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Preliminary Environmental Assessment Equivalent Report
Comprehensive Modernization Project
Venice High School

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List of Acronyms

4,4'-DDD	4,4'- dichlorodiphenyldichloroethane
4,4'-DDE	4,4'- dichlorodiphenyldichloroethylene
4,4'-DDT	4,4'-dichlorodiphenyltrichloroethane
AETL	American Environmental Testing Laboratory, Inc.
APN	Assessor Parcel Number
ASTM	American Society for Testing and Materials
bgs	below ground surface
CalEPA	California Environmental Protection Agency
CCR	California Code of Regulation
CDPH	California Department of Public Health
CFR	Code of Federal Regulations
CHHSL	California Human Health Screening Level
CMP	Comprehensive Modernization Project
COC	constituent of concern
COPC	constituent of potential concern
cy	cubic yards
DOGGR	Division of Oil, Gas and Geothermal Resources
DTSC	California Department of Toxic Substances Control
EDR	Environmental Data Resources
ELAP	Environmental Laboratory Accreditation Program
ESA	Environmental Site Assessment
ESL	Environmental Screening Level
FID	flame-ionization detector
HASP	Health and Safety Plan
HERO	DTSC Office of Human and Ecological Risk
HHSE	human health screening evaluation
HSO	Health and Safety Officer
IDW	investigation-derived waste
in. H_2O	inches water column
IQ	Intelligence Quotient
J&E	Johnson & Ettinger
LADBS	Los Angeles City Department of Building and Safety
LAUSD	Los Angeles Unified School District
LBP	lead-based paint
MDL	method detection limit
mg/kg	milligram/kilogram
mg/L	milligram/liter
ml/min	milliliter/minute
mph	miles per hour

List of Acronyms

msl	mean sea level
OCPs	organochlorine pesticides
OEHHA	Office of Environmental Health Hazard Assessment
OEHS	Office of Environmental Health and Safety
OSHA	Occupational Safety and Health Administration
OVA	organic vapor analyzer
PCBs	polychlorinated biphenyls
PCE	tetrachloroethene
PE	Professional Engineer
PEA	Preliminary Environmental (or Endangerment) Assessment
PPE	personal protection equipment
PQL	practical quantitation limit
PRG	preliminary remediation goal
QA/QC	quality assurance/quality control
RAW	Removal Action Workplan
REC	Recognized Environmental Condition
RSL	Regional Screening Level
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
Site	CMP portion of Venice High School
SL	Screening Level
SMP	Seismic Modernization Project
STLC	Soluble Threshold Limit Concentration
SWRCB	State Water Resources Control Board
TCLP	Toxicity Characteristic Leaching Procedure
TPH-g	total petroleum hydrocarbons in the gasoline range
TPH-d	total petroleum hydrocarbons in the diesel range
TPH-o	total petroleum hydrocarbons in the oil range
UCL	upper confidence limit
µg/dl	microgram/deciliter
µg/kg	microgram/kilogram
µg/L	microgram/liter
UN	United Nations
USA	Underground Service Alert
USEPA	United State Environmental Protection Agency
USGS	United States Geological Survey
VOCs	volatile organic compounds
WET	Waste Extraction Test

Certification

On behalf of the Los Angeles Unified School District, PlaceWorks has prepared this Preliminary Environmental Assessment (PEA) Equivalent Report for the Venice High School Comprehensive Modernization Project. The PEA Equivalent Report was prepared in a manner consistent with the level of care and skill ordinarily exercised by professional engineers, geologists, and environmental scientists, under the technical direction of the undersigned.

PlaceWorks:

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December 7, 2016

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December 7, 2016

Executive Summary

This document presents the results of a *Preliminary Environmental Assessment Equivalent* (PEA Equivalent) conducted in support of a Comprehensive Modernization Project (CMP) for the Los Angeles Unified School District's (LAUSD's) Venice High School ("Site"). Venice High School is located at 13000 W. Venice Boulevard, Los Angeles, California 90066. The CMP involves campus-wide upgrades of existing infrastructure and athletic fields as well as the construction of new classrooms, a gymnasium, and field bleachers. Several existing buildings and portable classroom units will be removed to make way for the Site improvements.

The PEA Equivalent was intended to assess environmental conditions within the areas targeted by the CMP prior to beginning construction. Features and activities of apparent environmental concern (i.e., "recognized environmental conditions") were identified in a site-wide Phase I Environmental Site Assessment (ESA) commissioned by the LAUSD. These included potential soil and soil gas impacts related to the operation of underground hydraulic lifts, an oil/water separator, and other historical activities that may have occurred within the shop area of the Site. In addition, the possible use of LBP and PCBs in existing buildings/ structures was investigated, as was the possible application of pesticides or herbicides that may have contained OCPs or arsenic. Although the available information indicates that methane and other hazardous oilfield gases are unlikely to be present beneath the Site at concentrations of concern, the LAUSD decided that they should be evaluated as a precaution due to the proximity of the high school to a Los Angeles City Department of Building and Safety (LADBS)-designated Methane Zone.

Based on the findings of the Phase I ESA, the LAUSD recommended that a PEA be performed equivalent to the process prescribed by the California Department of Toxic Substances Control (DTSC). The PEA Equivalent was conducted in accordance with relevant DTSC guidance, including the *PEA Guidance Manual* and the *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*. The field program consisted of the completion of 150 initial soil borings to a maximum depth of 20 feet bgs, 79 step-out borings to a maximum depth of 2.5 feet bgs, and the installation and sampling of soil gas probes at depths of 5 and 15 feet bgs at two locations. The soil samples were analyzed for lead, arsenic, OCPs, PCBs, TPH, VOCs and/or metals, depending on location and investigation purpose. The soil gas samples were analyzed for VOCs, methane, and hydrogen sulfide.

After evaluating the analytical results, PlaceWorks concludes the following with respect to conditions at the Site:

- Seven OCPs (i.e., chlordane, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, heptachlor, and heptachlor epoxide) were detected in one or more of the soil samples. The OCP concentrations were all below risk-based screening levels and do not pose a significant risk to human health or the environment.
- PCBs were not detected in any of the soil samples and, therefore, do not pose a significant risk to human health or the environment.
- TPH in gasoline, diesel, and oil carbon chain ranges were not detected in any of the soil samples and, therefore, do not pose a significant risk to human health or the environment.
- VOCs were not detected in any of the soil samples and, therefore, do not pose a significant risk to human health or the environment.
- Except for arsenic and lead, metals were all below risk-based screening levels and appear to be representative of naturally-occurring background concentrations.
- Arsenic was detected above its preliminary screening level of 12 mg/kg at fourteen locations, with a maximum reported concentration of 299 mg/kg. Step-out and step-down sampling was conducted around the fourteen locations in an effort to define the lateral and vertical extent of arsenic-impacted soil.
- Lead was detected above its preliminary screening level of 80 mg/kg at seven locations, with a maximum reported concentration of 336 mg/kg. Step-out and step-down sampling was conducted around six of the locations in an effort to define the lateral and vertical extent of lead-impacted soil. Step-out sampling was not conducted around one location within the metal shop building (B-141) after it was determined that this building would not be demolished. Soluble lead test results (TCLP and STLC) determined that at least a portion of the lead-impacted soil will require management as California non-RCRA hazardous waste, if removed.
- Three VOCs (i.e., tetrachloroethene, toluene, and xylenes) were detected at trace concentrations in one or more of the soil gas samples. The VOC concentrations were all below risk-based screening levels and do not pose a significant risk to human health or the environment.
- Methane and hydrogen sulfide were not detected in any of the soil gas samples and, therefore, do not pose a significant risk to human health or safety.

- Field procedures and laboratory data were evaluated to assure that data quality objectives were met and the data were suitable for their intended use. No significant quality assurance/quality control issues were identified.

- Based on the PEA objectives, the environmental quality goals of the LAUSD, and the results of this PEA field investigation, PlaceWorks has determined that elevated concentrations of arsenic and lead are present in Site soil that require a remedial response to ensure the health and safety of staff, students, and visitors to the existing high school. Arsenic- and lead-impacted soil has been identified at nineteen discrete locations, representing an estimated in-situ volume of 173.9 cubic yards.

PlaceWorks recommends that a Removal Action Workplan (RAW) be prepared to guide the excavation, transport, and off-site disposal of the arsenic- and lead-impacted soil. The RAW should also include procedures for confirmation soil sampling, dust suppression, air monitoring, worker health and safety, and data quality assurance. Once approved by the LAUSD, the RAW should be implemented in coordination with the CMP construction schedule and activities.

1. Introduction

This document presents the results of a *Preliminary Environmental Assessment Equivalent* (PEA Equivalent) conducted in support of a Comprehensive Modernization Project (CMP) for the Los Angeles Unified School District's (LAUSD's) Venice High School ("Site"). Venice High School is located at 13000 W. Venice Boulevard, Los Angeles, California 90066. The CMP involves campus-wide upgrades of existing infrastructure and athletic fields as well as the construction of new classrooms, a gymnasium, and field bleachers. Several existing buildings and portable classroom units will be removed to make way for the Site improvements. A figure that shows the areas of the high school subject to the CMP and describes the planned new construction and upgrades is provided in Appendix A.

The PEA Equivalent was intended to assess environmental conditions within the areas targeted by the CMP prior to beginning construction. Features and activities of apparent environmental concern (i.e., "recognized environmental conditions") were identified in a site-wide Phase I Environmental Site Assessment (ESA) commissioned by the LAUSD (AECOM, 2014). Based on the findings of the Phase I ESA, the LAUSD recommended that a PEA be performed equivalent to the process prescribed by the California Department of Toxic Substances Control (DTSC).

The PEA Equivalent was conducted in accordance with a workplan that consisted of a narrative scope of services, a sampling summary table, and three sample location figures (LAUSD, 2016). It was also consistent with relevant DTSC guidance, including the *PEA Guidance Manual* (DTSC, 2013b) and the *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* (DTSC, 2006). Field work was conducted in CMP areas that currently house fourteen portable classrooms, three shop buildings, a storage building, an attendance building, a boiler building, two gymnasiums, three field bleachers, athletic fields, play courts, and a parking lot. The field program included both soil and soil gas sampling components. Analytical results were assessed to determine whether chemical constituents were present at concentrations that could pose a potential health risk or hazard posed to construction workers and/or individuals that attend and work at the school. Based on the health risk analysis, recommendations were provided as to the need for further action.

1.1 PEA OBJECTIVES

The overall goal of the PEA process is to document Site conditions and to assess any potential human health risks if releases are identified during the course of the field investigation. The specific objectives for the current PEA are identified on the following page.

- Investigate recognized environmental conditions (RECs) that were identified in the Phase I ESA (AECOM, 2014) and that fall within the designated boundaries of the CMP.
- Establish, through a field sampling and analysis program, the nature and extent of any chemicals of potential concern (COPCs) that may be present in soil or soil gas within the CMP areas.
- Estimate the potential threat to public health and/or the environment posed by hazardous constituents, if any, through a screening-level human health risk evaluation that assumes a conservative residential land use scenario.
- Determine whether releases of hazardous materials or wastes have occurred that require further action in order to obtain approval for CMP construction to proceed. To the extent allowed by the analytical data, define the lateral and vertical extents of any areas of impacted soil or soil gas (i.e., having concentrations above risk-based screening levels) and estimate their associated volumes.

1.2 SCOPE OF WORK

The PEA involved the following scope of work:

- Preparation of a field work notice, in English and Spanish, which was posted on perimeter fences and delivered to parents of Venice High School students, surrounding residences and businesses, and key contacts.
- Preparation of a site-specific Health and Safety Plan.
- Contacting Underground Service Alert and checking all investigation locations for the presence of utilities or subsurface obstructions by geophysical means.
- Implementation of the PEA field program to assess environmental conditions at the Site, as follows:
  - Completion of 89 soil borings (B-1 to B-89) to a depth of 2.5 feet below ground surface (bgs) around school buildings and field bleachers to assess for potential impacts associated with the historical use of lead-based paint (LBP), termiticides, arsenical herbicides, and polychlorinated biphenyls (PCBs). Soil samples were analyzed for lead, arsenic, organochlorine pesticides (OCPs), and/or PCBs.
  - Completion of 49 soil borings (B-90 to B-138) to a depth of 2.5 feet bgs in athletic fields, hardcourts, parking lots, and other outdoor areas to assess for potential impacts associated with the historical use of LBP, OCPs, arsenical herbicides, and PCBs. Soil samples were analyzed for lead, arsenic, OCPs, and/or PCBs.

- Completion of 4 soil borings (B-139 to B-142) to a depth of 2.5 feet bgs inside the Shop 8-9 building (metal shop) to assess for potential impacts associated with historical activities conducted in this building. Soil samples were analyzed for total petroleum hydrocarbons-carbon chain range (TPH-cc), metals, volatile organic compounds (VOCs), and PCBs.
- Completion of 6 soil borings (B-143 to B-148) to a depth of 20 feet bgs inside the Shop 5-7 building (auto shop) to assess for potential impacts associated with hydraulic hoists observed in this building. Soil samples were analyzed for TPH-cc, metals, VOCs, and PCBs.
- Completion of 2 soil borings (B-149 and B-150) to a depth of 20 feet bgs outside the Shop 5-7 building (auto shop) to assess for potential impacts associated with a clarifier observed at this location. Soil samples were analyzed for TPH-cc, metals, VOCs, and PCBs.
- Installation of nested soil gas probes at two locations (SG-1 and SG-2) at depths of 5 and 15 feet bgs in the shop building courtyard to assess for potential solvent and fuel spills and naturally occurring oilfield gases. Soil gas samples were analyzed for VOCs, methane, and hydrogen sulfide.

- Evaluation of the resultant data by means of a screening level human health screening evaluation to determine if significant impacts have occurred.
- Preparation of this PEA Equivalent Report.

1.3 PEA EQUIVALENT REPORT FORMAT

This PEA Equivalent Report is organized in general accordance with the format presented in Chapter 3 of the DTSC's *PEA Guidance Manual* (DTSC, 2013b), as follows:

- Section 1 introduces the school project, identifies the PEA objectives, and outlines the PEA scope of work
- Section 2 describes the Site
- Section 3 provides background information and summarizes previous environmental investigations conducted for the Site
- Section 4 describes the environmental setting as it relates to various potential contaminant exposure pathways (i.e., soil, groundwater, surface water, and air)
- Section 5 defines the apparent problem that prompted the need for the PEA

- Section 6 introduces the preliminary screening levels that were used to evaluate the data and describes the PEA field activities
- Section 7 presents the analytical results, discusses their significance, and defines soil removal areas for locations where impacted soil was discovered
- Section 8 describes the field activities that varied from those outlined in the PEA workplan
- Section 9 provides a human health screening evaluation that explains the potential health risks and hazards associated with the chemicals of potential concern detected at the Site
- Section 10 presents conclusions and recommendations based on an evaluation of the data collected during the PEA
- Section 11 lists the references cited in the PEA Equivalent Report.

Copies of laboratory reports and other information relevant to the performance of the PEA are provided in appendices to the report.

2. Site Description

The LAUSD's Venice High School is located at 13000 W. Venice Boulevard, Los Angeles, California 90066 (Figure 1). The high school occupies one parcel of land approximately 28.9 acres in size and identified as Los Angeles County Assessor Parcel Number (APN) 4236-011-900. For purposes of this PEA, the "Site" is considered to be areas of Venice High School campus subject to demolition and construction activities during the upcoming CMP. These areas are shown on the CMP master plan provided in Appendix A.

2.1 SITE NAME

The Site is identified by the LAUSD as the CMP portion of Venice High School.

2.2 SITE OWNER

The Site is currently owned by the Los Angeles Unified School District.

2.3 SITE ADDRESS AND CURRENT OCCUPANTS

The Site is located at 13000 W. Venice Boulevard, Los Angeles, California 90066. It is currently occupied by Venice High School and has been since about 1913.

2.4 DESIGNATED CONTACT PERSON

Mr. Dane Robinson, Site Assessment Project Manager, is the designated manager for this project. Contact information for general inquiries regarding the project should be directed to Mr. Patrick Schanen, Environmental Health Manager, as follows:

LOS ANGELES UNIFIED SCHOOL DISTRICT
Office of Environmental Health and Safety
333 South Beaudry Avenue, 21st Floor
Los Angeles, California 90017
Telephone: (213) 241-3356
Fax: (213) 241-6821.

2.5 OTHER SITE NAMES

Venice High School was originally known as Venice Union Polytechnic High School. The LAUSD's Phoenix Continuation High School occupies the southeast corner of the high school and uses the address of 12971 West Zanja Street. Venice High School Indoor Pool, which is jointly operated by the

LAUSD and the City of Los Angeles Department of Recreation and Parks, occupies the southwest corner of the high school and uses the address of 2490 South Walgrove Avenue.

2.6 REGULATORY AGENCY IDENTIFICATION NUMBERS

Based on information obtained during the Phase I ESA (AECOM, 2014), Venice High School and Phoenix Continuation High School appear to have been issued one or more generator identification numbers for disposal of hazardous wastes between at least 1987-2012. The South Coast Air Quality Management District (SCAQMD) issued three permits to Venice High School for the operation of boilers under 2 million BTUs in 2009. The Site is not listed in either the DTSC's Envirostor or State Water Resources Control Board's (SWRCB's) GeoTracker databases.

2.7 SITE ZONING AND LAND USE

According to the Los Angeles County Assessor, the parcel is zoned [Q]PF-1XL for Public Facilities.

2.8 GEOGRAPHICAL COORDINATES

The Site and vicinity are depicted on the 1973 United States Geological Survey (USGS) *Venice, California 7.5 Minute Quadrangle* at an approximate elevation of 35 feet above mean sea level (msl). The approximate geographic coordinates for the Site are 33^{o} 59' 49.56" North Latitude and 118^{o} 26' 35.88" West Longitude.

2.9 SITE MAPS AND PHOTOGRAPHS

CMP project boundaries are shown on a master plan figure included in Appendix A. Site location and vicinity maps are provided as Figures 1 and 2, respectively. School buildings and outdoor areas investigated during the PEA are shown on Figures 3 to 6. Relatively recent photographs of the high school were provided in the Phase I ESA Report (AECOM, 2014). Representative photographs of PEA field activities are provided in Appendix B herein.

3. Background

Information regarding historical and current uses of the Site, surrounding land uses, and previous Site environmental investigations is provided in the following sections.

3.1 CURRENT SITE USES

The Site is developed with buildings associated with Venice High School (Figure 2). Features include permanent and portable classroom buildings, administration buildings, auditorium, gymnasiums (two), shop buildings, boiler house, cafeteria, student store, and maintenance/storage buildings. A building at the southwest corner of the campus houses an indoor swimming pool that is operated in cooperation with the City of Los Angeles Recreation and Parks Department. Phoenix Continuation High School operates out of a building located at the southeast corner of the campus. The remainder of the property is developed with sports fields, a running track, tennis courts, parking lots, and a garden area at the northwest corner of the campus.

3.2 HISTORICAL SITE USES

Venice High School was originally known as Venice Union Polytechnic High School. The first school buildings were constructed sometime around 1913. The original buildings suffered extensive damage from the 1933 Long Beach earthquake and new buildings were constructed in 1935 and 1936, many of which are still in use. The garden at the northwest corner of the campus has been active since before 1970.

3.3 SURROUNDING PROPERTY LAND USES

Venice High School is bordered by W. Venice Boulevard to the northwest, S. Walgrove Avenue to the southwest, W. Zanja Street to the southeast, and residential properties fronting Lyceum Avenue to the northeast (Figure 2). A commercial building with a dog groomer and ballet school as tenants adjoins the northeast corner of the campus. Properties across bordering streets are exclusively residential, except for a few commercial buildings across from the north end of the campus along W. Venice Boulevard.

3.4 PRIOR SITE INVESTIGATIONS

3.4.1 Phase I ESA (2014)

In 2014, the LAUSD commissioned a Phase I ESA for the entire high school campus, including CMP areas, in anticipation of planned modernization projects (AECOM, 2014). The Phase I ESA was performed in general conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM Standard E 1527-13). The purposes of the Phase I ESA were described as follows:

- To identify historical and/or current activities that resulted in, or potentially could have resulted in, environmental impairment to the Site through the release of hazardous substances (including petroleum compounds) to soil or groundwater (referred to as "recognized environmental conditions," or RECs).
- To acquire information regarding site screening issues that are of specific interest to the LAUSD in the remodeling of existing school sites, including geologic hazards and the proximity of the Site to potentially hazardous activities (e.g., fuel pipelines, airports, railroads, high voltage power transmission lines, major roadways, etc.).

The Phase I ESA included an inspection of the Site and surrounding area, acquisition and evaluation of a standard environmental database search report from Environmental Data Resources (EDR), agency file reviews, historical research (using Sanborn fire insurance maps, aerial photographs, topographic maps, city directories, etc.), and interviews with personnel knowledgeable about the school and its history. The following significant limitations and assumptions were noted in the report:

- Site access was limited due to the presence of students. It was assumed that areas not accessed contained only small amounts of hazardous materials such as cleaning supplies, art supplies, and laboratory chemicals.
- LAUSD did not provide any agency documents, previous environmental reports, or site plans or drawings. It was assumed that LAUSD would have provided relevant documents, if such were available.
- The evaluation of indoor air vapor intrusion as a potential environmental concern was not included in the assessment.
- The LAUSD indicated that the assessment was to include the entire school property, with a focus on the courtyard area, which included the cafeteria and shop building areas (i.e., automotive, printing, and former mechanical shop areas).

The Phase I ESA recommended that a PEA be conducted to investigate the following campus-wide RECs:

1. Two underground hydraulic lifts were observed in the automotive repair shop. These lifts contain hydraulic oil. Mr. Frank Nunez, Assistant Principal of Venice High School, indicated that there have been some problems with leaks from these lifts in the past, but could not provide any

additional information or details. There is a potential for leaking hydraulic oil to have impacted soil in the area of these lifts.

2. An oil/water separator is located in the shop yard area and is connected to floor drains located in the automotive repair shop. Mr. Nunez indicated that this oil/water separator is serviced on a regular basis by the LAUSD. There is a potential for impacts to the subsurface due to leakage from this oil/water separator.
3. The shop yard area was formerly occupied by a shop building that included an electrical shop and auto repair shop. There is a potential that underground storage tanks or other structures associated with these shops remain under the asphalt paved yard area.
4. Due to the age of the structures on-site, lead, arsenic, and organochlorine pesticides in soil testing is recommended in accordance with the DTSC's *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*, revised June 9, 2006.
5. There is a potential for arsenates in shallow soils beneath the asphalt pavement of the Site from application of weed killing arsenic bearing herbicides based upon conditions found at similar LAUSD school sites.
6. The western corner of the Site is currently used as a garden and appears to have been since before 1970. Organochlorine pesticides may have used in this area.
7. Due to their age, many of the buildings located on the Site may contain asbestos-containing materials (ACM) and lead based paint (LBP).

The current PEA investigated only REC Nos. 1 to 5, which are associated with buildings and areas that will be addressed by the CMP. REC No. 6 will be addressed at a later date, if necessary, and REC No. 7 will be addressed at the time of building demolition.

3.4.2 Seismic Modernization Project PEA Equivalent (2016)

In 2016, the LAUSD commissioned a PEA Equivalent for a small area of the school campus that was scheduled for seismic upgrades as part of the overall modernization program (Ninyo & Moore, 2016). Designated as the Seismic Modernization Project (SMP), it included the Lunch Pavilion and five smaller buildings to its north and west (see Ninyo & Moore Figure 2 in Appendix A). One of the buildings, identified as the Storage Building, was initially included in the SMP PEA, but was removed from the project before sampling could be completed. The Storage Building was subsequently included in the CMP and further investigated as a component of the current PEA (see Figure 5).

The objective of the SMP PEA Equivalent was to evaluate REC Nos. 4 and 5 (see Section 3.4.1) as they related to the SMP buildings. Field work was performed in accordance with a *PEA Equivalent Workplan* (Ninyo & Moore, 2015), as modified based on subsequent discussions with the LAUSD. The investigation consisted of the completion of 23 initial soil borings around the perimeters of the SMP buildings (SMP-B1 to SMP-B19 and W-B1 to W-B4), followed by 64 additional step-out borings to further evaluate locations where elevated arsenic concentrations (i.e., >12 mg/kg) were identified. Boring locations are shown on Ninyo & Moore Figure 2 in Appendix A. The soil borings were completed to a maximum depth of 5 feet bgs and depth-discrete soil samples were collected and analyzed variably for arsenic (USEPA Method 6020), lead (USEPA Method 6010B and x-ray fluorescence [XRF]), and OCPs (USEPA Method 8081A).

