REMOVAL ACTION WORKPLAN
COMPREHENSIVE
MODERNIZATION PROJECT

92nd Street Elementary School
9211 South Grape Street
Los Angeles, California 90002

January 11, 2021

Prepared for:

Los Angeles Unified School District

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REMOVAL ACTION WORKPLAN FOR A
COMPREHENSIVE MODERNIZATION PROJECT

92ND STREET ELEMENTARY SCHOOL
9211 SOUTH GRAPE STREET
LOS ANGELES, CALIFORNIA 90002

OPINION OF ENVIRONMENTAL PROFESSIONAL

Pinnacle Environmental Technologies has prepared this Removal Action Workplan (RAW) for the above project. This document incorporates methods and professional experience consistent with the standard for the industry. The observations, interpretations and recommendations provided in this document are based on conditions that existed at the time the original Preliminary Environmental Assessment – Equivalent (PEA-E) was performed.

Potential Recognized Environmental Conditions were identified at 92nd Street Elementary School by the original Phase I Environmental Site Assessment. A subsequent PEA-E revealed additional evidence of specific recognized environmental conditions in connection with activities at the project site. Environmental soil mitigation was recommended by the PEA-E based on the results of the assessment. This document described those tasks recommended to perform soil mitigation at the project site.

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EXECUTIVE SUMMARY

This Removal Action Workplan (RAW) report has been prepared by Pinnacle Environmental Technologies (Pinnacle) on behalf of the Los Angeles Unified School District (LAUSD) for the Comprehensive Modernization Areas at 92nd Street Elementary School (the school). This document is part of the ongoing environmental tasks for the Comprehensive Modernization Project at the school. The school is located at 9211 Grape Street, south of East 92nd Avenue, in Los Angeles, California (Figure 1). The school campus covers approximately 6.06 acres and has been developed with 12 permanent buildings, 7 modular buildings, one lunch shelter, one storage building, and 9 storage containers (Figure 2). Other parts of the school include a paved playground, concrete arcades, two parking lots and small landscaped areas. The Comprehensive Modernization Project includes:

- The demolition and removal of two permanent buildings (2-story Kindergarten Building 1, and 2-story Classroom Building D) and an adjacent parking lot,
- The removal of six portable buildings,
- The construction of two permanent buildings (2-story Kindergarten Building 1 and 1-story Classroom Building 2), and
- Site upgrades (utility infrastructure, ADA improvements, landcape, hardscape, fencing, restripe 24-space parking lot, new asphalt playground, new 55-space parking lot).

A Phase I Environmental Site Assessment (ESA) completed in 2017 identified the following potential environmental concerns.

- Soils impacted with lead due to the use of lead-based paints (LBP) in structures that predated the school.
- Soils impacted with arsenic and organochlorine pesticides (OCPs) due to possible pesticide and/or herbicide application within the project area.
- Soils impacted by releases of dielectric (cooling) oil containing Polychlorinated Biphenyls (PCBs) in the pad-mounted electrical transformer in the northeast section of the project area.

Based on the findings of the Phase I ESA, a Preliminary Environmental Assessment - Equivalent (PEA-E) Report was completed in accordance with relevant California Department of Toxic Substances Control (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. PEA-E activities included a total of 47 initial soil borings with an additional 45 step-outs borings at locations where concentrations exceeded screening levels. Samples collected from the Site were selectively analyzed for OCPs by EPA Method 8081, lead and arsenic by EPA Method 6010B, total petroleum hydrocarbons (TPH) by EPA Method 8015M, volatile organic compounds (VOCs) by EPA Method 8260B and polychlorinated biphenyls (PCBs) by EPA Method 8082.

