surface soils, excavations, and the modification of established drainage patterns. Construction sites 1 acre or larger are required to manage storm water in accordance with California's National Pollutant Discharge Elimination System (NPDES) General Construction Permit. The Port must file a Notice of Intent (NOI) with the California State Water Resources Control Board and have a Storm Water Pollution Prevention Plan (SWPPP). The General Construction Permit requires construction contractors to implement best management practices (BMPs) designed to reduce sediments in storm water runoff to the extent possible.

If proposed construction involving the breaching of the cap is less than 1 acre in size, the Port is not required to file an NOI or prepare a SWPPP; however, an Erosion and Sediment Control Plan will still be prepared and implemented to ensure control of storm water runoff from the area where the cap is breached. It will be kept on file at the Port's Environmental Programs and Planning Division and will be made available to the ACEH at their request.

BMPs will be based on the September 2004 California Stormwater Association's Stormwater Best Management Practice Handbook, construction, and updates, such as the following:

- The use of silt fences around the perimeter of the Site to impede off-site migration of sediment
- Sediment basin or traps where sediments can settle out of storm water runoff
- Gravel bag berms to control storm water flow directions
- Sandbag or straw bale barriers around storm drain inlets to prevent sediments from entering the storm drain system

- The use of plastic sheeting to cover stockpiles and ensure that stockpiles do not accumulate water.

In addition to erosion and sediment control, hazardous materials releases, such as any spills of oil, petroleum fuels, or hydraulic fluids, will be considered. The SWPPP and/or Erosion and Sediment Control Plan must contain procedures for responding to hazardous materials releases, such as use of absorbent material and proper management of the resultant waste.

3.3 Groundwater Management Protocols

Depth to groundwater at the Site ranges from 9 to 14 feet bgs. The following sections explain the protocol and procedures to ensure safe handling and transport of potentially contaminated groundwater if it is encountered during construction activities.

3.3.1 Utility Trenches

If utility trenches extend to the top of the groundwater, vapor and groundwater migration through utility conduits and backfill will be reduced. The Contractor will need to work with the project engineers to determine the best remedy for the situation. Measures may include conduits with water-tight fittings or low permeability backfill “plugs” placed where the utility trenches extend off site.

3.3.2 Excavation Dewatering

Subsurface construction work may require the dewatering of excavation or trenches. Groundwater or storm water may be disposed of in one of three ways:

- Discharge to the storm drain system under an NPDES permit
- Discharge to the East Bay Municipal Utility District’s (EBMUD) sanitary sewer system under a permit from EBMUD
- Off-haul to a permitted recycling facility.

Samples of groundwater or storm water discharged under an NPDES permit or an EBMUD permit will be analyzed, as required by the conditions of the permit. Samples of groundwater or storm water off-hauled to a permitted recycling facility will be analyzed for the following:

- Total extractable petroleum hydrocarbons (TEPH) as diesel/motor oil with silica gel cleanup in accordance with U.S. Environmental protection Agency (EPA) Method 8015 modified
- TPH as gasoline in accordance with EPA Method 8015 modified
- VOCs in accordance with EPA Method 8260B
- SVOCs in accordance with EPA Method 8270C
- Title 22 metals in accordance with EPA Methods 6010B and 7471A.

Groundwater or storm water hauled off-site must be transported in accordance with federal, state, and local regulations under appropriate waste manifests and disposed of or recycled at a permitted facility.

3.4 Soil Management Protocols

3.4.1 Soil Monitoring

Future construction and/or maintenance activities at the Site may include excavation and stockpiling of subsurface soils. Excavated soil may consist of shallow fill or potentially contaminated soil from below the shallow fill. The soil from below the shallow fill may be visibly contaminated.¹ Excavated soil may either be reused at depths greater than 4 ft. bgs within the excavations or characterized for off-site disposal. Excavated soil designated for on-site reuse must be characterized in accordance with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, Chapter 9, dated 1986, as updated (“SW-846”). Excavated soil designated for off-site disposal may be characterized in accordance with SW-846 or landfill-specific criteria. The frequency of samples collected for off-site disposal will be in accordance with specific landfill requirements.

The soil samples collected for reuse or off-site disposal will be analyzed by a California-licensed analytical laboratory for the following chemicals:

- TEPH as diesel/motor oil with silica gel cleanup in accordance with EPA Method 8015 modified
- TPH as gasoline in accordance with EPA Method 8015 modified
- VOCs in accordance with EPA Method 8260B
- SVOCs in accordance with EPA Method 8270C
- Title 22 metals in accordance with EPA Methods 6010B and 7471A
- Hexavalent chromium in accordance with EPA Method 7196.

3.4.2 Classification and Management of Impacted Soil

The first step in classification of the visibly contaminated soils for reuse or off-site disposal is to determine whether the soil is a California or federal hazardous waste. Such soils cannot be reused on-site and must be disposed of at a permitted landfill.

The analytical results of the soil samples will be compared against the Total Threshold Limit Concentration (TTLC; Title 22, CCR).² Total chemical concentrations that exceed the TTLC are designated as California hazardous waste. Analytical results will also be compared to the Soluble Threshold Limit Concentration

¹ Visibly contaminated soil is soil that shows visible evidence of TPH impact.

² The analytical results may be evaluated by calculating the one-tailed 90% upper confidence limit (90% UCL) of the sample mean in accordance with EPA Guidance (EPA 2002).

(STLC); soluble concentrations exceeding the STLCs are characterized as a California hazardous waste. The theoretical maximum soluble concentration in a sample using the Waste Extraction Test (WET) is 10 percent of the total concentration because the test performed by the laboratory uses a 10-fold dilution of the sample during the extraction process. Therefore, soil samples in which the total metals results exceed 10 times the STLC must also be analyzed for soluble concentrations using the WET. Soils containing chemicals exceeding the STLC are also classified as a California hazardous waste.

If the sample results exceed the STLC and are 20 percent of the RCRA threshold limit, the samples will also be analyzed for soluble content using the Toxicity Characteristic Leaching Procedure (TCLP). These results will be compared against RCRA hazardous waste thresholds (Title 40, CFR). Soil containing chemicals exceeding the RCRA hazardous waste thresholds are designated RCRA hazardous waste. Any soil classified as a California or RCRA hazardous waste will be disposed of off-site at a permitted facility.