Lead concentrations in the initial borings ranged from 1 to 91 mg/kg when analyzed in the field by XRF. Ten percent of the total soil samples having the highest lead concentrations were then submitted to a stationary laboratory for analysis of lead by USEPA Method 6010B. Lead concentrations in the confirmation samples ranged from 6.1 to 69 mg/kg. Because the stationary laboratory results were considered to be more reliable than the XRF results and all of the lead concentrations in the laboratory samples were below the DTSC-prescribed screening level of 80 mg/kg for school sites, the lead concentrations were judged to not be of health risk concern. Four of the soil samples with lead concentrations greater than 50 mg/kg were further analyzed for their soluble lead content using the California Soluble Threshold Limit Concentration (STLC) test and/or the USEPA Waste Extraction Test (WET) procedure. Because all of the soluble lead concentrations were less than 5 mg/L, the tested soil would be deemed non-hazardous for waste disposal purposes if it were removed.

The soil samples analyzed for OCPs were composited prior to analysis (two to four samples per composite). OCPs were not detected above the laboratory reporting limits in the eight composite samples analyzed.

Arsenic concentrations in the initial borings ranged from 2.5 to 60 mg/kg and exceeded the DTSC screening level of 12 mg/kg in seven of the soil samples analyzed. Three rounds of step-out sampling were conducted to delineate the lateral and vertical extents of the elevated arsenic concentrations, during which time arsenic concentrations as high as 100 mg/kg were detected. The *PEA Equivalent Report* concluded that the arsenic-impacted soil was non-hazardous and posed no health risk to the students, faculty and staff at the school because it was under pavement where it would not be directly contacted. The report recommended that a *Removal Action Workplan* (RAW) be prepared to remove arsenic-impacted soil within eleven defined areas (Areas A to K) to a maximum depth of 4 feet bgs. The volume of impacted soil to be removed was estimated to be approximately 71.7 cubic yards.

As previously mentioned, the SMP PEA Equivalent investigation started, but did not complete, soil sampling around the perimeter of the Storage Building. Because this building was subsequently included in the CMP, the analytical data from the SMP PEA has been incorporated in the current PEA and the sampling around this building was not repeated. SMP PEA sampling locations around the Storage Building are shown on Figure 7. As shown on this figure, the north, east and south sides of the building were investigated during the SMP PEA with initial borings W-B1 to W-B4 and ten step-out borings. To complete the assessment of the Storage Building, the west side of the building was investigated by the addition of boring B-46 during the CMP PEA, and one step-out boring was added south of boring W-B4.

SMP PEA analytical results for the Storage Building are included in Table 3 (arsenic and lead) and Table 4 (OCPs), along with results for the current PEA. As indicated in these tables, OCPs were not detected in the composite sample analyzed for OCPs, which was created by combining the 0.5 foot sample from each of the four initial boring locations. Lead was detected at a maximum concentration of 69 mg/kg, which is below the screening level used for this PEA (see Section 6.2.2). Arsenic concentrations in the 0.5 foot samples from W-B1 (24 mg/kg) and W-B4 (12 mg/kg) equaled or exceeded the DTSC screening level of 12 mg/kg and, therefore, were further assessed through one round of step-out sampling. Arsenic was detected at concentrations up to 100 mg/kg in the step-out samples, but the lateral extents of arsenic-impacted soil were not defined at either location before further sampling was halted. Additional step-out sampling conducted during the current PEA completed the delineation of arsenic-impacted soil around the Storage Building (see Section 7.3.1).

4. Environmental Setting

Much of the information presented in this section is summarized from the *Phase I ESA Report* previously prepared for the Site (AECOM, 2014). Knowledge of the Site environmental setting is essential for evaluating the actual or predicted migration of contaminants through soil, water, and air pathways.

4.1 FACTORS RELATED TO SOIL EXPOSURE PATHWAYS

Factors related to contaminant transport via soil pathways are the local topography, which controls surface water run-on and run-off, and soil type and geology, which control infiltration and vapor phase migration within the unsaturated (i.e., vadose) zone. Natural and manmade barriers/controls can minimize or prevent contaminant movement into and within the soil column. In some instances, they also provide protection against direct contact with hazardous substances that might be present at a site.

4.1.1 Topography

The Site is located within the U.S. Geological Survey, 7.5-Minute Topographic Map -- Venice, California Quadrangle. The elevation of the Site is shown as approximately 35 feet above msl on this map. The topographic gradient in the vicinity of the Site slopes gently toward the southwest.

4.1.2 Geology

The Site is located within the southwestern block of the Los Angeles Basin, also referred to as the Los Angeles Depositional Basin, between the Peninsular Ranges and Transverse Ranges geomorphic provinces of California. The basin is known for its active tectonics, structural complexity, and abundant oil production. The southwestern block of the Los Angeles Basin is defined as the area between the Newport-Inglewood belt of hills and the Pacific Ocean, extending from along the coastal margin of the basin from the Santa Monica Mountains to Long Beach. Topographically, the block is characterized by a gentle west-sloping plain and coastal sand dunes, bounded by prominent topographic features, such as the Santa Monica Mountains to the north, the Newport-Inglewood Hills to the east, and the Palos Verdes Hills on the south. Stratigraphically, the Los Angeles Basin is underlain by several hundred feet of unconsolidated Holocene alluvium, which locally consists of Los Angeles River floodplain and alluvial fan deposits of silt, sand, and gravel from the hills and mountain ranges to the north. Beneath the alluvial deposits are consolidated sedimentary strata of the Late Miocene Puente or Modelo Formations (CDWR, 1961).

A northwest structural trend is evident in many folding and faulting features of the regional geology, characteristic of the Peninsular Ranges geomorphic province. Near the Site, these include the Newport-

Inglewood and Santa Monica Fault Zones. The Santa Monica Fault, which extends approximately 40 kilometers through the Los Angeles region and offshore along the Malibu coast, is part of a system of west-trending reverse, oblique-slip, and left-lateral strike-slip faults that extends along the southern edge of the Transverse Ranges. The Santa Monica fault extends east-west along the southern edge of the Santa Monica Mountains, the southernmost of the Transvers Ranges (Yerkes et. al., 1997).

During the SMP PEA (Ninyo & Moore, 2016), soils beneath the Site were described as fill and alluvial material consisting of silty sand and silty clay to the total depth of 5 feet bgs explored. Soils encountered during the current PEA were observed to consist of artificial fill to a depth of approximately 3 feet bgs, moderate brown clayey sand between 3-10 feet bgs, light to medium silty sand between 10-15 feet bgs, and light brown sand between 15-20 feet bgs. No odors, staining, or other evidence of contamination were observed by the field geologists.

4.1.3 Oil Fields and Natural Gas

Maps prepared by the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) were reviewed to determine whether petroleum exploration and/or production have occurred on or near the Site. According to DOGGR District 1, Map 117, the Site is not located within a designated oil or gas field. The nearest oil and gas field, the Playa del Rey Oilfield, is located approximately 1 mile south of the Site. The same map shows the nearest oil and gas wells to be located approximately 0.5 mile to the northeast (Chevron "Texam" 1) and 0.5 mile to the southwest (Marathon Oil Company 1). Both of these oil wells have been plugged and abandoned.

The Site is not located in a Methane Zone or Methane Buffer Zone, as designated by the City of Los Angeles Department of Building and Safety (LADBS). Due to the fact that the Site is not located near a known landfill or within the vicinity of oil production activities, it is unlikely that elevated concentrations of methane or hazardous oilfield gases would be present beneath the Site. However, as a precaution, the current PEA included the analysis of soil gas samples for methane and hydrogen sulfide (see Section 5).

4.1.4 Visual Evidence of Releases to the Environment

No evidence of environmental releases was reported when the Site was inspected during the Phase I ESA (AECOM, 2014). At that time, hazardous materials were observed in the automotive repair shop (petroleum products and cleaners) and printing shop (paints, inks, and cleaners). The hazardous materials were described as being properly stored with little to no staining observed in the surrounding areas. Two 55-gallon drums of waste oil were stored on secondary containment pallets within and outside the automotive repair shop and no leakage or staining was noted. The likelihood of significant hazardous materials impacts at the Site was judged to be "low."

4.1.5 Site Accessibility and Controls

Venice High School is operated as an “open campus,” meaning that visitors to the Site can enter the campus from W. Venice Boulevard without encountering any security controls. Although the school buildings and some local areas are secured with internal fencing and locks, individuals can walk around most campus areas during weekends and non-school hours. During the PEA field investigation, pedestrian traffic was light but occasionally included a local resident or individuals availing themselves of the gymnasiums, swimming pool, and athletic track. A farmers market was also held on campus during one of the weekend workdays.

The PEA project field manager and subcontractors were instructed to be vigilant as to the presence of occasional visitors and to prevent them from entering work areas when encountered. All work areas and drums of investigation-derived waste were visually inspected and secured at the end of the work day to ensure that students, staff, and visitors would not be exposed to any potential hazards during non-investigation hours.

4.1.6 Proximity to Nearby Receptors

Residential homes and apartment border the Site on all four sides and the Site itself is developed with a public high school. The PEA field investigation was conducted with consideration for these nearby sensitive receptors and public notices regarding the planned activities were distributed to parents of the high school students and local residents prior to beginning field work (see Section 6.3).

The Site and surrounding area do not support natural vegetation or provide native wildlife or habitat and ecologically sensitive species are not known to not exist within 1 mile of the Site. Based on review of area maps, the nearest location of ecological interest is the Ballona Wetlands Ecological Reserve, which is located approximately 1.5 miles south of the Site.

4.2 FACTORS RELATED TO WATER PATHWAYS

Factors related to water pathways include the local hydrogeology, which defines the movement of contaminants within groundwater, and nearby surface waters, which can be impacted by runoff or flooding from a site.

4.2.1 Groundwater

The Site is located within the Santa Monica Sub-basin of the Coastal Plain of Los Angeles County, often referred to as the Santa Monica Basin, which is bounded on the south by the Ballona Escarpment, on the east by the Newport-Inglewood Fault Zone, on the west by the Pacific Ocean, and on the north by the consolidated rocks of the Santa Monica Mountains. The principal water-bearing deposits of the Santa Monica Basin include unconsolidated and semi-consolidated marine and continental alluvial sediments of Holocene, Pleistocene, and Pliocene ages. Further subdivision of the Santa Monica Basin includes the Charnock Sub-basin, significant portions of which are located southwest of the Site on the opposite side of the Overland Avenue Fault.

Groundwater within the Santa Monica Basin generally flows from north to south and west, with pumping and flow to the Santa Monica Bay as the main discharge mechanisms for water in the basin. The primary recharge occurs from the average 14 to 17 inches of rain that fall annually on the ground surface in the area and in the tributary canyons of the Santa Monica Mountains to the north.

Groundwater information specific to the Site is not available, but groundwater was not encountered to the total depth explored during the current PEA (i.e., 20 feet bgs). According to information obtained from the SWRCB's GeoTracker website, uppermost groundwater is present at depths of approximately 20 feet bgs and flows in a southwesterly direction at locations approximately 0.5 mile west-southwest of the Site (SGI, 2009). According to the Los Angeles County Department of Public Works website, the depth to groundwater is about 9 feet bgs at locations approximately 0.75 mile south-southwest of the Site (AECOM, 2014).

4.2.2 Surface Water

The surface water body nearest to the Site is Marina del Rey, which is located approximately 1 mile to the south. Stormwater drains as sheet flow to adjacent streets, where it is directed by curb and gutter systems to the City-maintained storm sewer system.

4.3 FACTORS RELATED TO AIR PATHWAYS

Climate within the Los Angeles Basin is influenced primarily by terrain and geographic location. For example, summer temperatures at the Los Angeles Civic Center average about 72°F, while cities relatively short distances to the north and east record average summer temperatures well above 90°F. The relatively close proximity to the ocean tends to moderate air temperatures, especially near the coast. Winter temperatures at the Los Angeles Civic Center average about 58°F.

The Los Angeles Basin is characterized as a semi-arid climatic region with an average annual rainfall of 14 to 18 inches. Most of the rainfall occurs during the months of December through March, typically associated with extra tropical cyclones of North Pacific origin. While precipitation during summer months does occur, it is infrequent. Rainless periods of several months are common in the Los Angeles area.

Wind speed and wind direction patterns in the Los Angeles Basin are dominated by diurnal daytime onshore flow and nighttime offshore flow. However, frontal storms and Santa Ana flow episodes frequently tend to break the diurnal onshore/offshore wind pattern cycle during the period of September through March. Overall, the basin experiences light, average wind speeds with little seasonal variation. A wind rose map prepared for South Coast Air Quality Management District (SCAQMD) West Los Angeles Station #52158 indicates that prevailing winds in the vicinity of the Site are generally from the southwest and typically average 5.4 miles per hour (mph) or less (CARB, 2003).

5. Apparent Problem

The CMP PEA field investigation was intended to evaluate certain RECs identified during the Phase I ESA for the Site, as described below:

- Two underground hydraulic lifts were observed in the automotive repair shop. These lifts contain hydraulic oil. Mr. Frank Nunez, Assistant Principal of Venice High School, indicated that there have been some problems with leaks from these lifts in the past, but could not provide any additional information or details. There is a potential for leaking hydraulic oil to have impacted soil in the area of these lifts.

- An oil/water separator is located in the shop yard area and is connected to floor drains located in the automotive repair shop. Mr. Nunez indicated that this oil/water separator is serviced on a regular basis by the LAUSD. There is a potential for impacts to the subsurface due to leakage from this oil/water separator.

- The shop yard area was formerly occupied by a shop building that included an electrical shop and auto repair shop. There is a potential that underground storage tanks or other structures associated with these shops remain under the asphalt paved yard area.

- Due to the age of the structures on-site, lead, arsenic, and organochlorine pesticides in soil testing is recommended in accordance with the DTSC's *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*, revised June 9, 2006.[1]

- There is a potential for arsenates in shallow soils beneath the asphalt pavement of the Site from application of weed killing arsenic bearing herbicides based upon conditions found at similar LAUSD school sites.

The available information indicates that methane and other hazardous oilfield gases are unlikely to be present beneath the Site at concentrations of concern (see Section 4.1.3). Nevertheless, the LAUSD decided that they should be evaluated as a precaution due to the proximity of the high school to the LADBS-designated Methane Zone associated with the Playa del Rey Oilfield and Playa Vista development,

[1] Recent experience at other school sites has prompted the DTSC to identify the possible presence of PCBs in historical building materials as a recognized environmental condition. In response, the PEA workplan required that 10% of the shallow soil samples collected during the field program be analyzed for PCBs.

the boundaries of which begin approximately 0.3 mile south of the Site. Accordingly, soil gas samples collected during the PEA were also analyzed for methane and hydrogen sulfide.

6. Sampling Program

The following sections describe the sampling strategy, investigative methods and procedures, sample handling, decontamination procedures, and management of investigation-derived waste for the PEA field investigation. The PEA investigation was conducted under the direct supervision of the California licensed Professional Engineer whose certification and signature appear at the beginning of this report. Fieldwork was conducted over the weekends of October 1-2, October 8-9, and November 5-6, 2016. Representative photographs of various field activities are provided in Appendix B.

Site access and notification of school administrative personnel were coordinated with the LAUSD-OEHS Project Manager, the LAUSD Facilities Complex Plant Manager, and the school Plant Manager. Field services were supported by Southwest Geophysics, Inc. (utility clearance), InterPhase Environmental, Inc. (drilling and soil gas probe installation), and Jones Environmental (soil gas sample collection).

6.1 SAMPLING STRATEGY AND RATIONALE

The PEA field program involved soil and soil gas sampling to investigate the RECs identified in Section 5. Sample locations, sample depths, analytical parameters, and sampling rationale are described in Table 1 and summarized below; sample locations are shown on Figures 3 to 6:

- LBP, OCPs, and PCBs Potentially Associated with Existing and Historical Buildings – A total of 138 soil borings (B-1 to B-138) were completed around the perimeters of existing buildings and within open areas of the campus to assess for potential impacts associated with the possible use of LBP, OCPs, and/or PCBs in existing or historical buildings. The borings were advanced to a total depth of 2.5 feet bgs. Soil samples were collected from depths of 0.5, 1.5, and 2.5 feet bgs and either archived or analyzed for lead, OCPs, and PCBs. Sampling and analysis was performed in general accordance with DTSC guidance (2006).

- Arsenical Herbicides Potentially Applied at LAUSD School Sites – All of the soil samples collected from the 138 borings described above were also analyzed for arsenic to assess for potential impacts associated with the possible use of arsenical herbicides for weed suppression. Such impacts have been found at other LAUSD schools of similar age.

- Metal Shop – Four borings (B-139 to B-142) were completed within the metal shop portion of the Shop 8-9 building to assess for possible historical releases. The borings were advanced to a total depth of 2.5 feet bgs. Soil samples were collected from depths of 0.5, 1.5, and 2.5 feet bgs and either archived or analyzed for TPH-cc, Title 22 metals, VOCs, and PCBs.

- Automotive Repair Shop Hydraulic Lifts – Six borings (B-143 to B148) were completed within the automotive repair shop portion of the Shop 5-7 building to assess for possible historical releases from existing hydraulic lifts. The borings were advanced to a total depth of 20 feet bgs. Soil samples were collected from depths of 5, 10, 15, and 20 feet bgs and either archived or analyzed for TPH-cc, Title 22 metals, VOCs, and PCBs.

- Clarifier Outside Shop 5-7 – Two borings (B-149 and B-150) were completed next to an existing clarifier outside the northeast corner of the Shop 5-7 building to assess for possible releases. The borings were advanced to a total depth of 20 feet bgs. Soil samples were collected from depths of 5, 10, 15, and 20 feet bgs and either archived or analyzed for TPH-cc, Title 22 metals, VOCs, and PCBs.

- General Shop Area -- Two soil gas probes (SG-1 and SG-2) were installed in the courtyard outside the school shop buildings to assess for possible historical solvent or fuel releases and to determine if hazardous oilfield gases are present beneath the Site. Soil gas probes were installed at depths of 5 and 15 feet bgs at each location. Soil gas samples were collected and analyzed for VOCs, methane, and hydrogen sulfide.

- Step-Out/Step-Down Sampling – Upon review of the analytical results for the initial soil borings, it was determined that arsenic exceeded its preliminary screening level of 12 mg/kg at fourteen locations, while lead exceeded its preliminary screening level of 80 mg/kg at six locations. Step-out and step-down sampling was conducted in the vicinity of these locations in an effort to delineate the lateral and vertical extents of impacted soil.

6.2 PRELIMINARY SCREENING LEVELS

Analytical results for the soil and soil gas samples were compared with preliminary screening levels to determine if the analyte represented a constituent of potential concern (COPC) at the Site. Preliminary screening levels used for the various chemical constituents represented by the laboratory test methods are described in the following sections.

6.2.1 Arsenic

Preliminary Screening Level: 12 mg/kg

Arsenic has proven problematic in the evaluation of school sites, since the risk-based soil concentration of approximately 0.03 mg/kg is nearly always below the concentrations detected at a site. Therefore, the DTSC conducted a statistical evaluation of nineteen LAUSD school sites and five southern California counties to determine the level of arsenic that is representative of background concentrations (DTSC, 2008). The term “background” collectively referred to both naturally-occurring and anthropogenic sources of arsenic in shallow soil. The study determined that an arsenic concentration of 1.5 mg/kg most likely represents the upper bound concentration of naturally-occurring arsenic, while a concentration of

12 mg/kg represents the upper bound concentration of naturally-occurring plus anthropogenic arsenic. Based on this study, the DTSC currently uses an arsenic concentration of 12 mg/kg as a screening level for new school sites.

6.2.2 Lead

Preliminary Screening Level: 80 mg/kg

Adverse health effects associated with exposure to lead have been correlated with concentrations of lead in whole blood, rather than with intake of lead by an individual. The US Centers for Disease Control considers a blood lead level of 10 micrograms/deciliter (µg/dl) to be cause for concern. The DTSC used this criterion for toxicity evaluations until 2007, when the California Environmental Protection Agency (CalEPA) Office of Environmental Health Hazard Assessment (OEHHA) developed a new criterion based on a source-specific “benchmark change” of 1 µg/dl, which is the estimated incremental increase in children’s blood lead that would reduce their Intelligence Quotient (IQ) by up to 1 point. Using this new approach, CalEPA established a preliminary remediation goal (action level) of 80 mg/kg for lead in soil (CalEPA, 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 DTSC Office of Human and Ecological Risk (HERO) has implemented the risk-based soil concentration as a residential land use scenario exposure point concentration, calculated as the 95 percent upper confidence limit of the arithmetic mean (95% UCL) of 80 mg/kg or less soil lead (DTSC, 2013a). With regard to the assessment of lead risk, if sufficient data are available, HERO recommends calculating the 95% UCL lead concentration for each exposure area. If individual samples exceed 80 mg/kg, the exposure would be still be acceptable as long as the 95% UCL is below 80 mg/kg and hot spots or data outliers are not present.

6.2.3 Organochlorine Pesticides

Preliminary Screening Level: (USEPA Regional Screening Levels; refer to table below)

Until recently, the DTSC recommended that analytical data for OCPs be compared to risk-based California Human Health Screening Levels (CHHSLs) for soil under a residential land use scenario (DTSC, 2006). However, HERO no longer recommends the use of CHHSLs for toxicity screening, because they have not been updated regularly and are not available for many chemicals. Instead, the DTSC now uses the latest USEPA Regional Screening Levels (RSLs),[2] as modified by recent guidance (DTSC, 2013a).

An abbreviated list of the most common OCPs used to control termites is provided in the following table. Both CHHSLs and RSLs are provided for each OCP for comparative purposes. In general, sites with OCP

[2] RSLs were formerly known as Preliminary Remediation Goals (PRGs).

concentrations below the screening values will require no further action, while those with concentrations at or above the screening values will require an additional response (DTSC, 2006).

Preliminary Screening Levels for Common OCPs

OCP	CHHSL (µg/kg)	RSL (µg/kg)
Aldrin	33	39
Gamma-BHC (Lindane)	500	570
Chlordane (all forms)	430	1,700
4,4’-DDD	2,300	2,300
4,4’-DDE	1,600	2,000
4,4’-DDT	1,600	1,900
Dieldrin	35	34
Heptachlor	130	130
Heptachlor Epoxide	NA	70

µg/kg = micrograms per kilogram
CHHSL = California Human Health Screening Level (residential exposure scenario)
RSL = USEPA Regional Screening Level (residential exposure scenario) (May 2016)
NA = not available

6.2.4 Polychlorinated Biphenyls

Preliminary Screening Level: 300 µg/kg

The CHHSL for PCBs in soil for a residential land use scenario is 89 µg/kg, while the current USEPA RSL is 240 µg/kg. However, the DTSC has established a screening level of 300 µg/kg for school sites under the assumption that lower concentrations cannot be routinely quantified through laboratory analysis (DTSC, 2006). A PCB concentration of 300 µg/kg corresponds to an approximate incremental cancer risk of 3.4 x 10^{-6} (DTSC, 2006). According to the DTSC, the maximum concentration of each PCB Aroclor detected in soil should be compared to the screening value of 300 µg/kg to determine whether or not further action is required.

6.2.5 Total Petroleum Hydrocarbons

Preliminary Screening Level: (San Francisco Bay and Los Angeles RWQCB Screening Levels; refer to table below)

Concentrations of TPH concentrations in the gasoline, diesel and oil ranges will be compared to San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) and Los Angeles RWQCB screening levels developed for the protection of human health (residential exposure scenario) and groundwater. Relevant screening levels for TPH in soil are summarized in the table on the following page.

Preliminary Screening Levels for TPH

TPH Carbon Chain Range	SFB RWQCB ESL for Odors (mg/kg)	SFB RWQCB ESL for Human Health (mg/kg)	Screening Levels for Groundwater Protection	
			SFB RWQCB ESL (mg/kg)	LA RWQCB SL (mg/kg)
TPH-gasoline	100	770	770	100
TPH-diesel	100	570	240	100
TPH-oil	100	10,000	NA	1,000

SFB RWQCB ESL = San Francisco Bay RWQCB Environmental Screening Level from *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, December 2013, Table A-1.
LA RWQCB SL = Los Angeles RWQCB Screening Level from *Interim Site Assessment & Cleanup Guidance*, Table 4-1, April 27, 2004 (assumes groundwater is <20 ft bgs).
NA = not available

6.2.6 Volatile Organic Compounds

<u>Preliminary Screening Level:</u> Various

VOCs detected in soil will be compared to the most current USEPA RSLs (residential exposure scenario) as a preliminary screening level as a check of potential health risks. They will also be compared to San Francisco Bay and Los Angeles RWQCB screening levels to assess potential threats to groundwater. VOCs detected in soil gas will be compared to California Human Health Screening Levels (CHHSLs) and attenuated USEPA Regional Screening Levels (RSLs), as follows:

- <u>Residential CHHSL</u> – As identified by the Office of Environmental Health Hazard Assessment (OEHHA) in Table 2, *Soil Gas Screening Numbers for Volatile Chemicals Below Buildings Constructed with Engineered Fill Below Sub-Slab Gravel*, dated September 23, 2010. Screening levels based on soil gas data collected <5 feet bgs and intended for evaluation of potential vapor intrusion into buildings and subsequent impacts to indoor air.

