REMOVAL ACTION WORKPLAN

SAN PEDRO HIGH SCHOOL
COMPREHENSIVE MODERNIZATION PROJECT
1001 W. 15TH STREET
LOS ANGELES, CALIFORNIA 90731

EnSafe Project Number:
0888821394

Prepared for:

Los Angeles Unified School District
Office of Environmental Health and Safety
333 South Beaudry Avenue, 21st Floor
Los Angeles, California 90017

November 14, 2017

5001 Airport Plaza Drive, Suite 260
Long Beach, California 90815
(562) 740-1060 | (800) 588-7962

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Reviewed by:

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Project Director

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LIST OF ACRONYMS

µg/dL	Micrograms of Lead Per Deciliter of Blood
ARAR	Applicable or Relevant and Appropriate Requirements
CalEPA	California Environmental Protection Agency
CMP	Comprehensive Modernization Project
COC	Constituent of Concern
COPC	Constituent of Potential Concern
CSC	Clark Seif Clark
DTSC	Department of Toxic Substance Control
ESA	Environmental Site Assessment
HASP	Health and Safety Plan
HVAC	Heating, Ventilation, and Air Conditioning
IQ	Intelligence Quotient
LAUSD	Los Angeles Unified School District
mph	Miles Per Hour
mg/m^3	Milligram Per Cubic Meter
mg/kg	Milligrams Per Kilogram
OCP	Organochlorine Pesticide
OEHS	Office of Environmental Health and Safety
OEHHA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyls
pCi/L	Picocuries Per Liter
PEA-E	Preliminary Environmental Assessment-Equivalent
PEL	Permissible Exposure Limit
PM_{10}	Particulate Matter of 10 Microns in Diameter or Smaller
QAPP	Quality Assurance Project Plan
RA	Removal Action
RACR	Removal Action Completion Report
RAO	Removal Action Objective
RAW	Removal Action Work Plan
RCRA	Resource Conservation and Recovery Act
SCAQMD	South Coast Air Quality Management District
SSCG	Site Specific Cleanup Goals
STLC	Soluble Threshold Limit Concentration
SWPPP	Storm Water Pollution Prevention Plan

TCLP	Toxicity Characteristic Leaching Procedure
TTLC	Total Threshold Limit Concentration
U.S. EPA	United States Environmental Protection Agency
USA	Underground Service Alert
VOC	Volatile Organic Compounds
yd^3	Cubic Yards

1.0 INTRODUCTION

This document presents a Removal Action Work Plan (RAW) for the removal of 27 discrete areas of soil impacted with constituents of concern (COCs) totaling approximately 226 cubic yards (yd^3) at the San Pedro High School Comprehensive Modernization Project (CMP) located at 1001 W. 15th Street (Site) in the community of San Pedro, city and county of Los Angeles, California (Figure 1). The COCs for the Site are based on previous investigations and include arsenic, lead, and organochlorine pesticides (OCPs). EnSafe Inc. prepared this RAW on behalf of the Los Angeles Unified School District (LAUSD) Office of Environmental Health and Safety (OEHS).

To achieve the CMP, LAUSD is proposing to demolish the Industrial Arts Building, Shop Building, and 10 portable buildings on the western portion of the campus (Figure 2). The existing Home Economics Building, Administration/Classroom Building, Physical Education Building, and Classroom Building 1 will experience modernization, which includes updated heating, ventilation, and air conditioning (HVAC) systems. These buildings will remain in place with no earth moving activities, and therefore, are excluded from the Removal Action (RA). The CMP has no planned activities for the Gymnasium Building, Girls Gymnasium, or Classroom Building 2 and these buildings are also excluded from the RA.

The RA described in this RAW is based on the results of a Preliminary Environmental Assessment-Equivalent (PEA-E) prepared by EnSafe, dated August 30, 2017. The RAW provides the engineering plan for conducting the selected RA for each COC and the goals to be achieved, as required by the California Health and Safety Code section 25323.1. The RAW was also prepared in general accordance with California Health and Safety Code section 25356.1(h). Furthermore, to demonstrate the necessity of a RAW, a human health risk screening evaluation based upon the data collected during the PEA-E was done. Consistency with these regulations is limited in instances where delineation of the COCs cannot be achieved due to construction and access limitations. In addition, the regulatory agency oversight aspects of these regulations is not being conducted at this time, but may be considered in the future.

1.1 Removal Action Objectives

Removal Action Objectives (RAO) are established to protect human health and the environment. RAOs are based on Site-specific media of concern, COCs, exposure routes and receptors, and acceptable contaminant levels or range of contaminant levels for each exposure route. The medium of concern for the Site is arsenic, lead, and OCP impacted soil. Based on the results of the

PEA-E, groundwater and surface water are not impacted and therefore are not complete exposure pathways at the Site.

The overall RAO of this RAW is to remove soil that contains arsenic, lead, and OCPs at concentrations above the site-specific cleanup goals (SSCG) established for arsenic at 12 milligrams per kilogram (mg/kg), lead at 80 mg/kg, chlordane at 0.44 mg/kg, and dieldrin at 0.034 mg/kg. LAUSD-OEHS has elected to use soil screening values as the SSCGs for the San Pedro High School modernization project. In accordance with the Department of Toxic Substance Control (DTSC) protocol, the school receptors were considered to be in a residential exposure scenario. The rationale for these SSCGs is discussed further in Section 4.1. To achieve these RAOs, the following steps will be completed:

- Evaluate and select an appropriate RA alternative.
- Minimize potential for migration of chlordane in soil to other media (e.g., air and surface water).
- Remove soil with arsenic, lead, chlordane, and dieldrin concentrations above SSCGs.
- Collect soil samples to confirm that the affected soil has been removed.
- Compare confirmation sample results to the SSCGs and conduct additional removal, as needed. The removal of impacted soil and achievement of the RAO will be limited in areas where construction or utility conflicts prohibit further excavation.

2.0 SITE BACKGROUND

The following sections present background information such as the location, description, physical setting, and previous Site actions. This information was collected from sources such as the Phase I Environmental Site Assessment (ESA) and PEA-E that have previously been prepared for the Site.

2.1 Site Location and Description

The following sections describe the Site location and historical background information.

2.1.1 Site Name and Address

The San Pedro High School campus is addressed 1001 W. 15th Street, San Pedro, California 90731 (Figure 1). The campus consists of an irregularly-shaped parcel that is bordered by W. 15th Street and W. 14th Street to the north, Dana Middle School (1501 S. Cabrillo Avenue) to the east, W. 17th Street to the south, and S. Leland Street to the west. The campus is located in the community of San Pedro, within the city and county of Los Angeles (Figure 1). Ten permanent buildings, nine portable classrooms, and a storage bunker make up the remaining Site buildings. Other improvements include a baseball field, football field, softball field, and parking lot.

As noted in Section 1, the CMP will be limited to, or not include, interior improvements for the following buildings: Home Economics Building, Administration/Classroom Building, Physical Education Building, Classroom Building 1, Gymnasium Building, Girls Gymnasium, and/or Classroom Building. These buildings and their immediate vicinity are excluded from the RA.

This RAW is limited to the areas where soil sampling was conducted during the PEA-E in the proposed areas of demolition at 10 portable structures or outbuildings along with the Industrial Arts building, Shop building, and Girls Gymnasium. Based on the maps provided by LAUSD-OEHS, the following identifiers were used for the buildings:

- AA-244 (Portable)
- AA-347 (Portable)
- AA-2384 (Portable)
- AA-2383 (Portable)
- Lunch Shelter
- Flammable Storage (Portable)
- Unnamed Classroom
- BB-182 (Portable)

- AA-2082 (Portable)
- Shop
- Unnamed Portable
- Industrial Arts
- Girls Gymnasium

The individual buildings are shown on Figures 3 through 9. Surface conditions around these buildings predominantly consist of asphalt pavement. Some areas have concrete pavement, or are located in unpaved landscape areas.

2.1.2 Contact Person, Mailing Address, and Telephone Number

Information regarding this RAW and/or the San Pedro High School project should be directed to Mr. Dane Robinson at LAUSD-OEHS. Mr. Robinson can be reached by phone at (213) 241-4122, or by mail:

Los Angeles Unified School District
Office of Environmental Health and Safety
333 South Beaudry Avenue, 21st Floor
Los Angeles, California 90017

Mr. Jay Nager is the Complex Project Manager for the Site and can be reached at the office line of (310) 808-1510.

2.1.3 Environmental Protection Agency Identification Number and Regulatory Identification Numbers

The United States Environmental Protection Agency (U.S. EPA) Identification Number for hazardous waste disposal at the Site is CAD982022642.

There are no active or historical case numbers listed for the Site on the DTSC EnviroStor or the State Water Resources Control Board GeoTracker internet databases.

2.1.4 Assessor's Parcel Numbers and Maps

The San Pedro High School campus is comprised of the Los Angeles County Assessor's Parcel Number 7458 024-918. The PEA-E and RAW activities are limited to the areas of the CMP.

2.1.5 Ownership

The San Pedro High School Campus is owned by LAUSD.

2.1.6 Geographic Coordinates

Approximate geographic coordinates at the entrance to San Pedro High School, adjacent to W. 15th Street, are 33.7303° North latitude and -118.2993° West longitude.

2.2 Operational History and Status

Based on the historical sources review as reported by the Clark Seif Clark, Inc. (CSC) Phase I ESA, dated June 7, 2016, there were no identified uses of the Site until the construction of several residential structures between 1923 and 1925. CSC stated that the land for the present day campus was acquired by LAUSD beginning in 1934 and continuing until 1969. Former owners of portions of the property included the Board of Water and Power Commissioners of the City of Los Angeles and the Southern California Gas Company. The high school was constructed sometime after 1935.

CSC conducted a review of historical sources, regulatory agency records, and current Site conditions to provide information regarding hazardous materials and wastes at the Site. South Coast Air Quality Management District air quality permits indicated the presence of a spray booth in 1980 and storage of more than 50 pounds of refrigerant in 2012. The City of Los Angeles Fire Department records included waste stream and hazardous materials storage lists for 2010 and 2012. The waste streams generally consisted of science classroom wastes (lab pack, formaldehyde), clarifier sludge from the Auto Shop, used oil and flammable liquids from the Auto Shop, asbestos, fluorescent light tubes, and flammable solids. Hazardous materials listed in the City of Los Angeles Fire Department records included flammable liquids and solids, photo development waste silver, caustics, clarifier waste, universal wastes, flooring finish, paint, and fuels (diesel and gasoline in quantities less than 55 gallons). Chemicals noted to be on the Site during the CSC reconnaissance included photographic fixer, chemistry lab chemicals, paint, cleaning supplies, and diesel and gasoline fuels. No spills were reported by CSC.

2.3 Topography

The Site is shown on the U.S. Geological Survey, Torrance, California, 7 1/2 minute topographic quadrangle (U.S. Geological Survey 2012) at an elevation ranging from approximately 120 to 200 feet above mean sea level. The topography in the Site vicinity slopes moderately to the east and west.

2.4 Geology and Hydrogeology

The following sections discuss the Site-specific geologic and hydrologic setting.

2.4.1 Site Geology and Soil Types

Review of geologic and hydrogeologic references was beyond the scope of work of this report. Soil conditions observed during the PEA-E sampling activities, to a depth of eight feet below ground surface, were characterized by sand and silty sand. The CSC Phase I ESA provided the following description of the geologic setting.

According to the EDR Geophysical Setting Report, the Subject Property lies in an area where the general geologic formation is of the Cenozoic era, Tertiary system, Eocene series. The dominant soil composition in the general area of the Subject Property is of the Calleguas series with a clay loam texture within the top 16 inches. This soil group is classified as Class D with very low infiltration rates. The soil drainage class is described as well drained and does not meet the requirements for a hydric soil. The corrosion potential for uncoated steels in this type of soil is listed as high. The depth to bedrock is approximated to be between 8 and 20 inches.

Alquist-Priolo Earthquake Fault Zones are regulatory zones that encompass surface traces of active faults that have a potential for future surface fault ruptures that would impact existing or future structures. The nearest fault is approximately 1.5 miles away (Palos Verdes Fault Zone) in the Transverse Ranges and Los Angeles Basin region. This is not an Alquist-Priolo Earthquake Fault Zone. (http://zimas.lacity.org).

2.4.2 Site Hydrogeologic Settings

The CSC Phase I provided the following summary of the hydrogeologic setting.

Groundwater flow direction is southeast towards the Pacific Ocean. Approximate measured depth to water is 15 to 16 feet. The nearest hydrogeological information comes from a site one-half to one mile east of the Subject Property where there are four aquifers: the semi-perched; Gage; Lynwood; and the Silverado. The unconfined semi-perched and underlying Gage aquifers are separated by the Bellflower aquiclude (EDR GeoCheck Report, 2016).

2.5 Surrounding Land Use and Sensitive Ecosystems

Land uses in the vicinity of the campus are predominantly single-family or multi-family residential. Limited commercial/retail uses are present approximately 1,000 feet to the east of the Site along South Grand Avenue.

2.6 Regional Radon Information

LAUSD developed a Radon Zones map dated April 26, 2016, which is based on radon data by ZIP Code obtained from the California Department of Public Health Indoor Radon Program, dated February 26, 2016. According to the map, the San Pedro High School campus is located in a Moderate Potential Radon Zone. Based on a review of the California Geological Survey, Radon Potential in Palos Verdes Area, California document, dated 2012, these hazard categories correspond to the percentage of homes that are likely to be equal to or greater than the U.S. EPA recommended radon action level of 4.0 picocuries per liter (pCi/L). The categories used were: high (greater than or equal to 20 percent of homes), moderate (greater than or equal to 5.0 to 19.9 percent of homes), low (less than 5 percent of homes), and unknown (for geologic units with few or no data).

Radon gas sampling was conducted prior to and as part of the PEA-E. Further information regarding these activities is provided in Section 2.7.3.2 of this report.

2.7 Previous Site Actions

The following sections summarize the environmental activities that have been performed at the Site.

2.7.1 Phase I Environmental Site Assessment

A Phase I ESA was prepared by CSC, and dated June 7, 2016 (CSC 2016a). The Phase I ESA (CSC 2016a) for the school found the following recognized environmental condition and recommendation:

- *There is a clarifier associated with the operation of an auto shop that was located in one of the buildings scheduled for demolition. Further investigation of the soil in the location of the clarifier is warranted.*

In addition to the recognized environmental condition, the following items of concern and recommendations were provided by CSC:

- *Based on the possibility of the historic use of termiticides, herbicides including arsenic, pesticides, PCBs in caulking and lead-based paint, CSC recommends that surficial soils in the construction area be sampled.*

- *Mitigation measures for radon intrusion [should] be implemented. Surveys previously conducted by LAUSD confirmed its presence. This finding is an indoor air quality concern.*

- *There are decommissioned DWP transformers in the vault in the basement of the administration building that might contain PCBs.*

2.7.2 Asbestos and Lead Survey

Asbestos and lead-based paint survey reports were not provided for review. Abatement of asbestos and lead-based paint at the time of building demolitions will be addressed separately from the RAW.

2.7.3 Preliminary Endangerment Assessment Equivalent

EnSafe prepared a PEA-E in accordance with a PEA-E Workplan and Soil and Radon Sampling Plan that was prepared by CSC and dated June 22, 2016 (CSC 2016b). This report was further supplemented by information in the referenced Phase I ESA prepared by CSC, and dated June 7, 2016 (CSC 2016a).

The purpose of the PEA-E was to evaluate soil in the proposed demolition areas for the presence of the potential contamination as described in the Phase I ESA. The scope of the soil evaluation was limited to the areas of demolition/construction and did not include the entire San Pedro High School campus. The scope of work provided by LAUSD-OEHS and the PEA-E do not address the potential presence of polychlorinated biphenyls (PCBs) in or around the electrical transformers described in the Phase I ESA. The PEA-E provided a limited evaluation of existing radon conditions in buildings selected for modernization. Soil and radon sampling are discussed in the following sections.

2.7.3.1 Soil Sampling

The soil sampling and analysis program was comprised of 50 primary borings (SB1 through SB50), and 102 step-out soil borings. The step-out borings were advanced to assess the extent of arsenic, lead, or OCP concentrations that exceeded the DTSC screening levels. The lateral and vertical extent of arsenic, lead, and OCP concentrations were defined in some areas by step-out and step-down samples. In areas where vertical delineation was not available, the delineation was deferred to confirmation sampling associated with the RA. Soil sampling was also discontinued in areas with subsurface utility conflicts and hillslopes. The delineation of arsenic, lead, and OCPs was not achieved in these areas.

The soil sample analytical results reported indicate that the contaminants of potential concern, polychlorinated biphenyls, total petroleum hydrocarbons, and volatile organic compounds (VOC), were not detected above their respective screening thresholds within the project area.

Thus, they were not anticipated to pose an unacceptable health risk by either inhalation, ingestion, or dermal contact during planned excavation or construction activities.

Soil sampling and step-out sampling analytical results indicated that arsenic, lead, and/or OCP concentrations exceeded the health-based screening levels at 27 surficial soil locations. Of the 27 areas, 17 were impacted with arsenic, 10 were impacted with lead, and 5 were impacted with OCPs (chlordane or dieldrin) above the screening levels. There were five locations where two or more compounds exceeded their respective screening levels.

Because the San Pedro High School CMP will disturb surficial soil at the 27 locations of concern, which could result in a pathway for exposure to students, faculty, or construction workers, EnSafe recommended soil removal and confirmation sampling in the areas of concern. After confirmation samples are obtained that show contaminants of potential concern below health screening levels for residential land use, no further action would be required.

2.7.3.2 Radon Gas Sampling

Radon gas sampling was conducted as part of the PEA-E. Prior to the PEA-E, previous radon measurements had been conducted at the San Pedro High School Campus. LAUSD-OEHS provided EnSafe with a Radon Measurement Survey, prepared by Alta Environmental and dated March 8, 2016. The testing results included radon concentrations above the U.S. EPA recommended action level of 4.0 pCi/L at two of the 18 locations. These included 4.7 pCi/L in Room 150-Storage and 8.5 pCi/L in the closet under the stairs (the former electrical closet). Radon measurements from the second floor of the building were below 4.0 pCi/L; however, the concentration of 2.9 pCi/L in Classroom 253 was considered unusual for a location above the ground floor.

Based on the radon measurements, Alta recommended retesting of selected areas as well as testing of the remaining buildings at the campus. Radon resistant construction design was further recommended by Alta for the new elevator installation, as well as new building additions.

EnSafe conducted limited radon testing in the areas specified by LAUSD-OEHS, which included the Administration Building, Classroom Building, Physical Education Building, and Home Economics Building. A total of 28 short term and 5 quality control Liquid scintillation radon sampling devices were deployed by in August 2016.

Radon testing results reported concentrations ranging from below the reporting limit of 0.2 pCi/L up to 3.9 pCi/L in the subject building. The highest radon concentration of 3.9 pCi/L was found in

Room 231 of Classroom Building 1. The sample from the Cafeteria in the Home Economics Building was flagged with a recommendation for additional testing, due to the doors being open at the time of the sample retrieval.

Radon sample results collected from the subject buildings were below the U.S. EPA action level of 4.0 pCi/L. However, previous testing provided by LAUSD-OEHS showed elevated radon levels in Classroom Building 1 and retesting was recommended. Based on the previous results, and because the EnSafe testing was restricted to four buildings, the EnSafe PEA-E recommended that LAUSD consider additional testing and/or radon mitigation prior to the design and construction of the San Pedro High School CMP.

EnSafe also noted that modernization of four buildings would include upgrades to the HVAC, and suggested that the results of radon testing be used to evaluate whether radon concentrations can be mitigated through appropriate ventilation and air exchange rates.

2.7.4 Additional Sampling — Post PEA-E

EnSafe collected additional surficial soil samples on June 25, 2017, to evaluate the hazardous waste characteristics for lead in areas recommended for removal in the PEA-E. The samples were analyzed for soluble lead following preparation by the Waste Extraction Test, and/or the Toxicity Characteristic Leaching Procedure (TCLP). Waste Extraction Test lead results were used for comparison to the Soluble Threshold Limit Concentration of 5 mg/L, which is the California limit for hazardous waste. The TCLP of 5 mg/L is the federal limit for Resource Conservation and Recovery Act (RCRA) hazardous waste. Based on the soluble lead testing, four areas (SB3, SB7, SB23, and SB34) exceeded the Soluble Threshold Limit Concentration (STLC). The laboratory analytical results, for the soluble lead testing, are provided in Appendix A. Hazardous waste classification is discussed further in Section 7.3.3 and summarized in Table 3.

3.0 NATURE, SOURCE, AND EXTENT OF CONTAMINANTS

This section describes the location, extent, and potential health effects of arsenic, lead, and OCPs in soil.

3.1 Type, Source, and Location of Contaminants

As noted in the CSC Phase I ESA and the PEA-E scope of work, multiple potential sources could have resulted in a release of hazardous substances to the environment. A clarifier associated with the operation of an auto shop program was identified as having the potential to impact soil with petroleum hydrocarbons, VOC, and PCBs. Pad mounted electrical transformers were identified as a potential source of PCBs in shallow soil, on the south side of the Girls Gymnasium. However, the clarifier and pad mounted electrical transformer areas were eliminated from further action because soil sampling results showed concentrations below the screening thresholds.

Potential surficial soil impacts around the buildings were identified due to the following: prior use of organochlorine compounds and arsenic (herbicides, termiticides, or other pesticides); PCBs due to their potential presence in caulking; and, lead due to the weathering of lead-based paint.

Use of OCPs as a termiticide has been known to result in significant concentrations around structures with wood components built prior to January 1, 1989. Arsenic may also be associated with direct application of pesticides. Weathering, scraping, chipping, and abrasion of potential PCB caulking or lead-based paint surfaces may cause these contaminants to be released and accumulate in soil around project area structures.

3.2 Extent and Volume of Contamination

Analytical results indicated that arsenic, lead, and/or OCP concentrations exceeded the health based screening levels at 27 surficial soil locations. These compounds are considered COCs for the Site.

TPH concentrations were below preliminary screening values and VOCs were not detected in subsurface samples from the clarifier area. TPH and VOCs are therefore eliminated as Constituents of Potential Concern (COPCs) and no further action is warranted at the clarifier area. PCBs were not detected in surficial samples around the buildings or at the transformer near the Girls Gymnasium. PCBs are therefore eliminated as a COPC and no further action is warranted at the transformer area. Of the 27 primary boring and step-out areas, 17 were impacted with arsenic, 10 were impacted with lead, and 5 were impacted with OCPs (chlordane or dieldrin) above the screening levels. The COPCs were adopted as COCs for the Site. There were four locations where two or more compounds exceeded their respective screening levels. A summary of the sample area exceedances is provided in the following table.

Table 3-1
Sample Areas with Constituents of Potential Concern above Screening Levels

Area ID	Arsenic	Lead	OCPs	
			Chlordane	Dieldrin
SB1	X			
SB3		X		
SB4	X			
SB6	X			
SB7		X		
SB8	X			
SB9		X		
SB11	X			
SB15	X			
SB17		X		
SB18	X			
SB19	X			
SB22	X			
SB23		X		
SB25	X		X	X
SB26	X	X	X	
SB27	X			
SB29			X	
SB30			X	
SB31		X	X	X
SB34		X		
SB36		X	X	
SB37	X			
SB41	X			
SB44	X			
SB46	X	X	X	
SB47	X			

Notes:
Area ID = Boring group location
OCP = Organochlorine pesticide

The lateral limits of impacts from arsenic, lead, and OCPs have been delineated at the 27 locations to the extent practicable, subject to limitations from architectural features, subsurface utilities, and hillslopes. The vertical extent of impacts have been delineated at 19 of the 27 surficial locations. LAUSD-OEHS elected to not collect additional step-down samples at the remaining eight locations,

and instead address these areas during this RA. A summary of the COCs, excavation limit rationale, and estimated volumes is provided in Table 3.