If the visibly contaminated soil is not a California or RCRA hazardous waste and will be reused on site, it will be screened against appropriate Ecological Screening Level (ESL) values;³ shallow fill⁴ placed on the Site during recent Site redevelopment can be segregated and reused without sampling. The applicable ESLs for the Site are for the commercial/industrial land use where groundwater is not a current or potential source of drinking water. The ESL values for arsenic have been adjusted to the Port-wide background levels of 16.4 milligram per kilogram (mg/kg) for fill and 5.6 mg/kg for native (Bay Mud) materials, as developed by BASELINE Environmental Consulting (BASELINE 2008).

For chemical constituents that exceed the respective ESL value, a 95% upper confidence limit (UCL; one-tailed) of the data will be calculated based on the EPA Guidance (2002). The 95% UCL will be compared to the applicable ESL values. If the 95% UCL is below the ESLs, then the material can be reused on site.

3.4.3 Management of Soil during Construction

If no impact is identified during the monitoring procedures outlined in Section 3.4.1 and 3.4.2, the surplus excavated soil can be transported to the appropriate landfill or reused on site or at another project location. If the soil is transported to another project, soil samples must be collected and analyzed in accordance with the requirements of that project by the appropriate Environmental Consultant. If the surplus soil is landfilled, samples will be analyzed to properly profile the material according to the requirements of the facility. The Contractor will coordinate the off-site disposal with the Environmental Consultant. Soils classified as RCRA hazardous waste will not be reused on site and will be properly disposed of at an off-site permitted facility.

³ Table B of the Water Board document *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* (February 2005).

⁴ Top two feet.

3.4.4 Import Fill

In order to minimize potential contamination on site and exposure to workers; the Environmental Consultant, and the Geotechnical Engineer will be notified when import fill materials will be used. These materials must have adequate documentation to verify that it is appropriate fill for the Site. Documentation should include but is not limited to detailed information on previous land use of the material, any Phase I Environmental Site Assessments performed and the findings, as well as the results from any analytical testing performed.

If documentation is unavailable or inadequate, samples of the fill material will be taken prior to shipment to the Site and analyzed. The Contractor will receive guidance from the Environmental Consultant regarding the acceptability of the fill material.

4. Notification and Documentation

4.1 Key Contacts

Key contacts for the Port, the environmental consultants, and ACEH will be provided at the start of Site redevelopment.

4.2 Notifications

In the event of the discovery of any COPCs in observations, analytical results, soil screening, or any other potential condition of environmental or health and safety concerns, the Project Owner, the Port of Oakland Environmental Consultant, and ACEH must be notified.

ACEH will be notified within 24 hours if suspected petroleum hydrocarbon-impacted soil or groundwater is encountered during any construction activities, or additional environmental conditions are encountered that may require action.

4.3 Documentation

Report(s) may be prepared by the Environmental Consultant at the discretion of the Port. The reports would include documentation of Site conditions, including observations, screening results, and laboratory results, as needed, to inform the Contractor of conditions in various work areas as may be needed to comply with provisions of this SGMP.

5. Limitations

Contractors and Subcontractors are responsible for review of this SGMP prior to commencing work at the Site and for the health and safety of their own employees and Subcontractors. The Port is responsible for review of the provisions of this SGMP and for incorporating its guidelines into their project planning and specifications. This document was prepared for the sole use and benefit of the Port, its project subsidiary, and its Contractors and Consultants at the Site. Neither this report, nor any of the information contained herein will be used or relied upon for any purpose by any person or entities. The Port and ARCADIS relied on information prepared by others and cannot be responsible for its accuracy or completeness or for the availability of all information that may be relevant to the preparation of this document.

6. References

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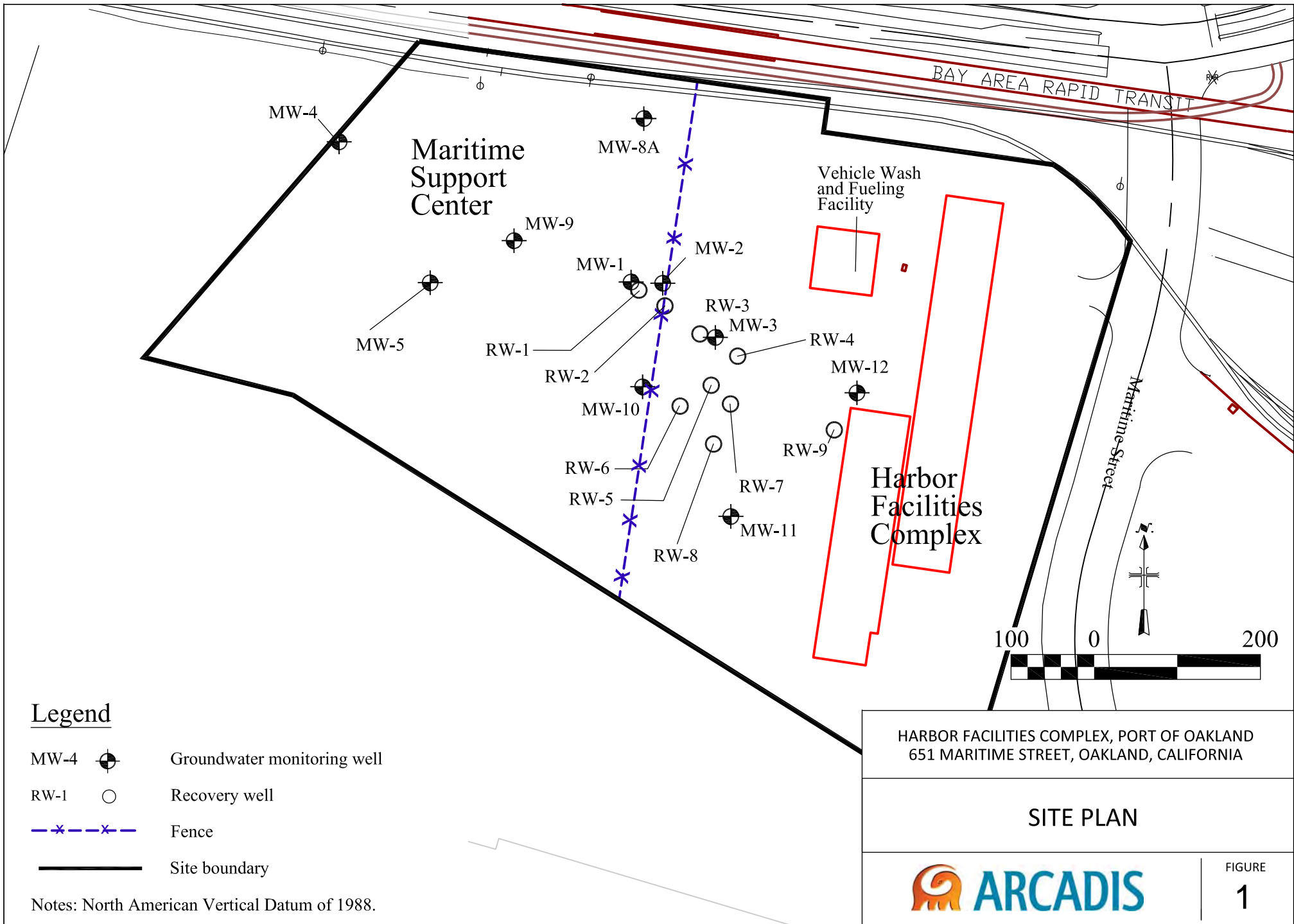
EPA. 1986. Test Methods for Evaluation Solid Waste, Physical/Chemical Methods, SW-846, as updated.