- <u>Residential Attenuated USEPA RSL</u> – Calculated by dividing the more conservative of either the USEPA's current regional screening level (RSL) for indoor air (November 2015) or the DTSC's screening level (SL) for ambient air (*Human and Ecological Risk Office [HERO] Health Risk Assessment Note 3*, Table 3, October 2015) by an attenuation factor of 0.001 for future residential buildings to determine corresponding soil gas concentrations, as recommended in Table 2 of DTSC's *Vapor Intrusion Guidance Document*, dated October 2011.

If any VOCs in soil gas exceed the CHSSLs or attenuated RSLs, a more detailed analysis will be conducted using the most current version of the DTSC-approved Johnson & Ettinger (J&E) model to evaluate potential health risks and hazards via building vapor intrusion and the indoor air exposure pathway.

6.3 PRE-FIELD ACTIVITIES

<u>Work Notice:</u> Prior to initiating field work, a PEA Work Notice was prepared in English and Spanish. The purpose of the notice was to advise the public of the nature of the PEA field program, the schedule of activities, and individuals who could be contacted for additional information. The notice was mailed to approximately 2,000 parents of Venice High School students and key contacts on September 20, 2016. On September 27, 2016, approximately 225 copies of the notice were hand delivered to residents and businesses in the immediate vicinity of the Site, and laminated copies were posted on fencing along the school perimeter. Copies of the PEA Work Notice and supporting documentation for these public participation activities are provided in Appendix C.

Utility Clearance: Underground Service Alert (USA) was contacted on September 19, 2016 with a request to identify underground utilities entering the Site from beneath surrounding streets and sidewalks (USA ticket B62630141). PlaceWorks was contacted by the Southern California Gas Company shortly thereafter to discuss the locations of two natural gas pipelines that originate from Zanja Street and run to the Boiler Building and Indoor Swimming Pool Building. According to the company representative, the locations of these pipelines had been located and marked at the Site for a recent investigation (possibly the SMP PEA).

Tentative sample locations were marked with paint (hardscape areas) or survey flags (landscape areas) in accordance with the PEA workplan (LAUSD, 2016). Southwest Geophysics, Inc. (San Diego, California), a private utility search firm, then checked the surrounding areas for subsurface utility lines and potential obstructions using geophysical instruments (e.g., magnetometer, electromagnetic induction, ground penetrating radar, etc.). If utilities were identified in close proximity to the marked sample location, it was relocated a safe distance away. Coring and drilling were allowed only after the absence of underground utilities had been confirmed at each location.

Health and Safety Plan: A site-specific Health and Safety Plan (HASP) was prepared as a final pre-field activity for use during the field investigation. The HASP was prepared in accordance with applicable Occupational Safety and Health Administration (OSHA) regulations, as outlined in Title 8 of the California Code of Regulations (i.e., "General Industry and Construction Safety Orders" [Section 5192]), Title 29 of the Code of Federal Regulations (i.e., "Standards for Hazardous Waste Operations and Emergency Response" [Section 1910.120] and "Construction Industry Standards" [Section 1926]), and other applicable federal, state and local laws and regulations. The HASP was intended to aid in the safe handling of soils potentially containing elevated levels of constituents of concern. It was designed to: 1) identify and describe potentially hazardous substances that may be encountered during field activities; 2) specify protective equipment for on-site activities; 3) specify personnel decontamination procedures; and 4) outline measures to be implemented in the event of an emergency.

All on-site activities were performed by individuals with appropriate training (CFR 1910.120). Personnel, including subcontractors, were briefed on job health and safety measures and were responsible for operating in compliance with the HASP. A designated project Health and Safety Officer (HSO) was responsible for maintaining compliance with the HASP. Daily tailgate health and safety meetings were held and meeting participation was documented in field forms that are maintained with project records.

During field activities, personnel within the exclusion zone wore personal protective equipment (PPE) equivalent to OSHA Level D. No incidents or emergency actions occurred during implementation of the PEA field program.

6.4 SAMPLING PROCEDURES

The PEA field investigation involved the collection of soil and soil gas samples. The procedures used for sample collection are described in the following sections.

6.4.1 Soil Sample Collection

Most of the borings were located in asphalt- or concrete-paved areas that required coring before soil samples could be collected. Once the sample locations had been cleared and cored, the borings were advanced using a hand auger or direct-push drill rig. Coring and drilling services were provided by Interphase Environmental, Inc. (InterPhase; Los Angeles, California).

A hand auger was used to complete the shallow borings (B-1 to B-142) to a total depth of 2.5 feet bgs, with soil samples being collected at depths of 0.5, 1.5, and 2.5 feet bgs. The hand auger equipment consisted of a stainless-steel earth auger attached to a T-bar that was used to rotate and advance the auger. Once the desired sampling depth was reached, the contents of the auger were transferred into a clean 4-ounce glass jar provided by the laboratory.

A track-mounted, Geoprobe® direct-push drill rig was used to complete seven of the eight deep borings (B-143 to B-148 and B-150) to a total depth of 20 feet bgs, with soil samples being collected at depths of 5, 10, 15, and 20 feet bgs. A building overhang at boring B-149 provided insufficient clearance to set up the drill rig, so this boring was hand-augered to a total depth of 10 feet bgs instead (see Section 8 for additional details). Direct-push sampling was conducted by driving a drill rod core barrel into the soil subsurface using a hydraulic hammer. As the drill rod was advanced, soil was driven into a 1.5-inch diameter by 4-foot long clear acetate sleeve housed in the core barrel. Soil samples were inspected by the field geologist for general soil conditions and evidence of contamination (e.g., odors or staining). Samples were also screened for VOCs using an organic volatile analyzer (OVA) with flame-ionization detector (FID) calibrated to hexane. The 6-inch sample intervals targeted for analysis were cut from the sleeve and prepared for submittal to the laboratory. Soil samples intended for VOC and TPH-g analyses were processed in the field in accordance with USEPA Method 5035A. The ends of the acetate sleeves were then covered with TeflonTM sheets and capped with plastic end caps.

Labels were applied to the outside of the glass jars and sample sleeves with the sample identification number (which contains the boring number and sample depth) and date and time of collection. Following labeling, soil samples were placed in clear, leak-resistant plastic bags, which were stored in a sample cooler with ice until delivery to the laboratory could be arranged. All soil samples were submitted to an off-site laboratory under chain-of-custody control.

Sampling equipment was decontaminated between borings and sample locations in accordance with the procedures described in Section 6.5. Soil cuttings and decontamination water generated during drilling were placed in United Nations (UN)-rated 55-gallon drums, properly labeled, and temporarily stored in a secure area of the Site pending off-site disposal (see Section 6.6). All borings were backfilled with clean, construction-grade sand and patched to match the existing pavement. It was assumed that the patched pavement would remain visible and allow the original borings to be located in the event that follow-up step-out sampling was required. For open, unpaved areas where no such visual cues were present, boring locations were referenced to permanent landmarks. Field measurements that were collected and recorded to help locate these borings in the future, if required, are provided in Table 2.

6.4.2 Soil Gas Sample Collection

Soil gas probe installation, sampling, and analysis were conducted in general accordance with the DTSC/Regional Water Quality Control Board (RWQCB) guidance *Advisory – Active Soil Gas Investigations* ("Soil Gas Advisory;" DTSC/RWQCB 2015). Procedures used for the installation and sampling of soil gas probes are described in the following sections. The soil gas probes were installed on October 8 and sampled on October 9, 2016.

6.4.2.1 PROBE INSTALLATION

Temporary soil gas probes were installed by InterPhase at two locations in the shop building courtyard (SG-1 and SG-2), as shown on Figure 4. At each location, two nested probes were installed at depths of 5 and 15 feet bgs using the same track-mounted, push-drive drill rig used to complete the deep soil borings (see Section 6.4.1). Soil gas probes were constructed with a prefabricated polypropylene filter tip attached to ¼-inch diameter flexible Nylaflo® tubing. Probe tips were set at the midpoint of 1-foot thick sand pack intervals (No. 3 Monterey sand) constructed at approximate depths of 4.5-5.5 feet bgs and 14.5-15.5 feet bgs within the borehole. An approximate 1-foot thick layer of dry granular bentonite was emplaced above each sand pack. Hydrated granular bentonite was then added above the dry granular bentonite to either the base of the upper probe sand pack or to the ground surface, as applicable. The end of each probe was fitted with a gas-tight, three-way valve for sample collection and marked to designate the probe identification and depth. The surface completions were temporarily protected until soil gas samples could be collected.

6.4.2.2 SOIL GAS SAMPLING PROCEDURES

The soil gas probes were allowed to equilibrate overnight prior to sampling. A significant rainfall event had not occurred within five days preceding the collection of soil gas samples. Prior to collecting a soil gas sample, a magnehelic gauge was connected to the probe sampling port to observe naturally existing soil gas pressures or vacuums beneath the Site. The port valve was opened and the pressure (or vacuum) reading was recorded on a monitoring form. A sample pump was then connected to the sampling port via a T-connection with the magnehelic gauge to conduct a shut-in test. The purpose of the shut-in test was to confirm that no atmospheric air leaks were present in the sample train. The sample pump was turned on with the port valve in the closed position until a vacuum of about 100 inches of water (in. H_2O) was achieved. The pump was then turned off and the magnehelic gauge was observed for at least 1 minute to confirm that there was no observable loss of vacuum.

After a successful shut-in test, the port valve was opened and the sample pump was used to purge three volumes of resident air from the probe. After the probe had been purged, a soil gas samples were collected from the sampling port into Tedlar bags and Summa canisters. The Tedlar bags and Summa canisters were labeled and prepared for delivery to an off-site laboratory under chain of custody control. During soil gas purging and sampling, flow rates did not exceed 200 milliliters per minute (ml/min) and probe vacuums did not exceed 100 inches water (in. H_2O). In addition, a chemical tracer was introduced near the sampling train connections during purging and sampling to serve as a check for leaks (i.e., to evaluate if ambient air had broken through and diluted the soil gas sample). The tracer compounds were included among the VOCs that were analyzed by the laboratory. A final reading of probe pressure/vacuum was obtained before disconnecting the sample train, removing the probes, and patching the surface to match the existing pavement.

The PEA workplan called for the collection of soil gas samples at two locations (SG-1 and SG-2) and two depths (5 and 15 feet bgs). However, low-flow conditions prevented the collection of a soil gas sample from the 15-foot probe at SG-2.

6.4.3 Step-Out Soil Sampling

Arsenic concentrations exceeded the screening level of 12 mg/kg in fourteen of the initial soil borings, while lead concentrations exceeded the screening level of 80 mg/kg in six of the initial soil borings.[3] The locations of the borings with elevated arsenic and/or lead concentrations are highlighted on Figures 3 to 5. Step-out samples were collected at each of these boring locations in an effort to delineate the lateral extent of arsenic- and lead-impacted soil. Step-out sample locations are shown on Figures 7 to 14. The approach used to collect step-out soil samples was similar to that used for the initial borings.

Step-out sample locations were marked in the field and cleared of subsurface utilities in preparation for additional soil sampling on November 5-6, 2016. In general, step-out locations were selected in three to four compass directions and two distances (5 and 10 feet) from the original samples. However, field conditions (e.g., obstructions, utilities, etc.) dictated the final step-out numbers and locations. Step-out samples were assigned identification numbers that corresponded to their distance and direction from the original boring location, as well as the sample depth. For example, sample **B2-N5-0.5’** corresponded to a step-out sample **5** feet north (**N**) from original boring **B-2** collected at a depth of **0.5** foot bgs.

[3] Lead also exceeded its screening level at a seventh location (B-141) in the metal shop, but because the LAUSD subsequently decided that this building would not be demolished, delineation of the lead concentrations through step-out sampling was not pursued.

At each step-out location, soil samples were collected at depths of 0.5 foot, 1.5 feet, and 2.5 feet bgs using a hand auger in the same manner as the original samples had been collected. Soil samples collected at a depth of 0.5 foot bgs from the 5-foot step-out borings were immediately analyzed for arsenic and/or lead (USEPA Method 6010B), while the remaining samples were archived by the laboratory for possible follow-up analysis. In instances where the arsenic or lead concentrations in the initial step-out samples exceeded site-specific cleanup goals, additional archived samples were analyzed in an effort to bound the lateral and vertical extents of the impacted soil. Step-out/step-down sampling continued until arsenic and lead concentrations were found to be below site-specific cleanup goals or until utilities were encountered.

6.5 EQUIPMENT DECONTAMINATION

Hand augers, drill rods, and other non-disposable sampling equipment were decontaminated between borings and sample locations to reduce the potential for contaminant introduction and cross-contamination. Equipment decontamination was performed in accordance with industry-standard procedures, as follows:

- Non-phosphate detergent and distilled water wash using a brush
- Initial distilled/deionized water rinse
- Final distilled/deionized water rinse.

6.6 INVESTIGATION-DERIVED WASTE MANAGEMENT

Spent acetate sample sleeves and used PPE were disposed of as Class III solid waste. Soil cuttings and decontamination water were collected in properly labeled UN-rated 55-gallon drums that have been temporarily stored in a secure area of the Site, as directed by the school Plant Manager, until arrangements can be made for their off-site disposal.

One liquid sample was collected from the drum of decontamination water and one composite soil sample was collected from the drums of soil cuttings for waste profiling purposes. The samples were submitted to American Environmental Testing Laboratory, Inc. (AETL) for analysis of TPH-cc (USEPA Method 8015M), VOCs (USEPA Method 8260B), and Title 22 metals (USEPA Methods 6010B/7471). A copy of the laboratory report is provided in Appendix D. Based on the analytical results for the waste profile samples, as well as the analytical results from the PEA investigation, the investigation-derived waste (IDW) was characterized as non-hazardous for waste disposal purposes. The waste profile has been approved by the LAUSD Environmental Compliance Manager and the receiving facilities (see Appendix D) and the IDW will be transported from the Site for lawful disposal once final step-out sampling at the Site has been completed.

7. Investigation Results

The following sections present the PEA investigation findings and discuss their significance with respect to potential impacts on human health and the environment.

7.1 LABORATORY PROCEDURES

Soil samples were submitted to American Environmental Testing Laboratory, Inc. (AETL; Burbank, California) for chemical analysis under chain-of-custody control. AETL is accredited by the California Department of Public Health (CDPH) Environmental Laboratory Accreditation Program (ELAP Certification No. 1541). Initially, only the 0.5-foot samples from the 2.5-foot borings and the 5- and 10-foot samples from the 20-foot borings were analyzed, while the deeper samples were archived by the laboratory. After reviewing the analytical results, follow-up analyses were performed on several of the archived samples to better define the vertical extent of impacted soil at a given location.

Soil samples from the shallow borings (2.5 feet bgs) were analyzed for the following parameters in accordance with the schedule presented in Table 1:

- Arsenic by USPEA Method 6010B
- Lead by USEPA Method 6010B
- OCPs by USEPA Method 8081A
- PCBs by USEPA Method 8082 (10% of total samples analyzed).

Soil samples from the deep borings (20 feet bgs) were analyzed for the following parameters in accordance with the schedule presented in Table 1:

- TPH-cc by USEPA Method 8015M
- VOCs by USEPA Method 8260B
- Title 22 metals by USEPA Methods 6010B/7471
- PCBs by USEPA Method 8082.

Soil gas samples were submitted to Jones Environmental, Inc. (Fullerton, California) for chemical analysis under chain-of-custody control. Jones Environmental is accredited by the CDPH Environmental

Laboratory Accreditation Program (ELAP Certification No. 2484/2094/1779A). The soil gas samples were analyzed for the following parameters in accordance with the schedule presented in Table 1:

- VOCs by USEPA Method 8260B
- Methane by ASTM D1946
- Hydrogen sulfide by USEPA TO-15/16.

7.2 QUALITY ASSURANCE/QUALITY CONTROL

The following quality assurance/quality control (QA/QC) procedures were followed during soil and soil gas sampling and analysis:

- Duplicate soil samples were collected and analyzed at a frequency of approximately 10 percent of the primary samples to evaluate statistical precision. The duplicate soil samples were analyzed for the same parameters as the primary samples. They were collected as "blind" samples so that the laboratory did not know the primary sample pairing. Analytical results for the duplicate soil samples are paired with the primary sample results in the PEA data summary tables.

- One duplicate soil gas sample was collected and analyzed for VOCs. This represents a duplicate sampling frequency of approximately 33% (one duplicate for three primary samples). Analytical results for the duplicate soil gas sample are paired with the primary sample results in the PEA data summary table.

- Soil gas samples were subjected to the QA/QC procedures prescribed in the Soil Gas Advisory, including the performance of shut-in tests and the use of chemical tracer compounds for leak testing during sampling. The tracer compounds were not detected in any of the samples analyzed, thereby confirming the integrity of the samples.

- All soil and soil gas samples were transferred to the laboratory under chain-of-custody control and were subject to the laboratory's conventional QA/QC analytical procedures, including the use of method blanks, surrogate recoveries, matrix spike samples, laboratory control samples, and/or duplicate analyses.

- All samples were properly preserved and analyzed within holding times prescribed for individual test methods.

- Laboratory detection limits for individual chemical constituents were set at appropriate levels to allow for comparison of the data with preliminary screening levels and otherwise meet PEA program objectives.

PlaceWorks reviewed the field procedures and laboratory reports and determined that all of the data were reliable and useable for meeting project objectives.

7.3 ANALYTICAL RESULTS

Analytical results for the PEA field investigation are summarized and discussed in the following sections. The analytical data are compiled in Tables 3 to 8 (soil samples) and Table 9 (soil gas samples). Copies of laboratory reports and chain-of-custody records are provided in Appendix E.

7.3.1 Arsenic

Initially, 138 primary shallow soil samples (0.5 foot bgs) and fourteen duplicate samples were analyzed for arsenic by USEPA Method 6010B. The analytical results are provided in Table 3, along with the arsenic results for 26 additional soil samples collected during the SMP PEA. As indicated in this table, arsenic concentrations ranged from non-detect (<0.5 mg/kg) to 299 mg/kg (B3-0.5’). Arsenic concentrations in fourteen of the initial borings (B-2, B-3, B-16, B-36, B-48, B-66, B-72, B-79, B-88, B-90, B-105, B-114, W-B1, and W-B4) exceeded the preliminary screening level of 12 mg/kg, prompting the follow-up analysis of deeper archived samples (1.5 feet bgs) to establish the vertical extent of arsenic-impacted soil. Arsenic concentrations in all of the 1.5-foot bgs samples were less than 12 mg/kg, thereby bounding the vertical extent of arsenic-impacted soil.

As discussed in Section 6.4.3, step-out soil samples were collected at all of the locations where arsenic exceeded the screening level of 12 mg/kg in an effort to define the lateral extent of arsenic-impacted soil. The maximum concentration of arsenic detected in the shallow (0.5 foot bgs) step-out samples was 342 mg/kg (B3-E5-0.5’). At step-out locations where arsenic concentrations exceeded 12 mg/kg in the 0.5-foot sample, the laboratory was instructed to analyze the 1.5-foot sample. At two locations (B36-W5-1.5’ and B72-N4-1.5’), arsenic concentrations in the 1.5-foot sample exceeded 12 mg/kg and the deeper 2.5-foot sample was analyzed. Arsenic concentrations in both 2.5 foot samples were below 12 mg/kg, thereby bounding the vertical extent of arsenic-impacted soil.

In order to accommodate the CMP construction schedule, this PEA Equivalent Report has been finalized before all of the step-out sampling could be completed. As a result, the full lateral extent of arsenic-impacted soil had not been established as of the date of this report. An addendum to the PEA Equivalent Report will be prepared once the step-out sampling program has been completed.

7.3.2 Lead

Initially, 138 primary shallow soil samples (0.5 foot bgs) and fourteen duplicate samples were analyzed for lead by USEPA Method 6010B. The analytical results are provided in Table 3, along with the lead results for thirteen additional soil samples collected during the SMP PEA. As indicated in this table, lead concentrations ranged from 1.59J[4] to 336 mg/kg (B94-0.5’). Lead concentrations in six of the initial borings (B-3, B-14, B-67, B-94, B-120, and B-123) exceeded the preliminary screening level of 80 mg/kg, prompting the follow-up analysis of deeper archived samples (1.5 feet bgs) to establish the vertical extent of lead-impacted soil. Lead concentrations in all but one of the 1.5-foot bgs samples were less than 80 mg/kg. After lead was reported at a concentration of 130 mg/kg in sample B14-1.5’, the deeper sample at this location (B14-2.5’) was analyzed and found to have lead concentration of 4.02J mg/kg, thereby bounding the vertical extent of lead-impacted soil.

As discussed in Section 6.4.3, step-out soil samples were collected at all of the locations where lead exceeded the screening level of 80 mg/kg in an effort to define the lateral extent of lead-impacted soil. The maximum concentration of lead detected in the shallow (0.5 foot bgs) step-out samples was 146 mg/kg (B94-N5-0.5’). At step-out locations where lead concentrations exceeded 80 mg/kg in the 0.5-foot sample, the laboratory was instructed to analyze the 1.5-foot sample. Lead concentrations in all of the 1.5-foot bgs samples were less than 80 mg/kg, thereby bounding the vertical extent of lead-impacted soil.

In order to accommodate the CMP construction schedule, this PEA Equivalent Report has been finalized before all of the step-out sampling could be completed. As a result, the full lateral extent of lead-impacted soil had not been established as of the date of this report. An addendum to the PEA Equivalent Report will be prepared once the step-out sampling program has been completed.

Four of the soil samples with elevated lead concentrations (>80 mg/kg) were analyzed for soluble lead to determine whether the soil would need to be managed as a hazardous waste if excavated and removed. The samples were analyzed for soluble lead by the USEPA Toxicity Characteristic Leaching Procedure (TCLP) and California Soluble Threshold Limit Concentration (STLC) test methods. Analytical results are summarized in the following table; copies of the laboratory reports are provided in Appendix E:

TCLP and STLC Results for Lead

Sample ID	Laboratory Report No.	Total Lead Concentration (mg/kg)	TCLP Lead Concentration (mg/L)	STLC Lead Concentration (mg/L)
B94-0.5’	84771	336	<0.5	7.17
B94-N5-0.5’	85347	146	<0.5	3.33
DUP-12	85346	102	--	1.24
B67-E13-0.5’	85347	81.1	--	1.96

Values in **bold** exceed levels used to characterize a waste as hazardous
“—“ = not analyzed
mg/kg = milligrams/kilogram
mg/L = milligrams/liter

As indicated in the preceding table, because the TCLP lead concentrations did not exceed the 5 mg/L regulatory threshold (and in fact, were non-detect), any soil excavated at the Site would not need to be

[4] Concentrations followed by the letter “J” indicate qualitative values between the laboratory’s method detection limit (MDL) and practical quantitation limit (PQL).

managed as a RCRA hazardous waste. The sample with the highest lead concentration of 336 mg/kg (B94-0.5') had an STLC lead concentration of 7.17 mg/L, which exceeds the 5 mg/L threshold used by the State of California to define a waste as non-RCRA hazardous. Therefore, any soil excavated from the B-94 removal area must be managed as California non-RCRA hazardous waste. Samples with lead concentrations of 146 mg/kg or lower did not exceed the STLC regulatory threshold of 5 mg/L. Because the maximum lead concentrations at excavation areas B-3 (127 mg/kg), B-14 (130 mg/kg), B-67 (81.5 mg/kg), B-120 (83.7 mg/kg), and B-123 (102 mg/kg) are all below the concentration of 146 mg/kg, the data support the management of any soil excavated from these five areas as non-hazardous waste.

7.3.3 Organochlorine Pesticides

A total of 138 primary samples and fourteen duplicate samples were analyzed for OCPs by USEPA Method 8081A. The analytical results are provided in Table 4, along with the OCP results for one additional composite soil sample collected during the SMP PEA. Seven OCPs[5] were detected in one or more of the soil samples, as summarized in the following table:

Summary of OCP Concentrations in Soil Samples

OCP	No. of Samples[1]	No. of Detections	Maximum Concentration (µg/kg)	Sample with Maximum Concentration	Screening Level[2] (µg/kg)	No. Exceeding Preliminary Screening Level
Chlordane (total)	153	47	669	B33-0.5'	1,700	0
Chlordane (alpha)	153	33	365	B33-0.5'	1,700	0
Chlordane (gamma)	153	34	304	B33-0.5'	1,700	0
4,4'-DDD	153	6	3.44	B135-0.5'	2,300	0
4,4'-DDE	153	38	104	B135-0.5'	2,000	0
4,4'-DDT	153	56	57.5	B135-0.5'	1,900	0
Dieldrin	153	6	4.70	B135-0.5'	34	0
Heptachlor	153	2	1.95J	B87-0.5'	130	0
Heptachlor Epoxide	153	1	2.80	B67-0.5'	70	0

µg/kg = micrograms per kilogram
[1] Includes primary and duplicate samples
[2] USEPA RSL

As indicated in the preceding table, none of the OCPs exceeded its preliminary screening level. Therefore, OCPs are not considered constituents of concern (COCs) for the Site.

7.3.4 Polychlorinated Biphenyls

A total of 32 primary soil samples and four duplicate samples were analyzed for PCBs by USEPA Method 8082. The analytical results are provided in Table 5. PCBs were not detected in any of the samples and, therefore, are not considered COCs for the Site.