3.3 Health Effect of Contaminants

Arsenic

Exposure to inorganic arsenic can cause various health effects such as irritation of the stomach and intestines, decreased production of red and white blood cells, abnormal heart rhythm, blood-vessel damage resulting in bruising, and impaired nerve function. Long term exposure can result in skin changes included darkened areas or "warts" on the palms, feet, and body. The prolonged exposure can also result in cancer. It is suggested that the uptake of significant amounts of inorganic arsenic can intensify the chances of cancer development, especially the chances of skin cancer, lung cancer, liver cancer, and lymphatic cancer (https://www.atsdr.cdc.gov/ToxProfiles/tp2-c1-b.pdf).

Lead

Lead can be absorbed via the ingestion and inhalation pathways. Lead affects practically all systems within the body. Lead at high levels can cause convulsions, coma, and even death. Lower levels of lead can cause adverse health effects on the kidney, central nervous system, cardiovascular system, urinary system, reproductive system, and blood forming cells. Several studies have shown that low levels of lead in the blood can impair mental and physical development. The effects of lead exposure on fetuses and young children can be severe. They include delays in physical and mental development, reduced Intelligence Quotient (IQ) scores, reduced cognitive ability, decreased reading, spelling, mathematics and linguistic performance, decreased memory, decreased motor skills and coordination, shortened attention span, anxious/depressed behavior, and increased behavioral problems (Child-specific Benchmark change in blood Lead concentration for School Site Risk Assessment, OEHHA 2007). Additional evidence from studies in laboratory animals show that exposure to lead is associated with impaired learning and memory, decreased neurobehavioral development, and other defects similar to those seen in humans.

Fetuses, infants, and children are more vulnerable to lead exposure than adults since lead is more easily absorbed into growing bodies, and the tissues of small children are more sensitive to the damaging effects of lead. Children may have higher exposures since they are more likely to ingest soil, to get lead dust on their hands and then put their fingers or other lead-contaminated objects into their mouths.

The California Office of Environmental Health Hazard Assessment (OEHHA) chose IQ as the relevant toxicological indicator for exposure to lead because it is a widely measured, sensitive marker,

for neurodevelopmental effects of lead. Based on epidemiological studies, OEHHA developed a 1 microgram of lead per deciliter of blood (µg/dL) benchmark for the incremental change in blood lead levels for protection of school children and fetuses (OEHHA, 2007) (http://www.dtsc.ca.gov/LawsRegsPolicies/Regs/upload/20-Lead-and-compounds.pdf). OEHHA estimated that exposure to no more than 80 mg/kg lead in soil is protective of a 1 µg/dL increase in blood lead levels in children (https://oehha.ca.gov/media/downloads/crnr/leadchhsl091709.pdf).

Chlordane and Dieldrin

Chlorinated cyclodiene insecticides, which are structurally related by the same mechanism of action, include dieldrin and chlordane. Like dichlorodiphenyltrichloroethane compounds, the cyclodienes persist in the environment, and accumulate in fatty tissues of biologic organisms. The central and peripheral nervous systems are the target organs.

Headache, nausea, vomiting, dizziness, and mild chronic jerking are characteristic symptoms of exposure. Increased exposure can increase the severity of these symptoms and advance to convulsions. Exposure to dieldrin alters the dopamine system and increases neurotoxicity in an animal model of Parkinson's disease (http://www.fasebj.org/cgi/content/full/20/10/1695). The cyclodienes also can produce liver damage.

All three cyclodienes are carcinogens based on liver tumors observed in experimental animals. The non-carcinogenic reference doses assigned to the cyclodienes are based on the critical effect of pathologic changes in the liver and increased liver weight of experimental animals.

3.4 Targets Potentially Affected By the Site

As the Site will continue to operate as an active high school, human access to the Site will be generally unlimited. Therefore, Site occupants (students and faculty) could potentially be exposed to the contaminants in soil at the Site if capping remedial actions are not implemented.

During Site redevelopment, Site occupants, onsite workers, and offsite receptors could potentially be exposed to the COCs. The area surrounding the Site is mainly residential.

Following Site redevelopment, future Site users, workers, and surrounding residential receptors could potentially be exposed to the COCs unless appropriate preventative measures or remedial actions are implemented.

A conceptual site model that identifies the receptors, who may contact the COCs, and the exposure pathways through which they may contact the COCs, has been developed. A copy of the Conceptual Site Model is attached as Appendix B.

The 95% upper confidence limit concentrations of COCs in the post-remediation data sets (confirmation samples and PEA-E samples that remain in place) will be calculated to evaluate the concentration of these compounds remaining in place at the Site. Because the COCs may not be delineated and will remain in areas where utility or construction conflict are encountered, the 95% upper confidence limits will need to be used a part of the evaluation of potential future exposures.

4.0 CLEANUP GOALS

Based on the results of the PEA-E (EnSafe, 2017), arsenic, lead, and OCPs (chlordane and dieldrin) have been determined to be the COCs for the Site. Analytical results for the COCs can be found in Tables 1 and 2. Summaries of the SSCGs for these COCs are discussed below.

4.1 Site Specific Cleanup Goals

LAUSD-OEHS elected to use soil-screening values as the SSCGs for the San Pedro High School CMP. In accordance with DTSC protocol, the school receptors were considered to be in a residential exposure scenario.

4.1.1 Arsenic

SSCG: 12 mg/kg

The DTSC has established a regional background concentration for arsenic in the soil, for use as a screening tool (DTSC, undated). The background concentration does not distinguish between residential and commercial/industrial use scenarios. Based on their statistical analysis of arsenic data points, attributed to both naturally occurring and anthropogenic sources, the DTSC's upper bound estimate (95th percentile) for background arsenic concentrations in Southern California is 12 mg/kg.

4.1.2 Lead

SSCG: 80 mg/kg

The California Environmental Protection Agency (Cal/EPA) OEHHA developed a source-specific benchmark incremental change of blood lead concentration of 1 µg/dL for school children and fetuses. This benchmark estimates the incremental increase in children's blood lead level would reduce their IQ by up to 1 point. Based on this approach, Cal-EPA established a preliminary remediation goal (action level) of 80 mg/kg for lead in soil (Cal/EPA, 2009). This standard represents the concentration of lead in soil that will result in a 90th percentile estimate of a 1 µg/dL increase in blood lead in the most sensitive receptor (i.e., child or fetus).

The Cal/EPA action level has been adopted by DTSC. The DTSC Human Health Risk Assessment Note 3 — DTSC-Modified Screening Level (DTSC-SL), dated June 2016, for Residential Soil, establishes a threshold of 80 mg/kg.

4.2 Organochlorine Pesticides

Chlordane SSCG: 0.44 mg/kg

The DTSC-SL for chlordane in residential soil is 0.44 mg/kg.

Dieldrin SSCG: 0.034 mg/kg

Dieldrin is not listed as having a DTSC-SL. The SSCG was therefore established to be consistent with the most recent version of the U.S. EPA Region 9 Regional Screening Level.

5.0 ENGINEERING EVALUATION/COST ANALYSIS

This section identifies and evaluates possible RA alternatives that may be used to achieve the RAOs. The screening of RA alternatives was performed in general accordance with the U.S. EPA Guidance on Conducting Non-Time-Critical Removal Actions under the Comprehensive Environmental Response Compensation and Liability Act. Therefore, RA alternatives were screened based on their effectiveness, implementability, and cost.

5.1 Identification and Screening of Removal Action Alternatives

The purpose of this section is to identify and screen possible RA alternatives. Each of the RA alternatives is screened based on effectiveness, implementability, and cost, as defined below:

- Effectiveness — this criterion focuses on the degree to which a RA reduces toxicity, mobility, and volume through treatment; minimizes residual risk and affords long-term protection; minimizes short-term impacts; and how quickly it achieves protection.

- Implementability — RAs are evaluated with respect to technical feasibility and applicability to Site conditions. Some examples of this criterion include the ability to obtain necessary permits, regulatory approval of RA, and availability of necessary materials, equipment, and skilled workers.

- Cost — This criterion relates to relative cost screening based on approximate capital, operational, and maintenance expenditures.

Screening of several technology types using the above criteria was conducted to select RAs for further evaluation. Based on this screening, the three RA alternatives are as follows:

- Alternative 1 — No Action
- Alternative 2 — Containment through Surface Capping
- Alternative 3 — Excavation and Off-Site Disposal

Each of these RA alternatives is described in Section 5.2. Other RA alternatives were identified and considered for implementation at the Site but were eliminated based on past experience at similar Sites and on engineering judgment indicating they would be ineffective in achieving the RAO or could not be implemented in a cost-effective manner. These methods include soil washing, asphalt incorporation, in-situ vitrification, in-situ thermal destruction, and others.

5.2 Evaluation of Removal Action Alternatives

This section provides a description of each RA alternative selected for evaluation. Rationale for the selection of each alternative for evaluation, and a description of the technology as it applies to this Site, is also provided. This section also provides an evaluation of each removal alternative compared to the criteria for feasibility studies defined in 40 Code of Federal Regulations Section 300.430 (e) (9) (iii) of the U.S. EPA National Oil and Hazardous Substances Pollution Contingency Plan. These criteria are identified and described below.

- **Short-term effectiveness** — This criterion evaluates the effects of the removal alternative during the construction and implementation phase until remedial objectives are met. It accounts for the protection of workers and the community during remedial activities and environmental impacts from implementing the action.

- **Long-term effectiveness and permanence** — This criterion addresses issues related to the management of residual risk remaining on the Site after an RA has been performed and has met its objectives. The primary focus is on the controls that may be required to manage risk posed by treatment residuals and/or untreated wastes.

- **Reduction of toxicity, mobility, or volume** — This criterion evaluates whether the remedial technology employed results in significant reduction in toxicity, mobility, or volume of the hazardous substance.

- **Implementability** — This criterion evaluates the administrative and technical feasibility of the alternatives, as well as the availability of the necessary goods and services. This includes the ability to construct and operate an alternative, ability to obtain services and equipment, ability to monitor the performance and effectiveness of technologies, and the ability to obtain necessary approvals from agencies.

- **Overall protection of human health and the environment** — This criterion evaluates whether the removal alternative provides adequate protection to human health and the environment.

- **Cost** — This criterion involves capital and operation and maintenance costs, and is based on a variety of factors. The actual costs will depend on true labor and material cost, competitive market conditions, final project scope, and implementation schedule.

- **Community Acceptance** — This criterion involves consideration of the likelihood of community acceptance or concerns regarding implementation of a particular removal alternative.

The following sections present a description of each alternative and an evaluation of the alternatives with respect to the criteria.

5.2.1 Alternative 1 — No Action

In accordance with National Oil and Hazardous Substances Pollution Contingency Plan and the Comprehensive Environmental Response Compensation and Liability Act, as amended, Alternative 1 has been included to provide a baseline comparison to other remediation alternatives. This alternative does not include institutional controls, treatment of soil, or monitoring. No cost is associated with this alternative.

The following paragraphs present an evaluation of this alternative with respect to the feasibility criteria.

- **Short-term effectiveness** — The No Action alternative would allow for the disturbance of soil without any controls during future Site grading. It poses the greatest potential for short-term risk to Site workers or the community. Additionally, this alternative does not meet the RAOs.

- **Long-term effectiveness and permanence** — because RAs are not undertaken and clean-up objectives are not achieved, long-term effectiveness and permanence are not achieved, and risks are not reduced.

- **Reduction of toxicity, mobility, or volume —** because RAs are not undertaken, toxicity, mobility, and volume are not reduced.

- **Implementability** — Because RAs are not undertaken, technical feasibility is achievable.

- **Overall protection of human health and the environment** — Reduction in human health risk is not achieved because soil impacted with COCs exceeding the cleanup objectives is not removed.

- **Cost** — There is essentially no cost in implementation of this alternative. The estimated costs for implementation of all three alternatives are summarized in Section 5.3.

- **Community Acceptance** — Because cleanup objectives are not achieved and human health risk is not reduced; the community would not be expected to accept this alternative.

5.2.2 Alternative 2 — Containment through Surface Capping

Containment treatment, as implemented at the Site, would consist of capping the surface of the impacted areas with an engineered soil cover and/or membrane. The cap would be used to minimize surface exposure. The following paragraphs present an evaluation of this alternative with respect to the feasibility criteria.

- **Short-term effectiveness** — The containment alternative would involve some disturbance of the COC-impacted soil during placement of the surface cap. Therefore, potential short-term risks to onsite workers, public health, and the environment could result from dust or particulates that may be generated during these activities. These risks could be mitigated using personal protective equipment for on-Site workers and engineering controls, such as dust suppression and additional traffic and equipment operating safety procedures, for protection of the surrounding community. The short-term risks associated with this alternative would be low to moderate. It should be noted that the short-term effectiveness could be negatively impacted by the proposed construction activities for the modernization project. Re-grading for buildings or pavement preparation, or installation of subsurface utilities, would need to be planned to avoid or manage soil from the containment areas.

- **Long-term effectiveness and permanence** — The installation of a surface cap would require long-term inspection and maintenance. Periodic inspections for settlement, ponding of liquids, erosion, and naturally occurring invasion by deep-rooted vegetation or burrowing animals, would be required. In addition, precautions would have to be taken to ensure that the integrity of the cap is not compromised by land use activities. Based on these factors, the effort required to ensure long-term effectiveness is considered high.

- **Reduction of toxicity, mobility, or volume** — Containment through surface capping would not lessen toxicity or volume of the COCs, but would limit mobility, specifically the surface accessibility of the contaminants.

- **Implementability** — Containment is a relatively simple technology, which offers a quick installation, and is easily implemented. Because of the permanence of leaving the COCs on the Site, obtaining and renewing permits and regulatory approval can be difficult in some situations.

- **Overall protection of human health and the environment** — The overall protection of human health is good, provided the long-term operations and maintenance is continued.

- **Cost** — Containment technologies are typically a low to moderate cost treatment group. Even with long-term operation and maintenance requirements, containment treatments can be considerably more economical than excavation and removal of large-scale waste sites. Landfill caps are generally the least expensive way to manage human health and ecological risks effectively. Rough industry costs are $175,000 per acre for RCRA Subtitle D, and $225,000 per acre for RCRA Subtitle C. The existing surface area that would need to be capped for the areas of COC-impacted soil encompasses less than one acre, but is split into 27 distinct areas. A summary of the estimated costs to implement this alternative is presented in the table in Section 5.3.1.

- **Community Acceptance** — Because the Site operates as a high school, the local community would not be expected to accept this alternative.

5.2.3 Alternative 3 — Excavation and Off-Site Disposal

The Excavation and Off-Site Land Disposal alternative would consist of removing and transporting COC-impacted soil to an approved offsite disposal facility. It is anticipated that pretreatment of the affected soil would not be required to meet possible land disposal restrictions. The following paragraphs present an evaluation of this alternative with respect to the feasibility criteria.

- **Short-term effectiveness** — Potential short-term risks to onsite workers, public health, and the environment could result from dust or particulates that may be generated during excavation and soil-handling activities. These risks could be mitigated using personal protective equipment for onsite workers and engineering controls, such as dust suppression and additional traffic and equipment operating safety procedures, for protection of the surrounding community. The short-term risks to workers and the surrounding community during modernization activities would also be reduced. The short-term risks are low to moderate.

- **Long-term effectiveness and permanence** — Excavation and disposal would remove the COCs from the Site and therefore eliminate the long-term risk. This results in meeting the RAO.

- **Reduction of toxicity, mobility, or volume** — although entirely removed from the Site, excavation, and offsite land disposal does not result in the reduction of toxicity or volume of the COCs. By placing the impacted soil in an engineered landfill suitable for receiving the concentrations of contaminants detected, the mobility of the COCs will be reduced.

- **Implementability** — Excavation and offsite disposal is a well-proven technology that is a common method for cleaning up hazardous waste sites. It is a relatively simple process with proven procedures. Equipment and labor required to implement this alternative are uncomplicated and readily available. The shallow depths of the anticipated contamination make excavation readily implementable. It is also anticipated that this alternative would have regulatory acceptance.

- **Overall protection of human health and the environment** — This alternative reduces the potential risks from the COC at the Site and results in meeting the RAO. Consequently, it is considered protective of human health and the environment.

- **Cost** — Cost estimates for excavation, transportation, and disposal range from $100 to $200 per ton depending on the methods of excavation and hazard classification of soil being disposed. These estimates include excavation, removal, transportation, and disposal at an approved facility. The estimated tonnage for excavation and disposal included in this RAW is approximately 509 tons. A summary of the estimated costs to implement this alternative is presented in the table in Section 5.3.1.

- **Community Acceptance** — because impacted soils would be permanently removed from the Site, community acceptance is expected. There is the potential for minor temporary inconvenience to the immediate community from the increased number of trucks used to transport the soil for offsite disposal.

5.3 Evaluation of Removal Action Alternatives

This section provides a comparative evaluation of the three removal alternatives based on the eight criteria presented in Section

5.3.1 Qualitative Discussion of Alternatives

The following provides a comparative discussion of the eight criteria of each removal alternative:

- **Short-Term Effectiveness** — Each of the alternatives has the potential for the disturbance of surface soil that may contain COCs. The No Action alternative would allow for the disturbance of soil without any controls during future Site modernization; it also may allow for exposure by students attending the school. It poses the greatest potential for short-term risk to students, Site workers, or the community. Both the Containment and the Excavation and Disposal alternatives will involve some disturbance of surface soil. The Excavation and Disposal alternative would require removing, handling, and transporting the impacted soil, resulting in higher potential short-term exposure risks to the COC than Containment. However, it is expected that these risks can be sufficiently mitigated through control measures for both these alternatives.

- **Long-Term Effectiveness and Permanence** — Under the No Action alternative, the impacts due to the COC would not be addressed. Consequently, there would be no reduction in the potential risks, and the RAOs would not be satisfied. The Containment and Excavation alternatives respectively reduce or eliminate potential exposure to the COCs and therefore satisfy the RAOs. Once implemented, the Containment alternative would require long-term monitoring to ensure its effectiveness. In addition, future changes in land use could disturb the soil. The Excavation and Off-Site Land Disposal alternative would remove the COCs from the Site to levels below the RAOs and would not require any further management or Site controls.

- **Reduction of Toxicity, Mobility, or Volume** — The No Action alternative does not result in reducing the toxicity, mobility, or volume of the COCs present at the Site. Implementing the Containment alternative would not reduce toxicity or volume but could reduce mobility (the cap would prevent surface water infiltration and downward migration of the COCs and prevent ready access to soil containing the COCs). The Excavation alternative would also not reduce toxicity or volume but would reduce mobility (the COCs would be contained within an engineered landfill suitable for the placement of this type of waste).

- **Implementability** — All three alternatives are technologically feasible and easily implemented. However, the No Action alternative and Containment alternative are not easily implemented administratively because it would be difficult to obtain the necessary regulatory permits and agency approval to leave the COCs in place at the Site.

- **Overall Protection of Human Health and the Environment** — The No Action alternative would not result in any reduction in the potential risk associated with the COCs at the Site; therefore, the RAOs would not be met. The Containment and Excavation alternatives both meet the RAOs and are protective of human health and the environment. However, the Excavation alternative is favored because it would eliminate the risk of long-term exposure to the COCs at the Site, whereas the Containment alternative would only reduce risk.

- **Cost Effectiveness** — A summary of estimated costs to implement the proposed alternatives is presented in the following table.

Table 5-1
Summary of Estimated Costs

Cost Type	Removal Action Alternative		
	No Action	**Containment [b]**	**Excavation and Disposal**
Capital Costs			
Equipment Costs	$0	$100,000	$15,000
Material Costs	$0	$50,000	$5,000
Transport Costs	$0	$0	$30,000
Labor Costs	$0	$35,000	$20,000
Disposal Costs[a]	$0	$0	$30,000
Direct Costs			
Engineering and Design Expenses	$0	$35,000	$10,000
License and Permitting Costs	$0	$15,000	$0
20-Year Operations and Maintenance Costs			
Operation and Maintenance Costs[c]	$0	$160,000	$0
Total	**$0**	**$395,000**	**$110,000**

Notes:

A = Assumes soil is non-hazardous and California-hazardous, and not Resource Conservation and Recovery Act-hazardous waste

B = Because of the small area of impacted soil at the Site, a 1-acre containment area is used to estimate costs.

C = Operation and maintenance cost assumes an annual post-containment action cost of $6,000 amortized over 20 years at an annual escalation rate of 3 percent, for a total of $160,000.

- **Community Acceptance** — The No Action alternative would not achieve the RAOs and, therefore, would not likely receive community acceptance. Although the Containment alternative is feasible, it is unlikely to receive community acceptance, because it would restrict land use at the Site and its comparative cost. The Excavation with Off-Site Land Disposal alternative would likely receive community acceptance because it removes the COCs from the Site and eliminates long-term exposure.

5.3.2 Comparative Ranking

A numerical ranking of alternatives based on the degree to which each alternative satisfies the evaluation criteria has been prepared. This analysis is based on numerical rankings that assign values described below.

- A value of "3" is awarded if the alternative satisfies essentially all the elements of the evaluation criteria.

- A value of "2" is awarded if the alternative satisfies some of the elements of the evaluation criteria.

- A value of "1" is awarded if the alternative satisfies few or essentially none of the elements of the evaluation criteria.

With respect to cost, values are assigned relative to the lowest (3) to highest (1) total estimated cost (present value, where applicable). Alternatives with comparable overall performance are assigned the same value. Absent other controlling factors, the removal alternative with the highest total rating (score) is considered the most appropriate.

Based on the discussion provided above, score values for each of the criteria were assigned as shown in the following table.

Table 5-2
Comparative Ranking of Removal Alternatives

Criteria	Alternative 1 No Action	Alternative 2 Containment through Surface Cap	Alternative 3 Excavation with Off-Site Land Disposal
Short-term Effectiveness	1	2	2
Long-term Effectiveness and Permanence	1	2	3
Reduction of Toxicity, Mobility, and Volume	1	2	2
Implementability	3	2	3
Overall Protection of Human Health and the Environment	1	2	3
Cost	3	1	2
Community Acceptance	1	1	3
Total Score	**11**	**12**	**18**

5.4 Recommended Removal Action Alternative

Based on the RA selection process conducted herein, the Excavation and Off-Site Disposal to Land alternative is the preferred RA to address the COCs present in the surface soil at the RA area. This alternative was selected because it was determined to be effective, implementable, and reasonably cost effective, as discussed below. In addition, the components of the preferred RA alternative complies with the Applicable or Relevant and Appropriate Requirements (ARAR). The ARARs for the preferred RA alternative are summarized in Section 6.

In summary, this alternative was selected for the following reasons:

- The short-term effectiveness and implementability of this alternative is high. Potential risks are readily mitigated by the proper use of personal protective equipment, adherence to procedures outlined in the Health and Safety Plan (HASP), and other engineering controls, such as water sprays, to mitigate fugitive dust generated during excavation, loading, and transportation.