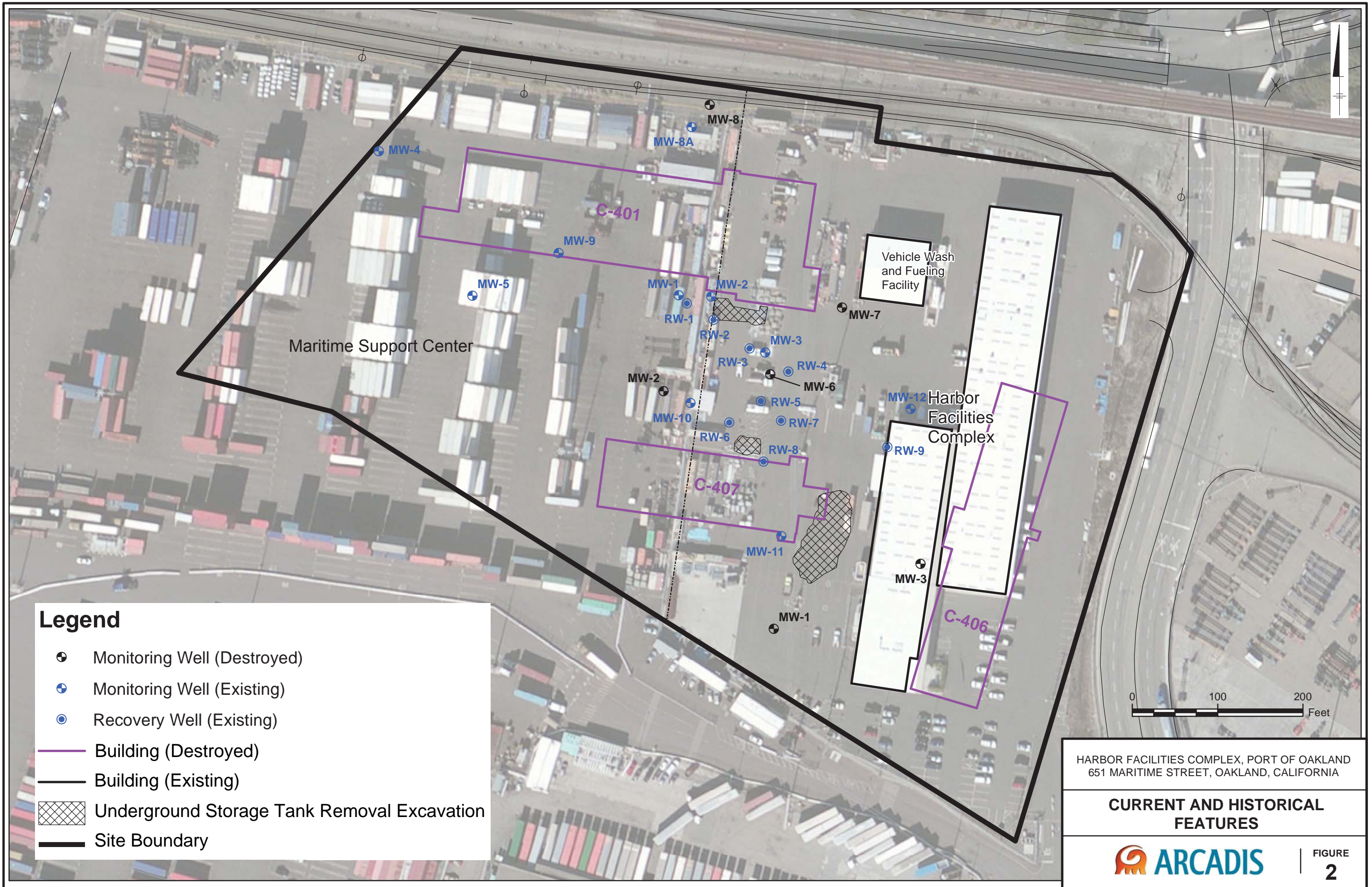
Soil and Groundwater Management Plan

Port of Oakland

Figures



CITY: DIV/GROUP: DB: LD: PIC: PM: TM: TR:
Project (Project #)



Legend

- Monitoring Well (Destroyed)
- Monitoring Well (Existing)
- Recovery Well (Existing)
- Building (Destroyed)
- Building (Existing)
- Underground Storage Tank Removal Excavation
- Site Boundary

HARBOR FACILITIES COMPLEX, PORT OF OAKLAND
651 MARITIME STREET, OAKLAND, CALIFORNIA

CURRENT AND HISTORICAL FEATURES



FIGURE
2



**Soil and Groundwater
Management Plan**

Port of Oakland

Appendix A



PORT OF OAKLAND

ENVIRONMENTAL
HEALTH AND SAFETY PROTOCOL
FOR SHALLOW EXCAVATIONS

For
Port Facilities Staff

February 4, 2014

Port of Oakland
530 Water Street
Oakland, CA 94607

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SIGNATURE PAGE

This Environmental Health and Safety Protocol has been prepared in accordance with Title 8 CCR, Div. 1, Chapter 4 - Construction Safety Orders, to serve as a guide to performing work activities in a manner that reduces the possibility of employee overexposure to chemical and physical hazards found in the shallow subsurface soils at the Port of Oakland. This Protocol, however, is not intended to be compliant with or substitute for 8 CCR, 5192, Hazardous Waste Operations and Emergency Response (“HAZWOPER”) and Port employees, in general, are prohibited in working under the conditions to which HAZWOPER applies.