During the PEA investigation, three areas at the school were identified with lead above 80 milligrams per kilogram (mg/kg) and/or arsenic above 12 mg/kg. These were located at soil sampling locations PB-11, PB-27 and PB-34. All other detected chemical of potential concern were below screening levels. The highest detections of arsenic and lead were 120 mg/kg and 84 mg/kg, respectively. A total of 35.2 cubic (in-place) yards of arsenic- and lead-impacted soil were delineated at these locations during the PEA investigation. Most of the impacted soil was detected above site-specific cleanup goals (SSCGs) at a depth of 0.5 feet below ground surface (bgs). A smaller area of arsenic-impacted soil near initial boring PB-11 was detected at a depth of 1.5 feet bgs. The excavation depths proposed in this RAW extend 6 inches below the detected arsenic contamination and will only extend deeper after detecting arsenic or lead above the SSCGs (arsenic 12 mg/kg and lead 80 mg/kg) during the confirmation sampling.

The areas identified with lead or arsenic concentrations above screening levels were initially planned for remediation as part of the Comprehensive Modernization Project planned at the school. This Removal Action Work Plan (RAW) was prepared to describe the procedure for remediating soil with elevated lead or arsenic concentrations to acceptable levels. Three remedial action alternatives were identified and evaluated in accordance with procedures outlined in the National Oil and Hazardous Substances Pollution Contingency Plan and applicable DTSC guidance, including Alternative 1 (No Action), Alternative 2 (Excavation with Capping), and Alternative 3 (Excavation and Off-Site Disposal). Alternative 3 was selected as the preferred alternative because it was less expensive than Alternative 2, was more easily implemented, and was more protective of future occupants of the Site and the environment. The estimated cost for remediating the soil in accordance with Alternative 3 is $79,500.

LAUSD elected to perform removal of soil at soil sampling locations PB-27 and PB-34 as a separate housekeeping event. Housekeping events are local excavations of small volumes of soil (generally less than 10 cubic yards) coordinated with construction schedules. Pinnacle was present during the event, and prepared a technical memorandum describing the work performed. The technical memoradum is provided as Appendix G of this RAW.

The preferred remediation method (Alternative 3) for the remaining soil involves the excavation and off-site disposal of the impacted soil from the three identified areas at the school. Approximately 26.6 in-place cubic yards of impacted soil will be excavated to depths of 1 to 2 feet bgs, or approximately 6 inches below the depth that arsenic or lead was detected above the SSCGs established in this RAW. Post excavation soil samples will be collected on excavation floors and sidewalls to confirm all arsenic or lead affected soil has been removed. If post-excavation confirmation samples do not meet the SSCGs, then additional soil excavation will be conducted at approximately 3 to 6 inch lifts. After confirmation sample analytical results meet the remedial goals and OEHS has provided excavation area clearance, the excavation areas will be available to the general contractor to re-grade or backfill with clean fill material.

This RAW also contains the following elements: a discussion of the applicable or relevant and appropriate requirements (ARARs) to be followed during implementation of the proposed remedial actions; a description of the remedial process and logistics, including air monitoring and dust control; a Health and Safety Plan (Appendix B); a Quality Assurance Project Plan (Appendix C); and a Transportation Plan (Appendix D). The work described in this RAW will be performed under LAUSD oversight, who will issue a “no further action” determination and certify the Site as safe for school construction upon successful completion of the response action.