- The selected technology has a high long-term effectiveness and reliability.

- The selected RA will result in the elimination of toxicity and volume of COCs at the Site through excavation and offsite disposal of the impacted soil.

- The alternative is effective, permanent and protective of human health and safety and the environment.

5.5 Description of Selected Remedy

The selected alternative, Excavation and Off-Site Land Disposal, will include the excavation of shallow, impacted soil from the RA Area. Information regarding the location and estimated volume of impacted soil is presented in Section 3.2.

6.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

This section discusses selected ARARs associated with this RAW.

6.1 Public Participation

Public participation is an important component to the development and implementation of the RAW. The following sections describe the public participation aspects of the RA.

6.1.1 Previous Public Participation

Prior to the PEA-E field activities, Pre-Work Notices in both English and Spanish were provided to members of the community located near the campus. In July 2016, copies were sent to the homes of 2,391 students who attend San Pedro High School. Approximately 200 copies of the notice were also delivered to homes and properties that border the San Pedro High School campus. Laminated copies of the Pre-Work Notices were posted on each side of the campus.

The Draft PEA-E was made available on the LAUSD-OEHS Site Assessment web page for a period of 30 days (July 14 to August 13, 2017). During this period, LAUSD-OEHS accepted written comments to the Draft PEA-E.

6.1.2 Public Participation for the Removal Action Workplan Implementation

LAUSD-OEHS invited the public to review the Final Draft RAW during a 30-day public comment period from September 19 to October 17, 2017. A Public Notice announcing the review period was published concurrently with notification for an Environmental Impact Report (EIR) that is being prepared to in accordance with the California Environmental Quality Act (CEQA). The combined CEQA/RAW Public Notice identified the volume of soil, types of contaminants, dates of the public comment period, locations of the public repositories for the RAW, and location and date for a public meeting. The public meeting occurred on Tuesday, October 3, 2017, at 6:00 p.m. in the Auditorium.

During the public comment period, the Final Draft RAW was available for review on the LAUSD Office of Environmental Health and Safety Site Assessment web page located at: http://achieve.lausd.net/oehs, and in the public repositories listed below:

San Pedro High School — Campus Library
1001 W 15th Street
San Pedro, California 90731

San Pedro Regional Branch Library
931 S. Gaffey Street
San Pedro, California 90731

No comments were received regarding the Final Draft RAW, during either the public meeting or the public comment period.

6.2 California Environmental Quality Act

California Environmental Quality Act (CEQA) compliance for the RAW will be achieved through the documentation prepared for the overall CMP. LAUSD will prepare an EIR for the CMP that includes the components of this RAW. A mailer was prepared to inform the public about the common CEQA/RAW meeting that was held on October 3, 2017. A copy of this notice is included in Appendix C.

6.3 Hazardous Waste Management

Compliance with the DTSC requirements of hazardous waste generation, temporary onsite storage, transportation, and disposal is required. LAUSD has secured a U.S. EPA Identification Number of CAD982022642 for proper management of the hazardous waste. Any container used for onsite storage will be properly labeled with a hazardous waste label and placed at secured locations on the Site, in accordance with applicable regulations. Within 90 days after its generation, the hazardous waste will be transported offsite for disposal. Any shipment of hazardous wastes in California will be transported by a registered hazardous waste hauler under a uniform hazardous waste manifest. Additional discussion of soil handling is described in Section 7.3.

Soil sample results associated with the PEA-E will be not be recent enough to use for waste profiling purposes. Stockpiled soils will be evaluated in accordance with U.S. EPA Publication SW-846. Stockpile samples will be submitted to a state-certified laboratory and analyzed for arsenic in accordance with U.S. EPA Method 6020B, lead in accordance with U.S. EPA Method 6010B, and for chlordane and dieldrin in accordance the U.S. EPA Method 8081A, to characterize these materials in accordance with state and federal regulations. Additional characterization requirements may be applicable to the selected disposal facilities.

6.4 South Coast Air Quality Management District

The Site is located in jurisdiction of the South Coast Air Quality Management District (SCAQMD). SCAQMD has three rules, which address excavation (Rules 1150, 1166, and 1466), and one, which addresses fugitive dust (Rule 403). Rule 1150 applies to the excavation of sanitary landfills and does

not apply to this project. Rule 1166 applies to the excavation of soils containing VOCs and does not apply to this RAW, as the chemicals of concern are not volatile. Applicable elements of Rules 403 and 1466 are described below.

The purpose of Rule 1466 is to minimize off-site fugitive dust emissions containing toxic air contaminants generated from earth moving activities. The rule is applicable to projects that disturb greater than 50 yd^3 and have been designated as, or been notified by the following: U.S. EPA as a Superfund National Priorities List site, DTSC Brownfield or Cleanup Program site, State Water Resources Control Board or RWQCB Site Cleanup Program site, or the Executive Officer. Although the subject Site has not been designated or notified by these entities, there is the potential for future notification. The toxic air contaminants addressed by the rule include two of the COCs at the Site, arsenic and lead. The RA will comply with SCAQMD Rule 1466 and related requirements for air monitoring, minimization of fugitive dust, signage, work hour limitations, and record keeping. Elements of these requirements have been incorporated into Section 7.3 of this RAW. The notification requirements will not be implemented unless the project becomes subject to the rule.

Several elements of Rule 403, such as protocols for mitigation of potential fugitive dust emissions, have also been incorporated into this RAW. Excavation, loading, and transport of impacted soils shall comply with SCAQMD Rule 403 prevention, reduction, and mitigation measures for fugitive dust emissions. However, notification of SCAQMD is required only for large operations (disturbing more than 100 acres or moving more than 10,000 yd^3 per day). Therefore, no notification or filing of a Fugitive Dust Emission Control Plan is required under Rule 403 due to project size.

6.5 Health and Safety Plan

A Site-specific HASP was prepared for the RAW activities in accordance with current safety standards as defined by the U.S. EPA, the Occupational Safety and Health Administration (OSHA), and the National Institute of Occupational Safety and Health. In addition, the HASP was prepared in accordance with guidelines set forth in Title 8 of the California Code of Regulations, Section 5192. A copy of the HASP is provided in Appendix D.

6.6 Quality Assurance Project Plan

A Quality Assurance Project Plan (QAPP) has been prepared to specifically meet the data quality objectives (DQOs) for this project. The QAPP is provided in Appendix E.

6.7 Storm Water Pollution Prevention

The State Water Resources Control Board (SWRCB), as part of the National Pollutant Discharge Elimination System (NPDES), has adopted a statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity (General Permit) to address discharges of storm water runoff from construction projects that encompass one acre or more in total acreage of soil disturbances. Construction activities subject to the General Permit include demolition, clearing, grading, excavation, soil stockpiling, material storing, onsite staging, offsite staging, and other land disturbance activities. The General Contractor for will prepare a Storm Water Pollution Prevention Plan (SWPPP) for the larger CMP activity and file a Notice of Intent (NOI) and Permit Registration Documents (PRDs) to obtain coverage under the permit. The RA will be subject to the General Permit and specific activities described in the SWPPP.

7.0 REMOVAL ACTION IMPLEMENTATION

This section describes the tasks that will be implemented in the field to achieve the RA. The selected RA is Alternative 3 — Excavation and Off-Site Land Disposal. It is expected that LAUSD-OEHS will contract an Environmental Consultant to provide project oversight, air monitoring, health and safety compliance, confirmation sampling, and closure reporting for the RA. The General Contractor, contracted by LAUSD-OEHS for the CMP, will be responsible for providing qualified labor, appropriate equipment, materials, and transportation and disposal services to implement the RA.

7.1 Site Preparation and Security Measures

The following sections describe the tasks necessary to prepare the Site for RA activities and provide Site security.

7.1.1 Delineation of Excavation Areas

Prior to excavation activities, the target area will be measured and clearly marked or staked by the General Contractor, in coordination with LAUSD-OEHS and the Environmental Consultant. The areal limits of each excavation area are shown on Figures 3 through 9, with the depths and dimensions described in Table 3. LAUSD-OEHS anticipates that the aboveground portions of the buildings will be removed prior to the RA. Concrete foundations, asphalt or concrete pavement, decorative pavers, curbs, retaining walls, and landscaping may remain in place at the commencement of the RA. LAUSD-OEHS has reported that, during the demolition of buildings and hardscape areas, the General Contractor will be directed to take precautions that prevent contaminated soil from spreading and contaminating non-impacted areas. Suggested precautions would include covering the RA areas with plastic sheeting or plywood. Hazard warning signs for COC contamination, written in English and Spanish, will be posted along the perimeters of the impacted areas.

7.1.2 Utility Clearance

The General Contractor will contact Underground Service Alert (USA) at least 48 hours in advance of excavation activities to identify the location of utilities that enter the property. Proposed excavation areas will be clearly marked with white paint or surveyor's flagging as required by USA. USA will contact utility owners of record near the Site and notify them of our intent to excavate. Utility owners of record will be expected to clearly mark the position of their utilities on the ground surface throughout the designated areas.

In addition, a geophysical survey will be conducted in the excavation area to help identify possible subsurface obstructions. Four potential geophysical methods may be used: magnetics, electromagnetics, ground penetrating radar, and/or electromagnetic line location. Magnetic and

electromagnetic methods are used to identify underground tanks, drums, and conduits, which are detected because of the ferrous and electrically conductive material of their construction. Ground penetrating radar is used as a follow-up technology to characterize identified magnetic or electromagnetic anomalies.

It is unknown which utilities will remain in place or in service at the time of the excavation activities. However, excavations shall have a minimum of one foot of separation from known and active utilities and excavation methods within three feet of active utilities shall be limited to hand tools and shovels. The General Contractor will be responsible for making sure construction workers are safe when working around such lines. Site utilities are shown on the excavation area maps as provided on the LAUSD topographic map dated April 25, 2016.

7.1.3 Security Measures

If not already delineated by demolition area fencing, each impacted area will be secured with a chain-link fence with locked gate to limit access. In accordance with SCAQMD Rule 1466, the fencing will be a minimum of 6 feet tall and at least as tall as the height of the tallest soil stockpile, with a windscreen with a porosity of 50 ± 5%. Signage compliant with Proposition 65 and SCAQMD Rule 1466, identifying the contaminants and providing contact information, will be posted on the fence on each side of the Site with a maximum spacing of 1,000 feet.

At the beginning of each working day, the gates will be unlocked and opened to allow excavation equipment and trucks to enter and leave that part of the Site where removal activities are to occur. At the end of each working day, the gates will be closed and locked to secure the Site. Properly trained and equipped hazardous waste workers will conduct fieldwork. In addition, Site visitors and field personnel will be recorded in the field logbook.

7.1.4 Contaminant Control

The COCs are not volatile but can adhere to airborne soil particles that will be generated during excavation and loading. Control of fugitive dust by spraying with water will be the primary method of contaminant control at the Site. Dust suppression will be performed by lightly spraying or misting the work areas with water. Further details regarding dust control and air monitoring are provided in Section 7.4.

7.1.5 Permits and Plans

Federal, state, or local permits or agency approvals are not expected to be required to implement the RAW.

7.2 Field Documentation

Documentation of field and confirmation soil sampling activities will be recorded in field logbooks, chain-of-custody forms, and photographs.

7.2.1 Field Logbooks

Field logbooks will be maintained by field personnel to document their observations. Logbook entries will be complete and accurate enough to permit reconstruction of field activities. All entries will be legible and language will be factual, objective, and free of personal opinions or other terminology, which might prove inappropriate. If an error is made, corrections will be made by crossing a line through the error and entering the correct information. Corrections will be dated and initialed. No entries will be obliterated or rendered unreadable.

Entries in the field logbook will include, at a minimum, the following for each sample date:

- Date
- Site name and address
- Recorder's name
- Team members and their responsibilities
- Other personnel at the Site
- A summary of any onsite meetings
- A brief summary of the day's activities and progress
- Estimated volumes of excavated soil for each day in the field
- Levels of safety protection
- Calibration readings for any monitoring equipment used and equipment model and serial number

At a minimum, the following information will be recorded during the collection of each confirmation sample:

- Sample identification number (includes sample location)
- Sampler's name(s)
- Date and time of sample collection
- Analytical method(s)
- Field observations and details important to analysis or integrity of samples (e.g., heavy rains, odors, colors, etc.)
- Instrument reading

7.2.2 Chain-of-Custody Records

Chain-of-custody records are used to document sample collection and shipment to the laboratory for analysis. All sample shipments for analyses will be accompanied by a chain-of-custody record. If multiple shipments are sent to a single laboratory on a single day, chain-of-custody form(s) will be completed and sent with each sample shipment. The chain-of-custody record will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorize personnel. Until receipt by the laboratory, the custody of the samples will be the responsibility of the sample collector.

7.2.3 Photographs

Photographs will be taken at representative locations and at other areas of interest. The photographs will serve to verify information entered in the field logbook.

- Time, date, location, and, if appropriate, weather conditions
- Description of the subject photographed
- Direction the photograph was taken
- Name of person taking the photograph

7.3 Excavation

This section describes the procedures for excavation activities, soil stockpiling, soil loading, and decontamination procedures.

7.3.1 Shoring

If a trench or excavation is five feet deep or deeper, it must be shored or sloped. If there is a possibility of soil movement, even shallower trenches have to be shored. If workers are required to enter an excavation that is five feet or deeper, a permit from the Division of Occupational Safety and Health, California Department of Industrial Relations must be obtained before excavating.

Due to the shallow planned excavation depths (less than three feet below ground surface) shoring is not expected be required. Whenever compliance is necessary, the site-specific HASP (Appendix D) will be updated.

7.3.2 Excavation Plan

Removal action will occur on the campus at the locations where arsenic, lead, and OCPs exceeded the health screening levels. The excavation are named according to the primary soil boring location (e.g. SB1) and are shown on Figures 3 through 9. A summary of the COCs, dimensions, estimated volumes, and limitations for each excavation is provided in Table 3. It should be noted that the distances between sample locations and mapped utilities are approximate. Subsurface anomalies that suggested utility lines not mapped by LAUSD were also found. The locations of utilities should be verified prior to soil disturbance and the excavation limits adjusted accordingly.

In the eight areas where vertical delineation is not available, the initial excavations will be advanced to a depth of 36 inches. This over-excavation is six inches beyond the deepest step-down samples and results in the removal of known contamination. Confirmation samples will be collected from these locations as described in Section 7.5 and compared to the SSCGs. At any confirmation sampling location, where the analytical results indicate the COC soil concentrations is above the SSCG, additional excavation will be performed followed by another round of confirmation sampling in that location to confirm all impacted soil is removed from the RA Area. Sequencing of the removal activities and coordination with potential construction activities will be conducted in consultation with LAUSD-OEHS.

As noted in Section 7.1.2, excavations shall have a minimum of one foot of separation from known utilities and excavation methods within three feet of active utilities shall be limited to hand tools and shovels. Excavation areas that are not constrained by utilities may be excavated with rubber-tire

backhoe or similar equipment. Other equipment that may be used includes a loader for stockpiling and loading, water truck or trailer tank for dust control, dump trucks for moving or transporting waste soil, and support vehicles.

7.3.3 Temporary Storage Operations

If the construction sequencing allows, LAUSD-OEHS prefers that excavated soil be loaded directly onto trucks for off-site disposal. Pre-characterization is not discussed further in this RAW. Pre-characterization would require coordination with and pre-approval from LAUSD-OEHS. However, it is likely that some or all of the excavated soils will need to be stored temporarily at the Site.

Excavated soils that are not directly loaded onto trucks will be placed in a temporary stockpile or temporary roll-off bin immediately after being excavated. Temporary stockpiles and/or bins will be located onsite, near the excavated area as designated by LAUSD-OEHS to avoid conflicts with construction. If placed in a stockpile, the impacted soil will be placed on heavy-gauge plastic sheeting, covered with plastic sheeting (three layers of at least 0.04-millimeter thick plastic visqueen), and secured with sandbags. In accordance with SCAQMD Rule 1466, stockpiles shall be less than 400 yd^3 and not taller than the perimeter fence. Soil stockpiles with arsenic and lead impacts will be labeled with "SCAQMD Rule 1466 — Control of Particulate Emissions from Soils with Toxic Air Contaminants Applicable Soil."

The stockpiles will also be managed to comply the SWPPP prepared for the CMP. The temporary stockpiles will be designed, constructed, and operated so that the potential for soil to be affected by the action of surface water is limited to the extent practicable.

After excavation activities are complete, soil samples will be collected from the stockpiles in accordance with U.S. EPA Publication SW-846 and landfill acceptance criteria to characterize the soil for disposal. See Section 7.3.3 for additional details on soil segregation and stockpile management.

7.3.4 Waste Characterization and Segregation Operations

Waste soil will be segregated and placed in stockpiles in accordance with the classifications provided below. The estimated volume of soil and expected waste classification for each excavation are provided in Table 3. Soil samples to characterize the stockpiles will be collected based on the actual volumes of soil generated, and in accordance with landfill acceptance criteria. Based on the results of PEA-E samples, the soil will be disposed of at the appropriate off-Site facilities. Section 7.7 of this RAW describes the waste classification and resulting transportation and disposal alternatives.

Non-hazardous arsenic, lead, and organochlorine pesticide impacted soil: This classification consists of soil that is expected to be classified as non-hazardous based on the results of the PEA-E. An estimated 189 yd^3 of soil will be segregated into one or more stockpiles at locations to be determined.

Arsenic concentrations in the samples collected were below the Total Threshold Limit Concentration (TTLC), 10 times the STLC, and 20 times the TCLP. No further testing was required to evaluate whether soil was a California-hazardous or RCRA-hazardous waste with respect to arsenic.

Total lead concentrations for the soil were below the TTLC. This classification also includes soil from excavations where total lead concentrations exceeded 10 times the STLC, or 20 times the TCLP, but soluble lead results were below the corresponding thresholds. Excavations with non-hazardous total and soluble lead concentrations include SB9, SB17, SB25, SB26, SB31, SB36, and SB46.

Total OCP concentrations were below the TTLC and 10 times the STLC. Soil sample SB30-00 exceeded 20 times the TCLP for chlordane, indicating potential classification as a RCRA hazardous waste. However, the TCLP soluble chlordane concentration for SB30-00 was non-detect. Selected soil samples from excavations SB25 (SB25-00 and SB25-5E-00) and SB29 (SB29-00) also contained chlordane at concentrations that exceeded 20 times the TCLP. However, because these total chlordane concentrations were less than the chlordane concentration at SB30-00, soil from SB25 and SB29 is expected to be non-hazardous waste.

California hazardous (non-RCRA) lead-impacted soil: This classification comprises soil from excavations SB3, SB7, SB23, and SB34, where soluble lead concentrations from the PEA-E exceeded the STLC. The soluble lead concentrations did not exceed the TCLP. Approximately 37 yd^3 will be generated from these excavations and segregated into one or more stockpiles.

7.3.5 Decontamination Area

Entry to the impacted areas should be limited to avoid unnecessary exposure and related transfer of contaminants. Equipment or truck(s) will be decontaminated in a designated decontamination set up for each excavation area/exclusion zone during excavation, stockpiling, and soil handling activities as required in the HASP.

Equipment that comes into direct contact with potentially impacted soil or water will be decontaminated to assure the quality of samples collected and/or to avoid cross contamination. Disposable equipment intended for one time use will not be decontaminated, but will be packaged

for appropriate disposal. Decontamination will occur prior to and after each designated use of a piece of equipment, using the following procedures:

- Non-phosphate detergent and tap water wash, using a brush if necessary
- Tap-water rinse
- Initial deionized/distilled water rinse
- Final deionized/distilled water rinse

Trucks that come into direct contact with potentially impacted soil or water will be decontaminated prior to leaving the Site to prevent the offsite tracking of impacted soil. Trucks will be visually inspected before leaving the Site and any dirt adhering to the exterior surfaces will be brushed off and collected on plastic sheeting. The storage bins or beds of the trucks will be inspected to ensure the loads are properly covered and secured. Excavation equipment surfaces will also be brushed off prior to removing it from the exclusion zone.

Equipment will be decontaminated in a pre-designated area on pallets or plastic sheeting. Clean bulky equipment will be stored on plastic sheeting in non-impacted areas. Cleaned small equipment will be stored in plastic bags. Materials, to be stored more than a few hours, will also be covered.

7.4 Dust Control Plan

The following sections describe the dust control measures and monitoring procedures. Dust control will follow SCAQMD Rule 403 (Fugitive Dust) including measures that constitute Best Available Control Measures, and Rule 1466 (Control of Particulate Emissions from Soils with Toxic Air Contaminants).

7.4.1 Dust Control Measures

The General Contractor will implement appropriate procedures to control the generation of airborne dust by soil remedial activities, such that fugitive dust cannot be visually observed downwind of the excavation or stockpile areas. These measures include the following, at a minimum:

- Lightly spraying or misting the work areas with water. Water mist may also be used on the soil stockpile, in the transport trucks, and on the onsite truck routes. The volume of water added to suppress dust will not exceed the moisture-holding capacity of the soil. If dust is observed, the quantity and/or frequency of misting will be increased until fugitive dust cannot be visually observed downwind of the work area.

- The soil stockpile location will be situated in an area shielded from the prevailing wind, where practical, and covered with plastic. For dust control purposes, efforts will be made to minimize the soil drop height from excavator's bucket onto the soil pile and/or into the transport trucks.

- Stockpiles will be covered and secured at the end of each work day, or sooner if no further soil is being added.

- If adequate room is available, the excavator will be positioned to load or stockpile soil from the upwind side. If sustained wind speeds exceed 15 miles per hour (mph) for a period of 15 minutes, or instantaneous wind speeds exceed 25 mph, excavation activities will cease until the wind speed is below 15 mph.

- After the soil is loaded into the transport trucks, cover the soil with tarps that are adequately secured to ensure that soil cannot spill out of the truck during transport to the disposal facility.

- Truck sides and tires will be swept clear of loose soil before departing the Site. Do not allow track-out to extend beyond 25 feet of the property line.

- Posting of signs in accordance with SCAQMD 1466 at the truck ingress and egress points. The signs will provide LAUSD-OEHS and General Contractor information including phone number for the Site contact or pre-recorded notification center that is accessible 24 hours a day.

7.4.2 Dust Monitoring

Dust monitoring will be conducted and total measured dust levels will be compared to site action levels. Site action levels are based on protection of the workers implementing the RA, and on protection of the community surrounding the Site.

7.4.2.1 Dust Action Level and Monitoring for Workers

Action levels for worker protection are based on the California OSHA permissible exposure limit (PEL) for each COC identified in soil at the Project Site (California Code of Regulations Title 8, Section 5155). The PEL for total dust (particulates not otherwise regulated) is 10 milligram per cubic meter (mg/m^3). Therefore, assuming that total dust is present at 10 mg/m^3 in air and contains the maximum concentration of each COC identified at the Site, then Site worker exposure levels can be calculated as follows:

Exposure Level (mg/m^3) = soil concentration (mg/kg) x total dust PEL (mg/m^3) / 1,000,000 (mg/kg)
The dust exposure levels for each COC are as follows:

Arsenic: 0.00059 mg/m^3 = 59 mg/kg x 10 mg/m^3 / 1,000,000 mg/kg

Lead: 0.0025 mg/m^3 = 250 mg/kg x 10 mg/m^3 / 1,000,000 mg/kg

Chlordane: 0.000017 mg/m^3 = 1.7 mg/kg x 10 mg/m^3 / 1,000,000 mg/kg

Dieldrin: 0.00000076 mg/m^3 = 0.076 mg/kg x 1 mg/m^3 / 1,000,000 mg/kg

The following table shows the of calculated maximum dust exposure levels compared with the California OSHA PELs. The dust exposure levels are less than PELs.