“Shallow Excavations,” as used in this document, are defined as the soil above the first encountered groundwater surface. The professional opinions provided herein are based on the undersigned’s review and current understanding of such conditions at the Port of Oakland.

Jeff Jones, M.S. CIH
Certified Industrial Hygienist # CP 3419

Date

ADMINISTRATIVE REVISIONS

The following is a list of administrative addenda implemented by the Port of Oakland. Administrative addenda include changes to phone numbers, personnel, or referenced site location identification procedures. Administrative addenda and editorial changes do not require review by a Certified Industrial Hygienist (“CIH”). Technical revisions to the document require review and stamp by a CIH.

Addendum Number	Author	Date	Training Date	Reason for Change

1. INTRODUCTION

This Environmental Health and Safety Protocol (“EH&SP”) has been prepared to address shallow excavation work by Port of Oakland (“Port”) Facilities Staff. The Port is located within the City of Oakland in Alameda County.

1.1 Scope and Purpose of the EH&SP

This EH&SP is applicable to construction and maintenance activities that will occur within areas owned or operated by the Port. This EH&SP establishes the policies and procedures to be used by Port Facilities Staff for the performance of the construction or maintenance activities that involve shallow excavation. These policies and procedures are intended to protect the worker and the public from potential health and safety hazards posed by possible contamination in the shallow excavation soils. For the purpose of this document, shallow excavation soil is defined as the soil from ground surface to the first encountered groundwater. All work will be conducted in a manner that minimizes the probability of injury, illness, property damage, or damage to the environment and will be performed in accordance with the Port’s Injury and Illness Prevention Program (“IIPP”) and Port Safety Manual.

The Port is divided into three areas: the Maritime Area, the Commercial Real Estate (“CRE”) Area, and the Oakland International Airport (“OIA”) Area, as described below. There are several sites in Maritime, CRE, and OIA areas that may have special requirements under Deed Restrictions, referred to as a Covert to Restrict Property filed with the Alameda County. These sites are shown on Figures A-1 *Maritime Area*, A-2 *CRE Area*, and A-3 *OIA Area* and listed on Table A-1 in Appendix A. As shown on Table A-1, some of these sites have site-specific health and safety or risk management plan requirements.

This EH&SP does not apply to the deed-restricted sites that have site-specific health and safety plan requirements; for those sites, the procedures presented in the site-specific health and safety plans must be followed. This EH&SP also does not cover excavation work where groundwater is encountered.

In addition to sites subject to deed restrictions with site-specific health and safety plan requirements, the Port also includes other Regulated Sites, which are sites where contamination has been identified. These other Regulated Sites are shown in Appendix B on Figures B-1, B-2, and B-3. Prior to any excavation in the Regulated Sites, Environmental Programs and Planning Division (“EP&P”) must be consulted.

1.1.1 Maritime Area

The Port’s Maritime Area is bounded approximately by the Oakland Inner Harbor to the south, Oakland Outer Harbor to the west, Interstate 880 and West Grand Avenue to the north, and Interstate 880 and Embarcadero West to the east (Figure A-1). The Maritime Area is zoned by the City of Oakland for industrial and transportation land use and contains the Port’s shipping berths, the Burlington Northern Santa Fe intermodal yards, the Former Oakland Army Base, and miscellaneous transportation-related Port tenants.

1.1.2 CRE Area

The Port's CRE Area is bounded approximately by the Oakland Inner Harbor to the south, the Howard P. Charles Terminal Berth 68 and 69 to the west, Interstate 880 to the north, and Hegenberger Road to the east (Figure A-2). The CRE Area is zoned by the City of Oakland for commercial, industrial, and transportation land uses and includes Jack London Square, the Oak to Ninth Street Development Area, Commercial Real Estate holdings from the Clay Street ferry dock to Union Point Park, and the Oakland Airport Business Park.

1.1.3 OIA Area

The Port's OIA Area is bounded approximately by the San Francisco Bay to the south, the City of Alameda to the west, Doolittle Drive to the North, and the Metropolitan Golf Course and the City of San Leandro to the east (Figure A-3). The OIA is located in the southwestern portion of the City of Oakland in Alameda County. The OIA is subdivided into South Field and North Field. South Field contains the OIA's commercial passenger facilities, its principal runway (Runway 11/29), and most of its cargo facilities. North Field contains three runways (Runways 9L/27R, 9R/27L, and 15/33), general aviation, aviation maintenance, and some cargo facilities.

1.1.4 Summary of Possible Environmental Hazards

The soil within some areas of the Port may contain chemicals or chemical compounds that have the potential to adversely affect the health of the workers. The locations of sites within the Port, which have known soil or groundwater contamination, are shown on Figures B-1, B-2, and B-3, *Regulated Sites*, in Appendix B. However, Port Facilities staff should be aware that at any project involving excavation work, unexpected chemicals of concern ("COCs") in the soil may be encountered.

In general, the COCs most likely to be encountered at the Port are petroleum hydrocarbons (primarily fuels, such as gasoline, jet A, and diesel, and motor oil), metals (such as lead), volatile organic compounds ("VOCs"), semi-volatile organic compounds ("SVOCs"), and/or pesticides.

The principle chemical hazards posed by soil to construction and maintenance workers are from direct contact, ingestion of soil, inhalation of dust containing COCs, or from inhalation of vapors from VOCs. This Protocol describes the work procedures to minimize exposure to soil and to prevent the release of hazardous substances during excavation work.

1.2 Key Personnel – Health and Safety Responsibilities

The organizational structure part of this Protocol establishes the specific chain of command and specifies the overall responsibilities of supervisors and employees. The organizational structure will be reviewed and updated as necessary to reflect the status of Project operations.