LIST OF ACRONYMS

ABBREVIATION	DESCRIPTION
%	percent
A-P Zone	Alquist-Priolo Fault Rupture Hazard Zone
APN	Assessors Parcel Number
ARARs	Applicable or Relevant and Appropriate Requirements
bgs	below ground surface
Cal EMA	California Emergency Management Agency
CDMG	California Department of Mines and Geology
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulation
CHHSL	California Human Health Screening Level
COC	Chain of Custody
DigAlert	Underground Services Alert of California
DTSC	Department of Toxic Substances Control
EE/CA	Engineering Evaluation/Cost Analysis
EPA	United States Environmental Protection Agency
ERA	Ecological Risk Assessment
ESA	Environmental Site Assessment
H&SC	Health & Safety Code
HASP	Health and Safety Plan
HSO	Health and Safety Officer
IS/MND	Initial Study and Mitigated Negative Declaration
kV	kilovolts
LACDPW	Los Angeles County Department of Public Works
LADWP	City of Los Angeles Department of Water and Power
LAUSD	Los Angeles Unified School District
LBP	lead-based paint
mg/kg	milligrams per kilogram
MPR	Multi-purpose Room
MSL	mean sea level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NIFZ	Newport-Inglewood Fault Zone
NOD	Notice of Determination
NPDES	National Pollutants Discharge Elimination System
OCP	Organochlorine Persticide
OEHS	Office of Environmental Health and Safety

LIST OF ACRONYMS (cont.)

ABBREVIATION	DESCRIPTION
OWTS	On-Site Wastewater Treatment Systems
PCBs	Polychlorinated Biphenyls
PEA-E	Preliminary Environmental Assessment Equivalent
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RACR	Removal Action Completion Report
RAP	Remedial Action Plan
RAW	Removal Action Workplan
REC	Recognized Environmental Condition
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCG	Southern California Gas
SSCG	Site Specific Cleanup Goal
SWPPP	Storm Water Pollution Prevention Plan

1.0 INTRODUCTION

This Removal Action Workplan (RAW) provides a scope of work for the excavation and removal of arsenic- and lead-impacted soil within the Comprehensive Modernization Project boundaries at the 92nd Street Elementary School (the school), located at 9211 Grape Street, Los Angeles, California (Figures 1 and 2). Pinnacle Environmental Technologies (Pinnacle) has prepared this RAW for the Office of Environmental Health and Safety (OEHS) at the Los Angeles Unified School District (LAUSD). The Comprehensive Modernization Project by LAUSD consists of the following planned activities at the school:

- The demolition and removal of two permanent buildings (2-story Kindergarten Building 1, and 2-story Classroom Building D) and adjacent parking lot,
- The removal of six portable buildings,
- The construction of two permanent buildings (2-story Kindergarten Building 1 and 1-story Classroom Building 2), and
- Site upgrades (utility infrastructure, ADA improvements, landcape, hardscape, fencing, restripe 24-space parking lot, new asphalt playground, new 55-space parking lot).

Pinnacle completed a Preliminary Environmental Assessment - Equivalent (PEA-E) for a portion of the school (the project area), using standard Department of Toxic Substances Control (DTSC) criteria (Pinnacle, 2019). The PEA-E identified arsenic concentrations in soil above the screening level of 12 milligrams per kilogram (mg/kg) and lead concentrations in soil above the screening level of 80 mg/kg (DTSC, 2007).

1.1 Purpose of the RAW

Pinnacle's PEA-E identified shallow soil impacted by arsenic and a smaller volume of this soil is also impacted by lead. The purpose of this workplan is to:

- Summarize the analytical results leading to the conclusion that soil within the project area requires removal,
- Provide estimates of the volume of impacted soil and the location of the impacted soil intended for removal,
- Provide activities to remove the impacted soil and establish that the surrounding material is below applicable screening levels.

This document was prepared in accordance with criteria specified in California Health and Safety Code (H&SC), Section 25356.1. It includes a description of the onsite impacts, a plan for performing a removal action, and the goals for the removal action, as outlined in H&SC 25323.1. It also conforms with the DTSC Remedial Action Plan (RAP) Policy (DTSC, 1995). This document briefly discusses remedial alternatives with regard to effectiveness, implementability and cost, and selects the optimum method for the project area.