[5] Total chlordane and its two isomers, alpha and gamma chlordane, are counted as one OCP.

7.3.5 Total Petroleum Hydrocarbons

A total of 20 primary soil samples and three duplicate samples were analyzed for total petroleum hydrocarbons in the gasoline range (TPH-g), diesel range (TPH-d), and oil range (TPH-o) by USEPA Method 8015M. The analytical results are provided in Table 6. TPH was not detected in any of the samples and, therefore, is not considered a COC for the Site.

7.3.6 Metals

A total of 20 primary soil samples and three duplicate samples were analyzed for Title 22 metals by USEPA Methods 6010B/7471. The analytical results are provided in Table 7. Antimony, beryllium, cadmium, mercury, molybdenum, selenium, silver, and thallium were not detected in any of the samples. Maximum concentrations of the remaining metals were as follows: arsenic (8.65 mg/kg); barium (152 mg/kg); chromium (34.0 mg/kg); cobalt (17.2 mg/kg); copper (25.5 mg/kg); lead (115 mg/kg); nickel (23.8 mg/kg); vanadium (52.3 mg/kg); and zinc (86.8 mg/kg). With one exception, the concentrations of individual metals were below preliminary screening levels and appear to be representative of naturally-occurring background concentrations.

The concentration of lead in sample B141-0.5’ was 115 mg/kg, which exceeded the preliminary screening level of 80 mg/kg. Boring B-141 was one of the four soil borings completed inside the metal shop (see Figure 4). The deeper sample at this location (B141-1.5’) was analyzed and found to have a lead concentration of 9.05 mg/kg, thereby bounding the vertical extent of lead-impacted soil. Following completion of the initial soil sampling inside the metal shop, the LAUSD decided that this building would not be demolished. Therefore, step-out sampling to delineate the lateral extent of elevated lead concentrations around boring B-141 was not conducted.

7.3.7 Volatile Organic Compounds in Soil

A total of 20 primary soil samples and three duplicate samples were analyzed for VOCs by USEPA Methods 5035A/8260B. The analytical results are provided in Table 8. VOCs were not detected in any of the soil samples and, therefore, are not considered COCs for the Site.

7.3.8 Soil Gas Analytical Results

A total of three primary soil gas samples and one duplicate soil gas sample were analyzed for VOCs by USEPA Method 8260B. The analytical results are provided in Table 9. Three VOCs were detected as follows (maximum concentration in parentheses): tetrachloroethene (PCE; 0.067 µg/L); toluene (0.045 µg/L); and xylenes (0.052 µg/L). These trace concentrations are well below the respective screening levels of 0.47 µg/L, 310 µg/L, and 100 µg/L for the three VOCs. Therefore, VOCs in soil gas are not considered COCs for the Site.

The soil gas samples were also analyzed for methane by ASTM D1946 and hydrogen sulfide by ASTM 5504. The analytical results are provided in Table 9. Methane and hydrogen sulfide were not detected in any of the soil gas samples and, therefore, are not considered COCs for the Site.

7.4 DISCUSSION OF RESULTS

The analysis of soil samples from 150 representative locations within the CMP area (B-1 to B-150) determined that concentrations of OCPs, PCBs, TPH, VOCs, and metals (except for arsenic and lead) were below levels of health risk and environmental concern. The analysis of soil gas samples from two locations (SG-1 and SG-2) determined that concentrations of VOCs, methane, and hydrogen sulfide were below levels health risk concern and do not pose a safety hazard. Therefore, no further action is required with respect to these COPCs.

Arsenic was detected above the preliminary screening level of 12 mg/kg at fourteen locations, with a maximum reported concentration of 299 mg/kg. Step-out and step-down sampling was conducted around the fourteen locations in an effort to define the lateral and vertical extents of arsenic-impacted soil. Lead was detected above the preliminary screening level of 80 mg/kg at six locations, with a maximum reported concentration of 336 mg/kg. Step-out and step-down sampling was conducted around the six locations in an effort to define the lateral and vertical extents of lead-impacted soil. Based on the findings of the PEA investigation, removal actions at the locations of arsenic- and lead-impacted soil are recommended (see Section 7.5).

7.5 DELINEATION OF AREAS OF IMPACTED SOIL

Fourteen areas of arsenic-impacted soil (i.e., >12 mg/kg) were identified during the CMP and SMP PEA field investigations. The areas are identified by their original boring designations as follows: B-2, B-3, B-16, B-36, B-48, B-66, B-72, B-79, B-88, B-90, B-105, B-114, W-B1, and W-B4. Six areas of lead-impacted soil (i.e., >80 mg/kg) were also identified during the CMP PEA field investigation, which are identified as follows: B-3, B-14, B-67, B-94, B-120, and B-123. As can be seen when comparing the lists, one of the areas (B-3) contains both arsenic- and lead-impacted soil, resulting in a total of nineteen areas of impacted soil. The locations of the areas of impacted soil are shown on Figures 7 to 14. To ensure the safety and health of school students, staff, and visitors following completion of the CMP, PlaceWorks recommends that impacted soil at each of the identified locations be removed and transported off-site for proper disposal.

Step-out and step-down sampling conducted as a component of the field investigation largely delineated the lateral and vertical extents of arsenic- and lead-impacted soil and allowed the definition of discrete soil removal areas. Many soil removal areas are bounded on one side by existing buildings that served as obstacles to further investigation efforts. In addition, at the direction of the LAUSD Project Manager, boundaries for some of the soil removal areas were established by existing utility lines that might impede the ability to safely excavate impacted soil. Finally, in order to accommodate the CMP construction schedule, this PEA Report was finalized before all of the scheduled step-out sampling could be completed. Because of these limitations, the lateral extent of impacted soil around some of the soil removal areas has not been precisely defined at this time. Completion of additional step-out sampling and reliance on a well-conceived confirmation soil sampling program during soil removal will ensure that all identified areas of arsenic- and lead-impacted soil are fully addressed.

The vertical extent of impacted soil has been well defined by step-down sampling, which has shown that arsenic and lead impacts do not extend below 1.5 feet bgs, with three exceptions. Arsenic concentrations at sample locations B36-W5-1.5’ (39.0 mg/kg) and B72-N4-1.5’ (18.6 mg/kg) and the lead concentration at sample location B14-1.5’ (130 mg/kg) exceeded the preliminary screening levels, but were below screening levels at the next sampling depth of 2.5 feet bgs. Accordingly, impacted soil will need to be excavated to a depth of 2.5 feet bgs at soil removal areas B-14, B-36, and B-72, while excavations to a depth of 1.5 feet bgs should be adequate to address impacted soil at the remaining soil removal areas.

At the present time, and given the limitations described above, areal dimensions and depths have been determined for each of the nineteen soil removal areas (see Table 11). Based on field measurements, the areas represent a total in-situ volume of approximately 173.9 cubic yards of arsenic- and lead-impacted soil that require removal and off-site disposal. As supported by the analysis presented in Section 7.3.2, a total of 164.5 cubic yards of soil can be managed as non-hazardous waste, while the 9.4 cubic yards of lead-impacted soil from removal area B-94 will require management as California non-RCRA hazardous waste. If a “fluff factor” of 1.5 is applied to this volume, a total of 261 cubic yards of impacted soil can be assumed for cost-estimation purposes. In addition, PlaceWorks recommends that a contingency equal to 25% of the total volume be applied to account for soil overexcavation in areas where confirmation samples exceed the screening levels. Estimated soil removal volumes calculated in this manner are summarized in the following table:

Estimated Soil Removal Volumes

Waste Type	Calculated Volume [1] (cy)	Add 1.5 Fluff Factor (cy)	Add 25% Contingency (cy)
Non-hazardous Soil	164.5	247	308
Non-RCRA Hazardous Soil	9.4	14	18
Totals	173.9	261	326

[1] See Table 11

Based on the assumptions outlined above, an estimated 326 cubic yards of soil will be generated by the soil removal action, of which approximately 18 cubic yards will require management as California non-RCRA hazardous waste due to lead STLC concentrations higher than 5 mg/L.

8. Field Variances

For the most part, the field investigation was conducted in accordance with the procedures outlined in the PEA workplan (LAUSD, 2016). Soil and soil gas samples were collected from a total of 152 investigation locations. Encountered field conditions resulted in a few deviations from the planned activities, as described below:

- Investigation locations around existing buildings were adjusted to account for observed wall-mounted utility panels/conduits and other obstructions (e.g., access walkways, vending machines, stored equipment, etc.). Patched pavement suggestive of subsurface utilities and recent utility markings were also avoided. In some instances, further adjustments to investigation locations were made to provide an adequate separation distance from utility lines identified by the geophysical survey. Final investigation locations are shown on Figures 3 to 6.

- Because soil samples were collected along the north, east, and south sides of the Storage Building during the SMP PEA, this sampling was not repeated, but was supplemented with the collection of one sample along the west side of the building (B-46). Analytical data presented for the Storage Building borings in the SMP PEA Report were used for the current PEA.

- After an updated CMP Master Plan was provided by the LAUSD Facilities Services Division on September 16, 2016 (see Appendix A), nine shallow soil borings (B-105 to B-113) were added to the PEA field investigation to assess the baseball field at the southeast corner of the Site. The baseball field borings were sampled in the same manner and analyzed for the same parameters as the other shallow borings.

- A building overhang at boring B-149 provided insufficient clearance to set up the drill rig, so this boring was hand-augered instead. The PEA workplan stated that the boring was to be drilled to a total depth of 20 feet bgs with soil samples collected at depths of 5, 10, 15, and 20 feet bgs. The samples from 5 and 10 feet bgs were to be analyzed, while the samples from 15 and 20 feet bgs were to be archived. Because the boring was hand augered, soil samples were only collected from depths of 5 and 10 feet bgs, foregoing the collection of samples to be archived. A review of the analytical results determined that the analysis of deeper samples was unnecessary, so their absence did not affect the integrity of the field program.

- The PEA workplan called for the collection of soil gas samples at two locations (SG-1 and SG-2) and two depths (5 and 15 feet bgs). However, low-flow conditions prevented the collection of a soil gas sample from the 15-foot probe at SG-2.

8. Field Variances

- With the prior approval of the LAUSD Project Manager (via e-mail on October 7, 2016), the drummed soil cuttings were profiled from a single composite sample, rather than from samples collected from individual drums. IDW samples collected for waste characterization (i.e., soil cuttings and decontamination water) were analyzed for TPH-cc and Title 22 metals, as called for in the PEA workplan, and VOCs rather than OCPs. IDW profiling was accomplished using the waste characterization results along with analytical data for the PEA soil samples.

9. Human Health Screening Evaluation

This section presents the human health screening evaluation (HHSE) portion of the PEA. The HHSE evaluates potential impacts to human health from exposure to the COPCs detected in soil at the Site. Per the *PEA Guidance Manual* (DTSC, 2013b), the HHSE is performed within the context of a health risk assessment that addresses an unrestricted future residential land-use scenario, which is more health-protective than the existing and continued use of the Site as a school.

Based on the analytical results for soil and soil gas sampling presented in Section 7.3, arsenic and lead are the only COPCs that are present at the Site. Arsenic was detected at a maximum concentration of 342 mg/kg, while lead was detected at a maximum concentration of 336 mg/kg. Health risk and hazard estimates associated with human exposure to these two metals are embedded in the decisions used to establish their preliminary screening levels of 12 mg/kg and 80 mg/kg, respectively. Any concentrations above the preliminary screening levels are deemed to pose an unacceptable health risk for a residential land use scenario. Because arsenic and lead were detected above their respective preliminary screening levels, both metals pose an unacceptable health risk and further action in terms of a remedial response is required.

10. Conclusions and Recommendations

The PEA was designed to investigate the RECs identified in the Phase I ESA Report prepared for the Site (AECOM, 2014). These included potential soil and soil gas impacts related to the operation of underground hydraulic lifts, an oil/water separator, and other historical activities that may have occurred within the shop area of the Site. In addition, the possible use of LBP and PCBs in existing buildings/ structures was investigated, as was the possible application of pesticides or herbicides that may have contained OCPs or arsenic. The PEA field program consisted of the completion of 150 initial soil borings to a maximum depth of 20 feet bgs, 79 step-out borings to a maximum depth of 2.5 feet bgs, and the installation and sampling of soil gas probes at depths of 5 and 15 feet bgs at two locations. The soil samples were analyzed for lead, arsenic, OCPs, PCBs, TPH, VOCs and/or metals, depending on location and investigation purpose. The soil gas samples were analyzed for VOCs, methane, and hydrogen sulfide. Sample locations are shown on Figures 3 to 14. Analytical results are summarized in Tables 3 to 9.

10.1 CONCLUSIONS

After evaluating the analytical results, PlaceWorks concludes the following with respect to conditions at the Site:

- Seven OCPs (i.e., chlordane, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, dieldrin, heptachlor, and heptachlor epoxide) were detected in one or more of the soil samples. The OCP concentrations were all below risk-based screening levels and do not pose a significant risk to human health or the environment.

- PCBs were not detected in any of the soil samples and, therefore, do not pose a significant risk to human health or the environment.

- TPH in gasoline, diesel, and oil carbon chain ranges were not detected in any of the soil samples and, therefore, do not pose a significant risk to human health or the environment.

- VOCs were not detected in any of the soil samples and, therefore, do not pose a significant risk to human health or the environment.

- Except for arsenic and lead, metals were all below risk-based screening levels and appear to be representative of naturally-occurring background concentrations.

- Arsenic was detected above its preliminary screening level of 12 mg/kg at fourteen locations, with a maximum reported concentration of 299 mg/kg. Step-out and step-down sampling was conducted around the fourteen locations in an effort to define the lateral and vertical extent of arsenic-impacted soil.

- Lead was detected above its preliminary screening level of 80 mg/kg at seven locations, with a maximum reported concentration of 336 mg/kg. Step-out and step-down sampling was conducted around six of the locations in an effort to define the lateral and vertical extent of lead-impacted soil. Step-out sampling was not conducted around one location within the metal shop building (B-141) after it was determined that this building would not be demolished. Soluble lead test results (TCLP and STLC) determined that at least a portion of the lead-impacted soil will require management as California non-RCRA hazardous waste, if removed.

- Three VOCs (i.e., PCE, toluene, and xylenes) were detected at trace concentrations in one or more of the soil gas samples. The OCP concentrations were all below risk-based screening levels and do not pose a significant risk to human health or the environment.

- Methane and hydrogen sulfide were not detected in any of the soil gas samples and, therefore, do not pose a significant risk to human health or safety.

- Field procedures and laboratory data were evaluated to assure that data quality objectives were met and the data were suitable for their intended use. No significant quality assurance/quality control issues were identified.

Based on the PEA objectives, the environmental quality goals of the LAUSD, and the results of this PEA field investigation, PlaceWorks has determined that elevated concentrations of arsenic and lead are present in Site soil that require a remedial response to ensure the health and safety of staff, students, and visitors to the existing high school. Arsenic- and lead-impacted soil has been identified at nineteen discrete locations, representing an estimated in-situ volume of 173.9 cubic yards.

10.2 RECOMMENDATIONS

PlaceWorks recommends that a Removal Action Workplan (RAW) be prepared to guide the excavation, transport, and off-site disposal of the arsenic- and lead-impacted soil. The RAW should also include procedures for confirmation soil sampling, dust suppression, air monitoring, worker health and safety, and data quality assurance. Once approved by the LAUSD, the RAW should be implemented in coordination with the CMP construction schedule and activities.

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11. References

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Tables

TABLE 1
SAMPLING STRATEGY PLAN
LAUSD Venice High School PEA Equivalent

Building or Area	No. of Borings	Boring/Probe ID	Sample Depths (ft bgs)	Analytical Methods	Purpose
SOIL SAMPLES					
Portables 7 and 8	4	B-1 B-2 B-3 B-4	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
Portables 9 and 10	4	B-5 B-6 B-7 B-8	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
Portables 11 and 12	4	B-9 B-10 B-11 B-12	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
Portables 13 and 14	4	B-13 B-14 B-15 B-16	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
Attendance Building	4	B-17 B-18 B-19 B-20	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
Boiler Building	4	B-21 B-22 B-23 B-24	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides

TABLE 1
SAMPLING STRATEGY PLAN
LAUSD Venice High School PEA Equivalent

Building or Area	No. of Borings	Boring/Probe ID	Sample Depths (ft bgs)	Analytical Methods	Purpose
East Gym	9	B-25 B-26 B-27 B-28 B-29 B-30 B-31 B-32 B-33	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
East Home Bleachers	4	B-34 B-35 B-36 B-37	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing bleachers Evaluate impacts from the possible use of arsenical herbicides
West Home Bleachers	4	B-38 B-39 B-40 B-41	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing bleachers Evaluate impacts from the possible use of arsenical herbicides
Visitor Bleachers	4	B-42 B-43 B-44 B-45	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing bleachers Evaluate impacts from the possible use of arsenical herbicides
Storage Building	1	B-46	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides

TABLE 1
SAMPLING STRATEGY PLAN
LAUSD Venice High School PEA Equivalent

Building or Area	No. of Borings	Boring/Probe ID	Sample Depths (ft bgs)	Analytical Methods	Purpose
Portables 37 and 38	4	B-47 B-48 B-49 B-50	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
Portable Cluster 51-54	10	B-51 B-52 B-53 B-54 B-55 B-56 B-57 B-58 B-59 B-60	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
West Gym	11	B-61 B-62 B-63 B-64 B-65 B-66 B-67 B-68 B-69 B-70 B-71	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides

TABLE 1
SAMPLING STRATEGY PLAN
LAUSD Venice High School PEA Equivalent

Building or Area	No. of Borings	Boring/Probe ID	Sample Depths (ft bgs)	Analytical Methods	Purpose
Shop 1-4	8	B-72 B-73 B-74 B-75 B-76 B-77 B-78 B-79	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
Shop 5-7	6	B-80 B-81 B-82 B-83 B-84 B-85	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
Shop 8-9	4	B-86 B-87 B-88 B-89	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential impacts from the possible use of LBP, OCPs, and PCBs in existing buildings Evaluate impacts from the possible use of arsenical herbicides
Track and Field	15	B-90 B-91 B-92 B-93 B-94 B-95 B-96 B-97 B-98	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential areawide impacts from the possible use of LBP, OCPs, and PCBs at the Site Evaluate impacts from the possible use of arsenical herbicides

TABLE 1
SAMPLING STRATEGY PLAN
LAUSD Venice High School PEA Equivalent

Building or Area	No. of Borings	Boring/Probe ID	Sample Depths (ft bgs)	Analytical Methods	Purpose
Track and Field (cont'd)	15	B-99 B-100 B-101 B-102 B-103 B-104	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential areawide impacts from the possible use of LBP, OCPs, and PCBs at the Site Evaluate impacts from the possible use of arsenical herbicides
Baseball Field	9	B-105 B-106 B-107 B-108 B-109 B-110 B-111 B-112 B-113	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential areawide impacts from the possible use of LBP, OCPs, and PCBs at the Site Evaluate impacts from the possible use of arsenical herbicides
Play Courts	6	B-114 B-115 B-116 B-117 B-118 B-119	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential areawide impacts from the possible use of LBP, OCPs, and PCBs at the Site Evaluate impacts from the possible use of arsenical herbicides
Northeast Corner	6	B-120 B-121 B-122 B-123 B-124 B-125	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential areawide impacts from the possible use of LBP, OCPs, and PCBs at the Site Evaluate impacts from the possible use of arsenical herbicides

TABLE 1
SAMPLING STRATEGY PLAN
LAUSD Venice High School PEA Equivalent

Building or Area	No. of Borings	Boring/Probe ID	Sample Depths (ft bgs)	Analytical Methods	Purpose
Central Campus	9	B-126 B-127 B-128 B-129 B-130 B-131 B-132 B-133 B-134	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential areawide impacts from the possible use of LBP, OCPs, and PCBs at the Site Evaluate impacts from the possible use of arsenical herbicides
Parking Lot	4	B-135 B-136 B-137 B-138	0.5' 1.5' (archive) 2.5' (archive)	Lead (6010B) Arsenic (6010B) OCPs (8081A) PCBs (8082) - 10%	Evaluate potential areawide impacts from the possible use of LBP, OCPs, and PCBs at the Site Evaluate impacts from the possible use of arsenical herbicides
Metal Shop	4	B-139 B-140 B-141 B-142	0.5' 1.5' (archive) 2.5' (archive)	TPH-cc (8015M) Metals (6010B/7471) VOCs (8260B) PCBs (8082)	Assess for potential releases from historical activities in the metals shop (Shop 8-9)
Hydraulic Hoists	6	B-143 B-144 B-145 B-146 B-147 B-148	5' 10' 15' (archive) 20' (archive)	TPH-cc (8015M) Metals (6010B/7471) VOCs (8260B) PCBs (8082)	Assess for potential releases from hydraulic lifts in the automotive repair shop (Shop 5-7)
Clarifier	2	B-149 B-150	5' 10' 15' (archive) 20' (archive)	TPH-cc (8015M) Metals (6010B/7471) VOCs (8260B) PCBs (8082)	Assess for potential releases from a clarifier outside the northeast corner of Shop 5--7

TABLE 1
SAMPLING STRATEGY PLAN
LAUSD Venice High School PEA Equivalent

Building or Area	No. of Borings	Boring/Probe ID	Sample Depths (ft bgs)	Analytical Methods	Purpose
SOIL GAS SAMPLES					
Shop Outdoor Area	2	SG-1 SG-2	5' 15	VOCs (8260B) CH_4 (ASTM D1946) H_2S (15/16)	Assess for possible solvent or fuel releases in the general shop area Assess for hazardous oilfield gases

TABLE 2
NON-PAVED AREA BORING LOCATIONS
LAUSD Venice High School PEA Equivalent

Boring ID	Distance Relative to Landmark
TRACK AND FIELD	
B-90	20' south of fence
	50' east of fence
	In larger of two grassy spots
B-91	Aligned with football field 20-yard line
	25' south of track curb
B-92	Aligned with football field 50-yard line
	25' south of track curb
B-93	5' east of football field 20-yard line
	26' south of track curb
B-94	10' south of fence
	15' west of fence
	In grassy area
B-95	30' west of goal post (measure from back of post)
	8' south of goal post (to avoid utilities)
B-96	On football field 20-yard line
	Mid-point of football field (158' wide field)
	79' north of south football field boundary line
B-97	On football field 50-yard line
	Mid-point of football field (158' wide field)
	79' north of south football field boundary line
B-98	On football field 20-yard line
	Mid-point of football field (158' wide field)
	79' north of south football field boundary line
B-99	30' east of goal post (measure from back of post)
B-100	10' north of fence
	Edge of dead grassy area
B-101	2' east of football field 20-yard line
	25' south of track curb
B-102	2' east of football field 50-yard line
	27' north of track curb
B-103	Aligned with football field 20-yard line
	25' north of track curb
B-104	45' north of fence
	10' west of fence
	In grassy area

TABLE 2
NON-PAVED AREA BORING LOCATIONS
LAUSD Venice High School PEA Equivalent

Boring ID	Distance Relative to Landmark
BASEBALL FIELD	
B-105	15' south of fence
	103' west of boring B-106 (to avoid utilities)
	75' north of boring B-108
	49' east of center of home plate
B-106	70' south of tennis court fence
	93' west of boring B-107 (to avoid utilities)
	On third base foul line
B-107	55' south of fence
	60' west of blue post line
	Generally lines up with yellow third base line foul pole
B-108	90' south of fence
	70' east of fence
	75' south of boring B-105
B-109	87' west of boring B-110 (to avoid utilities)
	80.5' south of boring B-106
	90.5' north of boring B-112
B-110	60' west of blue post line
	80.5' south of boring B-107
	80.5' north of boring B-113
B-111	70' east of fence
	75' north of fence
B-112	75' north of fence
	87' west of boring B-113 (to avoid utilities)
B-113	75' north of fence
	60' west of blue post line
SOFTBALL FIELD	
B-120	21' west of baseball backstop
	4' south of baseball backstop
B-121	187' north of short fence segment at south end of field
	30' west of perimeter fence
B-122	84' north of short fence segment at south end of field
	34' west of perimeter fence
B-123	93' north of perimeter fence
	24' east of perimeter fence
B-124	193' north of perimeter fence
	28' east of perimeter fence

TABLE 2
NON-PAVED AREA BORING LOCATIONS
LAUSD Venice High School PEA Equivalent

Boring ID	Distance Relative to Landmark
B-125	24' south of perimeter fence
	44' east of perimeter fence
OPEN AREAS	
B-126	26' south of asphalt
	36' east of asphalt
B-127	9.5' south of sidewalk (between sprinkler valve boxes)
	Centered between sprinkler valve boxes next to sidewalk
B-128	14' west of lunch table corner
	7' south of concrete drainage trench
B-129	8' west of the center of the sewer cap
	8' south of the center of the sewer cap
B-130	12' east of lunch table corner
	3' south of asphalt corner