1.2.1 Facilities Maintenance Manager

The Facilities Maintenance Manager ("Manager") is responsible for the on-time, on-budget completion of the individual maintenance projects involving excavations. The Manager is the primary contact for the Port, and is responsible for budgeting and providing the necessary safety facilities, equipment, and funding.

1.2.2 Site Supervisor (Port Supervisor or Designee)

The Site Supervisors are assigned to each specific job site and are responsible for health and safety of the workers. The Site Supervisors report to a Manager or Foreman, which includes reporting specific safety concerns to Port Safety Officers. The Site Supervisors are expected to:

- Manage field operations;
- Implement the health and safety program requirements;
- Remain informed about company health and safety policies and programs affecting the job site;
- Provide job-specific health and safety training to employees under his or her supervision;
- Ensure that each employee is able to safely complete each task to which he or she is assigned, and that equipment and machinery are maintained in safe operating condition;
- Conduct inspections at the job site to identify hazardous conditions and work practices;
- Investigate reported accidents and near-accidents, and implement corrective actions;
- Report to the Port Safety Officer any known or potentially unsafe or unhealthful conditions, including those identified by employees under their supervision, which they cannot immediately correct or for which they require assistance in correcting;
- Select and periodically inspect protective clothing and equipment for condition, use, storage and maintenance;
- Implement site access controls;
- Implement this Protocol;
- Understand emergency procedures;
- Notify, when necessary, local public emergency officials;
- Coordinate emergency medical care; and
- Monitor onsite hazards and conditions

1.2.3 Port Safety Officer

The Port Safety Officer is responsible for overall compliance with this Protocol, the IIPP and the Port Safety Manual. The Port Safety Officer is responsible for ensuring the overall implementation of this Protocol by directing and coordinating the following tasks:

- Identification and evaluation of workplace hazards, including regular inspections to identify unsafe conditions and work practices;

- Development of methods and procedures for correcting and controlling unsafe and unhealthy conditions, work practices and procedures;
- Employee training and instruction in both general and job-specific health and safety;
- Communication with employees in an understandable manner regarding matters relating to occupational health and safety;
- Monitoring employee compliance with health and safety rules, practices and procedures;
- Investigation of occupational injuries and illnesses, identification of causative factors, and implementation of hazard control actions;
- Development and implementation of health and safety programs related to the IIPP; and
- Maintenance of records for the implementation of the IIPP and related health and safety programs.

1.2.4 Individual Port Facilities Staff

Individual Port Facilities staff will be trained in this Protocol and will sign a training sign-in log, maintained by the Port Safety Officer to document completion of the training. Port Facilities staff are responsible for understanding the provisions of the Protocol and asking questions about portions which they do not understand. Individual workers are also expected and encouraged to point out to their supervisor any potential health and safety issues that they may observe. Individual Port Facilities staff are neither expected nor allowed to perform work in areas requiring training according to the requirements of 8 CCR 5192 (HAZWOPER Training).

1.2.5 Site Visitors

Visitors to sites where shallow excavation work is being conducted and who are untrained in this Protocol must obtain permission to enter from the Port Supervisor or Designee at the site and must be under the Port Supervisor or Designee escort. Visitors without an escort or training must read and sign this Protocol. Visitors must coordinate access with the Lead Person to comply with the Protocol and to receive information on safe practices when working in the vicinity of the heavy equipment.

2. HEALTH AND SAFETY PROTOCOL PROCEDURES

This section outlines the health and safety procedures that will take place during a typical Port project involving shallow excavation work.

2.1 Expected Project Activities within the Scope of this EH&SP

The types of shallow excavation work activities covered under this Protocol include, but are not limited to:

- Excavation for utility repair or replacement, shallow foundations, or other structures;

- Soil stockpiling;
- Disconnecting, cutting, and capping of existing utilities;
- Repairing or replacing roads or sidewalks, if work extends below bottom of pavement;
- Landscaping which involves soil excavation or installation of new plants; and
- Projects similar to those described above.

If groundwater or potentially contaminated soil is encountered (see Section 2.2.3), work will cease and the Foreman or Supervisor contacted for follow-up with the Port Safety Officer.

2.2 Pre-construction and Field Work Procedures

A flow chart summarizing the pre-construction and fieldwork procedures required by this Protocol is presented on Figure 1. The procedures are also summarized below.

2.2.1 Pre-construction Procedures

When a need for shallow excavation work is identified, the requestor opens a Work Request which is then approved by the Facilities Maintenance Manager and delegated to a Supervisor and Foreman for action.

Prior to beginning work, the Supervisor or Foreman will check Figures A-1, A-2 and A-3 along with Table A-1 in Appendix A to verify that the work is not being conducted on one of the deed-restricted sites that have site-specific health and safety requirements. If the work is to be performed at any of those sites, the work may not be conducted under this Protocol, but will be performed under the deed-restricted site's site-specific health and safety plan. NO EXCAVATION SHALL BE CONDUCTED IN THESE DEED-RESTRICTED SITES WITHOUT FIRST COORDINATING WITH EP&P.

If the work to be performed is not within one of the deed-restricted sites with site-specific health and safety requirements, the Supervisor or Forman will check to see if the work will be conducted within 100 feet of one of the deed-restricted sites shown on Table A-1 in Appendix A or one of the Regulated Sites, shown on Figure B-1 in Appendix B.