Table 7-1
Dust Exposure Level Comparison

Chemical of Concern	Calculated Dust Exposure Level[(a)] (mg/m^3)	Cal/OSHA PEL (mg/m^3)
Arsenic	0.00059	0.01
Lead	0.0025	0.05
Chlordane	0.000017	0.5
Dieldrin	0.00000076	0.25
Total Dust	—	10

Notes:
PEL = permissible exposure limit (eight-hour, time-weighted average)
(a) = Based on 10 mg/m^3 total dust
mg/m^3 = milligram per cubic meter
Cal/OSHA = California Division of Occupational Safety and Health

The dust action level for workers using equipment in the removal area will be set at 1 mg/m^3 steady for five minutes. This concentration is less than the PEL, but is considered protective of workers and will serve to prevent dust levels from exceeding action levels for the fence line monitoring. The Environmental Consultant will stop work if the action level is exceeded until appropriate dust suppression measures are implemented.

Measurement of airborne dust levels at the excavation locations will be conducted by the Environmental Consultant using real-time, data-logging aerosol monitors (i.e., Personal DataRam or PDM-3 Miniram aerosol monitor manufactured by MIE). These instruments will be calibrated daily. Monitoring information will be posted daily and discussed with Site workers. The monitors will be set to log dust levels over five minute periods and will be visually read every 15 minutes.

7.4.2.2 Dust Action Level and Monitoring for Fence Line

The action level for fence line monitoring and protection of the surrounding community are based on SCAQMD Rules 403 and 1466. The Rule 1466 action level for dust, as particulate matter of 10 microns in diameter or smaller (PM_{10}), is 25 micrograms per cubic meter air over a two-hour period, and will be used for the RA. The General Contractor shall provide a supervisor that has completed the SCAQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class.

Continuous direct-reading near real-time ambient monitoring of PM_{10} will be conducted to confirm that concentrations remain below the action level during any earth moving or vehicle movement activities on the Site. The ambient PM_{10} monitoring will be conducted in accordance with the following:

- Use two or more of the following particulate meters: TSI DustTrak II Aerosol Monitor 8530, E-BAM Particulate Monitor, Thermo Scientific Model ADR1500, or other approved instrument.
- Monitor ambient weather conditions including wind speed and direction using handheld meters, an onsite met station, and/or real-time internet weather locations. Record the wind observations and use for the selection of dust monitoring locations.
- Place one upwind monitor where dust concentrations are not influenced with the RA activities.
- Place one downwind monitor in the seasonal prevailing wind direction downwind for the earth moving activities, and as near as possible to the property line.
- Collect near real-time data using data logging features every 10 minutes or less.
- Calculate the PM_{10} concentration averaged over two hours, where the concentration is the absolute difference between upwind and downwind monitors.
- Retain all dust monitoring records at the Site.

If the ambient dust concentration limit is exceeded, the Environmental Consultant will direct the General Contractor to immediately stop all earth-moving activities and apply dust suppressant to all fugitive dust sources or employ necessary dust control measures until the PM_{10} concentration drops below 25 micrograms per cubic meter air, averaged over 30 minutes.

7.5 Confirmation Sampling

Confirmation sampling will be conducted after the impacted soil has been removed and in general accordance with the applicable field procedures, quality assurance/quality control protocols, and the QAPP. Confirmation sampling will confirm that remaining soil concentrations are below the SSCGs and that the RAOs have been achieved.

Confirmation soil samples will be collected from the bottom and sidewalls of the excavations. One bottom confirmation soil sample will be collected for approximately every 100 square feet of area excavated. In addition, one confirmation sample will be collected every 20 linear feet of excavation sidewall. The sidewall samples will be collected at the middle depth between the top of bottom of the excavation. At locations that approach utilities, or an upward or downward slope, excavation activities will be discontinued and no sidewall sample will be collected. The numbers, types, and locations of confirmation soil samples are shown on Figures 3 through 9 and detailed in Table 3.

Confirmation samples will be collected using a clean trowel and transferred directly into sampling jars thereby reducing the number of sampling implements, which will reduce the possibility of cross contamination. The final confirmation samples will be covered, labeled, and stored onsite in a cooled chest prior to delivery to a California Environmental Laboratory Accreditation Program-certified laboratory under chain-of-custody procedures. Samples will be delivered to the laboratory on the same day collected, if time permits, and no later than the day following collection. In the event the samples are delivered the day after they are collected, the samples will be secured under proper chain-of-custody documentation at the Environmental Consultant office until delivery.

Depending on the COCs at the excavation, the confirmation soil samples will be analyzed for one or more of the following:

- Arsenic impacts — arsenic by U.S. EPA Method 6020B
- Lead impacts — lead by U.S. EPA Method 6010B
- Chlordane impacts — chlordane by U.S. EPA Method 8081A
- Dieldrin impacts — dieldrin by U.S. EPA Method 8081A

If confirmation samples contain the COC concentrations at or above the RAO, the soil will be further excavated and additional confirmation samples will be collected following consultation with LAUSD-OEHS. Excavation activities will be considered complete when confirmation samples at the extent of excavation contain less than the SSCG for the COC.

The 95% upper confidence limit concentrations of the COCs in the post-remediation data sets (confirmation samples and PEA-E samples that remain in place) will be calculated to evaluate the concentration of these compounds remaining in place at the Site. Because the COCs may not be delineated and will remain in areas where utility or construction conflict are encountered, the 95% upper confidence limits will need to be used a part of the evaluation of potential future exposures.

7.7 Transportation Plan for Offsite Disposal

Based on the areal dimensions and estimated depths, the 27 excavation areas represent an approximate in situ volume of 226 yd^3 of arsenic, lead, and OCP impacted soil. Due to a loss of compaction after excavation, the in-situ volume may increase and has adjusted by 50 percent to a total stockpile and disposal volume of 339 yd^3 (or 509 tons at 1.5 tons per yd^3). It is anticipated that approximately 22 transport truckloads will be needed to haul the impacted soil from the RA area for offsite disposal. The estimate is based on hauling 339 yd^3 of soil with a weight of 1.5 tons per yd^3 and each truckload transporting approximately 15 yd^3. If necessary, LAUSD-OEHS will use U.S. EPA identification number 982022642 for the hazardous waste from the Site and its designee will sign all manifests and/or bills of lading. A brief discussion of the Transportation Plan to be implemented during remediation activities is provided below. A Transportation Plan is provided in Appendix F.

7.7.1 Soil Loading

Waste soil will be loaded onto transport trailers using a loader or backhoe. During the loading activities, a water mist will be used to suppress dust. A designated, full-time flag person will direct truck traffic during entry and exit at the Site. Entry and exit points will be delineated to warn pedestrians of the truck traffic. A truck log will be maintained and will include the trailer number and company affiliation, the date and time that the truck leaves the Site, the approximate volume of each load, and the hazardous or non-hazardous waste manifest number. In addition, materials will leave the Site with the appropriate paperwork (e.g., Bill of Lading or Uniform Hazardous Waste Manifest). Heavy equipment operation will be restricted to the hours of 7:00 a.m. to 5:00 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on weekends. To the extent possible, truck traffic will be timed to avoid rush hour, with trucks scheduled to leave the Site between the hours of 8:00 a.m. and 3:00 p.m.

If additional soil needs to be excavated based on confirmation sampling results, the number of truckloads will increase. The excavated soil will be segregated and managed as non-hazardous, non-RCRA hazardous, or RCRA hazardous waste. Waste classifications for the various soil removal areas are summarized in Table 3. Non-hazardous soils will be transported to an approved Class 3 landfill for disposal or use as daily cover. Non-RCRA and RCRA hazardous soils will be transported to a licensed and properly permitted Class 1 disposal facility or an out-of-state facility permitted to

accept hazardous waste. The Class 1 disposal facility that accepts the RCRA hazardous soil may require that the soil be treated prior to disposal pursuant to the land ban restrictions found at Title 40, California Code of Regulations, Part 376. The final determination as to which facilities are used is subject to approval by the LAUSD-OEHS prior to beginning soil removal activities.

Additional information is provided in the Transportation Plan attached as Appendix F.

7.7.2 Destination of Soil

The results of characterization of the soil stockpiles will indicate whether the stockpiled soils will be disposed of as non-hazardous, California non-RCRA hazardous, or RCRA hazardous. Samples collected for the PEA-E do have not indicated RCRA hazardous waste concentrations. Based on the characterization results, a soil disposal facility will be selected by the General Contractor and submitted to LAUSD-OEHS for approval.

If the soil is categorized as non-hazardous waste, the following are examples of Class III facilities that may be used:

Chiquita Canyon Landfill
29201 Henry Mayo Drive
Castaic, California 91384
(661) 257-3655

Waste Management — Simi Valley Landfill
2801 N. Madera Road
Simi Valley, California 93065
(805) 579-7267

Soil samples analyses may indicate that the soil is California non-RCRA hazardous. The following are example facilities that may be used:

South Yuma County Landfill
19536 S. Avenue IE
Yuma, Arizona 85366
(928) 341-9300
U.S. EPA Id. No. AZR000506980

Clean Harbors — Buttonwillow
2500 W. Lokern Road
Buttonwillow, California 93206
(661) 762-6200
U.S. EPA Id. No. CAD980675276

7.7.3 Soil Transportation Mode

The excavated soil will be transported via roll-off bin hauling trucks, end-dump trucks, or bottom-dump trucks. It is estimated that each truck will have a capacity to haul approximately 18 tons of material. While the soil is being loaded into the trucks, dust suppression will be performed by lightly spraying or misting the work areas with water. Water mist may also be used on soil placed in the transport trucks. After the soil is loaded into the transport trucks, the soil will be covered with a tarp to ensure that no soil spills from the trucks during transport to the disposal facility. If the soil is being transported as non-RCRA or RCRA hazardous waste, the transport company will be required to provide proof of valid certification to transport hazardous soil/materials prior to transporting the soil.

Before leaving the Site, each truck driver will be instructed to notify the Environmental Consultant. Each truck driver will be provided with the cellular phone number for the Environmental Consultant. It will be the responsibility of the Environmental Consultant to notify LAUSD-OEHS of any unforeseen incidents. In addition, there are call boxes located along the freeways that will be traveled to reach the disposal facilities. These call boxes are situated at roadside locations along the truck route to be used to report roadside incidents. Each truck driver will be instructed to report any roadside emergency using the call box system or cellular phone. In the event of an accidental release, the Highway Patrol and local emergency response personnel will be contacted.

Once at the disposal facilities, each truck will be weighed before offloading its payload. Copies of waste manifests will be provided to the RA contractor after all the impacted soil has been shipped from the Site and delivered to the appropriate disposal facility.

7.8 Backfill and Site Restoration

Since the excavation made during the RA activities will be three feet deep or less, it is anticipated that regrading or backfilling activities would be conducted during the CMP. To prevent a safety concern, the General Contractor will slope the edges of the excavations following the receipt of acceptable confirmation sample results. In the event that confirmation sampling in the excavation areas requires a greater excavation depth, these areas will be backfilled as needed for safety

purposes. If import soil is needed, the material will be tested and certified in accordance with LAUSD Specification Section 01 4524 Environmental Import/Export Materials Testing (LAUSD, 2011), which includes provisions for LAUSD-OEHS review and approval prior to soil import.

8.0 PROJECT SCHEDULE AND REPORT OF COMPLETION

The project schedule is dependent on implementation of the CMP. The anticipated schedule and reporting activities are discussed below.

8.1 Project Schedule

Implementation of the RAW will be dependent on the building demolitions and removals, but is required before the modernization grading activities. Remediation activities will be in accordance with the overall construction schedule.

8.2 Report of Completion

A draft Removal Action Completion Report (RACR) will be prepared and submitted to the LAUSD-OEHS for review and approval. The RACR will be prepared as expeditiously upon completion of field activities and receipt of final analytical data. The RACR will include the following information at a minimum:

- Site description and background
- Description of soil removal and confirmation sampling activities
- Tabulated analytical results for confirmation soil samples, supported by copies of laboratory reports
- Quality assurance review and a data validation memorandum
- Figures of soil removal excavations showing selected analytical results
- Volumes of soil removed and treatment/disposal methods, including copies of manifests
- Discussion of variances to the RAW, if any
- 95% upper confidence limit calculations for COCs using datasets that include confirmation soil sampling results.
- Findings, conclusions, and recommendations
- Appendices and other supporting documentation.

Once the LAUSD-OEHS approves the RACR, OEHS will certify the completion of environmental investigation and response activities at the Site.

9.0 REFERENCES

Agency for Toxic Substances and Disease Registry (ATSDR), 1993, Toxicity Profile for Arsenic, U.S. Department for Health and Human Services, U.S. Public Health Service

California Department of Public Health. California Indoor Radon Test Results. February 2016.

Clark Seif Clark. Phase I Environmental Site Assessment, San Pedro High School, 1001 W. 15th Street, San Pedro, California, 90731. June 7, 2016a.

— PEA Equivalent Work Plan. Soil and Radon Sampling Plan (Task 2), San Pedro High School, 1001 West 15th Street, San Pedro, California, 90731. June 22, 2016b.

California Regional Water Quality Control Board, Los Angeles And Ventura Counties, Region 4, Interim Site Assessment and Cleanup Guidebook. May 1996.

Department of Toxic Substances Control. Office of Human and Ecological Risk. Human Health Risk Assessment Note Number: 3. June 2016.

— Preliminary Endangerment Assessment Guidance Manual, Cal/EPA DTSC. January 1994 (Interim Final — Revised October 2013).

— Interim Guidance Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers, California Department of Toxic Substance Control (Cal-EPA DTSC). June 9, 2006.

— (accessed August 11, 2016). Determination of a Southern California Regional Background Arsenic Concentration in Soil. Retrieved from http://www.dtsc.ca.gov/upload/Background-Arsenic.pdf.

EnSafe, Final Preliminary Environmental Assessment Equivalent, San Pedro High School Comprehensive Modernization Project, 1001 W. 15th Street, Los Angeles, California, 90731. August 30, 2017.

Los Angeles Unified School District. Radon Zones (map). April 26, 2016a.

— Specification Section 01 4524 Environmental Import/Export Material Testing. October 1, 2011.

— Scope of Services, Preliminary Environmental Assessment Equivalent, San Pedro High School Comprehensive Modernization. July 8, 2016b.

Office of Environmental Health Hazard Assessment (OEHHA), California Environmental Protection Agency. Revised California Human Health Screening Levels for Lead. (https://oehha.ca.gov/media/downloads/crnr/leadchhsl091709.pdf). September 2009.

— Development of Health Criteria for School Site Risk Assessment Pursuant to Health and Safety Code Section 901(g) Child-Specific Benchmark Change in Blood Lead Concentration for School Site Risk Assessment. (http://www.dtsc.ca.gov/LawsRegsPolicies/Regs/upload/20-Lead-and-compounds.pdf) April 2007.

Radon Testing Services. Radon Gas Survey — San Pedro High School, 1001 W. 15th Street, San Pedro, California 90731. August 12, 2016.

South Coast Air Quality Management District, Rule 403 – Fugitive Dust. (http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf). June 3, 2005.

— Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants. (http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1466.pdf). July 7, 2017.

United States Environmental Protection Agency. Regions 3, 6, and 9. Regional Screening Levels for Chemical Contaminants at Superfund Sites. Retrieved from https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016. May 2016.

United States Geological Survey. 7 1/2-Minute Topographic Map of Torrance Quadrangle, California. 2012.

FIGURES

FIGURE 1
SITE LOCATION MAP
SAN PEDRO HIGH SCHOOL
1001 15TH STREET
SAN PEDRO, CALIFORNIA 90731

0 1,000 2,000
SCALE IN FEET
COORDINATE SYSTEM: NAD 1983
UTM ZONE 11

REQUESTED BY:	TS
DRAWN BY:	CC
DATE:	9/12/2017
PROJECT:	0888821394

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DATA SOURCES: U.S. Geological Survey. San Pedro, Torrance Quadrangle, California [Map]. Photorevised 2015. 1:24,000. 7.5 Minute Series.

I:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C001_EVAC AREAS AND CONFIRMATION SITE LOCATION MAP_FIGURE 1_LAUSD_SAN PEDRO HIGH_CA.dwg 9/7/2017 2:44:38 PM

LEGEND

APPROXIMATE SUBJECT PROPERTY BOUNDARY

1	BUILDING AA-244	7	UNNAMED PORTABLE BUILDING
2	BUILDING AA-347	8	SHOP BUILDING
3	BUILDING AA-2384	9	BUILDING AA-2082
4	BUILDING AA-2383	10	BUILDING BB-182
5	LUNCH SHELTER	11	UNNAMED CLASSROOM
6	FLAMMABLE STORAGE	12	INDUSTRIAL ARTS BUILDING

0 100 200

SCALE IN FEET

COORDINATE SYSTEM: NAD 1983
STATE PLANE CALIFORNIA ZONE 5 FEET

FIGURE 2
SITE MAP
SAN PEDRO HIGH SCHOOL
1001 15TH STREET
SAN PEDRO, CALIFORNIA 90731

REQUESTED BY:	TS
DRAWN BY:	CC
DATE:	9/12/2017
PROJECT:	0888821394

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DATA SOURCES: USGS Image LAR-IAC Earthstar Geographis SIO Bing 2017

I:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C002_EVAC AREAS AND CONFIRMATION SITE MAP_FIGURE 2_LAUSD_SAN PEDRO HIGH_CA.dwg 9/7/2017 2:46:10 PM

AA-244

AA-347

SB1, 24"

SB1-10N
SB1-5N
SB1-5W
SB1
SB1-5S

SB4, 36"

SB4-5W
SB4
SB4-5E
SB4-10E
SB4-5S

SB3, 12"

SB3
SB3-5S

SB6, 36"

SB6-5N
SB6-5E
SB6-15E
SB6-20E
SB6-5W
SB6
SB6-10E

SB8, 24"

SB8-5N
SB8
SB8-5S
SB8-10S

SB7, 36"

SB7-10W
SB7
SB7-5E
SB7-5W
SB7-5S

(189.50)
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(190.00)
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(192.00)
(191.00)

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I:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C003_EVAC AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS FIGURE 3_LAUSD_SAN PEDRO HIGH_CA.dwg 9/12/2017 11:09:56 AM

LEGEND

- WATER LINE
- SEWER LINE
- GAS LINE
- FENCE
- DRAIN LINE
- ELECT. LINE
- TEL./COMM. LINE
- SLOPE DIRECTION - DOWN
- SB1 — SOIL BORING LOCATION
- SB1-5N — SOIL BORING LOCATION WHERE SOIL SAMPLE CONCENTRATION EXCEEDED ONE OR MORE HEALTH SCREENING LEVELS AT ONE OR MORE DEPTHS
- SB1-24" — EXCAVATION NAME AND DEPTH
- UNIDENTIFIED LINE
- UTILITY/SLOPE BOUNDARY
- EXCAVATION LIMITS
- BOTTOM CONFIRMATION SAMPLE LOATION
- SIDEWALL CONFIRMATION SAMPLE LOCATION

0 5 10
SCALE IN FEET
COORDINATE SYSTEM: NAD 1983
STATE PLANE CALIFORNIA ZONE 5 FEET

FIGURE 3
EXCAVATION AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS
BUILDINGS AA-244 & AA-347
SAN PEDRO HIGH SCHOOL
1001 15TH STREET
SAN PEDRO, CALIFORNIA 90731

REQUESTED BY:	TS
DRAWN BY:	CC
DATE:	9/12/2017
PROJECT:	0888821394

ENSAFE
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800.588.7962 | www.ensafe.com

DATA SOURCES: P.A. ARCA ENGINEERING, INC., 500 East Carson Plaza Drive, Suite 201, Carson California 90746

I:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C004_EVAC AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS FIGURE 4_LA

AA-2384

AA-2383

LUNCH SHELTER

SB9-5N

SB5, 12"

SB9-5E

SB9-5W

SB9

SB17, 12"

SB17-5N

SB17-5W

SB17

SB17-5E

SB18-5N

SB18

SB18-5E

SB18, 12"

SB18-5S

SB19-10E

SB19-5W

SB19-20E

SB19-5E

SB19-15E

SB19

SB19, 24"

SB19-5S

SB11-5W

SB11-5E

SB11-10E

SB11-10W

SB11

SB11-5S

SB11, 36"

SB11-10S

SB15-5W

SB15

SB15-5E

SB15-10W

SB15-5S

SB15, 24"

(188.00)

(187.50)

(189.00)

(189.50)

(188.50)

(190.00)

DF

N

LEGEND

WATER LINE	FENCE	SB9-5N	SOIL BORING LOCATION
SEWER LINE	DRAIN LINE	SB9	SOIL BORING LOCATION WHERE SOIL SAMPLE CONCENTRATION EXCEEDED ONE OR MORE HEALTH SCREENING LEVELS AT ONE OR MORE DEPTHS
GAS LINE	ELECT. LINE	SB5-12"	EXCAVATION NAME AND DEPTH
	TEL./COMM. LINE		UNIDENTIFIED LINE
			UTILITY/SLOPE BOUNDARY
			EXCAVATION LIMITS
			BOTTOM CONFIRMATION SAMPLE LOATION
			SIDEWALL CONFIRMATION SAMPLE LOCATION

0 6 12

SCALE IN FEET

COORDINATE SYSTEM: NAD 1983
STATE PLANE CALIFORNIA ZONE 5 FEET

FIGURE 4
EXCAVATION AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS
BUILDINGS AA-2383, AA-2384 & LUNCH SHELTER
SAN PEDRO HIGH SCHOOL
1001 15TH STREET
SAN PEDRO, CALIFORNIA 90731