TABLE 3
ANALYTICAL RESULTS FOR LEAD AND ARSENIC IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Lead	Arsenic
		Units	**ft bgs**	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
COMPREHENSIVE MODERNIZATION PROJECT PEA					
B-1	B1-0.5'	10/8/16	0.5	12.9	6.82
B-2	B2-0.5'	10/8/16	0.5	3.59J	55.2
	B2-1.5'	10/8/16	1.5	--	11.2
B2-N5	B2-N5-0.5'	11/6/16	0.5	--	181
	B2-N5-1.5'	11/6/16	1.5	--	8.36
B2-N10	B2-N10-0.5'	11/6/16	0.5	--	92.7
	B2-N10-1.5'	11/6/16	1.5	--	6.71
B-3	B3-0.5'	10/8/16	0.5	127	299
	B3-1.5'	10/8/16	1.5	4.24J	7.68
B3-W3	B3-W3-0.5'	11/6/16	0.5	6.99	8.25
B3-E5	B3-E5-0.5'	11/6/16	0.5	7.57	342
	B3-E5-1.5'	11/6/16	1.5	--	7.02
B3-E10	B3-E10-0.5'	11/6/16	0.5	--	191
	B3-E10-1.5'	11/6/16	1.5	--	8.37
B3-S5	B3-S5-0.5'	11/6/16	0.5	32.2	16.4
	B3-S5-1.5'	11/6/16	1.5	--	7.38
B3-S10	B3-S10-0.5'	11/6/16	0.5	--	25.3
	B3-S10-1.5'	11/6/16	1.5	--	8.54
B-4	B4-0.5'	10/8/16	0.5	5.83	6.15
B-5	B5-0.5'	10/2/16	0.5	6.50	<0.5
B-6	B6-0.5	10/2/16	0.5	9.17	2.95J
B-7	B7-0.5'	10/2/16	0.5	6.40	2.11J
B-8	B8-0.5'	10/2/16	0.5	6.74	5.64
B-9	B9-0.5'	10/2/16	0.5	9.50	1.94J
B-10	B10-0.5'	10/2/16	0.5	10.0	4.29J
B-11	B11-0.5'	10/2/16	0.5	11.5	3.63J
B-12	B12-0.5'	10/2/16	0.5	9.68	2.29J
B-13	B13-0.5'	10/2/16	0.5	62.1	6.57
	DUP-1	10/2/16	0.5	53.3	6.55
B-14	B14-0.5'	10/2/16	0.5	82.7	4.30J
	B14-1.5'	10/2/16	1.5	130	--
	B14-2.5'	10/2/16	2.5	4.02J	--

TABLE 3
ANALYTICAL RESULTS FOR LEAD AND ARSENIC IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Lead	Arsenic
		Units	**ft bgs**	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
B14-N5	B14-N5-0.5'	11/5/16	0.5	20.1	--
B14-S5	B14-S5-0.5'	11/5/16	0.5	7.95	--
B-15	B15-0.5'	10/2/16	0.5	17.1	6.20
B-16	B16-0.5'	10/2/16	0.5	6.90	23.0
	B16-1.5'	10/2/16	1.5	--	5.32
B16-S5	B16-S5-0.5	11/5/16	0.5	--	5.28
B16-SE5	B16-SE5-0.5	11/5/16	0.5	--	4.81J
B16-SW5	B16-SW5-0.5	11/5/16	0.5	--	4.66J
B-17	B17-0.5'	10/2/16	0.5	4.43J	6.42
B-18	B18-0.5'	10/2/16	0.5	4.31J	5.79
B-19	B19-0.5'	10/2/16	0.5	4.47J	5.86
B-20	B20-0.5'	10/2/16	0.5	54.5	5.71
B-21	B21-0.5'	10/2/16	0.5	8.99	5.32
B-22	B22-0.5'	10/2/16	0.5	27.9	6.05
B-23	B23-0.5'	10/2/16	0.5	38.3	7.21
B-24	B24-0.5'	10/2/16	0.5	30.1	5.11
	DUP-2	10/2/16	0.5	23.6	3.09J
B-25	B25-0.5'	10/8/16	0.5	26.4	3.83J
B-26	B26-0.5'	10/8/16	0.5	4.90J	4.33J
	DUP-3	10/8/16	0.5	1.59J	<0.5
B-27	B27-0.5'	10/8/16	0.5	3.28J	<0.5
B-28	B28-0.5'	10/8/16	0.5	2.26J	1.15J
B-29	B29-0.5'	10/8/16	0.5	4.09J	7.09
B-30	B30-0.5'	10/8/16	0.5	4.10J	6.25
B-31	B31-0.5'	10/8/16	0.5	36.3	5.02
B-32	B32-0.5'	10/8/16	0.5	20.9	6.96
B-33	B33-0.5'	10/8/16	0.5	41.7	7.76
B-34	B34-0.5'	10/8/16	0.5	4.76J	9.43
B-35	B35-0.5'	10/8/16	0.5	10.5	6.43
B-36	B36-0.5'	10/8/16	0.5	3.88J	15.7
	B36-1.5'	10/8/16	1.5	--	6.29
B36-E5	B36-E5-0.5'	11/5/16	0.5	--	45.4
	B36-E5-1.5'	11/5/16	1.5	--	7.65

TABLE 3
ANALYTICAL RESULTS FOR LEAD AND ARSENIC IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Lead	Arsenic
		Units	ft bgs	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
B36-E10	B36-E10-0.5'	11/5/16	0.5	--	42.1
	B36-E10-1.5'	11/5/16	1.5	--	5.87
B36-S5	B36-S5-0.5'	11/5/16	0.5	--	45.2
	B36-S5-1.5'	11/5/16	1.5	--	8.60
B36-W5	B36-W5-0.5'	11/5/16	0.5	--	24.6
	B36-W5-1.5'	11/5/16	1.5	--	39.0
	B36-W5-2.5'	11/5/16	2.5	--	5.84
B36-W10	B36-W10-0.5'	11/5/16	0.5	--	54.1
	B36-W10-1.5'	11/5/16	1.5	--	7.29
B-37	B37-0.5'	10/8/16	0.5	3.10J	<0.5
B-38	B38-0.5'	10/8/16	0.5	9.13	1.99J
B-39	B39-0.5'	10/8/16	0.5	3.06J	<0.5
B-40	B40-0.5'	10/8/16	0.5	2.81J	1.02J
B-41	B41-0.5'	10/8/16	0.5	4.82J	0.882J
	DUP-4	10/8/16	0.5	2.87J	1.34J
B-42	B42-0.5'	10/8/16	0.5	4.41J	1.38J
B-43	B43-0.5'	10/8/16	0.5	7.42	9.54
B-44	B44-0.5'	10/8/16	0.5	7.27	1.99J
	DUP-5	10/8/16	0.5	4.97J	2.22J
B-45	B45-0.5'	10/9/16	0.5	2.72J	<0.5
B-46	B46-0.5'	10/1/16	0.5	4.30J	6.55
B-47	B47-0.5'	10/1/16	0.5	6.30	6.31
B-48	B48-0.5'	10/1/16	0.5	12.4	52.8
	B48-1.5'	10/1/16	1.5	--	5.79
B48-E4	B48-E4-0.5'	11/5/16	0.5	--	23.6
	B48-E4-1.5'	11/5/16	1.5	--	7.38
B48-N5	B48-N5-0.5'	11/5/16	0.5	--	8.15
B48-S5	B48-S5-0.5'	11/5/16	0.5	--	15.5
	B48-S5-1.5'	11/5/16	1.5	--	5.96
B48-S10	B48-S10-0.5'	11/5/16	0.5	--	21.2
	B48-S10-1.5'	11/5/16	1.5	--	8.09
B-49	B49-0.5'	10/2/16	0.5	6.03	4.64J
B-50	B50-0.5'	10/1/16	0.5	6.99	8.36
	DUP-6	10/1/16	0.5	6.25	9.12
B-51	B51-0.5'	10/2/16	0.5	3.25J	4.28J

TABLE 3
ANALYTICAL RESULTS FOR LEAD AND ARSENIC IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Lead	Arsenic
		Units	**ft bgs**	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
B-52	B52-0.5'	10/2/16	0.5	22.7	6.04
B-53	B53-0.5'	10/2/16	0.5	6.43	3.89J
B-54	B54-0.5'	10/2/16	0.5	26.5	6.84
B-55	B55-0.5'	10/2/16	0.5	12.0	6.83
B-56	B56-0.5'	10/2/16	0.5	3.05J	<0.5
	DUP-7	10/2/16	0.5	2.58J	<0.5
B-57	B57-0.5'	10/2/16	0.5	25.3	6.87
B-58	B58-0.5'	10/2/16	0.5	2.46J	<0.5
B-59	B59-0.5'	10/2/16	0.5	7.33	4.59J
B-60	B60-0.5'	10/2/16	0.5	11.6	4.71J
B-61	B610.5'	10/1/16	0.5	30.4	2.23J
B-62	B62-0.5'	10/1/16	0.5	14.3	<0.5
B-63	B63-0.5'	10/1/16	0.5	3.59J	5.50
B-64	B64-0.5'	10/1/16	0.5	13.2	7.65
B-65	B65-0.5'	10/2/16	0.5	34.1	6.17
B-66	B66-0.5'	10/2/16	0.5	32.6	14.8
	B66-1.5'	10/2/16	1.5	--	7.60
B66-E5	B66-E5-0.5'	11/5/16	0.5	--	8.17
B66-S5	B66-S5-0.5'	11/5/16	0.5	--	46.3
	B66-S5-1.5'	11/5/16	1.5	--	10.8
B66-W5	B66-W5-0.5'	11/5/16	0.5	--	19.8
	B66-W5-1.5'	11/5/16	1.5	--	7.76
B66-W10	B66-W10-0.5'	11/5/16	0.5	--	20.6
	B66-W10-1.5'	11/5/16	1.5	--	6.01
B-67	B67-0.5'	10/2/16	0.5	81.5	8.63
	B67-1.5'	10/2/16	1.5	9.30	--
B67-W5	B67-W5-0.5'	11/5/16	0.5	52.6	--
B67-E13	B67-E13-0.5'	11/5/16	0.5	81.1	--
	B67-E13-1.5'	11/5/16	1.5	26.8	--
B-68	B68-0.5'	10/2/16	0.5	10.5	7.77
	DUP-8	10/2/16	0.5	15.4	8.64
B-69	B69-0.5'	10/2/16	0.5	12.6	6.56
B-70	B70-0.5'	10/2/16	0.5	24.9	4.16J
B-71	B71-0.5'	10/1/16	0.5	12.6	<0.5

TABLE 3
ANALYTICAL RESULTS FOR LEAD AND ARSENIC IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Lead	Arsenic
		Units	**ft bgs**	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
B-72	B72-0.5'	10/1/16	0.5	25.5	13.8
	B72-1.5'	10/1/16	1.5	--	7.49
B72-N4	B72-N4-0.5'	11/5/16	0.5	--	112
	B72-N4-1.5'	11/5/16	1.5	--	18.6
	B72-N4-2.5'	11/5/16	2.5	--	6.49
B-73	B73-0.5'	10/1/16	0.5	8.55	6.92
B-74	B74-0.5'	10/1/16	0.5	7.10	5.58
B-75	B75-0.5'	10/1/16	0.5	4.77J	5.41
	DUP-9	10/1/16	0.5	6.80	4.99J
B-76	B76-0.5'	10/2/16	0.5	5.46	5.98
B-77	B77-0.5'	10/2/16	0.5	8.86	<0.5
B-78	B78-0.5'	10/2/16	0.5	43.1	4.74J
B-79	B79-0.5'	10/1/16	0.5	3.74J	53.3
	B79-1.5'	10/1/16	1.5	--	6.80
B79-N5	B79-N5-0.5'	11/5/16	0.5	--	26.9
	B79-N5-1.5'	11/5/16	1.5	--	6.20
B79-S5	B79-S5-0.5'	11/5/16	0.5	--	34.3
	B79-S5-1.5'	11/5/16	1.5	--	7.11
B79-W3	B79-W3-0.5'	11/5/16	0.5	--	51.8
	B79-W3-1.5'	11/5/16	1.5	--	6.87
B-80	B80-0.5'	10/2/16	0.5	3.23J	5.62
B-81	B81-0.5'	10/8/16	0.5	8.23	7.08
B-82	B82-0.5'	10/2/16	0.5	10.8	7.77
	DUP-10	10/2/16	0.5	12.2	10.5
B-83	B83-0.5'	10/1/16	0.5	23.7	10.6
B-84	B84-0.5'	10/2/16	0.5	6.07	<0.5
B-85	B85-0.5'	10/2/16	0.5	4.42J	7.56
B-86	B86-0.5'	10/2/16	0.5	42.6	2.24J
B-87	B87-0.5'	10/1/16	0.5	24.7	7.38
B-88	B88-0.5'	10/1/16	0.5	79.5	63.4
	B88-1.5'	10/1/16	1.5	--	4.49J
B88-E5	B88-E5-0.5'	11/5/16	0.5	--	6.39
B88-W5	B88-W5-0.5	11/5/16	0.5	--	9.05
B-89	B89-0.5'	10/2/16	0.5	8.37	9.66

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ANALYTICAL RESULTS FOR LEAD AND ARSENIC IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Lead	Arsenic
		Units	**ft bgs**	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
B-90	B90-0.5'	10/8/16	0.5	4.71J	49.3
	B90-1.5'	10/8/16	1.5	--	4.05J
B90-E5	B90-E5-0.5'	11/6/16	0.5	--	242
	B90-E5-1.5'	11/6/16	1.5	--	3.63J
B90-E10	B90-E10-0.5'	11/6/16	0.5	--	13.2
	B90-E10-1.5'	11/6/16	1.5	--	<2.5
B90-N5	B90-N5-0.5'	11/6/16	0.5	--	104
	B90-N5-1.5'	11/6/16	1.5	--	3.72J
B90-N10	B90-N10-0.5'	11/6/16	0.5	--	5.15
B90-S5	B90-S5-0.5'	11/6/16	0.5	--	16.3
	B90-S5-1.5'	11/6/16	1.5	--	2.85J
B90-S10	B90-S10-0.5'	11/6/16	0.5	--	<2.5
B90-W5	B90-W5-0.5'	11/6/16	0.5	--	10.4
B-91	B91-0.5'	10/9/16	0.5	27.1	8.12
B-92	B92-0.5'	10/9/16	0.5	17.2	3.03J
B-93	B93-0.5'	10/9/16	0.5	24.3	4.18J
B-94	B94-0.5'	10/8/16	0.5	336	8.34
	B94-1.5'	10/8/16	1.5	3.48J	--
B94-E5	B94-E5-0.5'	11/6/16	0.5	61.6	--
B94-N5	B94-N5-0.5'	11/6/16	0.5	146	--
	B94-N5-1.5'	11/6/16	1.5	5.63	--
B94-N9	B94-N9-0.5'	11/6/16	0.5	103	--
	B94-N9-1.5'	11/6/16	1.5	11.7	--
B94-S5	B94-S5-0.5'	11/6/16	0.5	6.21	--
B94-W2.5	B94-W2.5-0.5'	11/6/16	0.5	4.27J	--
B-95	B95-0.5'	10/9/16	0.5	25.5	2.80J
B-96	B96-0.5'	10/9/16	0.5	7.05	<0.5
B-97	B97-0.5'	10/9/16	0.5	9.02	3.37J
B-98	B98-0.5'	10/9/16	0.5	15.3	3.73J
B-99	B99-0.5'	10/9/16	0.5	10.1	<0.5
B-100	B100-0.5'	10/8/16	0.5	1.69J	2.57J
B-101	B101-0.5'	10/9/16	0.5	29.1	6.04
B-102	B102-0.5'	10/9/16	0.5	17.0	3.98J
B-103	B103-0.5'	10/9/16	0.5	24.6	8.20
B-104	B104-0.5'	10/8/16	0.5	24.7	5.83

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ANALYTICAL RESULTS FOR LEAD AND ARSENIC IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Lead	Arsenic
		Units	**ft bgs**	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
B-105	B105-0.5'	10/9/16	0.5	6.00	14.2
	B105-1.5'	10/9/16	1.5	--	8.88
B105-E3	B105-E3-0.5'	11/6/16	0.5	--	5.01
B105-N5	B105-N5-0.5'	11/6/16	0.5	--	4.29J
B105-S5	B105-S5-0.5'	11/6/16	0.5	--	2.90J
B105-W5	B105-W5-0.5'	11/6/16	0.5	--	4.01J
B-106	B106-0.5'	10/9/16	0.5	18.3	4.67J
B-107	B107-0.5'	10/9/16	0.5	17.7	5.87
B-108	B108-0.5'	10/9/16	0.5	12.8	2.22J
B-109	B109-0.5'	10/9/16	0.5	20.2	3.12J
	DUP-11	10/9/16	0.5	16.5	2.36J
B-110	B110-0.5'	10/9/16	0.5	30.1	7.07
B-111	B111-0.5'	10/9/16	0.5	8.81	2.22J
B-112	B112-0.5'	10/9/16	0.5	12.1	5.15
B-113	B113-0.5'	10/9/16	0.5	16.7	10.3
B-114	B114-0.5'	10/9/16	0.5	40.2	29.4
	B114-1.5'	10/9/16	1.5	--	8.00
B114-E5	B114-E5-0.5'	11/6/16	0.5	--	24.8
	B114-E5-1.5'	11/6/16	1.5	--	6.10
B114-E10	B114-E10-0.5'	11/6/16	0.5	--	24.7
	B114-E10-1.5'	11/6/16	1.5	--	5.46
B114-N5	B114-N5-0.5'	11/6/16	0.5	--	19.5
	B114-N5-1.5'	11/6/16	1.5	--	8.79
B114-N10	B114-N10-0.5'	11/6/16	0.5	--	11.7
B114-S5	B114-S5-0.5'	11/6/16	0.5	--	13.0
	B114-S5-1.5'	11/6/16	0.5	--	7.97
B114-S10	B114-S10-0.5'	11/6/16	0.5	--	27.1
	B114-S10-1.5'	11/6/16	1.5	--	7.57
B-115	B115-0.5'	10/9/16	0.5	18.2	11.5
B-116	B116-0.5'	10/9/16	0.5	7.68	10.2
B-117	B117-0.5'	10/9/16	0.5	18.0	9.87
B-118	B118-0.5'	10/9/16	0.5	7.59	9.53

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ANALYTICAL RESULTS FOR LEAD AND ARSENIC IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Lead	Arsenic
		Units	**ft bgs**	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
B-119	B119-0.5'	10/9/16	0.5	10.5	3.05J
B-120	B120-0.5'	10/1/16	0.5	87.7	7.51
	B120-1.5'	10/1/16	1.5	14.6	--
B120-E5	B120-E5-0.5'	11/6/16	0.5	56.3	--
B120-N3	B120-N3-0.5'	11/6/16	0.5	16.2	--
B120-S5	B120-S5-0.5'	11/6/16	0.5	36.7	--
B120-W5	B120-W5-0.5'	11/6/16	0.5	83.2	--
	B120-W5-1.5'	11/6/16	1.5	16.8	--
B120-W10	B120-W10-0.5'	11/6/16	0.5	83.7	--
	B120-W10-1.5'	11/6/16	1.5	24.4	--
B-121	B121-0.5'	10/1/16	0.5	16.3	7.41
B-122	B122-0.5'	10/1/16	0.5	32.6	5.53
B-123	B123-0.5'	10/1/16	0.5	44.5	7.90
	DUP-12	10/1/16	0.5	102	6.43
	B123-1.5'	10/1/16	1.5	4.43J	--
B123-N5	B123-N5-0.5'	11/6/16	0.5	64.7	--
B123-S5	B123-S5-0.5'	11/6/16	0.5	38.5	--
B123-W5	B123-W5-0.5'	11/6/16	0.5	33.1	--
B-124	B124-0.5'	10/1/16	0.5	39.5	10.7
B-125	B125-0.5'	10/1/16	0.5	73.0	4.99J
B-126	B126-0.5'	10/1/16	0.5	43.3	5.01
	DUP-13	10/1/16	0.5	37.0	5.66
B-127	B127-0.5'	10/1/16	0.5	50.3	4.21J
B-128	B128-0.5'	10/1/16	0.5	53.2	5.56
B-129	B129-0.5'	10/1/16	0.5	19.0	5.86
B-130	B130-0.5'	10/1/16	0.5	34.7	5.32
B-131	B131-0.5'	10/2/16	0.5	4.26J	6.15
B-132	B132-0.5'	10/2/16	0.5	26.4	4.92J
B-133	B133-0.5'	10/1/16	0.5	11.3	6.08
B-134	B134-0.5'	10/1/16	0.5	47.7	6.98
B-135	B135-0.5'	10/1/16	0.5	21.0	8.48
B-136	B136-0.5'	10/1/16	0.5	23.7	5.31
B-137	B137-0.5'	10/1/16	0.5	12.8	4.41J
	DUP-14	10/1/16	0.5	9.04	4.52J
B-138	B138-0.5'	10/1/16	0.5	21.0	6.66

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		Units	**ft bgs**	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
SEISMIC MODERNIZATION PROJECT PEA					
W-B1	W-B1-0.5	1/7/16	0.5	14.2	24
	W-B1-1.5	1/7/16	1.5	21	7.0
	W-B1-2.5	1/7/16	2.5	12	--
W-B1-5W	W-B1-5W-0.5	3/22/16	0.5	--	91
	W-B1-5W-1.5	3/22/16	1.5	--	5.8
W-B1-8W	W-B1-8W-0.5	3/22/16	0.5	--	55
	W-B1-8W-1.5	3/22/16	1.5	--	7.0
W-B1-5E	W-B1-5E-0.5	3/22/16	0.5	--	100
	W-B1-5E-1.5	3/22/16	1.5	--	6.4
W-B1-10E	W-B1-10E-0.5	3/22/16	0.5	--	23
	W-B1-10E-1.5	3/22/16	1.5	--	6.2
W-B1-5N	W-B1-5N-0.5	3/22/16	0.5	--	23
	W-B1-5N-1.5	3/22/16	1.5	--	5.9
W-B2	W-B2-0.5	1/7/16	0.5	13	7.7
	W-B2-1.5	1/7/16	1.5	26.6	--
	W-B2-2.5	1/7/16	2.5	16.7	--
W-B3	W-B3-0.5	1/7/16	0.5	52 [(a)]	10
	W-B3-1.5	1/7/16	1.5	19.4	--
	W-B3-2.5	1/7/16	2.5	19.3	--
	DUP1	1/7/16	2.5	21.2	--
W-B4	W-B4-0.5	1/7/16	0.5	15	12
	W-B4-1.5	1/7/16	1.5	9	9.8
	W-B4-2.5	1/7/16	2.5	4	--
W-B4-5W	W-B4-5W-0.5	3/21/16	0.5	--	8.2
W-B4-10W	W-B4-10W-0.5	3/21/16	0.5	--	16
	W-B4-10W-1.5	3/21/16	1.5	--	9.6
	W-B4-15S-0.5'	11/5/16	0.5	--	8.57
W-B4-5S	W-B4-5S-0.5	3/21/16	0.5	--	13
	W-B4-5S-1.5	3/21/16	1.5	--	6.8
W-B4-10S	W-B4-10S-0.5	3/21/16	0.5	--	17
	W-B4-10S-1.5	3/21/16	1.5	--	12
W-B4-15S	W-B4-15S-0.5'	11/5/16	0.5		8.57

TABLE 3
ANALYTICAL RESULTS FOR LEAD AND ARSENIC IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Lead	Arsenic
		Units	**ft bgs**	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B
		Screening Level	--	80	12
W-B4-5E	W-B4-5E-0.5	3/21/16	0.5	--	8.4
	DUP-3A	3/21/16	0.5	--	8.9
W-B4-10E	W-B4-10E-0.5	3/21/16	0.5	--	1.2

Notes:
1. Lead analyzed by XRF during Seismic Modernization Project PEA
2. Arsenic analyzed by USEPA Method 6020 during Seismic Modernization Project PEA
[a] Confirmed as 69 mg/kg by stationary laboratory using USEPA Method 6010B
ft bgs = feet below ground surface
mg/kg = milligrams/kilogram
"--" = not analyzed