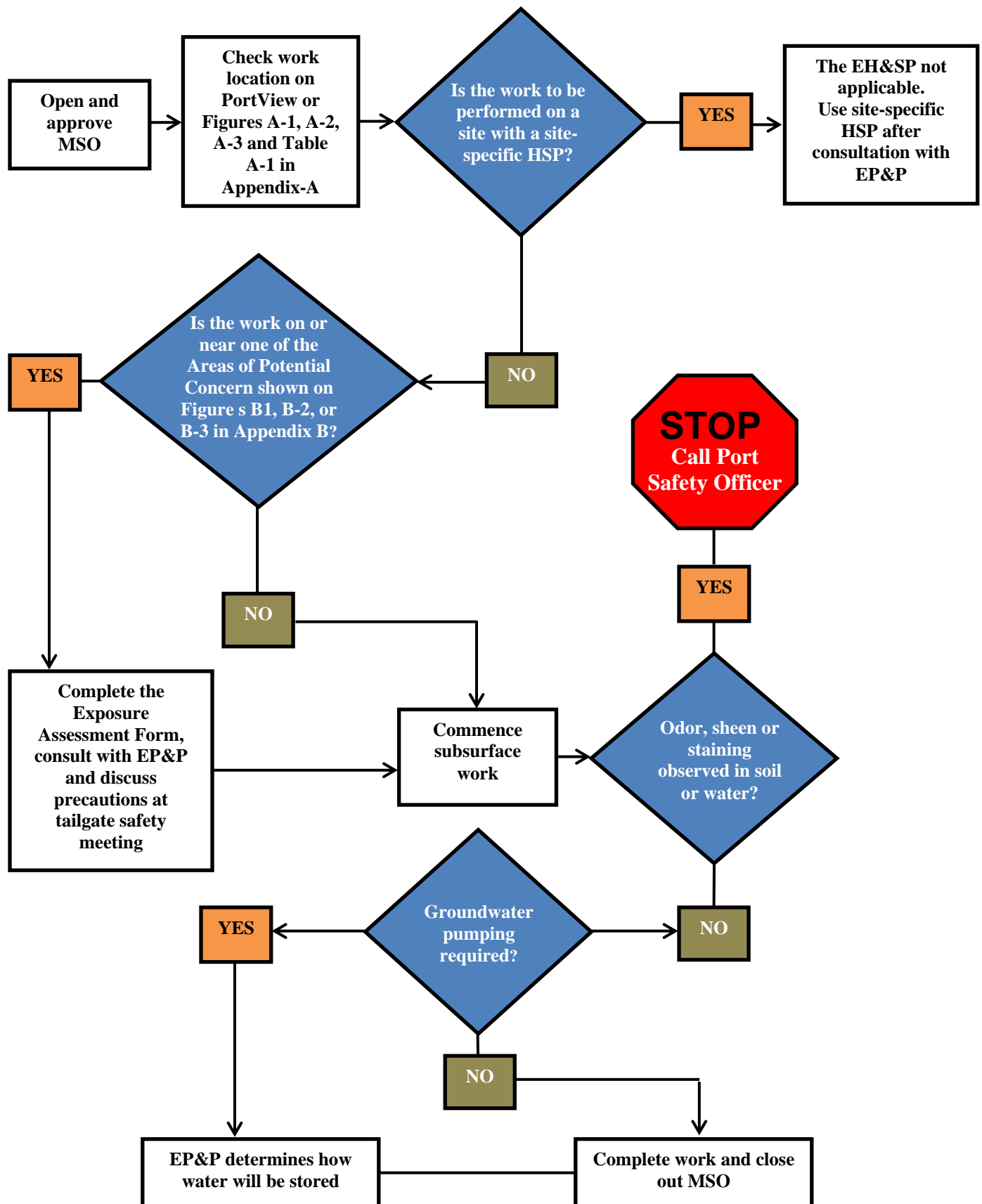
The Supervisor or Foreman will contact the EP&P to determine if the shallow soils pose a danger to workers, based on the proposed scope of work if the shallow excavation work is:

- 1) located within 100 feet of any of the deed-restricted sites with a site-specific health and safety plan listed in Table A-1 in Appendix A;
- 2) on or near deed-restricted sites without a site-specific health and safety plan listed in Table A-1 in Appendix A; OR
- 3) on or near a Regulated Site as shown on Figure B-1 in Appendix B.

If EP&P determines that the shallow soils do not pose a health risk to workers, the work may be performed by Port Facilities staff under this Protocol.

**Environmental Health and Safety Protocol for Shallow Excavations
Work Procedure Flowchart
Port of Oakland**

Figure 1



2.2.2 Exposure Assessment

Prior to beginning any subsurface work that meets the three criteria listed above in Section 2.2.1, an exposure assessment will be performed by the Port Safety Officer in consultation with the Supervisor or Foreman. Information to be considered includes the proposed work location, dates of work, description of the work, and total depth of excavation. The Port Safety Officer will review the information provided to determine if there is a potential for worker exposure to hazardous chemicals and the Site Supervisor or designee, in consultation with the Port Safety Officer, will complete an Exposure Assessment Form (Appendix C) for the project. The completed Exposure Assessment Form must be signed and dated by the Port Safety Officer before subsurface work can proceed.

2.2.3 Field Work Procedures for Shallow Excavation Work

Prior to the start of field activities, the Site Supervisor or Designee will conduct a Tailgate Safety Meeting (see Section 2.2.3.1). Shallow excavation work may then proceed. If floating product, sheen, odors, or staining are observed during excavation or groundwater is encountered, work will cease until the Site Supervisor or Designee have inspected the work and determined whether the work should continue under this Protocol. The Port Safety Officer will also be contacted.

Port Facilities staff may identify soil potentially impacted by COCs by visual evidence or detection of chemical odors. Visual evidence may include, but is not limited to, separate-phase hydrocarbons (floating product), staining, and debris. The color of soils can be an indicator, particularly when there is a sharp contrast of soil colors over a short distance. Unusual odors can also be used as indicators of contamination and COC types. For instance, diesel contamination typically has a strong petroleum odor and creosote (wood preservative) contamination has a strong naphthalene smell, similar to mothballs.

2.2.3.1 Safety Meetings

Prior to the start of work, the Site Supervisor or Designee will conduct a Tailgate Safety Meeting. The following agenda items will be included in the meeting:

- Review this Protocol with site Facilities staff involved in the work;
- Demonstrate the location of the work site to Regulated Sites and deed-restricted areas;
- Identify key personnel, including who makes decisions regarding observed environmental conditions; and
- Review procedures to follow if floating product, sheen, odors, soil staining, or groundwater are observed during excavation.

Tailgate Safety Meetings will be held prior to the start of each Work Order covered by this Protocol and weekly thereafter. Topics to be discussed will include health and safety hazards associated with the upcoming week's activities and any safety-related issues from the previous week's work.

A detailed record of each safety meeting and health and safety conference will be made on a Safety Meeting Form by the person leading the meeting. Visitor training will also be recorded on this form.

The work zone perimeter boundaries and the protocol for adjusting those boundaries will be established at the first Tailgate Safety Meeting and prior to start of work.