1.2 Removal Action Objectives

The ideal outcome for any PEA-E at a school site would be to confirm that no chemicals or metals are present above applicable screening levels. In those cases when chemical or metals are identified above applicable screening levels, the impacted soils may require mitigation to minimize exposure to student, staff and/or workers. At this point, the identified chemicals or metals become chemicals of concern (COCs), and the applicable screening levels typically convert to site-specific cleanup goals (SSCGs). The general remedial action objectives for this and other removal actions conducted in response to the observed COCs are as follows:

- To reduce future potential human exposure to elevated COCs (arsenic and lead in this case) through ingestion, inhalation or dermal contact,
- To protect human health during mitigation activities due to the possible release of fugitive dust containing COCs in excess of South Coast Air Quality Management District (SCAQMD) limits,
- To reduce migration of elevated concentrations of COCs to air, groundwater and/or surface water.

This removal action is specifically designed to remove the soil with COCs (arsenic and lead) above screening levels/SSCGs so that no known soil with COCs above these levels remains. The SSCGs for this removal action are 12 mg/kg for arsenic and 80 mg/kg for lead. These concentrations have been determined to be protective of human health and the environment.

2.0 SITE INFORMATION AND BACKGROUND

2.1 Site Description

The 92nd Street Elementary School is located at 9211 South Grape Street, south of the Firestone Park Area of the City of Los Angeles. The Firestone Park Area of Los Angeles is located approximately six miles south of downtown Los Angeles. The school is also bounded by the Avalon Gardens Area to the west, the Hacienda Village Area to the south, and the Nadeau Area to the north.

The Assessor's Parcel Number (APN) for the school is 6046-002-901. The latitude and longitude for the approximate center of the school and the project area as shown on Figure 1 and Figure 2 are as follows:

Latitude - North 33.9518850 degrees
Longitude - West 118.2368490 degrees

The legal information for the school is as follows:

Tract No. – TR 26899
Map Reference – M B 707-41-42
Block – None
Lot – 1
Book - 6046

The 92nd Street Elementary School occupies a elongated, rectangular, residential city block (Figures 1 and 2). The block is bounded by 92nd Street to the north, 95th Street to the south, Grape Street to the east, and Anzac Avenue to the west. This block occupies approximately 6.06 acres (263,610 square feet).

The 92nd Street Elementary School is a secured facility that is surrounded by steel fences and gates, and is monitored by a team of security personnel. Portions of the school facility are secured by individual chain-link fences. The primary parking area for the school is at the northeast corner of the campus. It is accessed from the east through two sliding gates on Grape Street. A second central parking lot is located south of the main parking lot and a two-story classroom building. It is accessed through a single sliding gate on Grape Street (Figure

3). There is a sliding gate at the northeast corner of the playground area and another gate on the west side of the campus. These gates will provide best access to the excavation areas.

There are 19 primary structures on the school campus. Twelve of these are permanent structures (Figure 3). They include six classroom buildings, an administration building at the northeast corner of the campus, and the West Building located at the northwest corner of the campus. The West Building is the largest structure at the school. It was built in the early 1930s and is the oldest structure on the campus. Five of the six permanent classroom buildings are single-story structures. A two-story classroom building is located on the east side of the school, immediately north of the parking lot at the center of campus.

A single structure incorporating the cafeteria/kitchen and multi-purpose room (MPR) is located south of the central parking lot. A lunch pavilion is located immediately west of the cafeteria/kitchen/MPR. A small storage building is located on the west side of the campus, west of the lunch pavilion. Power equipment and a small volume of gasoline is kept in the storage building. The west gate is located immediately west of this storage building.

There are seven temporary structures on the campus (Figure 3). Five of these buildings are located on the west side of campus, west of the cafeteria/kitchen/MPR. Three of these structures are classrooms, one structure is an attached pair of rest rooms, and the fifth structure is a large storage bin. The two other temporary structures are small bungalows adjacent to the West Building on the north side of campus.

The West Building and two smaller adjacent temporary buildings are not included within the project area. The project area was determined by LAUSD construction project staff and OEHS based on their plans to replace the cafeteria/kitchen/MPR, lunch pavilion, and numerous classroom structures with new buildings.