(yellow)	Concentration exceeds screening level
(lavender)	Step-out boring

TABLE 4
ANALYTICAL RESULTS FOR OCPs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Chordane (total)	Chordane (alpha)	Chordane (gamma)	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Heptachlor	Heptachlor Epoxide	Other OCPs
		Units	**ft bgs**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		USEPA Test Method	--	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A
		Screening Level	--	1,700	1,700	1,700	2,300	2,000	1,900	34	130	70	--
COMPREHENSIVE MODERNIZATION PROJECT PEA													
B-1	B1-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-2	B2-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-3	B3-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-4	B4-0.5'	10/8/16	0.5	10.1	5.67	4.41	<1.0	5.49	24.1	<1.0	<1.0	<1.0	ND
B-5	B5-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-6	B6-0.5	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-7	B7-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	1.12J	3.63	<1.0	<1.0	<1.0	ND
B-8	B8-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-9	B9-0.5'	10/2/16	0.5	5.07	2.52	2.55	<1.0	<1.0	<1.0	3.20	<1.0	<1.0	ND
B-10	B10-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.75J	<1.0	<1.0	<1.0	ND
B-11	B11-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	2.08	<1.0	<1.0	<1.0	ND
B-12	B12-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	2.73J	<1.0	<1.0	<1.0	<1.0	ND
B-13	B13-0.5'	10/2/16	0.5	17.3	10.9	6.42	<1.0	3.13	6.25	<1.0	<1.0	<1.0	ND
	DUP-1	10/2/16	0.5	14.8	8.61	6.19	<1.0	2.79	6.35	<1.0	<1.0	<1.0	ND
B-14	B14-05.'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	1.36J	5.89	<1.0	<1.0	<1.0	ND
B-15	B15-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	1.25J	2.14	<1.0	<1.0	<1.0	ND
B-16	B16-0.5'	10/2/16	0.5	1.07J	<1.0	<1.0	<1.0	1.55J	2.17	<1.0	<1.0	<1.0	ND
B-17	B17-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-18	B18-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-19	B19-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-20	B20-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-21	B21-0.5'	10/2/16	0.5	1.88J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-22	B22-0.5'	10/2/16	0.5	8.97J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND
B-23	B23-0.5'	10/2/16	0.5	4.90	2.36J	2.53J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	ND

TABLE 4
ANALYTICAL RESULTS FOR OCPs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Chordane (total)	Chordane (alpha)	Chordane (gamma)	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Heptachlor	Heptachlor Epoxide	Other OCPs
		Units	ft bgs	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		USEPA Test Method	--	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A
		Screening Level	--	1,700	1,700	1,700	2,300	2,000	1,900	34	130	70	--
B-24	B24-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	DUP-2	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-25	B25-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	2.72	1.87J	<1.0	<1.0	<1.0	ND
B-26	B26-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	DUP-3	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-27	B27-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-28	B28-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-29	B29-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-30	B30-0.5'	10/8/16	0.5	4.42	<1.0	4.42	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-31	B31-0.5'	10/8/16	0.5	14.0	6.95J	7.08J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-32	B32-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-33	B33-0.5'	10/8/16	0.5	669	365	304	<1.0	<1.0	23.3	2.85	<1.0	<1.0	ND
B-34	B34-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-35	B35-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.00J	<1.0	<1.0	<1.0	ND
B-36	B36-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-37	B37-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-38	B38-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-39	B39-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-40	B40-0.5'	10/8/16	0.5	1.44J	<1.0	<1.0	<1.0	1.38J	<1.0	<1.0	<1.0	<1.0	ND
B-41	B41-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	DUP-4	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-42	B42-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-43	B43-0.5'	10/8/16	0.5	1.46J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-44	B44-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	DUP-5	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-45	B45-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	4.02	<1.0	<1.0	<1.0	ND

TABLE 4
ANALYTICAL RESULTS FOR OCPs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Chordane (total)	Chordane (alpha)	Chordane (gamma)	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Heptachlor	Heptachlor Epoxide	Other OCPs
		Units	**ft bgs**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		USEPA Test Method	--	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A
		Screening Level	--	1,700	1,700	1,700	2,300	2,000	1,900	34	130	70	--
B-46	B46-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-47	B47-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-48	B48-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-49	B49-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-50	B50-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	DUP-6	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-51	B51-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-52	B52-0.5'	10/2/16	0.5	2.19J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-53	B53-0.5'	10/2/16	0.5	1.23J	<1.0	<1.0	<1.0	<1.0	2.29	<1.0	<1.0	<1.0	ND
B-54	B54-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	2.52	<1.0	<1.0	<1.0	ND
B-55	B55-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-56	B56-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	DUP-7	10/2/16	0.5	3.86	2.14	1.72J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-57	B57-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-58	B58-0.5'	10/2/16	0.5	2.21	1.17J	1.04J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-59	B59-0.5'	10/2/16	0.5	16.9	9.14	7.78	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-60	B60-0.5'	10/1/16	0.5	312	155	157	<1.0	<1.0	<1.0	<1.0	1.43J	<1.0	ND
B-61	B610.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-62	B62-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-63	B63-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-64	B64-0.5'	10/1/16	0.5	4.32	2.43J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-65	B65-0.5'	10/1/16	0.5	8.31J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-66	B66-05.'	10/2/16	0.5	2.62	1.47J	1.14J	<1.0	103	37.1	<1.0	<1.0	<1.0	ND
B-67	B67-0.5'	10/2/16	0.5	117	60.0	56.5	2.95	13.1	34.7	2.25	<1.0	2.80	ND
B-68	B68-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	DUP-8	10/2/16	0.5	2.28	1.01J	1.27J	<1.0	<1.0	1.90J	<1.0	<1.0	<1.0	ND

TABLE 4
ANALYTICAL RESULTS FOR OCPs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Chordane (total)	Chordane (alpha)	Chordane (gamma)	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Heptachlor	Heptachlor Epoxide	Other OCPs
		Units	**ft bgs**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
		USEPA Test Method	--	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A
		Screening Level	--	1,700	1,700	1,700	2,300	2,000	1,900	34	130	70	--
B-69	B69-0.5'	10/2/16	0.5	24.0	13.5	10.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-70	B70-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-71	B71-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-72	B72-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-73	B73-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-74	B74-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-75	B75-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	DUP-9	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-76	B76-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-77	B77-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-78	B78-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-79	B79-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-80	B80-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-81	B81-0.5'	10/8/16	0.5	2.30	1.08J	1.22J	<1.0	1.76J	2.19	<1.0	<1.0	<1.0	ND
B-82	B82-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
	DUP-10	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-83	B83-0.5'	10/1/16	0.5	27.6	13.1	14.5	<1.0	<1.0	5.01	2.25J	<1.0	<1.0	ND
B-84	B84-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-85	B85-0.5'	10/2/16	0.5	6.22	4.17	2.05	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-86	B86-0.5'	10/2/16	0.5	7.13	3.47	3.66	<1.0	1.45J	2.79	<1.0	<1.0	<1.0	ND
B-87	B87-0.5'	10/1/16	0.5	53.4	25.4	28.0	<1.0	<1.0	3.01	<1.0	1.95J	<1.0	ND
B-88	B88-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-89	B89-0.5'	10/2/16	0.5	1.74J	<1.0	<1.0	<1.0	<1.0	1.65J	<1.0	<1.0	<1.0	ND
B-90	B90-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-91	B91-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	2.61	<1.0	<1.0	<1.0	ND
B-92	B92-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	1.88J	1.55J	<1.0	<1.0	<1.0	ND

TABLE 4
ANALYTICAL RESULTS FOR OCPs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Chordane (total)	Chordane (alpha)	Chordane (gamma)	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Heptachlor	Heptachlor Epoxide	Other OCPs
Units			**ft bgs**	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
USEPA Test Method			--	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A
Screening Level			--	1,700	1,700	1,700	2,300	2,000	1,900	34	130	70	--
B-93	B93-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.82J	<1.0	<1.0	<1.0	ND
B-94	B94-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-95	B95-0.5'	10/9/16	0.5	2.94	1.06J	1.88J	<1.0	5.37	3.74	<1.0	<1.0	<1.0	ND
B-96	B96-0.5'	10/9/16	0.5	1.34J	<1.0	<1.0	<1.0	8.59	1.99J	<1.0	<1.0	<1.0	ND
B-97	B97-0.5'	10/9/16	0.5	7.57	3.65	3.92	<1.0	6.14	5.24	<1.0	<1.0	<1.0	ND
B-98	B98-0.5'	10/9/16	0.5	3.94	2.14	1.80J	<1.0	5.04	3.72	<1.0	<1.0	<1.0	ND
B-99	B99-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-100	B100-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-101	B101-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	2.14	<1.0	<1.0	<1.0	ND
B-102	B102-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	1.39J	1.35J	<1.0	<1.0	<1.0	ND
B-103	B103-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.49J	<1.0	<1.0	<1.0	ND
B-104	B104-0.5'	10/8/16	0.5	<1.0	<1.0	<1.0	<1.0	2.45	3.55	<1.0	<1.0	<1.0	ND
B-105	B105-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-106	B106-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-107	B107-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	2.03	4.94	<1.0	<1.0	<1.0	ND
B-108	B108-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.24J	<1.0	<1.0	<1.0	ND
B-109	B109-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	1.37J	1.25J	<1.0	<1.0	<1.0	ND
	DUP-11	10/9/16	0.5	4.10	1.90J	2.20	<1.0	1.19J	1.43J	<1.0	<1.0	<1.0	ND
B-110	B110-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	1.05J	2.30	<1.0	<1.0	<1.0	ND
B-111	B111-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-112	B112-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-113	B113-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.81J	<1.0	<1.0	<1.0	ND
B-114	B114-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.11J	<1.0	<1.0	<1.0	ND
B-115	B115-0.5'	10/9/16	0.5	45.9	23.2	22.7	<1.0	<1.0	3.09J	<1.0	<1.0	<1.0	ND

TABLE 4
ANALYTICAL RESULTS FOR OCPs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Chordane (total)	Chordane (alpha)	Chordane (gamma)	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Heptachlor	Heptachlor Epoxide	Other OCPs
		Units	**ft bgs**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
		USEPA Test Method	--	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A
		Screening Level	--	1,700	1,700	1,700	2,300	2,000	1,900	34	130	70	--
B-116	B116-0.5'	10/9/16	0.5	6.75	3.84	2.91	<1.0	<1.0	1.63J	<1.0	<1.0	<1.0	ND
B-117	B117-0.5'	10/9/16	0.5	9.78	4.88	4.90	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-118	B118-0.5'	10/9/16	0.5	4.70	2.45	2.25	<1.0	<1.0	1.86J	<1.0	<1.0	<1.0	ND
B-119	B119-0.5'	10/9/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-120	B120-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	2.55	3.45	<1.0	<1.0	<1.0	ND
B-121	B121-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-122	B122-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	2.16	2.38	<1.0	<1.0	<1.0	ND
B-123	B123-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	1.57J	3.06	<1.0	<1.0	<1.0	ND
	DUP-12	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	2.02	<1.0	<1.0	<1.0	ND
B-124	B124-0.5'	10/1/16	0.5	1.04J	<1.0	<1.0	<1.0	1.77J	1.97J	<1.0	<1.0	<1.0	ND
B-125	B125-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	2.74	2.73	<1.0	<1.0	<1.0	ND
B-126	B126-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	1.45J	<1.0	<1.0	<1.0	<1.0	ND
	DUP-13	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.08J	<1.0	<1.0	<1.0	ND
B-127	B127-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	2.79	<1.0	<1.0	<1.0	<1.0	ND
B-128	B128-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	1.85J	<1.0	<1.0	<1.0	ND
B-129	B129-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-130	B130-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-131	B131-0.5'	10/2/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-132	B132-0.5'	10/2/16	0.5	10.8	<1.0	6.70J	<1.0	9.63J	<1.0	<1.0	<1.0	<1.0	ND
B-133	B133-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-134	B134-0.5'	10/1/16	0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND
B-135	B135-0.5'	10/1/16	0.5	27.4	15.3	12.1	3.44	104	57.5	4.70	<1.0	<1.0	ND
B-136	B136-0.5'	10/1/16	0.5	1.66J	<1.0	1.20J	2.83	14.1	4.96	2.50	<1.0	<1.0	ND
B-137	B137-0.5'	10/1/16	0.5	3.82	2.33	1.49J	1.48J	3.85	<1.0	<1.0	<1.0	<1.0	ND
	DUP-14	10/1/16	0.5	4.38	2.74	1.64J	1.26J	3.23	1.62J	<1.0	<1.0	<1.0	ND
B-138	B138-0.5'	10/1/16	0.5	2.42	1.14J	1.28J	1.60J	9.34	16.7	<1.0	<1.0	<1.0	ND

TABLE 4
ANALYTICAL RESULTS FOR OCPs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Chordane (total)	Chordane (alpha)	Chordane (gamma)	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Heptachlor	Heptachlor Epoxide	Other OCPs
		Units	**ft bgs**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
		USEPA Test Method	--	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A	8081A
		Screening Level	--	1,700	1,700	1,700	2,300	2,000	1,900	34	130	70	--
SEISMIC MODERNIZATION PROJECT PEA													
W-B1, W-B2, W-B3, W-B4	Composite A	1/7/16	0.5	<5	NA	NA	<0.36	<0.43	<0.42	<0.35	<0.43	<0.45	ND
			Maximum Concentrations	669	365	304	3.44	104	57.5	4.70	1.95J	2.80	ND

ft bgs = feet below ground surface

µg/kg = micrograms/kilogram

ND = not detected; detection limits variable; refer to laboratory reports

NA = not analyzed

TABLE 5
ANALYTICAL RESULTS FOR PCBs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	PCBs
		Units	**ft bgs**	µg/kg
		USEPA Test Method	--	8082
		Screening Level	--	300
B-4	B4-0.5'	10/8/16	0.5	<25
B-14	B14-05.'	10/2/16	0.5	<25
B-32	B32-0.5'	10/8/16	0.5	<25
B-34	B34-0.5'	10/8/16	0.5	<25
B-60	B60-0.5'	10/1/16	0.5	<25
B-61	B610.5'	10/1/16	0.5	<25
B-65	B65-0.5'	10/1/16	0.5	<25
B-72	B72-0.5'	10/1/16	0.5	<25
B-89	B89-0.5'	10/2/16	0.5	<25
B-116	B116-0.5'	10/9/16	0.5	<25
B-123	B123-0.5'	10/1/16	0.5	<25
	DUP-12	10/1/16	0.5	<25
B-127	B127-0.5'	10/1/16	0.5	<25
B-139	B139-0.5'	10/8/16	0.5	<25
B-140	B140-0.5'	10/8/16	0.5	<25
	DUP-15	10/8/16	0.5	<25
B-141	B141-0.5'	10/8/16	0.5	<25
B-142	B142-0.5'	10/8/16	0.5	<25
B-143	B143-5'	10/8/16	5	<25
	B143-10'	10/8/16	10	<25
B-144	B144-5'	10/8/16	5	<25
	B144-10'	10/8/16	10	<25
B-145	B145-5'	10/8/16	5	<25
	DUP-16	10/8/16	5	<25
	B145-10'	10/8/16	10	<25
B-146	B146-5'	10/8/16	5	<25
	B146-10'	10/8/16	10	<25
B-147	B147-5'	10/8/16	5	<25
	B147-10'	10/8/16	10	<25
B-148	B148-5'	10/8/16	5	<25
	B148-10'	10/8/16	10	<25

TABLE 5
ANALYTICAL RESULTS FOR PCBs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	PCBs
		Units	**ft bgs**	µg/kg
		USEPA Test Method	--	8082
		Screening Level	--	300
B-149	B149-5'	10/8/16	5	<25
	B149-10'	10/8/16	10	<25
B-150	B150-5'	10/8/16	5	<25
	DUP-17	10/8/16	5	<25
	B150-10'	10/8/16	10	<25

ft bgs = feet below ground surface
µg/kg = micrograms/kilogram

TABLE 6
ANALYTICAL RESULTS FOR TPH IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	TPH-g	TPH-d	TPH-o
		Units	ft bgs	mg/kg	mg/kg	mg/kg
		USEPA Test Method	--	8015M	8015M	8015M
		SFB RWQCB ESL (odors)	--	100	100	100
		SFB RWQCB ESL (human health)	--	770	570	10,000
		SFB RWQCB ESL (groundwater)	--	770	240	NA
		LA RWQCB SL (groundwater)	--	100	100	1,000
B-139	B139-0.5'	10/8/16	0.5	<0.1	<1.0	<1.0
B-140	B140-0.5'	10/8/16	0.5	<0.1	<1.0	<1.0
	DUP-15	10/8/16	0.5	<0.1	<1.0	<1.0
B-141	B141-0.5'	10/8/16	0.5	<0.1	<1.0	<1.0
B-142	B142-0.5'	10/8/16	0.5	<0.1	<1.0	<1.0
B-143	B143-5'	10/8/16	5	<0.1	<1.0	<1.0
	B143-10'	10/8/16	10	<0.1	<1.0	<1.0
B-144	B144-5'	10/8/16	5	<0.1	<1.0	<1.0
	B144-10'	10/8/16	10	<0.1	<1.0	<1.0
B-145	B145-5'	10/8/16	5	<0.1	<1.0	<1.0
	DUP-16	10/8/16	5	<0.1	<1.0	<1.0
	B145-10'	10/8/16	10	<0.1	<1.0	<1.0
B-146	B146-5'	10/8/16	5	<0.1	<1.0	<1.0
	B146-10'	10/8/16	10	<0.1	<1.0	<1.0
B-147	B147-5'	10/8/16	5	<0.1	<1.0	<1.0
	B147-10'	10/8/16	10	<0.1	<1.0	<1.0
B-148	B148-5'	10/8/16	5	<0.1	<1.0	<1.0
	B148-10'	10/8/16	10	<0.1	<1.0	<1.0
B-149	B149-5'	10/8/16	5	<0.1	<1.0	<1.0
	B149-10'	10/8/16	10	<0.1	<1.0	<1.0
B-150	B150-5'	10/8/16	5	<0.1	<1.0	<1.0
	DUP-17	10/8/16	5	<0.1	<1.0	<1.0
	B150-10'	10/8/16	10	<0.1	<1.0	<1.0

TPH-g = total petroleum hydrocarbons in the gasoline range (C4-C12)
TPH-d = total petroleum hydrocarbons in the diesel range (C13-C22)
TPH-o = total petroleum hydrocarbons in the oil range (C23-C40)
ft bgs = feet below ground surface
mg/kg = milligrams/kilogram
SFB RWQCB = San Francisco Bay Regional Water Quality Control Board
LA RWQCB = Los Angeles Regional Water Quality Control Board
ESL = Environmental Screening Level
SL = Screening Level

TABLE 7
ANALYTICAL RESULTS FOR METALS IN SOIL
LAUSD Venice High School PEA Equivalent

Sampling Location ID	Sample ID	Sample Date	Sample Depth (ft bgs)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		Units	ft bgs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		USEPA Test Method	--	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	7471A	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Screening Level [(a)]	--	31	12	15,000	15	5.2	36,000	23	3,100	80	0.89	390	1,500	390	390	0.78	390	23,000
B-139	B139-0.5'	10/8/16	0.5	<1.0	4.44J	80.6	<1.3	<1.3	21.4	6.30	18.0	6.77	<0.1	<2.5	15.0	<1.0	<2.5	<1.0	34.2	55.3
B-140	B140-0.5'	10/8/16	0.5	<1.0	4.30J	82.2	<1.3	<1.3	22.8	17.2	16.3	10.6	<0.1	<2.5	16.4	<1.0	<2.5	<1.0	40.7	85.7
	DUP-15	10/8/16	0.5	<1.0	3.92J	122	<1.3	<1.3	23.6	10.1	17.2	3.70J	<0.1	<2.5	17.1	<1.0	<2.5	<1.0	48.5	61.3
B-141	B141-0.5'	10/8/16	0.5	<1.0	4.08J	92.8	<1.3	<1.3	25.2	6.96	16.6	115	<0.1	<2.5	15.1	<1.0	<2.5	<1.0	38.3	86.8
B-141	B141-1.5'	10/8/16	1.5	--	--	--	--	--	--	--	--	9.05	--	--	--	--	--	--	--	--
B-142	B142-0.5'	10/8/16	0.5	<1.0	4.64J	79.0	<1.3	<1.3	22.2	7.81	16.2	5.39	<0.1	<2.5	14.7	<1.0	<2.5	<1.0	36.0	48.5
B-143	B143-5'	10/8/16	5	<1.0	6.77	86.6	<1.3	<1.3	27.6	7.13	22.2	3.81J	<0.1	<2.5	19.7	<1.0	<2.5	<1.0	44.9	51.1
	B143-10'	10/8/16	10	<1.0	3.38J	95.8	<1.3	<1.3	25.1	10.9	15.8	3.05J	<0.1	<2.5	16.9	<1.0	<2.5	<1.0	52.3	62.5
B-144	B144-5'	10/8/16	5	<1.0	7.38	81.5	<1.3	<1.3	28.2	7.19	23.2	3.28J	<0.1	<2.5	21.8	<1.0	<2.5	<1.0	48.2	54.9
	B144-10'	10/8/16	10	<1.0	2.82J	152	<1.3	<1.3	23.2	9.75	14.4	2.80J	<0.1	<2.5	15.5	<1.0	<2.5	<1.0	46.2	57.1
B-145	B145-5'	10/8/16	5	<1.0	7.62	113	<1.3	<1.3	28.2	6.66	18.9	2.92J	<0.1	<2.5	21.4	<1.0	<2.5	<1.0	49.0	49.7
	DUP-16	10/8/16	5	<1.0	6.96	70.8	<1.3	<1.3	25.5	6.64	17.7	<2.5	<0.1	<2.5	18.7	<1.0	<2.5	<1.0	44.6	44.5
	B145-10'	10/8/16	10	<1.0	8.65	80.4	<1.3	<1.3	27.7	8.30	21.8	3.31J	<0.1	<2.5	22.4	<1.0	<2.5	<1.0	48.4	54.3
B-146	B146-5'	10/8/16	5	<1.0	7.07	107	<1.3	<1.3	28.0	7.47	19.0	2.99J	<0.1	<2.5	21.2	<1.0	<2.5	<1.0	47.4	49.4
	B146-10'	10/8/16	10	<1.0	7.69	80.1	<1.3	<1.3	28.7	8.51	22.2	3.11J	<0.1	<2.5	23.0	<1.0	<2.5	<1.0	50.8	54.1
B-147	B147-5'	10/8/16	5	<1.0	7.03	81.5	<1.3	<1.3	29.6	7.38	20.6	3.22J	<0.1	<2.5	21.1	<1.0	<2.5	<1.0	50.5	56.4
	B147-10'	10/8/16	10	<1.0	2.03J	91.4	<1.3	<1.3	20.6	9.70	12.8	2.80J	<0.1	<2.5	14.6	<1.0	<2.5	<1.0	44.2	55.2
B-148	B148-5'	10/8/16	5	<1.0	8.23	96.1	<1.3	<1.3	28.5	7.49	20.4	3.29J	<0.1	<2.5	23.8	<1.0	<2.5	<1.0	49.7	54.4
	B148-10'	10/8/16	10	<1.0	3.52J	76.7	<1.3	<1.3	23.9	11.2	16.0	3.31J	<0.1	<2.5	16.7	<1.0	<2.5	<1.0	50.4	62.5
B-149	B149-5'	10/8/16	5	<1.0	5.64	73.6	<1.3	<1.3	25.6	7.13	17.3	2.55J	<0.1	<2.5	18.7	<1.0	<2.5	<1.0	40.8	44.6
	B149-10'	10/8/16	10	<1.0	6.12	101	<1.3	<1.3	33.8	5.71	14.7	<2.5	<0.1	<2.5	18.4	<1.0	<2.5	<1.0	50.0	47.8
B-150	B150-5'	10/8/16	5	<1.0	6.54	81.6	<1.3	<1.3	27.4	8.39	19.0	2.70J	<0.1	<2.5	21.1	<1.0	<2.5	<1.0	46.4	51.0
	DUP-17	10/8/16	5	<1.0	3.84J	43.6	<1.3	<1.3	15.9	3.89J	10.6	<2.5	<0.1	<2.5	11.4	<1.0	<2.5	<1.0	26.2	27.6
	B150-10'	10/8/16	10	<1.0	5.15	107	<1.3	<1.3	34.0	11.8	25.5	4.12J	<0.1	<2.5	23.2	<1.0	<2.5	<1.0	50.6	63.8
			Maximum Concentration	<1.0	8.65	152	<1.3	<1.3	34.0	17.2	25.5	115	<0.1	<2.5	23.8	<1.0	<2.5	<1.0	52.3	86.8

[(a)] Screening levels are the lower of the USEPA Regional Screening Levels (RSLs) or HERO HHRA Note No. 3, Table 1 (October 2015) screening levels. The DTSC school screening level is used for lead. The DTSC background level is used for arseni

ft bgs = feet below ground surface

mg/kg = milligrams/kilogram

Concentration exceeds screening level (yellow)

Step-down sample (shaded)

TABLE 8
ANALYTICAL RESULTS FOR VOCs IN SOIL
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	VOCs
		Units	ft bgs	µg/kg
		USEPA Test Method	--	8260B
		Screening Level	--	--
B-139	B139-0.5'	10/8/16	0.5	ND
B-140	B140-0.5'	10/8/16	0.5	ND
	DUP-15	10/8/16	0.5	ND
B-141	B141-0.5'	10/8/16	0.5	ND
B-142	B142-0.5'	10/8/16	0.5	ND
B-143	B143-5'	10/8/16	5	ND
	B143-10'	10/8/16	10	ND
B-144	B144-5'	10/8/16	5	ND
	B144-10'	10/8/16	10	ND
B-145	B145-5'	10/8/16	5	ND
	DUP-16	10/8/16	5	ND
	B145-10'	10/8/16	10	ND
B-146	B146-5'	10/8/16	5	ND
	B146-10'	10/8/16	10	ND
B-147	B147-5'	10/8/16	5	ND
	B147-10'	10/8/16	10	ND
B-148	B148-5'	10/8/16	5	ND
	B148-10'	10/8/16	10	ND
B-149	B149-5'	10/8/16	5	ND
	B149-10'	10/8/16	10	ND
B-150	B150-5'	10/8/16	5	ND
	DUP-17	10/8/16	5	ND
	B150-10'	10/8/16	10	ND

ft bgs = feet below ground surface

µg/kg = micrograms/kilogram

ND = not detected; detection limits variable; refer to laboratory reports

TABLE 9
ANALYTICAL RESULTS FOR SOIL GAS SAMPLES
LAUSD Venice High School PEA Equivalent