2.2.4 Dust Control and Site Control

Dust control and site control will be performed in a manner that minimizes environmental and safety impacts.

3. JOB HAZARD ANALYSIS AND HAZARD MITIGATION

There are two types of hazards on a work site: 1) chemical hazards; and 2) physical hazards. The hazards are described below.

3.1 Chemical Hazards Analysis

It is possible that contaminated soil will be encountered in any shallow excavation. The shallow soil may contain petroleum hydrocarbons, SVOCs, polychlorinated biphenyls (“PCBs”), metals including lead, pesticides, and/or VOCs. The potential chemical hazards are related to industrial processes that were historically located at the Port of Oakland.

Typical exposure pathways to chemical hazards in soil are inhalation of vapors from soil or liquid petroleum product, inhalation of dust, ingestion of soil, and skin (direct) contact with soil. Vapors from soil may contain petroleum hydrocarbons or VOCs, typically from solvents. Workers may also be exposed to contaminants through ingestion or inhalation of dust containing SVOCs, PCBs, lead, other metals, pesticides, or petroleum hydrocarbons.

Incidental dermal exposure to dust and soil containing COCs is also an exposure route of concern. This exposure pathway will be controlled with the application of proper hygienic practices and use of appropriate personal protective equipment, including washing before eating, drinking, smoking, or leaving the site. All Port employees must properly wash their hands and must employ other hygienic and safety practices, as directed.

3.2 Physical Hazards

Additional hazards common to shallow excavation work, including those listed below, are covered in the Port Safety Manual.

- Heavy Equipment Movement
- Demolition Debris
- Heat Stress Hazards
- Noise Hazards

- Trenching and Shoring
- Confined Spaces
- Fire Prevention

3.2.1 Mitigating Physical Hazards

Mitigation measures will be consistent with those described in the Port IIPP and Safety Manual.

3.3 Regulatory Requirements

This Protocol is not intended to be comprehensive or inclusive of all possible Cal/OSHA or related environmental regulations. The Protocol can be shared with contractors or subcontractors or their representatives, but the Port does not warrant its effectiveness or utility for a contractor's particular work or work procedures. It will also be made available to Port employees, to employee-designated representatives, and any federal, state, or local agencies with regulatory authority over the work site.

4. PERSONNEL TRAINING REQUIREMENTS

A health and safety training program specific to this Protocol will be provided for all relevant Port staff. A site-specific health and safety training will be provided either at a department safety meeting or at the first Tailgate Safety Meeting prior to the start of work. Attendance at the site-specific health and safety training will be documented. In addition, employees will be trained on an on-going basis as outlined in the Port's IIPP and Safety Manual:

Each employee requiring training in safe construction practices will be trained in the following, relative to this Protocol:

- Pre-construction Procedures (Project Setup)
 - Identification of Regulated Sites, including deed-restricted areas (Appendices A and B).
- Construction Procedures
 - Limits of work - when to contact the Port EP&P;
 - Procedures to follow if petroleum or solvent odors, a sheen, or stained soil are observed; and
 - The engineering controls and work practices associated with the employee's job assignment including training of employees to follow relevant good work practices.
- Additional Information
 - The specific nature of the operations which could result in exposure to chemicals of concern; and
 - The employee's right of access to records under Title 8 CCR 3204.

5. GENERAL SAFE WORK PRACTICES AND SITE CONTROL

5.1 General Safe Work Practices

General Safe Work Practices under this EH&SP shall be consistent with those discussed in the Port IIPP, the Port Safety Manual, and Port Administrative Policies, including, but not limited to, the following topics:

- Heavy Equipment Movement
- Demolition Debris
- Heat Stress Hazards
- Noise Hazards
- Confined Space Entry
- Fire Prevention
- Site Excavations
- Shoring
- Site Safety Meetings
- Personal Hygiene
- Site Control

5.2 Personal Protective Equipment

Personal Protective Equipment (“PPE”) will be selected to protect employees from the hazards and potential hazards they are likely to encounter as identified by the Supervisor, Foreman or Port Safety Officer. Table 1 below lists minimum PPE requirements:

Table 1: Minimum Site PPE Requirements

Location	Tasks	PPE Level	Equipment Required
ALL WORK ZONES	ALL TASKS	D	<ul style="list-style-type: none">• Hard hat (worker on ground within reach of excavation equipment)• Safety glasses• High-visibility safety vests (ANSI Class 3)• Hearing protection (available for use as needed)• Leather hard-toed work boots (ASTM 2412)• Long sleeve shirt and long pants

Additional PPE may be required based on particular tasks, such as welding.

6. ENVIRONMENTAL MONITORING

Air monitoring may be provided by Port Safety as conditions warrant. Generally, air monitoring concurrent with the work will be performed when conditions indicate that simple sense-based observation is insufficient to protect employees

6.1.1 Visual Inspection

The Site Supervisor or designee will visually inspect for dust during the work. If dust is visible for more than 30 seconds, additional engineering controls will be implemented to reduce visible dust. Additional engineering controls may include additional water applied to the site, reduced traffic speed, and more aggressive soil removal from vehicle wheels. If additional controls do not reduce the visible dust, then work shall cease until the Port Safety Officer establishes additional engineering controls or monitoring.

6.1.2 Training Requirements of Monitoring Personnel

Personnel conducting air monitoring will have the training and experience necessary to properly perform the air monitoring and equipment calibration. EP&P [(510) 627-1560] should be contacted for situations falling outside established Port safety procedures.

6.1.3 Documentation of Monitoring

Records of monitoring results will be maintained at a location readily accessible to employees. Records include the date; time, contaminants or hazards monitored, person conducting monitoring, calibration date and method, operations and location of monitoring, and results.

7. INFORMATIONAL PROGRAMS

The Port's IIPP, the Hazard Communication Program, and the Port Safety Manual are available on the Port's intranet (Divisions/Environmental Programs and Planning) from any Port computer. Employees, contractors, and subcontractors will also be informed and will share information on chemical hazards at job sites, as required by the Hazard Communication Standard. Safety Data Sheets for all chemical materials used on-site will be readily available to site personnel. Employees, contractors, and subcontractors working outside of the limits of the work zone will be notified of chemical hazards if required by the Hazard Communication Standard.