A paved playground for the students is located on the southern third of the school campus. Playground equipment occupies the northeast corner of the playground. Basketball courts are located at the southeast corner of the playground and a set of multipurpose baseball/kickball fields are located in the center and west portions of the playground. A small oval track constructed using a thin pavement of rubberized asphalt on the asphalt pavement is located within the area occupied by the ball fields.

The parking areas and most of the areas between classrooms are asphalt-paved. Arcades connecting the three classrooms on the west side of campus, the kindergarten building located south of the main parking lot, and the main administration building have concrete-paved walkways. The areas between the three classroom buildings on the west side of campus are also concrete paved. The largest landscaped area on the campus is at the corner of 92nd Street and Grape Street. Other smaller landscaped areas and tree wells have little ground cover other than smaller trees, vines and shrubs. The mature trees on campus did not appear to be distressed.

The campus is flat with a gradual slope to the south, so any precipitation not percolating into the few landscaped areas travels over paved portions of the campus as sheet flow and is directed to scattered stormwater drains or to offsite drains. Shallow concrete culverts located within some of the paved areas also direct runoff to the stormwater drains. It is assumed that these drains lead to a stormwater collection main that bisects the southern half of the campus from the north to the south. The main is not near the three areas of impacted soil.

The school is within the Watts/Harbor Primary Sewer Drainage Basin. There is no secondary sewershed for this area. Wastewater from the school is directed to the Terminal Island Water Reclamation Plant in the Harbor Area of the City of Los Angeles. The sewer system is operated by the City of Los Angeles Department of Public Works (LADPW). Two offsite private sanitary sewer or septic systems were identified within 0.5 miles of the school on the April 15, 2013 map of On-Site Wastewater Treatment Systems (OWTS) for Council District 15 produced by the Wastewater Engineering Services Division of the City of Los Angeles Bureau of Sanitation. One was for a multi-family application and one was for residential use. The map did not have sufficient detail to determine if the systems were on the school property. However, they are not expected to impact the proposed school modernization project. Evidence of a septic system was not observed by Pinnacle during the current field investigation.

LADWP supplies power to the school. A set of LADWP transmission towers carrying 127 kilovolts (kV) of power are located in an east to west alignment 400 feet north of the school. None of the current or planned campus structures are within 100 feet of these lines. Power is brought into the campus at the northeast corner of the school, and is routed in the subsurface to a pad-mounted transformer located north of the parking lot. No other high-voltage (greater than 50 kV) lines operated by either LADWP or Southern California Edison (SCE) are located within 100 feet of the school.

According to the Safety Element of the Los Angeles Master Plan and information available on the National Pipeline Mapping System, a crude oil pipeline operated by Plains Pipeline is located below Alameda Street, 0.4 miles east of the school. An abandoned crude oil pipeline is also located below Alameda Street. An active but unfilled product pipeline is located 0.4 miles west of the school under Graham Avenue. It is operated by Shell Pipeline. None of these lines are near the areas of impacted soil.

Southern California Gas (SCG)/The Gas Company supplies natural gas to the school and vicinity. An operating 30-inch, high-pressure gas transmission line is located within 100 feet of the school. This line (#18484) is located immediately south of the school below 95th Street. Four-inch gas distribution lines are located adjacent to the school below 92nd Street and Grape Street. A three-inch distribution line is located below Anzac Avenue on the west side of the school.

Water to the school is provided by LADWP. Based on a five-year average of deliveries, approximately 36% of the LADWP supplies have been produced from the Eastern Sierra via the Los Angeles Aqueduct system. Approximately 11% of the supply has been pumped from wells in the San Fernando Valley. Recycled water accounted for 1% of the water delivered to customers over this period. The remainder of the City's supplies (approximately 52%) have been imported from Metropolitan Water District sources such as the Colorado River and Feather River.