REQUESTED BY:	TS
DRAWN BY:	CC
DATE:	9/12/2017
PROJECT:	0888821394

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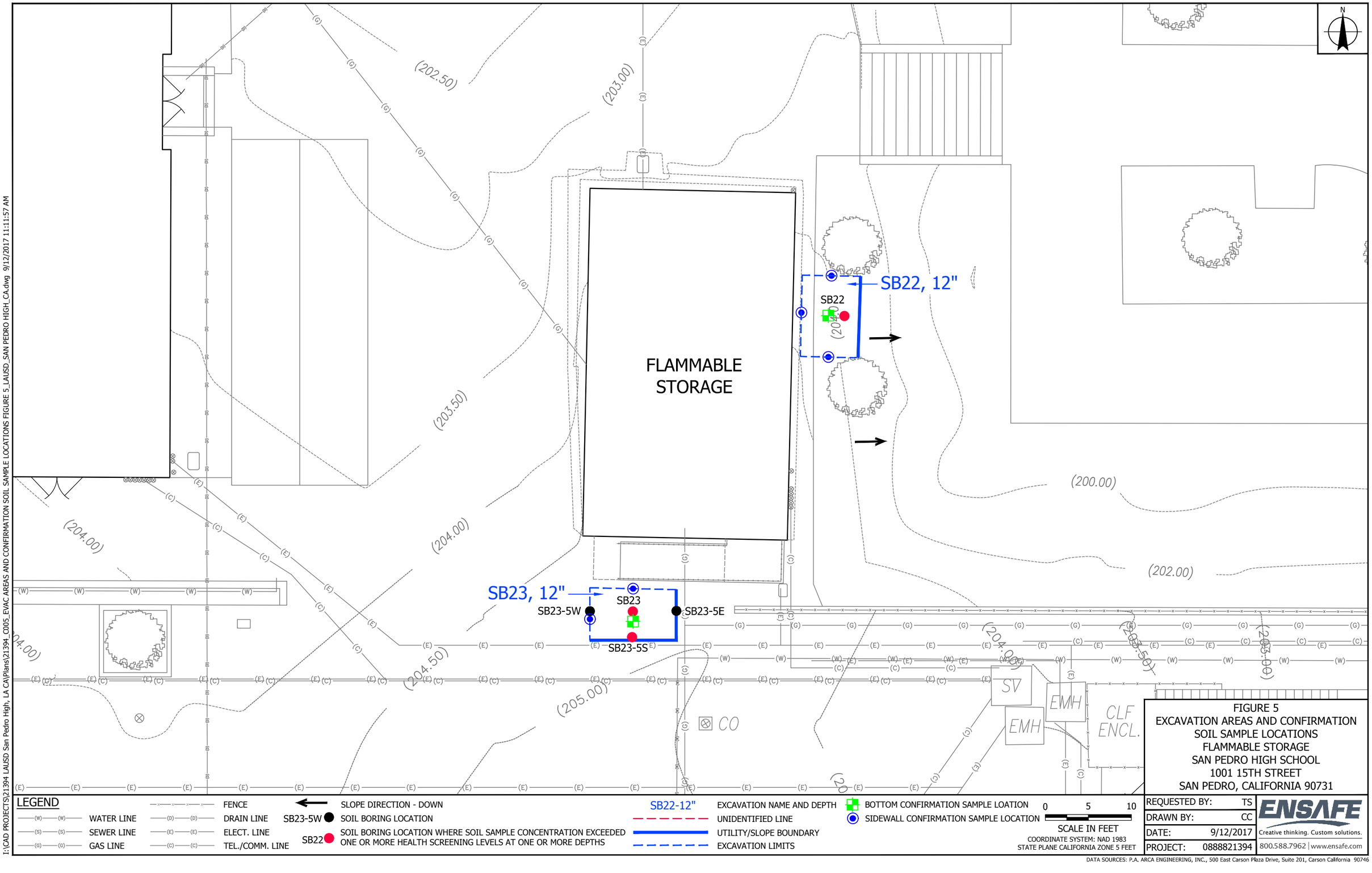
DATA SOURCES: P.A. ARCA ENGINEERING, INC., 500 East Carson Plaza Drive, Suite 201, Carson California 90746

I:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C004_EVAC AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS FIGURE 4_LAUSD_SAN PEDRO HIGH_CA.dwg 9/12/2017 11:10:32 AM



LEGEND

- WATER LINE
- SEWER LINE
- GAS LINE
- FENCE
- DRAIN LINE
- ELECT. LINE
- TEL./COMM. LINE
- SLOPE DIRECTION - DOWN
- SB23-5W — SOIL BORING LOCATION
- SB22 — SOIL BORING LOCATION WHERE SOIL SAMPLE CONCENTRATION EXCEEDED ONE OR MORE HEALTH SCREENING LEVELS AT ONE OR MORE DEPTHS
- SB22-12" — EXCAVATION NAME AND DEPTH
- UNIDENTIFIED LINE
- UTILITY/SLOPE BOUNDARY
- EXCAVATION LIMITS
- BOTTOM CONFIRMATION SAMPLE LOATION
- SIDEWALL CONFIRMATION SAMPLE LOCATION

0 5 10
SCALE IN FEET
COORDINATE SYSTEM: NAD 1983
STATE PLANE CALIFORNIA ZONE 5 FEET

FIGURE 5
EXCAVATION AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS
FLAMMABLE STORAGE
SAN PEDRO HIGH SCHOOL
1001 15TH STREET
SAN PEDRO, CALIFORNIA 90731

REQUESTED BY:	TS
DRAWN BY:	CC
DATE:	9/12/2017
PROJECT:	0888821394

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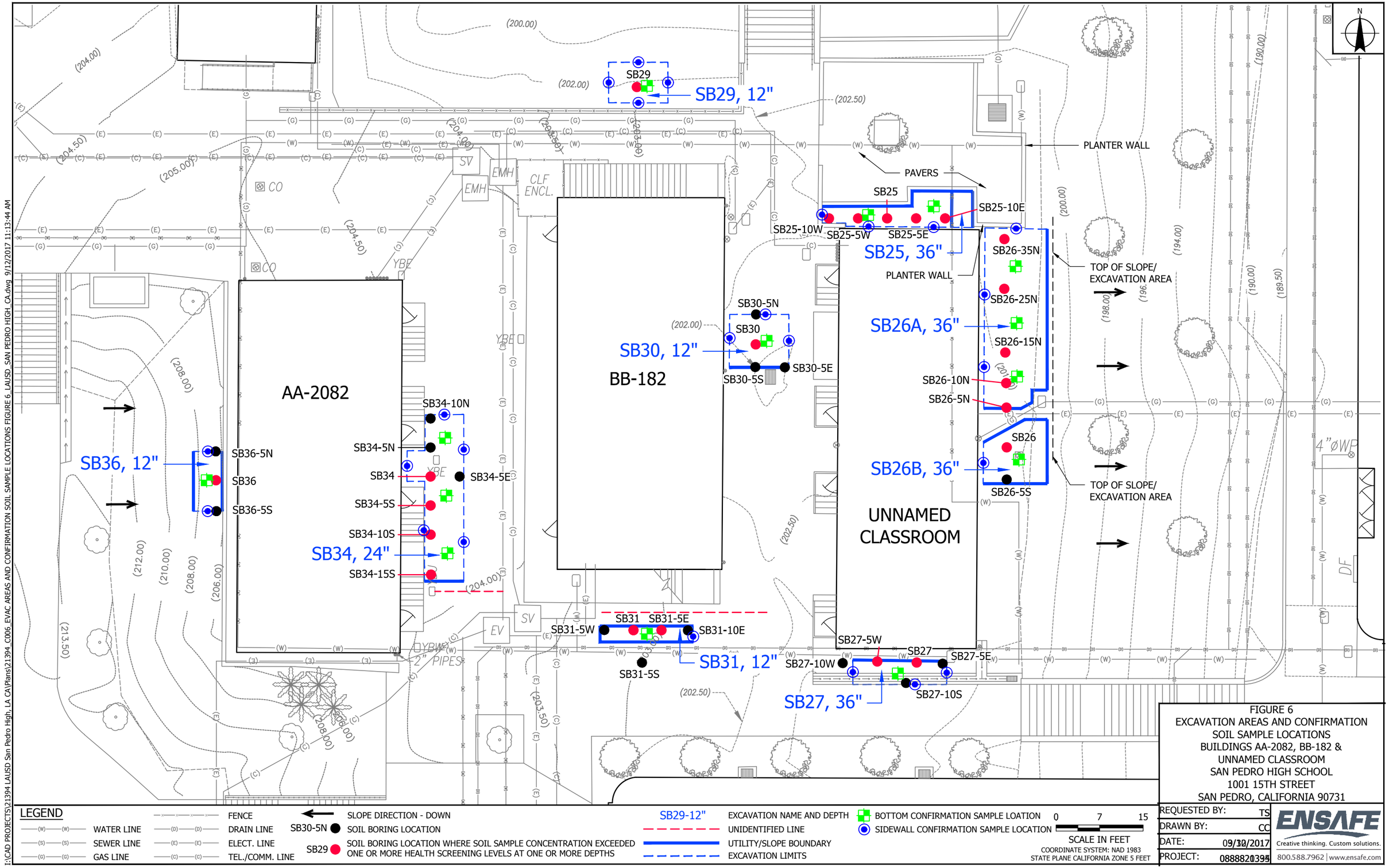
DATA SOURCES: P.A. ARCA ENGINEERING, INC., 500 East Carson Plaza Drive, Suite 201, Carson California 90746

I:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C005_EVAC AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS FIGURE 5_LAUSD_SAN PEDRO HIGH_CA.dwg 9/12/2017 11:11:57 AM



LEGEND

WATER LINE	FENCE	SLOPE DIRECTION - DOWN	EXCAVATION NAME AND DEPTH
SEWER LINE	DRAIN LINE	SB30-5N SOIL BORING LOCATION	UNIDENTIFIED LINE
GAS LINE	ELECT. LINE	SB29 SOIL BORING LOCATION WHERE SOIL SAMPLE CONCENTRATION EXCEEDED ONE OR MORE HEALTH SCREENING LEVELS AT ONE OR MORE DEPTHS	UTILITY/SLOPE BOUNDARY
	TEL./COMM. LINE		EXCAVATION LIMITS

BOTTOM CONFIRMATION SAMPLE LOATION
SIDEWALL CONFIRMATION SAMPLE LOCATION

0 7 15
SCALE IN FEET
COORDINATE SYSTEM: NAD 1983
STATE PLANE CALIFORNIA ZONE 5 FEET

FIGURE 6
EXCAVATION AREAS AND CONFIRMATION
SOIL SAMPLE LOCATIONS
BUILDINGS AA-2082, BB-182 &
UNNAMED CLASSROOM
SAN PEDRO HIGH SCHOOL
1001 15TH STREET
SAN PEDRO, CALIFORNIA 90731

REQUESTED BY:	TS
DRAWN BY:	CC
DATE:	09/30/2017
PROJECT:	08888203395

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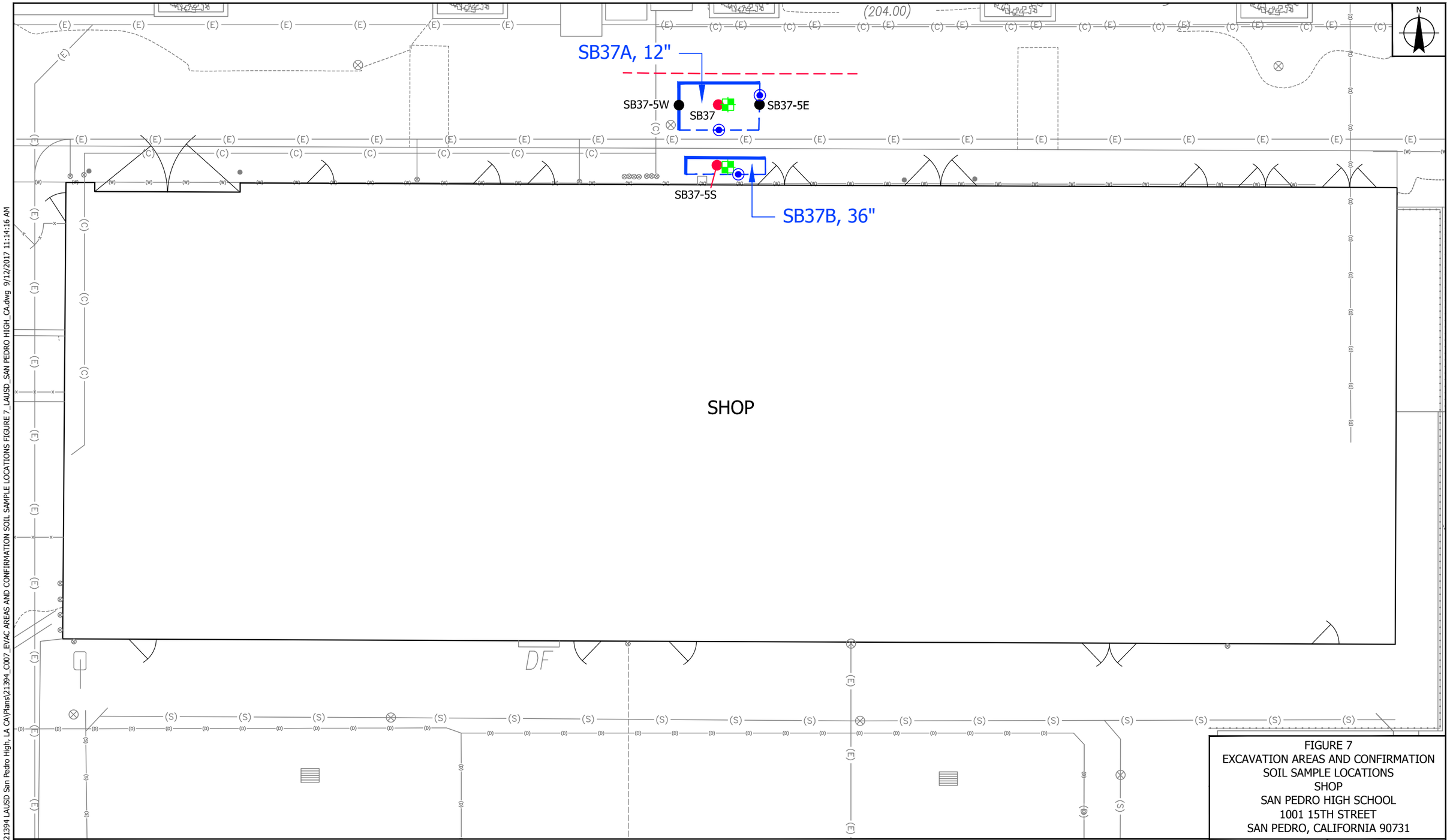
DATA SOURCES: P.A. ARCA ENGINEERING, INC., 500 East Carson Plaza Drive, Suite 201, Carson California 90746

I:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C006_EVAC AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS FIGURE 6_LAUSD_SAN PEDRO HIGH_CA.dwg 9/12/2017 11:13:44 AM



LEGEND

(W)(W)	WATER LINE	(D)(D)	DRAIN LINE
(S)(S)	SEWER LINE	(E)(E)	ELECT. LINE
(G)(G)	GAS LINE	(C)(C)	TEL./COMM. LINE
x x x	FENCE		

SB37-5W ● SOIL BORING LOCATION

SB37 ● SOIL BORING LOCATION WHERE SOIL SAMPLE CONCENTRATION EXCEEDED ONE OR MORE HEALTH SCREENING LEVELS AT ONE OR MORE DEPTHS

SB37A-12" EXCAVATION NAME AND DEPTH

UNIDENTIFIED LINE

UTILITY/SLOPE BOUNDARY

EXCAVATION LIMITS

BOTTOM CONFIRMATION SAMPLE LOATION

SIDEWALL CONFIRMATION SAMPLE LOCATION

0 5 10

SCALE IN FEET

COORDINATE SYSTEM: NAD 1983
STATE PLANE CALIFORNIA ZONE 5 FEET

FIGURE 7
EXCAVATION AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS
SHOP
SAN PEDRO HIGH SCHOOL
1001 15TH STREET
SAN PEDRO, CALIFORNIA 90731

REQUESTED BY:	TS
DRAWN BY:	CC
DATE:	9/12/2017
PROJECT:	0888821394

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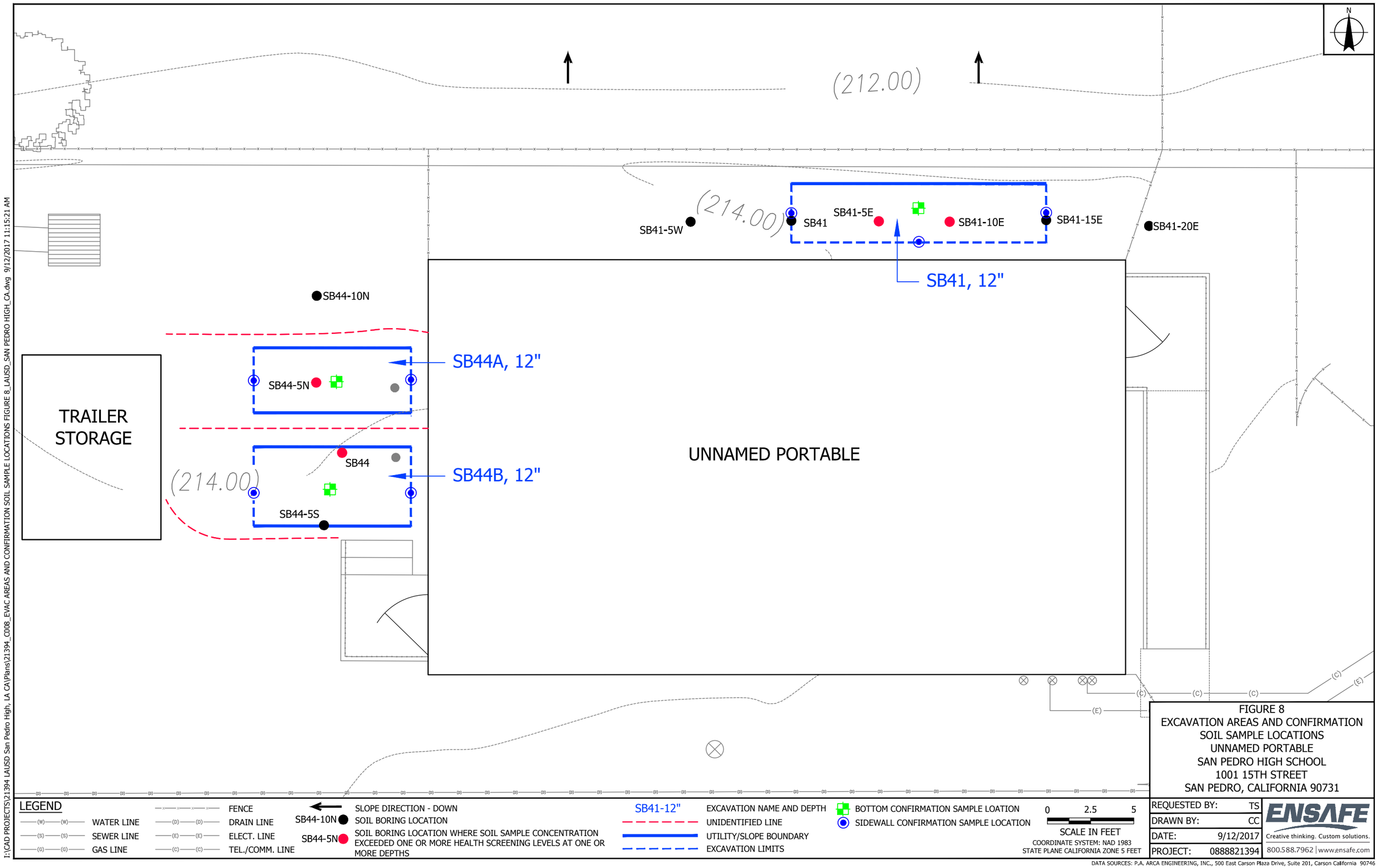
DATA SOURCES: P.A. ARCA ENGINEERING, INC., 500 East Carson Plaza Drive, Suite 201, Carson California 90746

I:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C007_EVAC AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS FIGURE 7_LAUSD_SAN PEDRO HIGH_CA.dwg 9/12/2017 11:14:16 AM



1:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C008_EVAC AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS FIGURE 8_LAUSD_SAN PEDRO HIGH_CA.dwg 9/12/2017 11:15:21 AM

LEGEND

- (W)—(W)— WATER LINE
- (S)—(S)— SEWER LINE
- (G)—(G)— GAS LINE
- x—x—x—x— FENCE
- (D)—(D)— DRAIN LINE
- (E)—(E)— ELECT. LINE
- (C)—(C)— TEL./COMM. LINE
- SLOPE DIRECTION - DOWN
- SB44-10N SOIL BORING LOCATION
- SB44-5N SOIL BORING LOCATION WHERE SOIL SAMPLE CONCENTRATION EXCEEDED ONE OR MORE HEALTH SCREENING LEVELS AT ONE OR MORE DEPTHS
- SB41-12" EXCAVATION NAME AND DEPTH
- UNIDENTIFIED LINE
- UTILITY/SLOPE BOUNDARY
- EXCAVATION LIMITS
- BOTTOM CONFIRMATION SAMPLE LOATION
- SIDEWALL CONFIRMATION SAMPLE LOCATION

0 2.5 5
SCALE IN FEET
COORDINATE SYSTEM: NAD 1983
STATE PLANE CALIFORNIA ZONE 5 FEET

DATA SOURCES: P.A. ARCA ENGINEERING, INC., 500 East Carson Plaza Drive, Suite 201, Carson California 90746

FIGURE 8
EXCAVATION AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS
UNNAMED PORTABLE
SAN PEDRO HIGH SCHOOL
1001 15TH STREET
SAN PEDRO, CALIFORNIA 90731

REQUESTED BY:	TS
DRAWN BY:	CC
DATE:	9/12/2017
PROJECT:	0888821394

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I:\CAD PROJECTS\21394 LAUSD San Pedro High, LA CA\Plans\21394_C009_EVAC AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS FIGURE 9_LAUSD_SAN PEDRO HIGH_CA.dwg 9/12/2017 11:16:21 AM

INDUSTRIAL ARTS

SB46-5N
SB46
SB46-5E
SB46-5S
SB46-10S
SB46, 24"

SB47A, 12"
SB47
SB47-5E
SB47-5W
SB47-10E
SB47B, 24"
SB47-5S

3"SWR ASB
4"S
3"SWR ASB
GAS ASB
DF
DF

LEGEND

- WATER LINE
- SEWER LINE
- GAS LINE
- FENCE
- DRAIN LINE
- ELECT. LINE
- TEL./COMM. LINE
- SB47-5N — SOIL BORING LOCATION
- SB47 — SOIL BORING LOCATION WHERE SOIL SAMPLE CONCENTRATION EXCEEDED ONE OR MORE HEALTH SCREENING LEVELS AT ONE OR MORE DEPTHS
- SB47A-12" — EXCAVATION NAME AND DEPTH
- UNIDENTIFIED LINE
- UTILITY/SLOPE BOUNDARY
- EXCAVATION LIMITS
- BOTTOM CONFIRMATION SAMPLE LOATION
- SIDEWALL CONFIRMATION SAMPLE LOCATION

0 10 20
SCALE IN FEET
COORDINATE SYSTEM: NAD 1983
STATE PLANE CALIFORNIA ZONE 5 FEET

FIGURE 9
EXCAVATION AREAS AND CONFIRMATION SOIL SAMPLE LOCATIONS
INDUSTRIAL ARTS
SAN PEDRO HIGH SCHOOL
1001 15TH STREET
SAN PEDRO, CALIFORNIA 90731

REQUESTED BY:	TS
DRAWN BY:	CC
DATE:	9/12/2017
PROJECT:	0888821394

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DATA SOURCES: P.A. ARCA ENGINEERING, INC., 500 East Carson Plaza Drive, Suite 201, Carson California 90746

Appendix A
Soluble Lead Laboratory Analytical Results

Date of Report: 08/01/2017

Travis Stravasnik

ENSAFE, Inc
5001 Airport Plaza Drive, Suite 260
Long Beach, CA 90815

Client Project:	0888821231
BCL Project:	LAUSD - San Pedro HS
BCL Work Order:	1720148
Invoice ID:	B274580

Enclosed are the results of analyses for samples received by the laboratory on 7/21/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000631278

Sincerely,

Contact Person: Misty Orton
Client Service Rep

Stuart Buttram
Technical Director

Table of Contents

BC LABORATORIES, INC.