Location	Sample ID	Sample Date	Sample Depth	Methane	H_2S	PCE	Toluene	Xylenes	Other VOCs
		Units	ft bgs	%	ppmv	µg/L	µg/L	µg/L	µg/L
		Test Method	--	ASTM D1946	ASTM 5504	8260B	8260B	8260B	8260B
		Residential CHHSL	--	--	--	0.47	320	740	--
		Residential Attenuated USEPA RSL	--	--	--	0.48	310	100	--
SG-1	SG1-5'	10/9/16	5	<0.01	<0.2	0.056	0.028	0.034	ND
SG-1	SG1-5' DUP	10/9/16	5	NA	NA	0.056	0.031	0.035	ND
SG-1	SG1-15'	10/9/16	15	<0.01	<0.2	0.050	<0.02	<0.02	ND
SG-2	SG2-5'	10/9/16	5	<0.01	<0.2	0.067	0.045	0.052	ND

H2S = hydrogen sulfide

PCE = tetrachloroethene

ft bgs = feet below ground surface

µg/L = micrograms/liter

% = percent

ppmv = parts per million by volume

"--" = not applicable

NA = not analyzed

ND = not detected

TABLE 10
STEP-OUT BORING SUMMARY
LAUSD Venice High School PEA Equivalent

Boring Location	COC	Conc. (mg/kg)	Step-outs No.	Step-outs Direction	Step-outs Distance(s)	Comment
B-2	Arsenic	55.2	2	N	5', 10'	No restrictions beyond
			0	E	--	Rectangular anomaly at 1.5'
			0	S	--	Utility at 3'
			0	W	--	Building wall at 2'
B-3	Arsenic	299	0	N	--	Building wall at 2'
	Lead	127	2	E	5', 10'	Utility at 11'
			2	S	5', 10'	Utility at 12'
			2	W	3', 7.5'	Patched pavement in between step-outs; utility at 8.5'
B-14	Lead	130	1	N	5'	Utility at 6'
			0	E	--	Block wall at 2.5'
			2	S	5', 10'	No restrictions beyond
			0	W	--	Building wall at 2.5'
B-16	Arsenic	23	0	N	--	ADA stair ramp at 1.5'
			1	E	5'	Stepped out from south boring, not original; no restrictions beyond
			1	S	5'	Fence at 5', then asphalt pavement for bleachers
			1	W	5'	Stepped out from south boring, not original; no restrictions beyond
B-36	Arsenic	15.7	0	N	--	Bleachers at 2'
			2	E	5', 10'	No restrictions beyond
			1	S	5'	Fence at 6', then athletic track at 7'
			2	W	5', 10'	No restrictions beyond
B-48	Arsenic	52.8	2	N	5', 10'	Stairs at 11'
			1	E	4'	Utility at 5.5'
			2	S	5', 10'	Stairs at 16'
			0	W	--	Building wall at 2'

TABLE 10
STEP-OUT BORING SUMMARY
LAUSD Venice High School PEA Equivalent

Boring Location	COC	Conc. (mg/kg)	Step-outs			Comment
			No.	Direction	Distance(s)	
B-66	Arsenic	14.8	0	N	--	Building wall at 2'
			2	E	5', 10'	No restrictions beyond
			1	S	5'	Stepped over concrete walkway; fence at 8'; hedge beyond
			2	W	5', 10'	Stairs at 18'
B-67	Lead	81.5	0	N	--	Building wall at 2'
			1	E	13'	Hedge opening; next opening at 33'; length of planter is 48'
			0	S	--	Retaining wall at 2.5'; 14' wide grassy area beyond
			1	W	7'	Concrete entryway adjacent to raised bed at 8'
B-72	Arsenic	13.8	1	N	4'	Utility at 5.5'
			0	E	--	Utility at 1.5'
			0	S	--	Building wall at 2'
			0	W	--	Utility at 1.5'
B-79	Arsenic	53.3	1	N	5'	Utility at 6'
			0	E	--	Building wall at 2'
			1	S	5'	Utility at 8'
			1	W	3'	Utility at 4'
B-88	Arsenic	63.4	0	N	--	Building wall at 2'
			1	E	5'	Utility at 6.5'
			0	S	--	Utility trench at 2.5'
			2	W	5', 10'	No restrictions beyond
B-90	Arsenic	49.3	2	N	5', 10'	Fence at 20'; paved area beyond
			2	E	5', 10'	Track starts at 17'
			2	S	5', 10'	Track starts at 16'
			2	W	5', 10'	No restrictions beyond

TABLE 10
STEP-OUT BORING SUMMARY
LAUSD Venice High School PEA Equivalent

Boring Location	COC	Conc. (mg/kg)	Step-outs No.	Step-outs Direction	Step-outs Distance(s)	Comment
B-94	Lead	336	2	N	5', 9'	Fence at 10'; bare soil area in front of gym beyond
			1	E	5'	Utility at 7.5'; fence at 15'; bare soil area beyond
			2	S	5', 10'	Utility at 22'
			1	W	2.5'	Utility at 3.5'
B-105	Arsenic	14.2	2	N	5', 10'	Fence at 15'; paved area fronting bleachers beyond
			1	E	3'	Irrigation line at 4.5'
			2	S	5', 10'	No restrictions beyond
			2	W	5', 10'	No restrictions beyond
B-114	Arsenic	29.4	2	N	5', 10'	Utility at 19'
			2	E	5', 10'	No restrictions beyond
			2	S	5', 10'	No restrictions beyond
			0	W	--	Utility at 2.5'
B-120	Lead	87.7	1	N	3'	Fence at 4'; paved dug-out beyond
			1	E	5'	Utility at 7'
			2	S	5', 10'	No restrictions beyond
			2	W	5', 10'	No restrictions beyond
B-123	Lead	102	2	N	5', 10'	No restrictions beyond
			0	E	--	Utility at 3.5'
			2	S	5', 10'	No restrictions beyond
			2	W	5', 10'	No restrictions beyond
B-141	Lead	115	0	N	--	No step-outs in metal shop
			0	E	--	Building will not be demolished
			0	S	--	(per Dane Robinson on 11/4/16)
			0	W	--	

TABLE 10
STEP-OUT BORING SUMMARY
LAUSD Venice High School PEA Equivalent

Boring Location	COC	Conc. (mg/kg)	Step-outs			Comment
			No.	Direction	Distance(s)	
W-B1	Arsenic	100	1	N	5'	Utility 2' beyond W-B1-5N
			2	E	5', 10'	ADA stair ramp 3' beyond W-B1-10E
			0	S	--	Building wall to south
			2	W	5', 8'	Utility 0.5' beyond W-B1-8W
W-B4	Arsenic	17	0	N	--	Building wall to north
			2	E	5', 10'	Clean boring already done at W-B4-5E
			3	S	5', 10', 15'	5' south of W-B4-10S; utility at 23'
			2	W	5', 10'	Utility 4' beyond W-B4-10W
		Total	89			

TABLE 11

ESTIMATED SOIL REMOVAL VOLUMES [1]

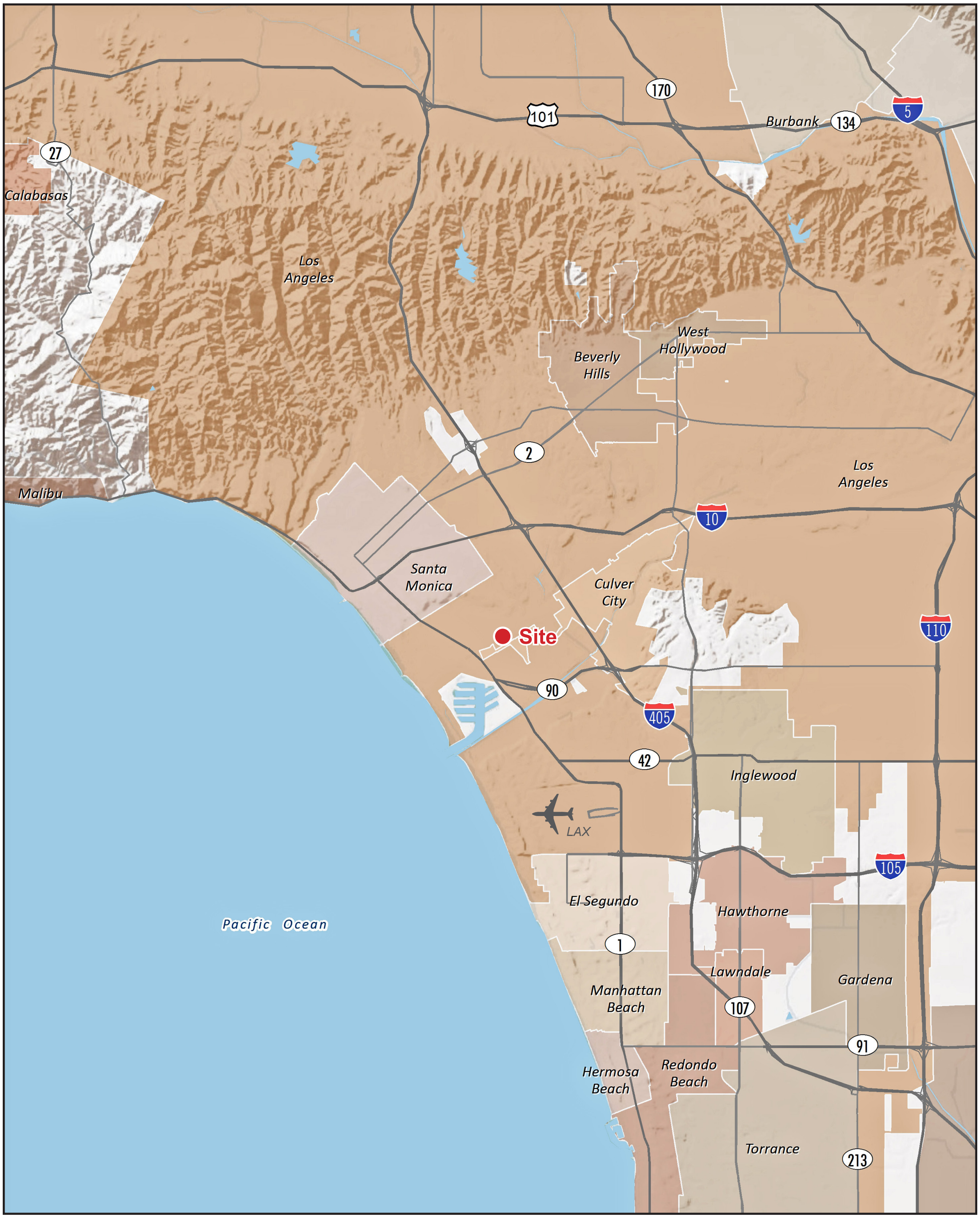
LAUSD Venice High School PEA Equivalent

Soil Removal Area	COC	Areal Dimensions (ft)	Area (sq ft)	Depth (ft)	Volume (cu yd)	Waste Type
B-2	Arsenic	18 x 3.5	63	1.5	3.5	Non-hazardous
B-3	Arsenic Only	(14 x 14) - (8 x 7)	140	1.5	7.8	Non-hazardous
	Lead + Arsenic	8 x 7	56	1.5	3.1	Non-hazardous
B-14	Lead	11 x 5	55	2.5	5.1	Non-hazardous
B-16	Arsenic	(3.5 x 3.5) + (6.5 x 3) + (3.5 x 1.5)	37	1.5	2.1	Non-hazardous
B-36	Arsenic	(5 x 8) + (15 x 8)	160	1.5	8.9	Non-hazardous
		10 x 8	80	2.5	7.4	Non-hazardous
B-48	Arsenic	20 x 7.5	150	1.5	8.3	Non-hazardous
B-66	Arsenic	20 x 10	200	1.5	11.1	Non-hazardous
B-67	Lead	28 x 3	84	1.5	4.7	Non-hazardous
B-72	Arsenic	7.5 x 3	22.5	2.5	2.1	Non-hazardous
B-79	Arsenic	14 x 6	84	1.5	4.7	Non-hazardous
B-88	Arsenic	10 x 4.5	45	1.5	2.5	Non-hazardous
B-90	Arsenic	20 x 20	400	1.5	22.2	Non-hazardous
B-94	Lead	17 x 10	170	1.5	9.4	Non-RCRA Hazardous
B-105	Arsenic	8 x 10	80	1.5	4.4	Non-hazardous
B-114	Arsenic	25 x 17.5	437.5	1.5	24.3	Non-hazardous
B-120	Lead	20 x 8	160	1.5	8.9	Non-hazardous
B-123	Lead	10 x 8.5	85	1.5	4.7	Non-hazardous
WB-1	Arsenic	21.5 x 9	193.5	1.5	10.8	Non-hazardous
WB-4	Arsenic	19 x 17	323	1.5	17.9	Non-hazardous
				Total Soil Removal Volume	173.9	
				Total Non-hazardous	164.5	
				Total Non-RCRA Hazardous	9.4	

[1] Volumes subject to change based on results of additional step-out sampling.

Figures

Figure 1 - Site Location



Note: Unincorporated county areas are shown in white.

Venice High School
13000 Venice Boulevard
Los Angeles, California 90066

Base Map Source: ESRI, USGS, NOAA, 2016

Figure 2 - Aerial Photograph

School Boundary

Venice High School
13000 Venice Boulevard
Los Angeles, California 90066

0 175 350
SCALE (IN FEET)

N

Base Map Source: Google Earth Pro, 2016

Figure 3 - Site Details and Area Wide Soil Sample Locations

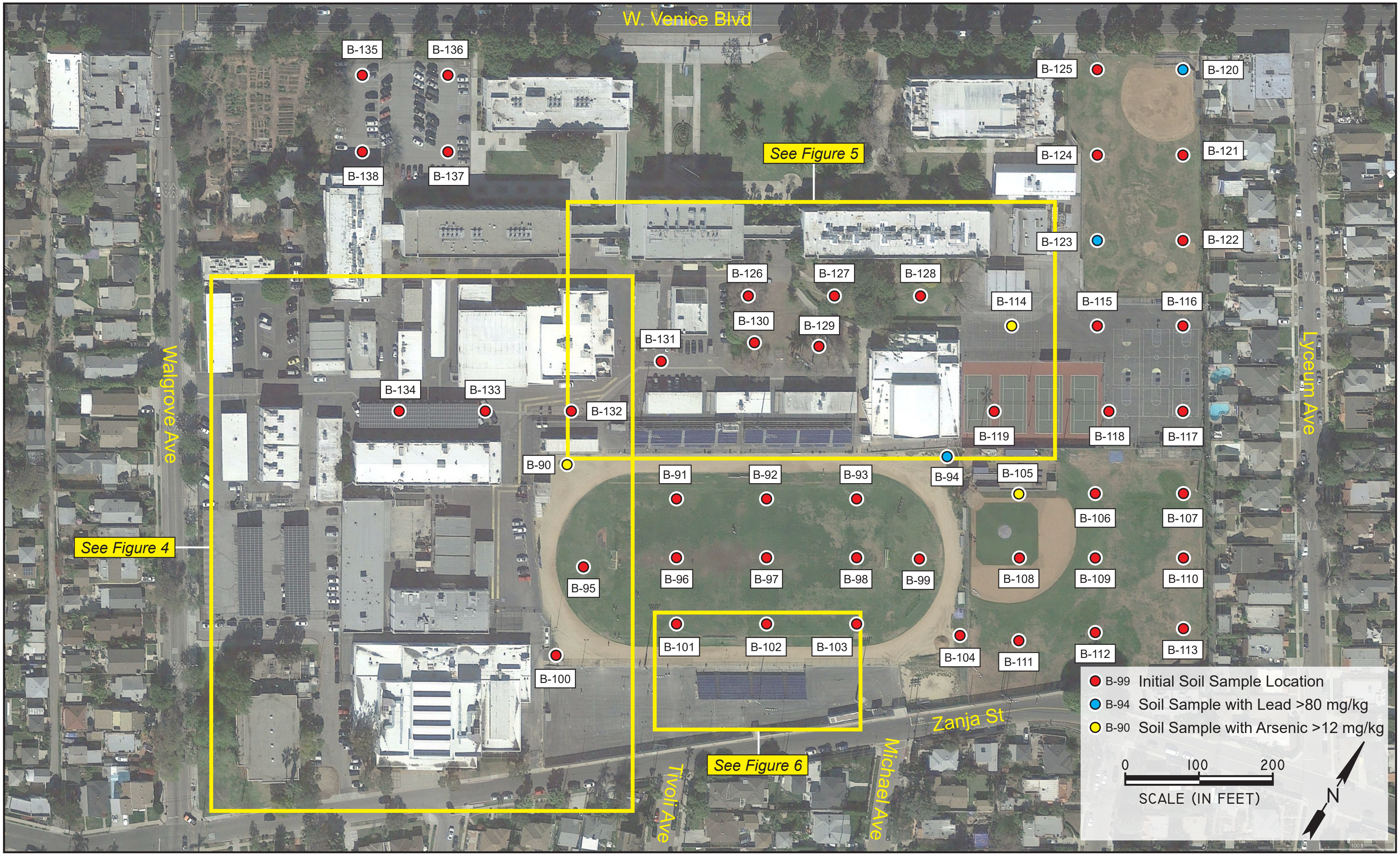
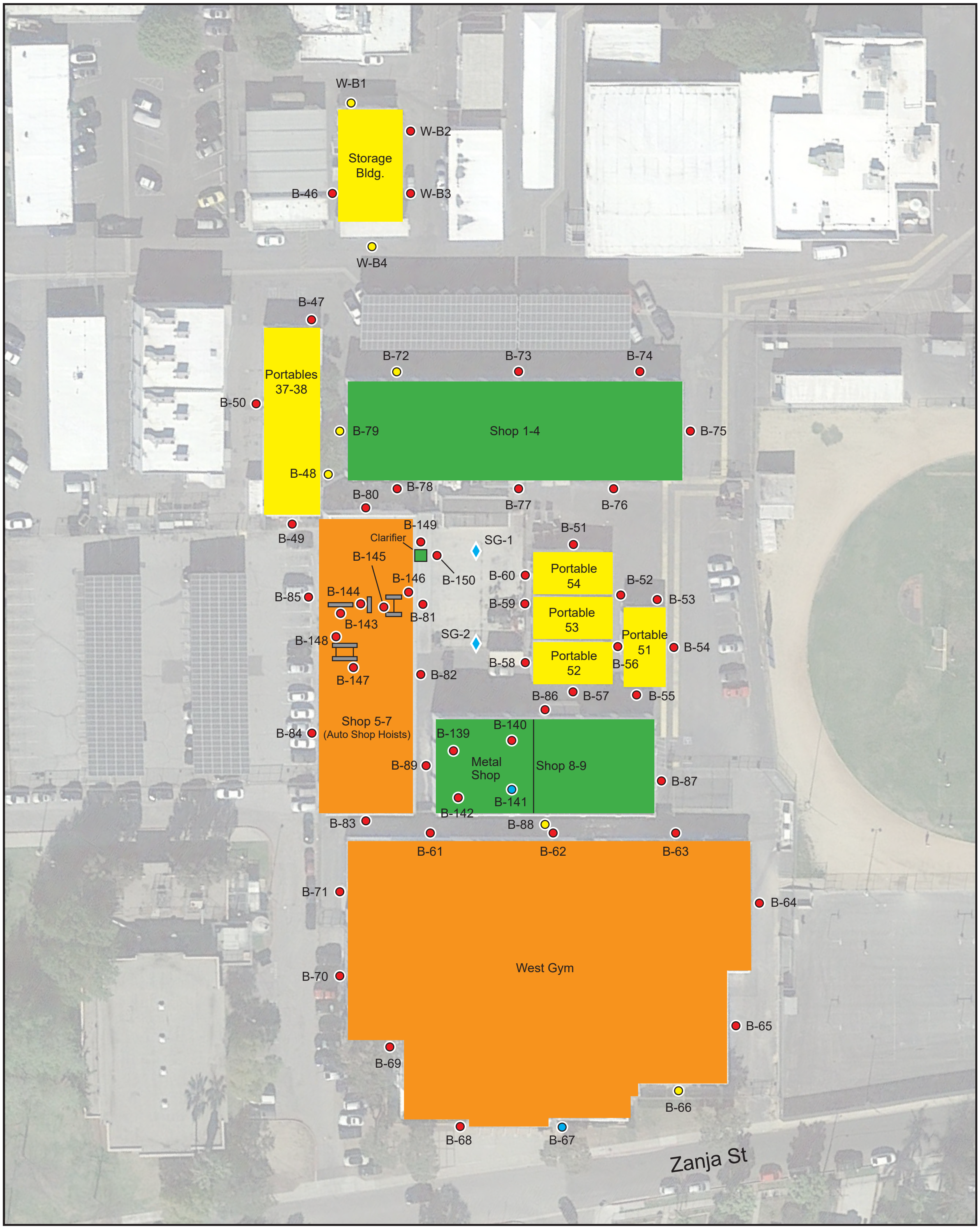


Figure 4 - Building Soil and Soil Gas Sample Locations - Detail 1



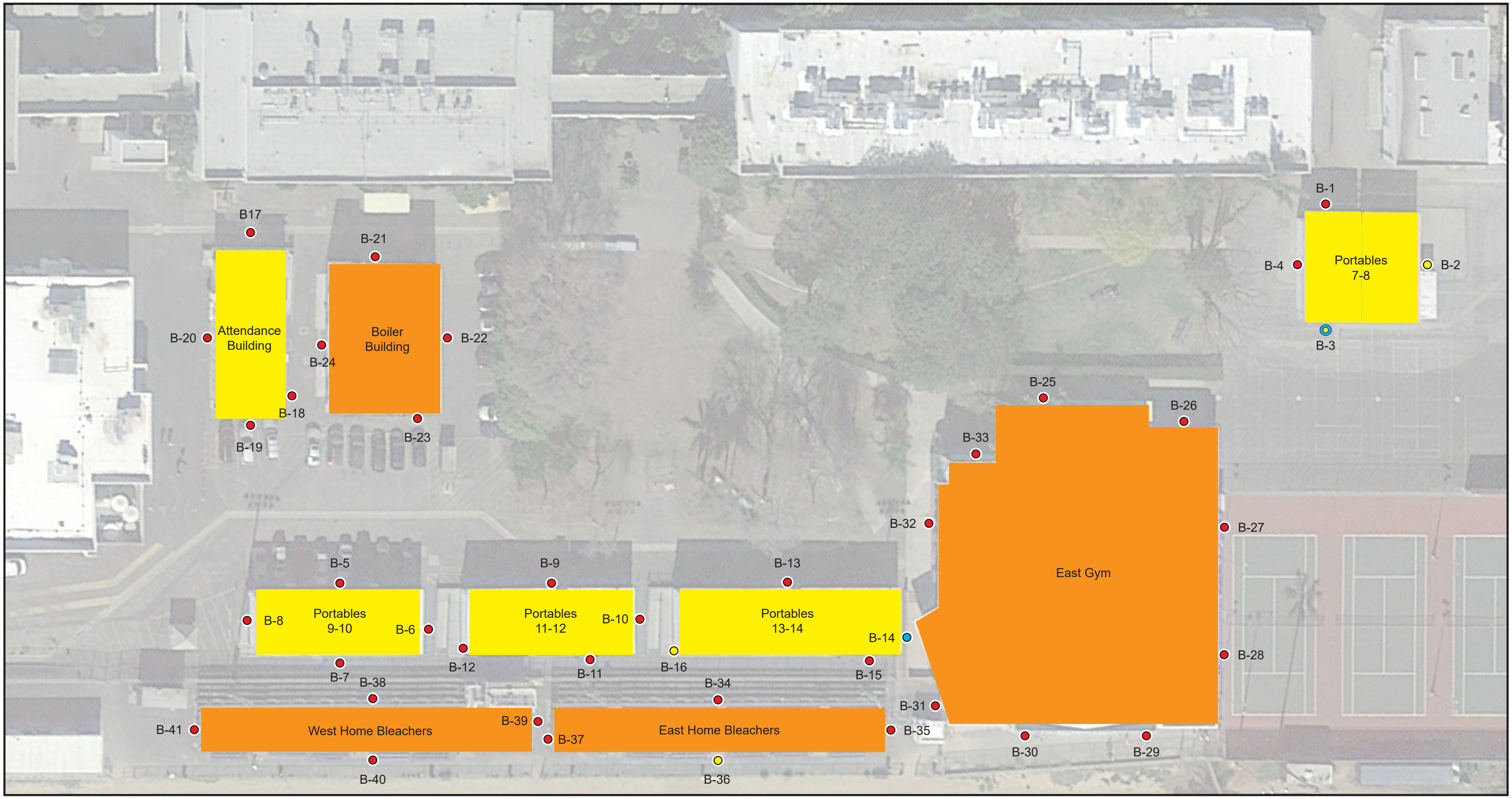
B-68 Initial Soil Sample Location
B-67 Soil Sample with Lead >80 mg/kg
B-66 Soil Sample with Arsenic >12 mg/kg
SG-1 Soil Gas Sample Location