8. EMERGENCY RESPONSE PLAN

The emergency response plan will be consistent with existing Port procedures. Contact a Supervisor or the Port Safety Officer in an emergency.

9. REFERENCES

Port of Oakland, Injury and Illness Prevention Program ("IIPP"), current version located on the Port intranet.

Port of Oakland, Port Safety Manual, current version located on the Port intranet.

Port of Oakland, Hazard Communication Program, current version located on the Port intranet.

Port of Oakland Port Administrative Manual, current version located on the Port intranet.

APPENDIX A

**PORT PROPERTIES WITH DEED RESTRICTIONS
RECORDED WITH ALAMEDA COUNTY**

Table A-1: Port Property with Deed Restrictions Recorded with Alameda County – May 2013

Recorded Date and Series No.	Contaminated Site	Location	Former Use	Existing Use	Lead Regulatory Agency	Approximate Acreage Affected	Site Specific RMP/HSP?¹
MARITIME AREA							
2/22/2001 2001066698	Former Fleet Industrial Supply Center	Maritime and 7 th streets	U.S Navy Supply Center	Joint Intermodal Terminal and Berths 55-59	DTSC	23.2	NO/NO
3/3/2003 2003121181	Howard Terminal (Berths 67 and 68)	1 Market Street	Howard Steamship Shipping Company and Manufacturing Gas Plant	Shipping Terminal	DTSC	54.5	YES/YES
8/8/2003 2003466371	Former Oakland Army Base EDC Area	Maritime Street and West Grand Avenue, Parcel 1, 2, 2A and 2B	Army Base	Maritime Space Assignment	DTSC	363.5	YES/YES
11/18/2004 2004513848	Former Oakland Army Base Subaru Lot	Maritime Street and West Grand Avenue	Army Reserves	Maritime Space Assignment; Partially on City Property and partially on Port property	DTSC	19.0	NO/NO
6/29/2007 2007243216	Former Oakland Army Base Army Reserves - Parcels 18, 19 and 21 (Bldg. 762 and 780)	South of 14 th Street, east of Maritime Street	Army Reserves	Maritime Space Assignment	DTSC	6.76	NO/NO
4/11/2008 2008120058	UP Roundhouse	1407 Middle Harbor Road, Oakland	Union Pacific Train Maintenance Yard	Container Yard-Short Term Space Assignment	RWQCB	36.6	YES/YES

Table A-1 - continued

Recorded Date and Series No.	Contaminated Site	Location	Former Use	Existing Use	Lead Regulatory Agency	Approximate Acreage Affected	Site Specific RMP/HSP?¹
8/26/2011 2011245828	McGuire Chemical Company	2500 7 th Street, Oakland	Industrial Use (Packing Chemicals)	Berth 25/26	DTSC	5.3	YES/YES
Pending Deed Restriction Not Filed to Date	Trailer on Flat Car ("TOFC")	Berth 59	Rail Related Activities	Shipping Terminal Container Storage	RWQCB	~1.2 Site Boundary Not Defined	To be determined
Pending Deed Restriction Not Filed to Date	Ringsby (Harbor Facilities Complex)	651 Maritime Street	Trucking Support Facilities	Harbor Facilities	Alameda County	13	To be determined
CRE AREA							
10/15/96 96263198	Lot 12	475 Second Street, Oakland	Coal Gasification Plant	Movie Theatre	DTSC	0.70	YES/YES
2/13/97 97042207	Embarcadero Cove	Between Livingston and Dennison Streets	Monsanto Pesticide Manufacturing	Vacant	DTSC	1.40	YES/YES
3/15/2011 20111081471	Cryer Site	1899 Dennison Street, Oakland	Boat Repair Facility and Steam Valve Company	Recreational Park	RWQCB	1.6	YES/YES

Table A-1 - continued

Recorded Date and Series No.	Contaminated Site	Location	Former Use	Existing Use	Lead Regulatory Agency	Approximate Acreage Affected	Site Specific RMP/HSP?¹
6/29/2011 2011184114	Union Point Park	2301 Embarcadero	Lumber and Scrap Metal Yard	Recreational Park	RWQCB	1.13	YES/YES
OIA AREA							
8/26/2011 2011245829	SFPP, L.P Oakland Airport Transfer Station	100 Edward White Way	Vacant	KMEP Metering Station	RWQCB	0.5	YES/YES
8/26/2011 2011245830	Former Tank Farm C	1 Edward White Way	Chevron Tank Farm	OFFC Tank Farm	RWQCB	1.7	YES/YES
8/26/2011 2011245831	Former Humble PST Tank Farm	1 Edward White Way	Humble PST Tank Farm	Vacant land	RWQCB	2.6	YES/YES
Pending Deed Restriction Not Filed to Date	Former Tank Farm S	1 Edward White Way	Tank Farm S	OFFC Administrative offices	RWQCB	2.3	YES/YES

Notes:

DTSC = Department of Toxic Substances Control

RWQCB = San Francisco Bay Regional Water Quality Control Board

OFFC = Oakland Fuel Facilities Corporation

RMP = Risk Management Plan

HSP = Health and Safety Plan

¹ For the RMP, “YES” means that there is a current RMP for the site or one is required to be prepared for soil excavations and “NO” mean that there is no RMP.

For the HSP, “YES” means that there is a model Health and Safety Plan to be considered for that site or that there is a requirement for a site-specific health and safety plan, “NO” means that there is no model health and safety plan and that there are no requirements for a site-specific health and safety plan.

APPENDIX B
REGULATED SITES

APPENDIX C
EXPOSURE ASSESSMENT FORM



**Soil and Groundwater
Management Plan**

Port of Oakland

Appendix B

EXPOSURE ASSESSMENT FORM

TASK ORDER NO.: _____ **DATES OF WORK:** _____

LOCATION OF WORK:
(attach a site plan) _____

DESCRIPTION OF WORK: _____

DEPTH OF EXCAVATIONS:
(below ground surface) _____

EXPOSURE ASSESSMENT

Workers will not be exposed to site contaminants. Yes ¹

Workers may be exposed to site contaminants. Yes ²

¹ Use Port's standard construction health and safety procedures.

² Follow the procedures in the Risk Management Plan for 651 and 555 Maritime Street.

Sign (Certified Industrial Hygienist)

Date