Chain of Custody Form

A-20148 17-2047 rec 22417

Page 1 of 1

Report To:	
Client: ENSAFE	Project #:
Attn: Travis Stravasnik	Project Name: San Pedro HS.
Street Address: 5001 Airport Plaza Dr. #260	
City, State, Zip: Long Beach CA	Sampler(s): G. Valenzuela
Phone: Fax:	
Email: tstravasnik@ensafe.com	
Work Order #:	

Analysis Requested

Please refer to the back of this page for completion instructions and method legend.

Comments:

Sample	Description	Date Sampled	Time Sampled	Pb	Pb STLC	Pb TCLP	Sample Matrix: Soil	Sludge	Drinking Water	Ground Waater	Waste Water	Other	Result Request **Surcharge: STD (10 Days) / 5 Day** / 2 Day** / 1 Day**	Notes
-1	SB3-00A	7/21/17	1228	X	X	X	X							
-2	SB7-55-00A		1219											
-3	SB9-00A		1240											
-4	SB17-00A		1255											
-5	SB23-00A		1045											
-6	SB25-00A		0940											
-7	SB26-00A		0913											
-8	SB31-5E-00A		0924											
-9	SB34-5S-00A		1000											
-10	SB36-00A		0955											
-11	SB46-00A		0950											

CHK BY MAT

DISTRIBUTION

SUB-OUT

Billing	EDF Required? Geotracker	Global ID (Needed for EDF)	System # (Needed for EDT)
Client: ENSAFE ~~Same as above~~	☐ Yes ☐ No		
Address: ON FILE	Send Copy to State of CA? (EDT)		
City: Memphis State TN Zip	☐ Yes ☐ No		
Attn:			
P.O. #:			

	Relinquished By	Date	Time	Received By	Date	Time
1.		7/21/17	1500		7/21/17	1500
2.		7/21/17	1725		7/21/17	1730
3.					7/21/17	1834

BC Laboratories, Inc. – 4100 Atlas Ct. – Bakersfield, CA 93308 – 661.327.4911 – Fax: 661.327.1918 – www.bclabs.com

7217 2045 7.21 2045

Chain of Custody and Cooler Receipt Form for 1720148 Page 2 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 2

Submission #: 17-20148

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐	Ice Chest ☒ None ☐ Box ☐	YES ☐ NO ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____	Other ☐ (Specify)_____	W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.98 Container: Clear glass Thermometer ID: 208 Date/Time 7/21/17 20:43

Temperature: (A) 0.3 °C (C) 0.2 °C Analyst Init RNR

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
(8oz) 16oz / 32oz JAR	A	A	A	A	A	A	A	A	A	A
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: AM Date/Time: 7.24.17 1016 Rev 21 05/23/2016

A = Actual / C = Corrected

[S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 20]

Chain of Custody and Cooler Receipt Form for 1720148 Page 3 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Page 2 Of 2

Submission #: 17-20148

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐	Ice Chest ☒ None ☐ Box ☐	YES ☐ NO ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____	Other ☐ (Specify)_____	W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.98 Container: Clear Jars Thermometer ID: 208 Date/Time 7/21/17 20:43

Temperature: (A) 0.3 °C (C) 0.2 °C Analyst Init RNR

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR	A									
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: VDL Date/Time: 7-24-17 1015

A = Actual / C = Corrected

Rev 21 05/23/2016

[S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 20]

ENSAFE, Inc
5001 Airport Plaza Drive, Suite 260
Long Beach, CA 90815

Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1720148-01	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 12:28
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB3-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil
1720148-02	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 12:19
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB7-5S-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil
1720148-03	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 12:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB9-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil
1720148-04	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 12:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB17-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil
1720148-05	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 10:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB23-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil
1720148-06	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 09:40
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB25-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil
1720148-07	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 09:13
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB26-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil

ENSAFE, Inc
5001 Airport Plaza Drive, Suite 260
Long Beach, CA 90815

Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1720148-08	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 09:24
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB31-5E-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil
1720148-09	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 10:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB34-5S-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil
1720148-10	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 09:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB36-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil
1720148-11	**COC Number:**	---	**Receive Date:**	07/21/2017 20:45
	Project Number:	---	**Sampling Date:**	07/21/2017 09:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	SB46-00A	**Lab Matrix:**	Solids
	Sampled By:	Gabriela Valenzuela	**Sample Type:**	Soil

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-01 | **Client Sample Name:** SB3-00A, 7/21/2017 12:28:00PM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**8.0**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:15	JRG	PE-OP2	1	B[G2457

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-01 | **Client Sample Name:** SB3-00A, 7/21/2017 12:28:00PM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.030	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 23:21	JRG	PE-OP2	1	B[G2460

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Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-02 | **Client Sample Name:** SB7-5S-00A, 7/21/2017 12:19:00PM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**7.7**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:17	JRG	PE-OP2	1	B[G2457

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-02 | **Client Sample Name:** SB7-5S-00A, 7/21/2017 12:19:00PM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.030	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/29/17 00:11	JRG	PE-OP2	1	B[G2468

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-03 | **Client Sample Name:** SB9-00A, 7/21/2017 12:40:00PM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**0.98**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:19	JRG	PE-OP2	1	B[G2457

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Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-03 | **Client Sample Name:** SB9-00A, 7/21/2017 12:40:00PM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.030	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 23:59	JRG	PE-OP2	1	B[G2468

ENSAFE, Inc
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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-04 | **Client Sample Name:** SB17-00A, 7/21/2017 12:55:00PM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**0.20**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:21	JRG	PE-OP2	1	B[G2457

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-04 | **Client Sample Name:** SB17-00A, 7/21/2017 12:55:00PM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	**0.19**	**mg/L**	**0.50**	**0.030**	**EPA-6010B**	5.0	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/29/17 00:19	JRG	PE-OP2	1	B[G2468

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Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-05 | **Client Sample Name:** SB23-00A, 7/21/2017 10:45:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**2.0**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:23	JRG	PE-OP2	1	B[G2457

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Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-05 | **Client Sample Name:** SB23-00A, 7/21/2017 10:45:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.030	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 23:23	JRG	PE-OP2	1	B[G2460

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-06 | **Client Sample Name:** SB25-00A, 7/21/2017 9:40:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**2.5**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:25	JRG	PE-OP2	1	B[G2457

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-06 | **Client Sample Name:** SB25-00A, 7/21/2017 9:40:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	**0.37**	**mg/L**	**0.50**	**0.030**	**EPA-6010B**	5.0	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/29/17 00:21	JRG	PE-OP2	1	B[G2468

ENSAFE, Inc
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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-07 | **Client Sample Name:** SB26-00A, 7/21/2017 9:13:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**2.4**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 21:45	JRG	PE-OP2	1	B[G2457

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-07 | **Client Sample Name:** SB26-00A, 7/21/2017 9:13:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.030	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 23:03	JRG	PE-OP2	1	B[G2460

ENSAFE, Inc
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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-08 | **Client Sample Name:** SB31-5E-00A, 7/21/2017 9:24:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.16	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:33	JRG	PE-OP2	1	B[G2457

ENSAFE, Inc
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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-08 | **Client Sample Name:** SB31-5E-00A, 7/21/2017 9:24:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.030	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 23:25	JRG	PE-OP2	1	B[G2460

ENSAFE, Inc
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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-09 | **Client Sample Name:** SB34-5S-00A, 7/21/2017 10:00:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**9.2**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:35	JRG	PE-OP2	1	B[G2457

ENSAFE, Inc
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Long Beach, CA 90815

Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-09 | **Client Sample Name:** SB34-5S-00A, 7/21/2017 10:00:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.030	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 23:27	JRG	PE-OP2	1	B[G2460

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-10 | **Client Sample Name:** SB36-00A, 7/21/2017 9:55:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	**2.5**	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:37	JRG	PE-OP2	1	B[G2457

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-10 | **Client Sample Name:** SB36-00A, 7/21/2017 9:55:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	**0.071**	**mg/L**	**0.50**	**0.030**	**EPA-6010B**	5.0	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 23:29	JRG	PE-OP2	1	B[G2460

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

BCL Sample ID: 1720148-11 | **Client Sample Name:** SB46-00A, 7/21/2017 9:50:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	STLC Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.16	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/28/17 22:39	JRG	PE-OP2	1	B[G2457

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

BCL Sample ID: 1720148-11 | **Client Sample Name:** SB46-00A, 7/21/2017 9:50:00AM, Gabriela Valenzuela

Constituent	Result	Units	PQL	MDL	Method	TCLP Limits	Lab Quals	Run #
Lead	ND	mg/L	0.50	0.030	EPA-6010B	5.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	07/28/17	07/29/17 00:23	JRG	PE-OP2	1	B[G2468

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[G2457						
Lead	B[G2457-BLK1	ND	mg/L	0.50	0.16	

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B[G2457										
Lead	B[G2457-BS1	LCS	21.519	20.000	mg/L	108		85 - 115		

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

WET Test (STLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B[G2457	Used client sample: Y - Description: SB26-00A, 07/21/2017 09:13										
Lead	DUP	1720148-07	2.4320	2.2529		mg/L	7.6		20		
	MS	1720148-07	2.4320	23.947	20.408	mg/L		105		75 - 125	
	MSD	1720148-07	2.4320	23.433	20.408	mg/L	2.2	103	20	75 - 125	

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[G2460						
Lead	B[G2460-BLK1	ND	mg/L	0.50	0.030	
QC Batch ID: B[G2468						
Lead	B[G2468-BLK1	ND	mg/L	0.50	0.030	

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B[G2460										
Lead	B[G2460-BS1	LCS	20.652	20.000	mg/L	103		85 - 115		
QC Batch ID: B[G2468										
Lead	B[G2468-BS1	LCS	20.505	20.000	mg/L	103		85 - 115		

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Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

TCLP Toxicity

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B[G2460	Used client sample: Y - Description: SB26-00A, 07/21/2017 09:13										
Lead	DUP	1720148-07	ND	0.042736		mg/L			20		J
	MS	1720148-07	ND	20.031	20.000	mg/L		100		75 - 125	
	MSD	1720148-07	ND	18.907	20.000	mg/L	5.8	94.5	20	75 - 125	
QC Batch ID: B[G2468	Used client sample: Y - Description: SB9-00A, 07/21/2017 12:40										
Lead	DUP	1720148-03	ND	ND		mg/L			20		
	MS	1720148-03	ND	20.324	20.000	mg/L		102		75 - 125	
	MSD	1720148-03	ND	19.347	20.000	mg/L	4.9	96.7	20	75 - 125	

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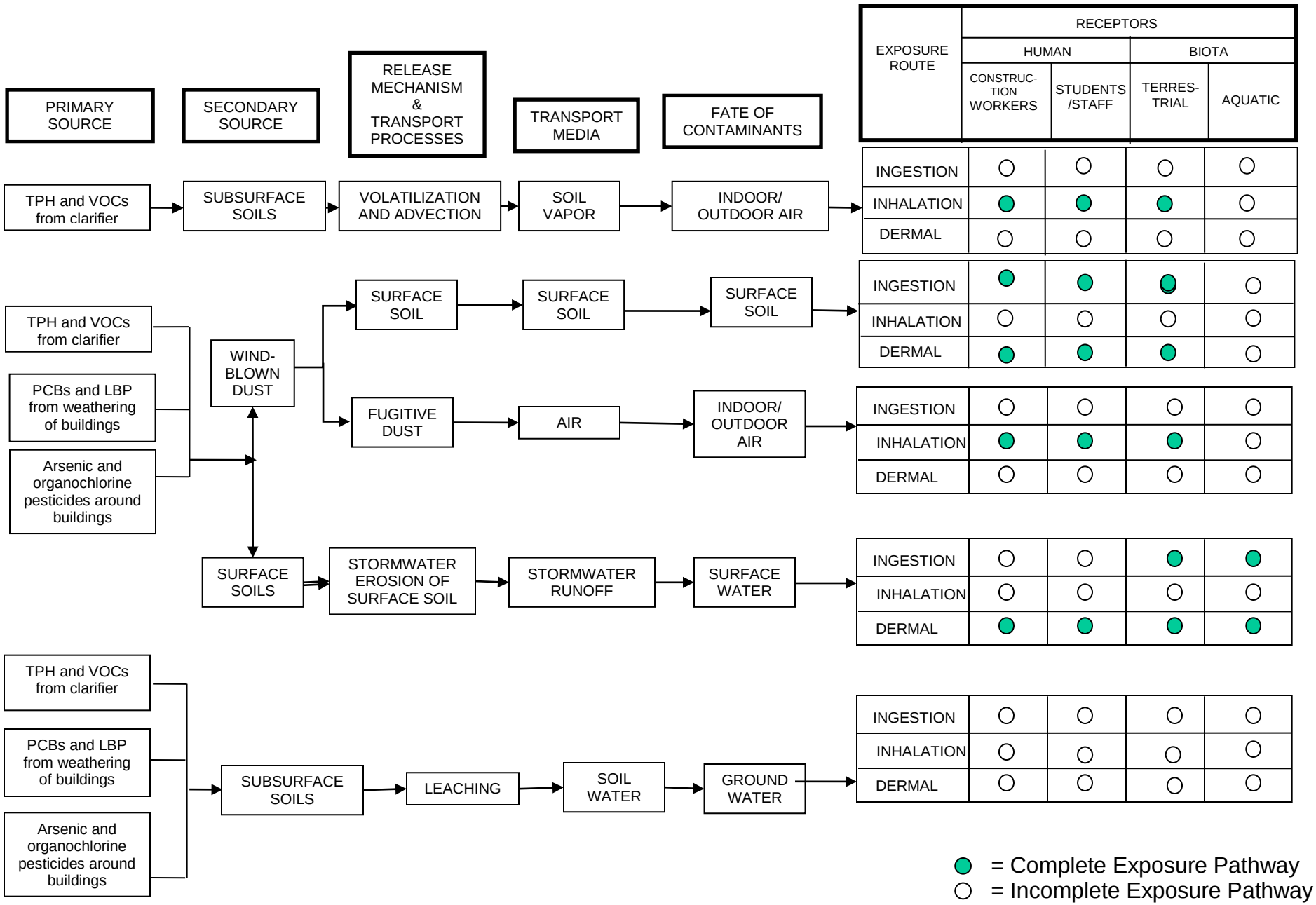
Reported: 08/01/2017 11:55
Project: LAUSD - San Pedro HS
Project Number: 0888821231
Project Manager: Travis Stravasnik

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit

Appendix B
Conceptual Site Model



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CHECKED BY: TLS

Appendix B

PROJECT NO. 0888821394

DATE: September 2017

CONCEPTUAL SITE MODEL

FIGURE

B-1

Appendix C
Public Notices

NOTICE OF PREPARATION OF ENVIRONMENTAL IMPACT REPORT AND NOTICE OF PUBLIC COMMENT PERIOD FOR REMEDIAL ACTION WORKPLAN

TO: Agencies, Organizations and Interested Parties

PROJECT TITLE: San Pedro High School Comprehensive Modernization Project

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report in Compliance with Title 14, Section 15082(a), 15103, and 15375 of the California Code of Regulations and Notice of Public Comment Period for Removal Action Workplan

Notice is hereby given that the Los Angeles Unified School District (LAUSD) is the Lead Agency under the California Environmental Quality Act (CEQA) in the preparation of the Environmental Impact Report (EIR) for the San Pedro High School Comprehensive Modernization Project. The Lead Agency has prepared this Notice of Preparation (NOP) for the EIR in order to provide the widest exposure and opportunity for input from public agencies, stakeholders, organizations, and individuals on the scope of the environmental analysis addressing the potential effects of the proposed project. Notice is further given that a Removal Action Workplan (RAW) has been prepared and is available for review for the Project.

PROJECT LOCATION: The 22.9-acre San Pedro HS campus is located at 1001 West 15th Street, San Pedro, Los Angeles County, California.

PROJECT DESCRIPTION: The proposed Project would include renovations, modernizations, and new construction at San Pedro HS; including demolition of the Industrial Arts Building, Metal Shop Building, and Lunch Shelter/Food Service Building, and approximately 17 classrooms located in nine portable (relocatable) buildings. The Project would include the construction of a Band and Shop Building, Lunch Shelters, and a new Administration, Food Services, and Classroom Building. The new buildings would house approximately 14 new general and specialty classrooms, and support spaces. The Project includes modifications and/or upgrades to the existing Administration Building, the Physical Education Building (Old Gym), the Home Economics Building, and Classroom Building 1. Upon Project completion, San Pedro HS would have 74 classrooms including 25 existing classrooms, 35 remodeled classrooms, and 14 new classrooms.

In addition, the District proposes the removal and off-site disposal of approximately 226 cubic yards of soil with elevated concentrations of arsenic, lead, and/or organochlorine pesticides and replacement with clean fill.

POTENTIAL ENVIRONMENTAL EFFECTS: LAUSD has prepared an Initial Study that describes the potential environmental effects of the proposed project. Based on the conclusions of the Initial Study, it has been determined that an EIR is the appropriate level of environmental documentation. Environmental factors that will be analyzed in the EIR are: Air Quality, Cultural Resources, Greenhouse Gases, Noise, Pedestrian Safety, and Transportation/Traffic.

The RAW presents the findings of the site assessment investigations performed for this Project and outlines the proposed process for the removal and off-site disposal of the impacted soil.

PUBLIC REVIEW PERIOD: LAUSD will make this NOP and the Initial Study (pursuant to California Code of Regulations, Title 14, Section 15082(b)) available for public review and comment from September 29, 2017 to October 28, 2017. The RAW will be available for public review and comment from September 19, 2017 to October 18, 2017.

RESPONSES AND COMMENTS: Please indicate a contact person for your agency or organization and send your comments to:

<u>CEQA Questions and Comments</u>
Los Angeles Unified School District
Office of Environmental Health and Safety
Attention: Will Meade, Environmental Planning Specialist
333 South Beaudry Avenue, 21st Floor
Los Angeles, CA 90017
Email: CEQA-comments@lausd.net
Please include "SPHS Comp Mod" in the subject line

<u>RAW Questions and Comments</u>
Los Angeles Unified School District
Office of Environmental Health and Safety
Attention: Dane Robinson, Site Assessment Project Manager
333 South Beaudry Avenue, 21st Floor
Los Angeles, CA 90017
Email: dane.robinson@lausd.net
Phone: (213) 241-4122

SCOPING MEETING: LAUSD will hold a public meeting on October 3, 2017 at 6:00 PM at the San Pedro High School Auditorium located at 1001 W. 15th St. San Pedro, California. You are encouraged to attend and present environmental information that you believe should be addressed in the EIR.

DOCUMENT AVAILABILITY: The Initial Study and RAW are available for public review during regular business hours at the locations listed below.

- LAUSD, Office of Environmental Health and Safety, 333 South Beaudry Avenue, 21st Floor, Los Angeles, CA 90017 (by appointment, call 213.241.3199)
- San Pedro High School Library: 1001 West 15th Street, San Pedro, CA
- San Pedro Regional Branch Library: 931 S. Gaffey Street, San Pedro, CA 90731
- LAUSD Local District South Office, 1208 Magnolia Avenue, Gardena, CA 90247
- LAUSD Office of Environmental Health and Safety Website:
    - CEQA Initial Study (http://achieve.lausd.net/ceqa)
    - RAW (http://achieve.lausd.net/siteassessment)

AVISO DE PREPARACIÓN
DE INFORME DE IMPACTO AMBIENTAL
AVISO DE PERIODO DE COMENTARIOS PÚBLICOS PARA
EL PLAN DE TRABAJO DE ACCION CORRECTIVA

PARA: Agencias, Organizaciones y Partes Interesadas

TITULO DEL PROYECTO: Proyecto de Modernización Extensa de la Escuela Preparatoria San Pedro

TEMA: Aviso de Preparación de un Borrador de Informe de Impacto Ambiental en cumplimiento con las Secciones 15082(a), 15103, y 15375 del Título 14 del Código de Regulaciones de California y aviso de período de comentarios públicos para el plan de trabajo de acción correctiva.

Por el presente se da aviso que el Distrito Escolar Unificado de Los Ángeles, (LAUSD, por sus siglas en inglés) es la agencia líder bajo la ley de la Calidad Ambiental de California (CEQA, por sus siglas en inglés) en la preparación del Borrador del Informe de Impacto Ambiental (EIR, por sus siglas en inglés), para el Proyecto de Modernización Extensa de la Escuela Preparatoria San Pedro. La Agencia Líder ha preparado este Aviso de Preparación (NOP, por sus siglas en inglés) para el EIR, con el fin de proporcionar la más amplia atención y oportunidad posible de aportaciones de agencias públicas, partes interesadas, organizaciones e individuos sobre el alcance del análisis ambiental que trata los efectos potenciales del proyecto propuesto. Además se da aviso que un Plan de Trabajo de Acción de Remoción (RAW, por sus siglas en ingles) se ha preparado y esta disponible para repaso para el Proyecto.

UBICACIÓN DEL PROYECTO: El campus de 22.9 acres de la Escuela Preparatoria San Pedro está ubicado en 1001 West Street, San Pedro, Condado de Los Ángeles, California.

DESCRIPCIÓN DEL PROYECTO: El Proyecto Propuesto incluiría renovaciones, modernizaciones, y nuevas construcciones en la Escuela Preparatoria San Pedro; incluyendo la demolición del edificio de Artes Industriales, el Edificio del Taller de Metales, y el edificio de Refugio de Almuerzo/Edificio de Servicio de Alimentos, y aproximadamente 17 aulas ubicadas en nueve edificios portátiles (reubicables). El Proyecto incluiría la construcción de un edificio de Banda y Taller, Refugios para Comer, y un nuevo edificio de Administración, Servicio de Alimentos, y de Aulas. Los nuevos edificios tendrían aproximadamente 14 aulas nuevas de uso general y de especialidad, y espacios de apoyo. El Proyecto incluye modificaciones y/o mejoras al Edificio de Administración, el Edificio de Educación Física (el Gimnasio Viejo), el Edificio de Economía Doméstica, y el Edificio 1 de Aulas. Una vez que se complete la modernización, la Escuela Preparatoria San Pedro tendrá 74 aulas incluyendo 25 aulas existentes, 35 aulas remodeladas y 14 aulas nuevas.

Además, el Distrito propone la remoción y desecho fuera del sitio de aproximadamente 226 yardas cúbicas de suelo con concentraciones elevadas de arsénico, plomo, y/o pesticidas organoclorados y reemplazo con relleno limpio.

POSIBLES EFECTOS AMBIENTALES: El LAUSD ha preparado un Estudio Inicial que describe los posibles efectos ambientales del proyecto propuesto. En base a las conclusiones del Estudio Inicial se ha determinado que un EIR es el nivel apropiado de documentación ambiental. Los factores ambientales que serán analizados en el EIR son: Calidad del Aire, Recursos Culturales, Gases de Efecto Invernadero, Ruido, Seguridad de Peatones y Transporte/Tráfico.

El RAW presenta los hallazgos de las investigaciones de evaluación del sitio realizadas para este Proyecto y esboza el proceso propuesto para la remoción y desecho fuera del sitio del suelo impactado.

PERIODO DE REVISIÓN PÚBLICA: El LAUSD hará este NOP y el Estudio Inicial (de acuerdo con la Sección 15082 (b) del Título 14 del Código de Regulaciones de California) disponible al público para su revisión y comentario desde el 29 de septiembre de 2017 hasta el 28 de octubre de 2017. El RAW estará disponible para revisión y comentarios públicos del 19 de septiembre de 2017 hasta el 18 de octubre de 2017.