Portables to be Removed
Buildings to be Removed
Historical Buildings to be Removed

0 35 70
SCALE (IN FEET)

N

Figure 5 - Building Soil Sample Locations - Detail 2



B-1 Initial Soil Sample Location
B-14 Soil Sample with Lead >80 mg/kg
B-36 Soil Sample with Arsenic >12 mg/kg
B-3 Soil Sample with Lead >80 mg/kg and Arsenic >12 mg/kg

Portables to be Removed

Buildings to be Removed

Figure 6 - Building Soil Sample Locations - Detail 3

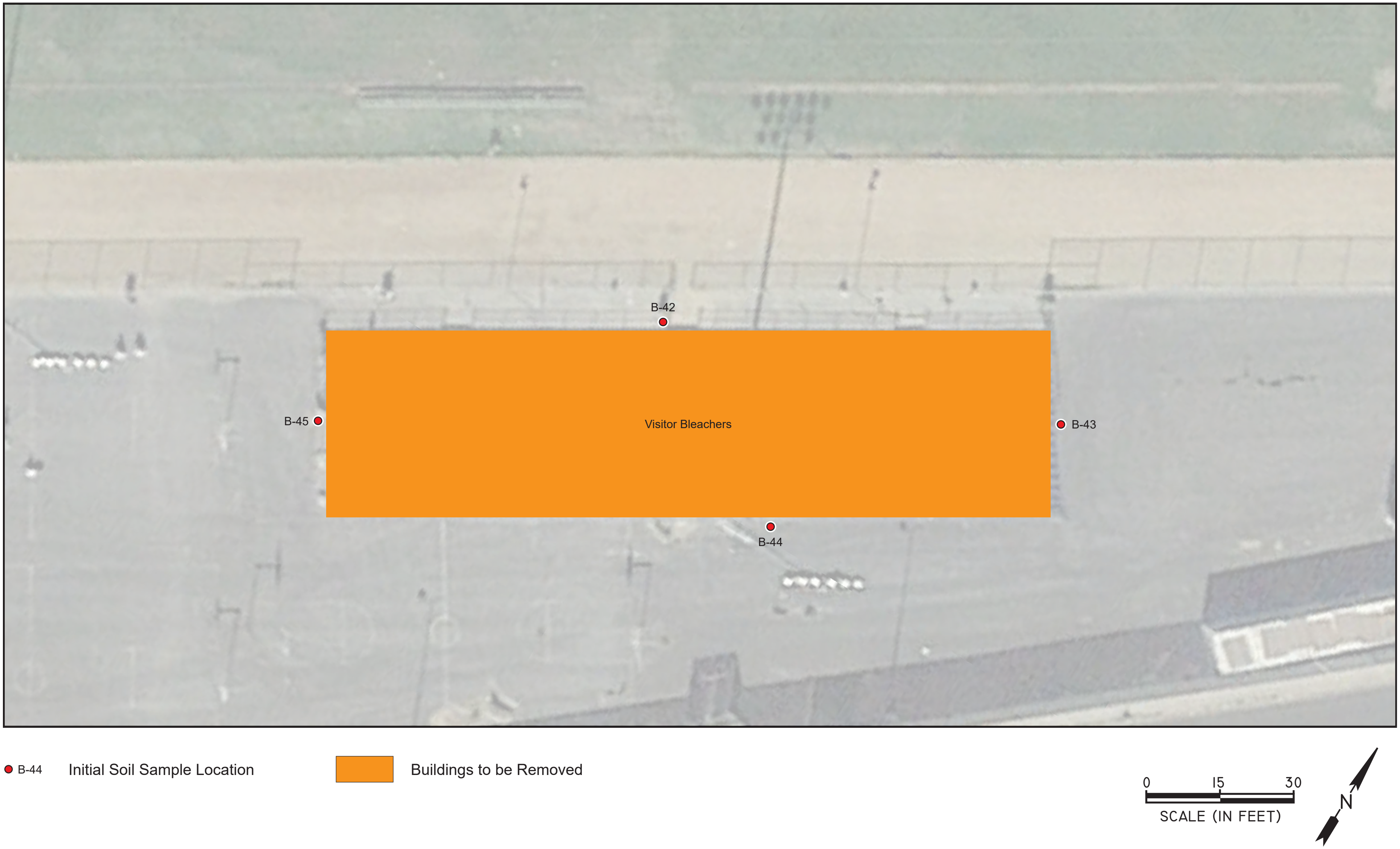


Figure 7 - Step-Out Sample Locations and Removal Areas - Storage Building

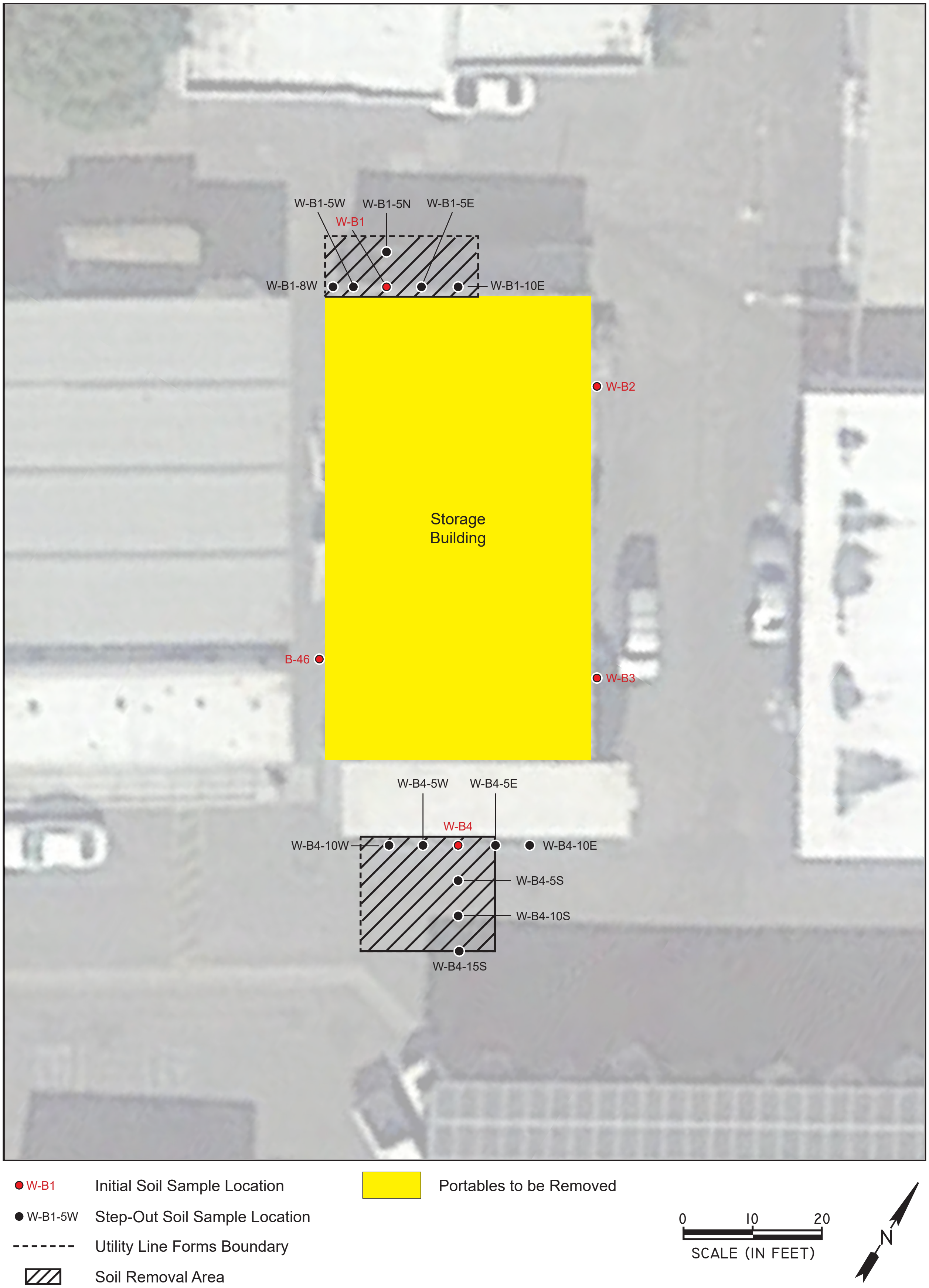


Figure 8 - Step-Out Sample Locations and Removal Areas - Shop 1-4 and Portables 37-38

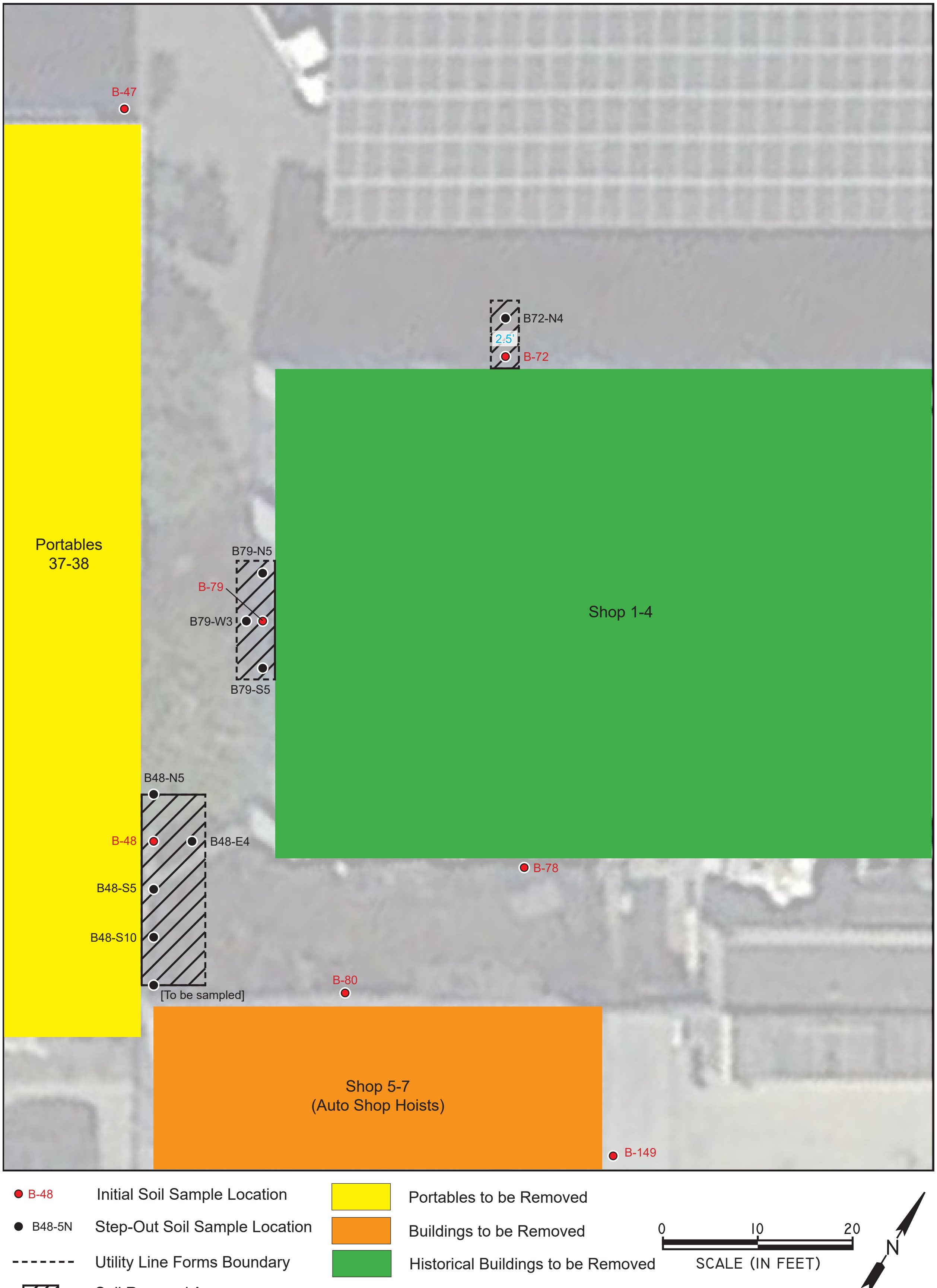


Figure 9 - Step-Out Sample Locations and Removal Areas - West Gym

B-66 Initial Soil Sample Location

B66-W5 Step-Out Soil Sample Location

Utility Line Forms Boundary

Soil Removal Area

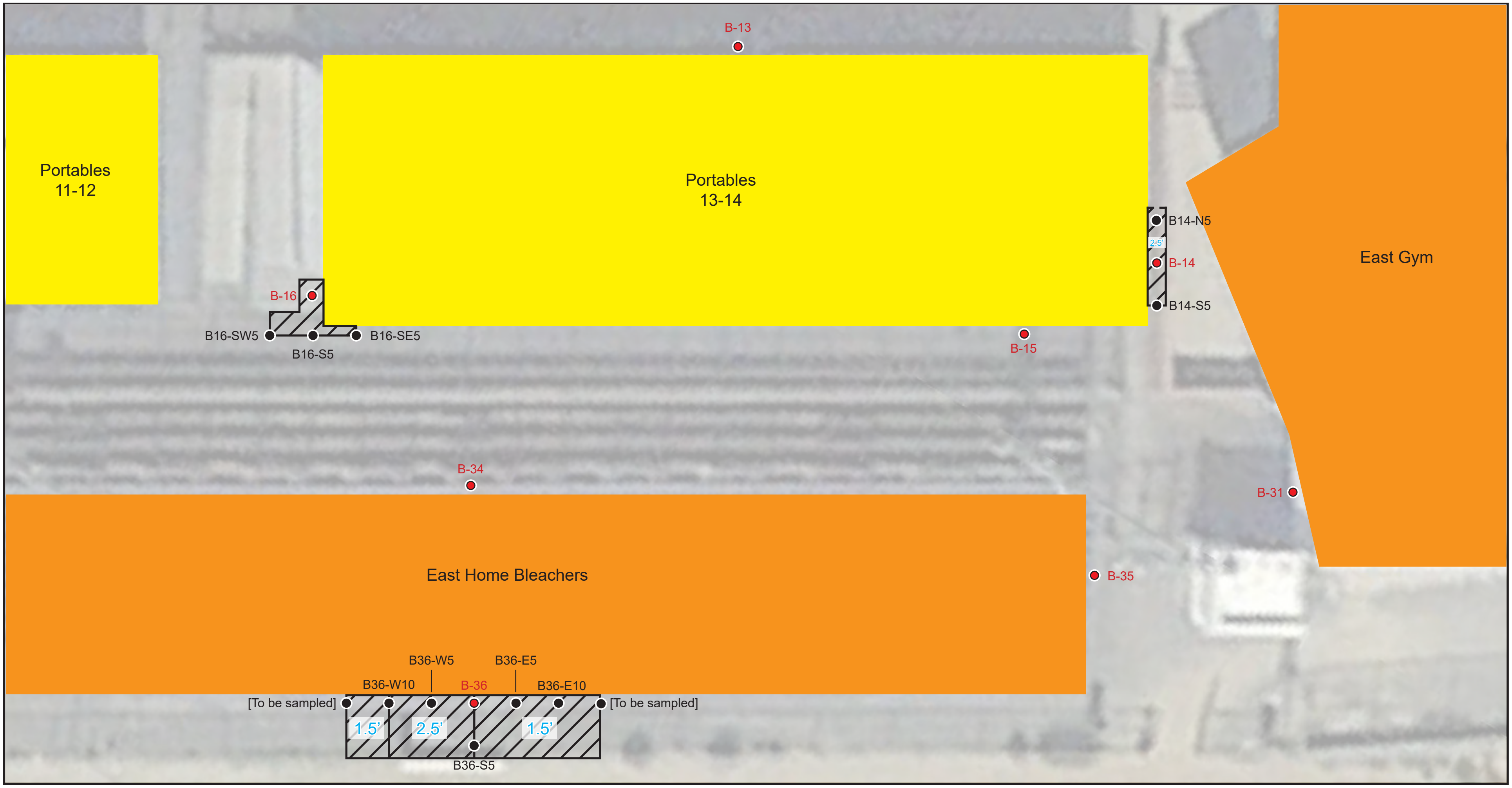
Buildings to be Removed

Historical Buildings to be Removed

0 20 40
SCALE (IN FEET)

N

Figure 10 - Step-Out Sample Locations and Removal Areas - Portables 13-14 and Home Bleachers



B-36 Initial Soil Sample Location

B36-E5 Step-Out Soil Sample Location

Utility Line Forms Boundary

Soil Removal Area

Portables to be Removed

Buildings to be Removed

Figure 11 - Step-Out Sample Locations and Removal Areas - Portables 7-8

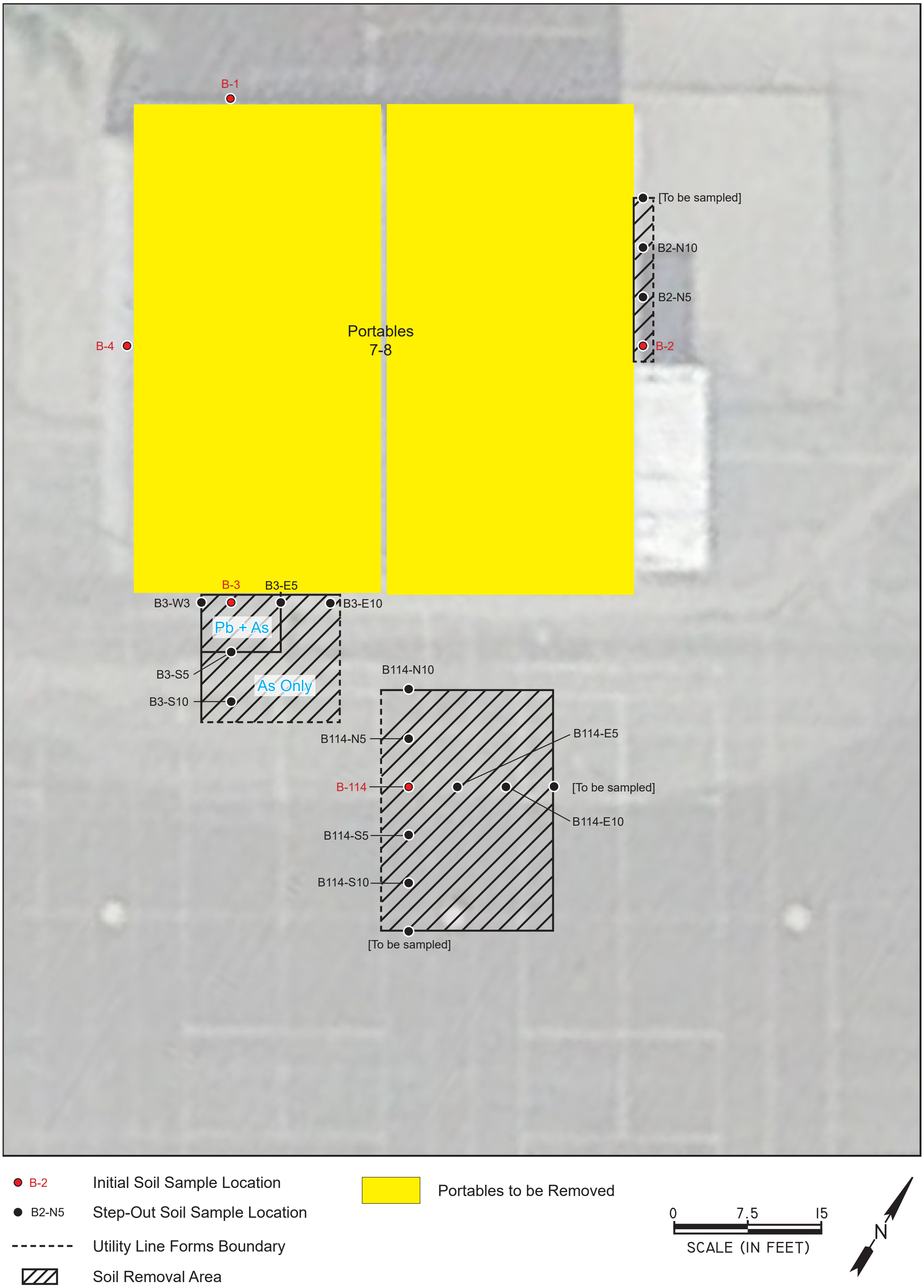
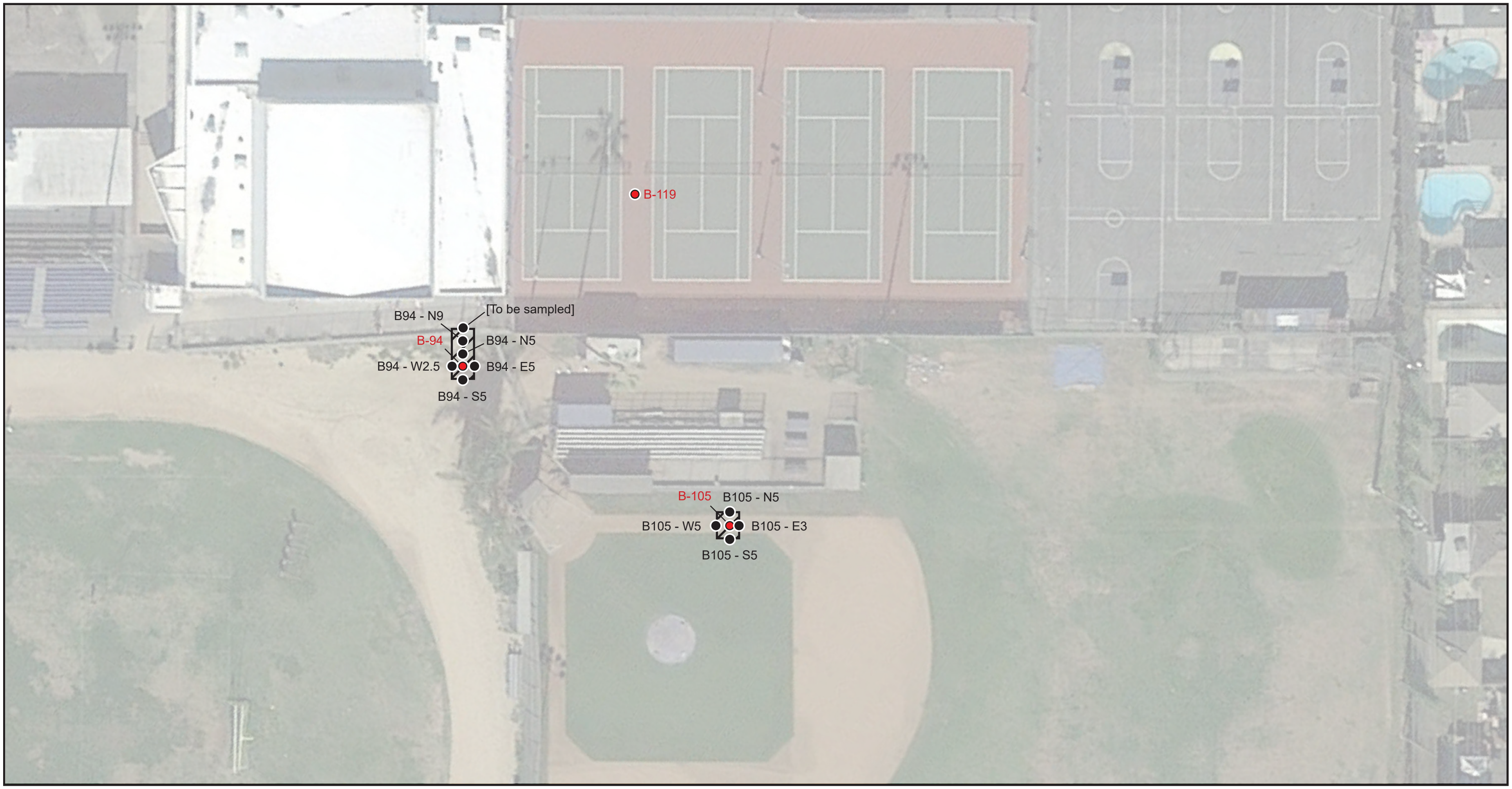


Figure 12 - Step-Out Sample Locations and Removal Areas - West Track

Figure 13 - Step-Out Sample Locations and Removal Areas - East Track and Baseball Field



B-94 Initial Soil Sample Location

B94 - S5 Step-Out Soil Sample Location

Utility Line Forms Boundary

Soil Removal Area

0 30 60
SCALE (IN FEET)

N

Figure 14 - Step-Out Sample Locations and Removal Areas - Softball Field