RESPUESTAS Y COMENTARIOS: Por favor indique una persona de contacto para su agencia u organización y envíe sus respuestas y comentarios a:

Preguntas y Comentarios CEQA
Los Angeles Unified School District
Office of Environmental Health & Safety
Attention: Will Meade, Environmental Planning Specialist
333 South Beaudry Avenue, 21st Floor
Los Angeles, CA 90017
Email: CEAQ-comments@lausd.net
Por favor incluya “SPHS Comp Mod” en el renglón de tema

Preguntas y Comentarios RAW
Los Angeles Unified School District
Office of Environmental Health and Safety
Attention: Dane Robinson, Site Assessment Project Manager
333 South Beaudry Avenue, 21st Floor
Los Angeles, CA 90017
Email: dane.robinson@lausd.net
Teléfono; (213) 241-4122

REUNIÓN DE DETERMINACIÓN DE ALCANCE: El LAUSD llevará a cabo una reunión de determinación de alcance el 3 de octubre de 2017, a las 6:00 PM en el Auditorio de la Escuela Preparatoria San Pedro ubicada en 1001 W. 15th St., San Pedro, California. Se le anima a asistir y presentar información ambiental que usted cree que se debería abordar en el EIR.

DISPONIBILIDAD DE DOCUMENTOS: El Estudio Inicial y el RAW están disponibles para la revisión del público durante el horario regular de oficina en los siguientes lugares.

- LAUSD Office of Environmental Health and Safety, 333 South Beaudry Avenue, 21st Los Angeles, CA 90017 (con cita, llamar al 213.241.3199)
- San Pedro High School Library: 1001 West 15th Street, San Pedro, CA
- San Pedro Regional Branch Library, 931 S. Gaffey Street, San Pedro, CA 90731
- LAUSD Local District South Office, 1208 Magnolia Avenue, Gardena, CA 90247
- Sitio web de LAUSD Office of Environmental Health and Safety:
  - CEQA Estudio Inicial (http://achieve.lausd.net.cega)
  - RAW (http://achieve.lausd.net.siteassessment)

Appendix D
Health and Safety Plan

TABLE OF CONTENTS

Illustration:

1.0 INTRODUCTION

The Health and Safety guidelines and requirements presented herein are based on a review of available information and an evaluation of potential hazards. This Plan outlines the procedures and equipment required to minimize the potential for chemical and physical injury of field personnel. This Health and Safety Plan (HASP) is also for use with the selected General Contractor's and Environmental Consultant's Injury and Illness Prevention Plans (IIPP). The format and content of this HASP are established to meet the requirements of the California Division of Occupational Safety and Health Regulations; Title 8 of the California Code of Regulations (T8 CCR), Section 5192; Title 29 Code of Federal Regulations, Part 1910.120; and the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.

This HASP has been prepared for use in the implementation of the Removal Action Workplan at the San Pedro High School Comprehensive Modernization Project. This HASP shall not be used for work other than that described herein; nor shall it be modified without written approval by the Los Angeles Unified School District (LAUSD) Office of Environmental Health and Safety (OEHS). In addition, this HASP covers only the environmental aspects associated with the removal of surface soils with elevated concentrations of the following constituents of concern (COC): arsenic, lead, and organochlorine pesticides (specifically chlordane and dieldrin).

This HASP should be used as part of an overall Health and Safety Program or IIPP as specified in 8 CCR 5192 and 8 CCR 3203, respectively.

This HASP is intended to assist field personnel in addressing reasonably anticipated hazards and appropriate response measures. However, the Plan has inherent limitations in that it cannot be completely "site-specific." Not all specific hazards, that may impact the project, may not have been identified during the planning stages of this project. If such hazards are encountered, the health and safety protocol contained herein is intended to provide sufficient detail to allow appropriately trained and experienced personnel to obtain the necessary site-specific data. That data can then be used to develop an addendum to this HASP and allow the project activities to go forward.

1.1. Project Description

The Removal Action Workplan was prepared for the removal of 27 discrete areas of arsenic, lead, chlordane, and dieldrin-impacted soil totaling approximately 226 cubic yards.

San Pedro High School Comprehensive Modernization Project is located at 1001 W. 15th Street (Site) in the community of San Pedro, city and county of Los Angeles, California. The removal addresses soil conditions in the areas proposed building demolitions, including the Industrial Arts Building, Shop Building, and 10 portable buildings on the western portion of the campus. Approximate geographic coordinates at the entrance to San Pedro High School, adjacent to W. 15th Street, are 33.7303° North latitude and -118.2993° West longitude. Based on the results of the sampling, removal action activities will be performed. The removal action activities will include the excavation and off-site disposal of soils contaminated with the COCs.

1.2. Site History

Based on the historical sources review as reported by the Clark Seif Clark, Inc. Phase I Environmental Site Assessment, there were no identified uses of the Site until the construction of several residential structures between 1923 and 1925. Clark Seif Clark stated that the land for the present day campus was acquired by LAUSD beginning in 1934 and continuing until 1969. Former owners of portions of the property include the Board of Water and Power Commissioners of the City of Los Angeles, and the Southern California Gas Company. The high school was constructed sometime after 1935. It is our understanding that a licensed asbestos and lead abatement removal contractor will perform the appropriate demolition activities and ensure proper handling and disposal of asbestos containing materials and lead-based paint debris.

2.0 DOCUMENTATION AND RECORD KEEPING

2.1 Distribution of the Health and Safety Plan

Before any work begins, a copy of this HASP must be made available to each employee assigned to work at the Site, as well as to an authorized representative of each firm contracted to perform work on the Site. Individuals assigned to work at the Site must acknowledge receipt of the Plan and agree to comply with its provisions in writing.

The following records will be maintained by field personnel:

- A list of personnel qualified to work according to the compliance statement,
- A signature sign-in sheet of all personnel entering and exiting the exclusion zone,
- The HASP with compliance agreements, and
- Exposure monitoring data from the direct reading instruments.

The HASP will remain on the Site. Its location will be known to all personnel at the Site and it will be available for inspection at any time.

2.2 Incident reporting

Injuries, exposures, illnesses, safety infractions, and other incidences specified in the IIPP must be reported to the LAUSD within four hours of occurrence, or immediately if a hospitalization or fatality is involved. In the event of an accident or incident, an Incident Investigation form (or similar form from a subcontractor's HASP) will be completed and provided to the LAUSD-OEHS within two working days.

An incident is any event listed below:

- Illness resulting from chemical exposure or unknown causes
- Physical injury, including those that do not require medical attention
- Fire explosions, and flashes resulting from activities performed by LAUSD and/or their subcontractors
- Vehicular accidents occurring on the Site or while traveling to and from sites
- Infractions of safety rules and requirements
- Unexpected chemical exposures (indicated by irritation of eyes, nose, throat, or skin). Work will be suspended to correct the cause of the accident or incident and to modify the HASP as necessary.

3.0 HAZARD ASSESSMENT

3.1 Chemical Hazards

The following paragraphs provide a brief description of the health hazards associated with the COCs.

Arsenic

Exposure to inorganic arsenic can cause various health effects, such as irritation of the stomach and intestines, decreased production of red and white blood cells, skin changes, and lung irritation. It is suggested that the uptake of significant amounts of inorganic arsenic can intensify the chances of cancer development, especially the chances of development of skin cancer, lung cancer, liver cancer, and lymphatic cancer. A very high exposure to inorganic arsenic can cause

infertility and miscarriages with women, as well as skin disturbances, declined resistance to infections, heart disruptions, and brain damage with both men and women.

Lead

Lead can be absorbed via the ingestion and inhalation pathways. Lead affects practically all systems within the body. Lead at high levels can cause convulsions, coma, and even death. Lower levels of lead can cause adverse health effects on the kidney, central nervous system, cardiovascular system, urinary system, reproductive system, and blood forming cells. Several studies have shown that low levels of lead in the blood can impair mental and physical development. The effects of lead exposure on fetuses and young children can be severe. They include delays in physical and mental development, reduced Intelligence Quotient scores, reduced cognitive ability, decreased reading, spelling, mathematics and linguistic performance, decreased memory, decreased motor skills and coordination, shortened attention span, anxious/depressed behavior, and increased behavioral problems (Child-specific Benchmark change in blood Lead concentration for School Site Risk Assessment, Office of Environmental Health Hazard Assessment 2007). Additional evidence from studies in laboratory animals show that exposure to lead is associated with impaired learning and memory, decreased neurobehavioral development, and other defects similar to those seen in humans.

Fetuses, infants, and children are more vulnerable to lead exposure than adults since lead is more easily absorbed into growing bodies, and the tissues of small children are more sensitive to the damaging effects of lead. Children may have higher exposures since they are more likely to ingest soil, to get lead dust on their hands and then put their fingers or other lead-contaminated objects into their mouths.

The California OEHHA chose Intelligence Quotient as the relevant toxicological indicator for exposure to lead, because it is a widely measured, sensitive marker for neurodevelopmental effects of lead. Based on epidemiological studies, OEHHA developed a 1 microgram of lead per deciliter of blood benchmark for the incremental change in blood lead levels for protection of school children and fetuses (OEHHA, 2007) (see http://www.oehha.ca.gov/public_info/public/kids/pdf/PbHGV041307.pdf). OEHHA estimated that exposure to no more than 80 milligrams per kilogram (mg/kg) lead in soil is protective of a 1 microgram of lead per deciliter of blood increase in blood lead levels in children (http://www.oehha.ca.gov/risk/pdf/LeadCHHSL091709.pdf).

Chlordane and Dieldrin

Chlorinated cyclodiene insecticides that are structurally related by the same mechanism of action include dieldrin and chlordane. Like dichlorodiphenyltrichloroethane compounds, the cyclodienes persist in the environment and accumulate in fatty tissues of biologic organisms. The central and peripheral nervous systems are the target organs.

Headache, nausea, vomiting, dizziness, and mild chronic jerking are characteristic symptoms of exposure. Increased exposure can increase the severity of these symptoms and advance to convulsions. Exposure to dieldrin alters the dopamine system and increases neurotoxicity in an animal model of Parkinson's disease (http://www.fasebj.org/cgi/content/full/20/10/1695). The cyclodienes also can produce liver damage.

All three cyclodienes are carcinogens based on liver tumors observed in experimental animals. The non-carcinogenic reference doses, assigned to the cyclodienes, are based on the critical effect of pathologic changes in the liver and increased liver weight of experimental animals.

3.2 Physical Hazards

The physical hazards associated with the project include buried utilities, electrical safety, falling and tripping, heat stress, heavy equipment, noise, and traffic hazards.

3.2.1 Falling and Tripping

Prevention of slip/trip/fall accidents is largely a measure of routine inspections to assure that dangerous areas are properly marked and/or protected. Due to uneven ground, open excavations, and clutter of work areas with pieces of equipment, trips and falls are likely to occur if adequate preventative measures are not taken. Excavations and trenches must be properly shored and workers must wear proper fall protection equipment, as required, to prevent injury. Field personnel must be aware of their surroundings, pay attention to where they are and what they are doing, and take precautions.

3.2.2 Dust

Dust from the Site may contain elevated levels of COCs. To reduce potential dust inhalation, proper control measures will be implemented on the Site. Vehicle traffic will be kept to a minimum and driving speeds on the Site will be slow enough to prevent the generation of fugitive dust. Fugitive dust at the Site during excavation, stockpiling, and loading activities will be as-

sessed through periodic monitoring using direct reading instruments such as aerosol or particulate dust monitors.

4.0 PERSONAL PROTECTIVE EQUIPMENT AND MONITORING

Personal Protective Equipment (PPE) is a means of isolating a worker from a potential exposure to a contaminant source. Physically isolating the sources from the surrounding work environment is generally not possible on hazardous waste sites; thus, the worker must be isolated from the work area. Use of PPE places a high degree of responsibility for safety on the worker. Exposure can occur during lapses in standard operating procedures, failure of PPE, removal of PPE at the end of work periods, or use of improper or damaged equipment. However, a properly administered PPE program can offer an effective means of control or act as a supplement or backup to controls at the source of the hazards.

Employees at the Site will be trained on the selection and use of PPE as well as proper maintenance, storage, decontamination, disposal, inspection, donning and doffing procedures. All PPE will conform to California Division of Occupational Safety and Health (DOSH), better known as Cal/OSHA Title 8 CCR requirements.

The following equipment listed below will be available for on-site use as needed.

- Safety goggles or glasses
- Steel toe or rubber safety boots with steel toe
- Hard hat
- Earplugs
- National Institute for Occupational Safety and Health-approved respirators with high efficiency dust cartridges (not expected to be utilized)
- Nitrile or neoprene gloves
- Highly visible construction vests

The PPE specified for the project will be re-evaluated periodically as the amount of information about potential hazards increases. Level D protection is appropriate when no contaminants are present; atmospheric concentrations of contaminants are less than action levels; or work functions preclude splashes, immersion, or potential for unexpected inhalation of any chemicals. It requires street clothes or protective overalls, steel-toed work boots, work gloves, safety glasses, hardhat, and hearing protection (based on noise levels).

PPE levels will be increased when there is a known or suspected presence of dermal hazards, a change in work task that will increase contact with hazardous materials, or at the request of individuals performing the tasks.

Based on field conditions, the PPE may be increased to Level C protection. Level C protection requires, in addition to the Level D PPE, respirators with appropriate filters, and chemical-resistant clothing and gloves. Levels of protection higher than Level C are not anticipated. If levels of protection higher than Level C are necessary, Site-specific safety analysis will be required. Dust and airborne matter will be critical in moving to a higher level of PPE. With proper dust control, it is likely that a Level D PPE can be maintained.

PPE levels may be decreased when there is new information indicating that the situation is less hazardous than originally suspected; a change in Site conditions that decrease the hazard; or a change in work that will reduce contact with hazardous materials. The PPE clothing material selected will depend on the chemicals present and the type of work to be accomplished. The materials selected will resist the items listed below where necessary

- Permeation — the process by which a chemical dissolves in and/or moves through a protective clothing material on a molecular level.

- Degradation — the loss of or change in the fabric's chemical resistance.

- Penetration — the movement of chemicals through zippers, stitched seams, or imperfections in a material.

4.1 Dust monitoring

Dust monitoring will be conducted and measured total dust levels will be compared to Site action levels. Site action levels are based on protection of the workers implementing the Removal Action (RA), and on protection of the community surrounding the site.

Dust Action Level and Monitoring for Workers

Action levels for worker protection are based on the Cal/OSHA permissible exposure limits (PEL) for each COC identified in soil at the Project Site (CCR Title 8, Section 5155). The PEL for total dust (particulates not otherwise regulated) is 10 milligram per cubic meter (mg/m^3). Therefore, assuming that total dust is present at 10 mg/m^3 in air and contains the maximum concentration of each COC identified at the site, and then Site worker exposure levels can be calculated as follows:

Exposure Level (mg/m^3) = soil concentration (mg/kg) x total dust PEL (mg/m^3) / 1,000,000 (mg/kg)

The dust exposure levels for each COC are as follows:

Arsenic: 0.00059 mg/m^3 = 59 mg/kg x 10 mg/m^3/ 1,000,000 mg/kg
Lead: 0.0025 mg/m^3 = 250 mg/kg x 10 mg/m^3/ 1,000,000 mg/kg
Chlordane: 0.000017 mg/m^3 = 1.7 mg/kg x 10 mg/m^3/ 1,000,000 mg/kg
Dieldrin: 0.00000076 mg/m^3 = 0.076 mg/kg x 1 mg/m^3 / 1,000,000 mg/kg

The following table shows the calculated maximum dust exposure levels compared with the Cal/OSHA PELs. The dust exposure levels are less than PELs.

Dust Exposure Level Comparison

Chemical of Concern	Calculated Dust Exposure Level[(a)] (mg/m^3)	Cal/OSHA PEL (mg/m^3)
Arsenic	0.00059	0.01
Lead	0.0025	0.05
Chlordane	0.000017	0.5
Dieldrin	0.00000076	0.25
Total Dust	--	10

Notes:

PEL	=	permissible exposure limit (eight-hour, time-weighted average)
(a)	=	Based on 10 mg/m^3 total dust
Cal/OSHA PEL	=	California Division of Occupational Safety and Health Permissible Exposure Limit
mg/m^3	=	Milligram Per Cubic Meter

The dust action level for workers using equipment in the removal area will be set at 1 mg/m^3 steady for five minutes. This concentration is less than the PEL, but is considered protective of workers and will serve to prevent dust levels from exceeding action levels for the fence line monitoring. The Environmental Consultant will stop work of the action level is exceeded until appropriate dust suppression measures are implemented.

Measurement of airborne dust levels at the excavation locations will be conducted by the Environmental Consultant using real-time, data-logging aerosol monitors (i.e., Personal DataRam or PDM-3 Miniram aerosol monitor manufactured by MIE). These instruments will be calibrated daily. The monitoring information will be posted daily and discussed with the Site workers. The monitors will be set to log dust levels over 5 minute periods and will be visually read every 15 minutes.

Dust Action Level and Monitoring for Fence Line

The action level for fence line monitoring and protection of the surrounding community are based on South Coast Air Quality Management District Rules 403 and 1466. The Rule 1466 action level for dust, as particulate matter of 10 microns in diameter or smaller (PM_{10}), is 25 micrograms per cubic meter of air over a two-hour period, and will be used for the RA. The General Contractor shall provide a supervisor that has been issued a valid Certificate of Completion for the South Coast Air Quality Management District Fugitive Dust Control Class.

Continuous direct reading near real-time ambient monitoring of PM_{10} will be conducted to confirm that concentrations remain below the action level during any earth moving or vehicle movement activities on the Site. The ambient PM_{10} monitoring will be conducted in accordance with the following:

- Use two or more of the following particulate meters: TSI DustTrak II Aerosol Monitor 8530, E-BAM Particulate Monitor, Thermo Scientific Model ADR1500, or other approved instrument.

- Monitor ambient weather conditions including wind speed and direction using handheld meters, an onsite station, and/or real-time internet weather locations. Record the wind observations and use for the selection of dust monitoring locations.

- Place one upwind monitor where dust concentrations are not influenced with the RA activities.

- Place one downwind monitor in the seasonal prevailing wind direction downwind for the earth moving activities, and as near as possible to the property line.

- Collect near real-time data using data logging features every 10 minutes or less.

- Calculate the PM_{10} concentration averaged over two hours, where the concentration is the absolute difference between upwind and downwind monitors.

- Retain all dust monitoring records at the Site.

If the ambient dust concentration limit is exceeded, the Environmental Consultant will direct the General Contractor to immediately stop all earth-moving activities and apply dust suppressant to all fugitive dust sources or employ necessary dust control measures until the PM_{10} concentration drops below 25 micrograms per cubic meter of air, averaged over 30 minutes.

5.0 DECONTAMINATION PROCEDURES

Decontamination of equipment and personnel is necessary to confine the contaminants to the exclusion zone. Prior to leaving the exclusion zone, all major equipment, tools, and materials will be dry brushed to remove encrusted dirt. A decontamination station and procedure will be established by the General Contractor and Environmental Consultant, in coordination with LAUSD-OEHS, during Site mobilization. The procedure will consist of a liquid soap and water wash for hands, face, and hard hats. Prior to eating or drinking, personnel will wash their hands with soap and water. The contaminated soil should be removed from skin using a mild detergent and water. Hot water is more effective than cold water, and Liquinox soap is more effective than hand soap.

An effective decontamination area can be established by spreading a waterproof ground sheet and using several large 30-gallon tubs for personal decontamination. The criteria used in selecting an area are listed below.

- Ease of containment of contaminated materials
- Access to water

- Accessibility to on-site personnel

The area will be cordoned off in a similar manner to the exclusion zone. The areas of decontamination will be identified and removal of the indicated protective equipment in the specified order will be completed in this area.

5.1 Equipment Decontamination

All major reusable equipment and other tools used for work will be decontaminated prior to leaving the work areas. Cleaning will normally consist of scrubbing to remove encrusted soil, followed by a soap and water wash and potable water rinse. Containers of detergent solutions for cleaning tools, boots, and gloves will be available in the exclusion zone. Decontamination of equipment will be performed at a designated area within the contamination zone, determined during the pre-construction job walk and meeting.

A steam cleaner is a convenient source of hot water for personnel and protective equipment cleaning. If a steam cleaner is available, sampling equipment, vehicle undercarriages, and tires encrusted with contaminated soil should be steam cleaned.

Rinsate and residual soils generated during decontamination will not be allowed to run off from the Site, and will be contained in appropriately sized washtubs and transferred to 55-gallon drums for temporary storage and disposal.

6.0 EMERGENCY NOTIFICATION

6.1 Emergency Notification List

The Site Safety Manager will be trained to render basic first aid. Every injury will be reported and entered in the field log. In the event of fire, explosion, accident, or injury, the Project Manager (PM) or other Site personnel will contact the appropriate emergency response group. The emergency telephone numbers listed below are for obtaining emergency services at the Site.

Contact	Name	Contact Information
General Contractor Project Manager	To be determined	To be determined
Environmental Consultant Project Manager	To be determined	To be determined
LAUSD-OEHS Project Manager	Dane Robinson	(213) 241-4122

LAUSD Complex Project Manager	Jay Nager	(310) 808-15100
LAUSD Police	Dispatch	(213) 625-6631
Site Health and Safety Officer	To be determined	To be determined
Hospital	Providence Little Company of Mary Medical Center San Pedro 1300 W 7th Street San Pedro, California 90732	(310) 832-3311

Notes:
LAUSD = Los Angeles Unified School District
OEHS = Office of Environmental Health and Safety

This hospital is estimated to be 0.9 mile, or four minutes, away from the Site. Please see attached driving directions to the hospital from the Site (Figure 1).

6.2 Emergency Procedures

The following emergency equipment will be stored on Site at all times: fire extinguishers, first aid kits, cellular phones, and eye wash capable of 15 minutes of flush.

6.2.1 Situation Assessment

In the event of an unexpected incident or emergency, the situation assessment will include gathering and processing information on the type of incident, the victims, if any, the chemicals of concern, the potential for fire, explosion, or release of hazardous substances, potential for danger to off-Site population or environment, the equipment and personnel needed for victim rescue and hazard mitigation, and the hazards involved in rescue and response.

6.2.2 Rescue/Action Steps

Based on the available information, the type of response required will be identified and the necessary steps implemented. Some actions may be done concurrently. No one will attempt emergency response or rescue until backup personnel and evacuation routes have been identified.

In the event there is a hazardous materials spill, the contractor will immediately stop work activities. Try to stop the source of the spill, contain the spill if possible, and lay out absorbent materials. Notify the PM immediately, and call 911 as needed.

In the case of localized small fires not posing risks to life or property, Site personnel may use fire extinguishers or other suitable material (earth, blanket, or water) to bring the situation un-

der control. In all other cases, local fire departments will be called immediately to help control fire. The immediate area will be evacuated in the case of an uncontrolled fire causing the release of potentially toxic gases. Local fire authorities will be notified immediately of the materials involved.

In the event an emergency cannot be controlled by Site personnel, the following outside agencies will be called, as necessary:

- Local fire/rescue: 911
- Local ambulance: 911
- Police: 911
- Hospital/emergency facility: 911 or (619) 522-3600
- Chemical Emergency Response/Chemical Transportation Emergency Cente (CHEMTREC): (800) 424-9300

6.2.3 Follow up

Before normal Site activities are resumed, personnel must be fully prepared and equipped to handle another emergency. The PM will notify appropriate agencies as required. Equipment and supplies will be restocked, and damaged equipment will be replaced or repaired. The PM will review and revise the HASP as needed, based on Site conditions and information obtained from the emergency response.

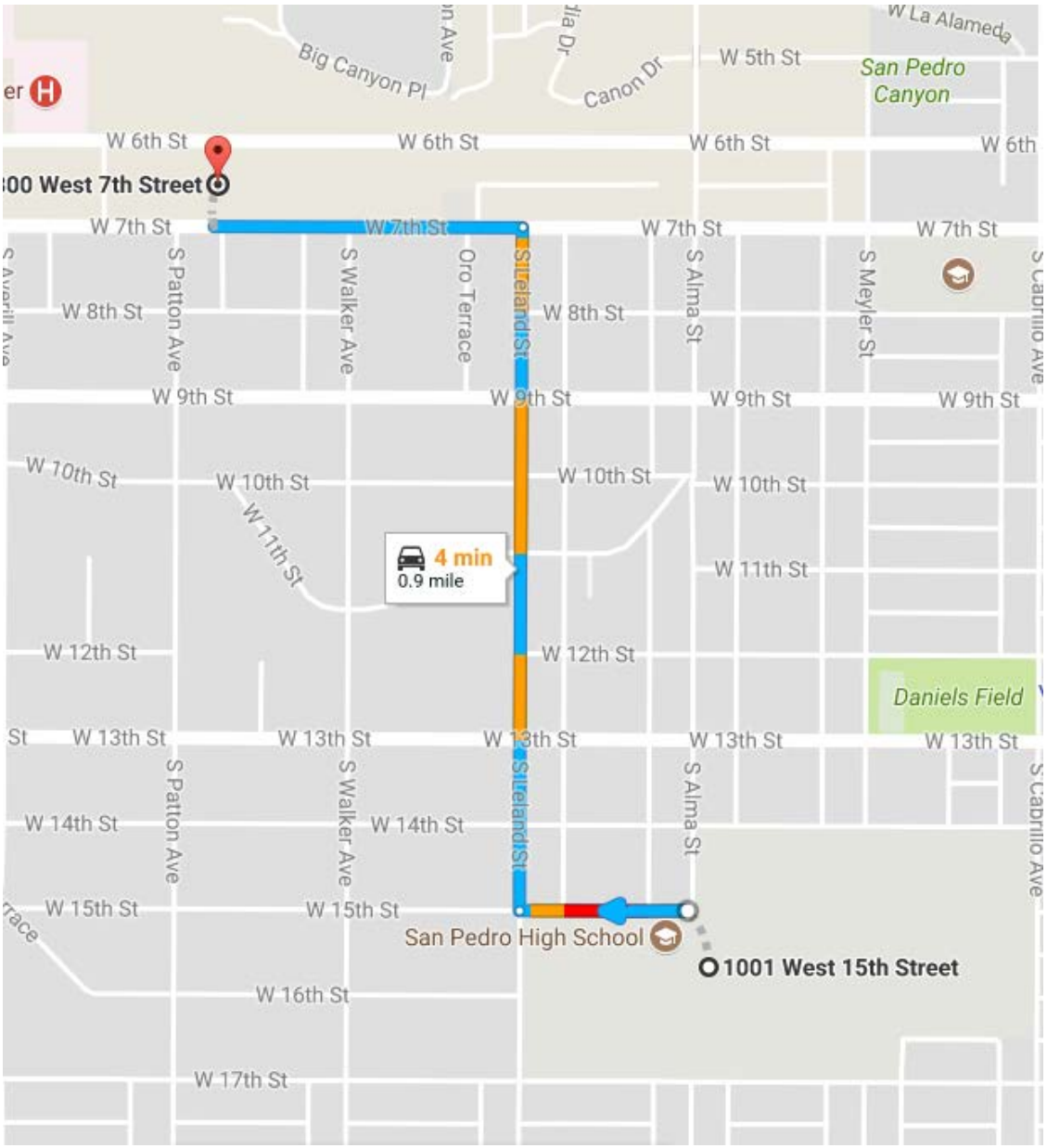
ATTACHMENT 1: SAFETY PLAN COMPLIANCE AGREEMENT

All field personnel are required to read this HASP and, by signing below, acknowledge that they are 40-hour OSHA Hazardous Waste Operators and Emergency Response-trained with current annual refresher updates and that they are familiar with the HASP provisions.

I have received a copy of the HASP for this project. I have reviewed the Plan, understand it, and agree to comply with all of its provisions. I understand that I could be prohibited from working on the project for violating any of the health and safety requirements specified in the Plan.

Title	Name/Company Name (Printed)	Signature and Date
Project Manager		
Site Safety Manager		
Field Team Leader		
Other Site Personnel		

FIGURE 1 — HOSPITAL ROUTE MAP



- Starting from San Pedro High School, 1001 W. 15th Street, San Pedro, California 90731
- Head west on W 15th Street toward S Leland Street
- Turn right onto S Leland Street
- Turn left onto W 7th Street
- Arrive at Providence Little Company of Mary Medical Center San Pedro, 1300 W 7th Street, San Pedro, California 90732

Appendix E
Quality Assurance Project Plan

QUALITY ASSURANCE PROJECT PLAN

This appendix describes the quality assurance and quality control (QA/QC) plan, or quality assurance project plan (QAPP), which will provide an appropriate level of assurance regarding the reliability and usability of the data generated during the confirmation sampling for the Removal Action Workplan (RAW). This section sets forth the policies, procedures, and activities for the identification and documentation of the quality of data generated during the performance of the RAW. The Environmental Consultant for the RAW is responsible for confirmation sampling at the excavation areas and is therefore responsible for the QAPP.

SECTION 1 Project Task and Problem Definition

The overall Removal Action Objective of this RAW is to remove soil that contains the constituents of concern at concentrations above the site-specific cleanup goals (SSCG). The SSCG established for the constituents of concern (COC) are as follows: arsenic at 12 milligrams per kilogram (mg/kg); lead at 80 mg/kg; chlordane at 0.44 mg/kg; and dieldrin at 0.034 mg/kg. The Los Angeles Unified School District, Office of Environmental Health and Safety has elected to use soil screening values as the SSCGs for the San Pedro High School modernization project.

SECTION 2 Data Quality Objectives (DQOs)

Soil analytical data will be collected during the confirmation sampling. Data collected will be evaluated to determine whether the COCs remain in soil at concentrations that exceed the SSCGs. The Data Quality Objective is that the data obtained during the confirmation sampling are usable for evaluating subsurface impacts and confirming the removal of impacted soil.

Compliance with the Data Quality Objective will be met by evaluating the following Acceptance Criteria:

- Precision
- Accuracy
- Representativeness
- Completeness
- Comparability
- Method Detection Limits (MDL)

SECTION 3 Acceptance Criteria

Specific acceptance criteria for the data quality indicators (DQI) of precision, accuracy, representativeness, completeness, comparability, and MDLs have been selected. These DQIs and their corresponding acceptance criteria are discussed in turn below.

Precision

Precision measures the reproducibility of repetitive measurements. It is strictly defined as the degree of mutual agreement among independent measurements as the result of repeated application of the sample process under similar conditions.

Analytical precision is a measurement of the variability associated with duplicate or replicate analyses of the same sample in the laboratory, and is determined by analysis of laboratory quality control samples, such as duplicate control samples or Laboratory Control Sample Duplicates, matrix spike duplicates, or sample duplicates. If the recoveries of analytes in the specified control samples are comparable within established control limits, then precision is within limits.

Total precision is a measurement of the variability associated with the entire sampling and analytical process. It is determined by analysis of duplicate or replicate field samples, and measures variability introduced by both the laboratory and field operations. Field duplicate samples are analyzed to assess field and analytical precision.

Duplicate results are assessed using the relative percent difference (RPD) between duplicate measurements. If the RPD for laboratory quality control samples exceed 30 percent, data will be qualified. If the RPD between primary and duplicate field samples exceed 50 percent, data will be qualified. The RPD will be calculated as follows:

$$\%RPD = \frac{200 \times (X_2 - X_1)}{X_2 + X_1}$$

Where X_2 is the larger of the two observed values and X_1 is the smaller of the two observed values.

Accuracy

Accuracy is a statistical measurement of correctness and includes components of random error (variability due to imprecision) and systematic error. It reflects the total error associated with a measurement. A measurement is accurate when the value reported does not differ from the true value or known concentration of the spike or standard.

Accuracy of laboratory analyses will be assessed by Laboratory Control Samples, surrogate standards, matrix spikes, and initial and continuing calibrations or instruments. Laboratory accuracy is expressed as the percent recovery (%R). Accuracy limits are statistically generated

by the laboratory, required by specified Environmental Protection Agency methods, or set forth in guidance documents prepared by various organizations. If the %R is determined to be outside of acceptance criteria, associated data will be qualified. The calculation of %R is provided below:

$$\%R = \frac{100 \times (X_s - X)}{T}$$

Where X_s is the measured value of the spiked sample, X is the measured value of the unspiked sample, and T is the true value of the spike solution added.

Field accuracy for soil samples will be assessed through the analysis of equipment blanks at a rate of one per day. Analysis of blanks will monitor errors associated with the sampling process including equipment decontamination procedures (in the case of equipment blanks) and sample handling. The acceptance criteria for field equipment blanks are that all values are less than the reporting limit for each target constituent. If contamination is reported in the field equipment blanks, data will be qualified.

Representativeness

Representativeness is the degree to which data accurately and precisely represents a characteristic, an environmental condition, or a population. It relates both to the area of interest and to the method of taking the individual sample. Representativeness of data collection is addressed by careful preparation of sampling and analysis programs, including use of procedures to avoid false negatives and false positives. The RAW addresses representativeness by specifying sufficient and proper numbers and locations of samples, incorporating appropriate sampling methodologies, specifying and performing proper sample collection and preservation techniques, performing required decontamination procedures, selecting appropriate laboratory methods to prepare and analyze soil and groundwater samples, and establishing proper field and laboratory QA/QC procedures for the parameters of interest.

Completeness

Completeness is the amount of valid data obtained compared to the amount that was expected under ideal conditions. The number of valid results divided by the number of possible results, expressed as a percentage, determines the completeness of the data set. The acceptance criteria for completeness are to obtain valid results for at least 80 percent of the planned analytical results. The formula for calculation of completeness is:

$$\%\ Completeness = \frac{100\ x\ number\ of\ valid\ results}{number\ of\ expected\ results}$$

Comparability

Comparability is an expression of confidence with which one data set can be compared to another. This QA/QC plan addresses comparability by specifying laboratory methods that are consistent with the current standards of practice as approved by the EPA, which will allow the data to be evaluated for trends or changes (in space or time) at the Site. In addition, comparability is also addressed by specifying that associated standard units of measurement will be used for data reports.

Method Detection Limits

MDLs should be below the action levels whenever possible, or else there is no way to know whether non-detect results are above or below the action level. For this RAW, the Los Angeles Unified School District wishes to know whether COCs are present in soil at concentrations that exceed health-screening values. The laboratory reporting limits for the COCs should be confirmed by the selected Environmental Consultant to confirm they are sufficiently low to make the comparison with SSCGs. See table 3-1 and 3-2 for a list comparing laboratory reporting limits with action levels.

TABLE 1: CONTAMINANTS OF CONCERN, LABORATORY AND ACTION LEVELS
MATRIX = SOIL

Analytical Parameter (Contaminants of Concern)	Laboratory Reporting Limits	Action Levels: Site-Specific Cleanup Goal
Arsenic by EPA 6020B (mg/kg)		
Arsenic	*TBD*	12
Lead by EPA 6010B (mg/kg)		
Lead	*TBD*	80
Organochlorine Pesticides by EPA 8081A (mg/kg)		
Chlordane	*TBD*	0.44
Dieldrin	*TBD*	0.034

Notes:

mg/kg = Milligrams Per Kilogram

TBD = To Be Determined by the Environmental Consultant and selected laboratory, but must be lower than Site-Specific Cleanup Goals.

EPA = Environmental Protection Agency

SECTION 4 DATA Review and Validation

The Environmental Consultant will review the laboratory reports and prepare a data-review checklist. The laboratory reports will be reviewed for the following:

- Data Completeness
- Chain of Custody
- Holding Times
- Sample Preservation
- Blanks
- Laboratory Control Samples/Laboratory Control Sample Duplicates
- Matrix Spike/Matrix Spike Duplicate
- Surrogates/Internal Standards (as applicable);
- Field Quality Control Samples

Data that does not meet the acceptance criteria set forth in Section 1.3 will be qualified, and the data review checklist will be included in the Removal Action Completion Report (RACR). Data qualifications flags will indicate whether results are considered anomalous, estimated, or rejected. Only rejected data are considered unusable for decision-making purposes; however, other qualified data may require further verification, such as reviewing the laboratory's raw data.

Detection limits associated with the analytical data will be reviewed before eliminating chemicals from consideration because they were not detected. In some cases, the detection limit for a chemical may be greater than the corresponding standards, criteria, or concentrations derived from toxicity reference values; therefore, the chemical may be present at levels greater than these corresponding reference concentrations, which may result in undetected risk. In other cases, a particular detection limit may be significantly higher than positively detected values in other samples in a data set. After considering these cases and any other reasonable reasons why contaminants may not have been detected, chemicals that have not been detected in any medium will be eliminated if appropriate. If information exists to indicate that the chemicals are present, they will not be eliminated.

For analytical results, various qualifiers pertaining to the quality of the data may be assigned to certain analytical results by either the laboratory conducting the analysis or by persons conducting data review as discussed above. For example, some results may be marked as estimated if the concentration is below the verifiable or contract-required detection limit but may be detected at a lower value by the instrument. All qualified results will be reviewed prior to being compared to the pertinent SSCG. Any data discrepancies will be reviewed and explained in the RACR. If enough data are rejected as unusable for decision-making purposes, such that the DQI for completeness is not achieved, then corrective actions such as reanalysis or resampling will be recommended.

SECTION 5 Data Management

The Environmental Consultant Project Manager will review the field notebooks, field forms (such as boring logs), and chain-of-custody forms to evaluate completeness of the field records, appropriateness of the field methods employed, and whether the chain of custody forms were completed correctly. When the laboratory reports are submitted, the Environmental Consultant data reviewer will prepare a data review checklist as set forth in Section 1.4. Subsequently, the data will be entered onto tables to be included in the Phase II report, including any necessary qualification flags identified in the data review checklist. An independent person (i.e., not the person who prepared the data tables) will check every entry on the data tables for completeness and correctness. Similarly, figures (including boring logs) to be published in the RACR will be checked by an independent person to verify that all data on the figures are correct. All project documentation, including field records, laboratory reports, data review memoranda, and data tables, will be retained in Environmental Consultant's project files and made available to other parties as needed and appropriate.

SECTION 6 Assessment Oversight

Ultimate responsibility for implementation of this RAW, including the QA/QC plan, will rest with the Environmental Consultant Project Manager. The Environmental Consultant Quality Assurance Manager will perform at least one audit of field procedures, and will review the field notebooks, other field forms, COCs, and laboratory reports for compliance with the QAPP.

Appendix F
Transportation Plan

TABLE OF CONTENTS

SECTION 1 INTRODUCTION

This Transportation Plan describes waste transportation activities associated with the soil excavation and soil handling activities at the Removal Action (RA) from the Los Angeles Unified School District (LAUSD) San Pedro High School Comprehensive Modernization Project (CMP). The purpose of the Transportation Plan is to specify protocols to minimize the potential health, safety, and environmental risks associated with the transportation of soil to the appropriate treatment and disposal facilities. The loading and transportation of waste materials will be conducted by the General Contractor and/or its subcontractor at the time of the CMP construction.

The San Pedro High School campus is located at 1001 W. 15th Street, San Pedro, California, 90731. The campus consists of an irregularly-shaped parcel that is bordered by W. 15th Street and W. 14th Street to the north, Dana Middle School (1501 S. Cabrillo Avenue) to the east, W. 17th Street to the south, and S. Leland Street to the west. The campus is located in the community of San Pedro, within the city and county of Los Angeles.

The overall Removal Action Objective of the Removal Action Workplan (RAW) is to remove soil that contains the constituents of concern at concentrations above the site-specific cleanup goals. Waste soil will be segregated and placed in stockpiles in accordance with the classifications provided below.

- Non-hazardous arsenic, lead, and organochlorine pesticide impacted soil.
- California hazardous (non-Resource Conservation and Recovery Act [RCRA]) lead-impacted soil.

Soil samples to characterize the stockpiles will be collected based on the actual volumes of soil generated, and in accordance with landfill acceptance criteria. The classifications may be changed to reflect the stockpile sample analytical results.

SECTION 2 DOCUMENTATION AND RECORD KEEPING

This Transportation Plan supports proposed soil removal activities to be implemented by the General Contractor with oversight from the Environmental Consultant. The parties providing these roles have not been defined as of the date of this RAW. The Plan will ensure that the soil suspected to be classified a California-hazardous waste, is segregated from soil that is classified as a non-hazardous waste, and to track the segregated waste from existing stockpiles to the landfill.

An estimated soil volume of 226 cubic yard will be loaded from existing stockpiles and transported for off-site disposal. On-site loading will be dependent on landfill operating hours to make sure that the trucks can arrive before closing time.

The General Contractor will be responsible for profiling, manifesting, placement of truck tarps, and transporting the impacted soil to the appropriate disposal facility. Waste characterization, soil loading, dust suppression, truck decontamination, and traffic control (if necessary) will also be performed by the General Contractor. The soil to be removed contains elevated concentrations of metals (specifically arsenic and lead) and organochlorine pesticides (specifically chlordane and dieldrin).

SECTION 3 HEALTH & SAFETY

A Site-Specific Health and Safety Plan has been prepared for on-site personnel who may be exposed to contaminated soil. The Health and Safety Plan is included as a separate appendix to the RAW.

SECTION 4 DRIVERS

The General Contractor and their designated waste transporter will provide the necessary trucks to the project site each operating day for the duration of the transportation phase to complete the offsite removal and disposal of impacted soils. Waste transportation on the project is anticipated to occur on business days between the hours of approximately 7:00 AM to 5:00 PM. It is anticipated that trucks will be onsite for up to one hour for staging/loading and require up to one hour for offloading at the disposal facility.

SECTION 5 TRAINING

The waste transporter will ensure that all drivers staffed for this project have all of the necessary Department of Transportation training, licenses, and permits to complete the transportation phase of the project. Documentation will be provided by the waste transporters to LAUSD-Office of Environmental Health and Safety (OEHS) and the Environmental Consultant indicating that the truck drivers for the project have been recently tested for road and dumping procedures.

SECTION 6 SOIL LOADING

Waste soil will be loaded onto transport trailers using a loader or backhoe. During the loading activities, a water mist will be used to suppress dust. A designated, full-time flag person will direct truck traffic during entry and exit at the Site. Entry and exit points will be delineated to warn pedestrians of the truck traffic. A truck log will be maintained and will include the trailer number and company affiliation, the date and time that the truck leaves the Site, the approximate

volume of each load, and the hazardous or non-hazardous waste manifest number. In addition, materials will leave the Site with the appropriate paperwork (e.g., Bill of Lading or Uniform Hazardous Waste Manifest).

Heavy equipment operation will be restricted to the hours of 7:00 AM to 5:00 PM on weekdays and 8:00 AM to 5:00 PM on weekends. To the extent possible, truck traffic will be timed to avoid rush hour, with trucks scheduled to leave the Site between the hours of 8:00 AM and 3:00 PM.

SECTION 7 DESTINATION OF SOIL

The results of characterization of the soil stockpiles will indicate whether the stockpiled soils will be disposed of as non-hazardous, California non-RCRA hazardous, or RCRA hazardous. Samples collected for the Preliminary Environmental Assessment-Equivalent did not indicate RCRA hazardous waste concentrations. Based on the characterization results, a soil disposal facility will be selected by the General Contractor and submitted to LAUSD-OEHS for approval.

If the soil is categorized as non-hazardous waste, the following are examples of Class III facilities that may be used:

Chiquita Canyon Landfill
29201 Henry Mayo Drive
Castaic, California 91384
(661) 257-3655

Waste Management — Simi Valley Landfill
2801 N. Madera Road
Simi Valley, California 93065
(805) 579-7267

Soil samples analyses may indicate that the soil is California non-RCRA hazardous. The following are example facilities that may be used:

South Yuma County Landfill
19536 S. Avenue IE
Yuma, Arizona 85366
(928) 341-9300
EPA Id. No. AZR000506980

Clean Harbors — Buttonwillow
2500 W. Lokern Road
Buttonwillow, California 93206
(661) 762-6200
EPA Id. No. CAD980675276

SECTION 8 DRY TRUCK DECONTAMINATION

Transportation trailers or trucks will be manually dry brushed in the truck loading areas prior to leaving the work area, or as directed by the onsite personnel, to remove loose soil . As necessary, exterior contamination will be removed by dry brushing until bulk, visible contamination is removed. After the soil is loaded into the transport trucks, the soil will be covered with a tarp to ensure that no soil will spill from the trucks during transport to the disposal facility.

SECTION 9 DEPARTMENT OF TRANSPORTATION CERTIFICATIONS

The waste transporter will maintain all Department of Transportation certifications. The waste transporter will transport waste soils in accordance with all local, county, state and federal regulations (49 Code of Federal Regulations Parts 100 — 177).

SECTION 10 MANIFESTING

The General Contractor or their waste transporter will provide Uniform Hazardous Waste Manifests. If necessary, LAUSD-OEHS will use Environmental Protection Agency identification number 982022642 for the hazardous waste from the Site, and its designee will sign all manifests and/or bills of lading. For non-hazardous waste transport and disposal, a non-hazardous waste manifest, bill of lading, or generator-approved equivalent will be used. Each load transported from the Site will be manifested.

Each truck entering the disposal facility will have a manifest signed by landfill personnel and the appropriate copies archived at the facility. The generator's copies will be forwarded to the waste transporter with certified weight tickets and invoices.

All appropriate records that document transportation of the waste will be maintained onsite and provided to LAUSD, and the Environmental Consultant, including the following: manifests, bills of lading, weight tickets, waste analyses, or profile sheets, certifications of final treatment/disposal signed by the responsible disposal facility official, and land disposal notifications.

SECTION 11 TRAFFIC CONTROL

Due to the location of the Site in a low-traffic region, traffic control will be used, if necessary, at the ingress/egress and staging areas. Traffic control will consist of personnel with hand-held signs indicating slow/stop, and cones and delineators, as necessary, to route trucks through the staging and loading area, and then offsite. Trucks will be coordinated and routed in a manner that minimizes truck traffic on nearby residential streets. Track-out of dirt onto roadways will be minimized by implementing effective decontamination vehicle procedures.

SECTION 12 TRUCK TRANSPORTATION ROUTES

The General Contractor will instruct all drivers on the specific haul routes and alternate routes prior to commencing transport activities at the site. These will be established for other activities associated with the campus CMP. Before leaving the Site, each truck driver will be instructed to notify the Environmental Consultant. Each truck driver will be provided with the cellular phone number for the Environmental Consultant. It will be the responsibility of the Environmental Consultant to notify LAUSD-OEHS of any unforeseen incidents. In addition, there are call boxes located along the freeways that will be traveled to reach the disposal facilities. These call boxes are situated at roadside locations along the truck route to be used to report roadside incidents. Each truck driver will be instructed to report any roadside emergency using the call box system or cellular phone. In the event of an accidental release, the Highway Patrol and local emergency response personnel will be contacted.