2.2 Site Topography

The school is situated approximately 117 feet above mean sea level (MSL) and topography of the general area slopes gently to the south-southeast. The school campus is flat with a gradual slope to the south, so any precipitation not percolating into the few landscaped areas travels over paved portions of the campus as sheet flow and is directed to scattered stormwater drains or to offsite drains.

2.3 Site History and Status

The property occupied by the school was single-family residences in the earliest historical aerial photograph in 1923 reviewed by Accord Engineering while performing their Phase I Environmental Assessment (Accord, 2017). Buildings 1 and 2 were erected in the 1930's and replaced some of these homes. The southern portion of the property continued to be occupied by single-family homes. These homes were removed when the school was extended to the south to occupy the whole block.

2.4 Surrounding Land Use and Sensitive Ecosystems

The school is located in a residential area and is surrounded by single-family homes. The closest commercial or other land uses is a small store located offsite at the southwest corner of the school. Fifteen sensitive receptors (public buildings, other schools, parks, hospitals, convalescent homes, and churches), including the school, are co-located with, or located, within 0.25 miles of the project area.

The closest major highways to the school are Interstate 105, which is located 1.6 miles south of the school, and Interstate 118, which is located 2.6 miles west of the school. Interstate 710 is located 3.9 miles east of the school.

There are no sensitive ecosystems on the school property or in the surrounding neighborhood.

2.5 Previous Site Investigations

Accord Engineering produced a Phase I Environmental Site Assessment (ESA) Report for the complete school campus dated July 28, 2017. That assessment did not identify any previously conducted environmental investigations for the school or contiguous property. However, it identified potential Recognized Environmental Conditions (RECs) within the project area that were used to produce the scope of work for Pinnacle's PEA-E. Pinnacle used their own site observations to augment the RECs produced by Accord.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

3.1 Geology

The school is located in the north-central portion of the Los Angeles Basin. The Basin is bounded by the Santa Monica Mountains and the Elysian Hills to the north, the Repetto and Merced Hills to the northeast, the Puente and Coyote Hills to the east, and the Santa Ana Mountains and San Joaquin Hills to the south. The Pacific Ocean is to the west.

Fine-grained surface soils in the vicinity of the school belong to the Chino soil series, which is a poorly-drained, silty loam. This fine-grained alluvium varies laterally with Hanford soils in the western portion of the Los Angeles Basin. Soil belonging to this series has been identified below undisturbed areas in the Los Angeles Basin to a depth of up to 60 inches. The original undisturbed soil horizon below the school extended with little variability to the fine-grained Recent alluvial sediments at depth. This soil was subsequently mixed with broken building materials during school construction.

Near-surface subsoil geologic materials at the school are poorly-indurated, Recent Alluvium (primarily sands and silts) shed from the Santa Monica Mountains and other highlands to the north. This materials was transported primarily by the Los Angeles River. Approximately 170 feet of this material is present below the school. The upper 90-100 feet of this material is undifferentiated finer-grained clays and silts. The bottom 70-80 feet of this material is the coarser-grained Gaspur Aquifer. The Lakewood Formation is present below this Recent material. It consists of fine-grained material (the Bellflower Aquiclude) to a depth of approximately 240 feet below ground surface (bgs), where the top of the Exposition Aquifer has been observed. The school is not within the Central Pressure Area, where shallow groundwater is present under confined conditions.

The nearest fault to the school is the Avalon-Compton segment of the Newport-Inglewood Fault Zone (NIFZ), which is approximately 3.4 miles southwest from the school at its closest point. This fault segment is the closest Alquist-Priolo Fault-Rupture Hazard Zone (A-P Zone) to the school. Numerous surface ruptures were produced along this fault during the 1933 magnitude 6.3 Long Beach Earthquake. Though the epicenter for this earthquake was located offshore of Huntington Beach, the area near the school experienced significant shaking. Less severe earthquakes with magnitudes from 3.0 to 4.7 have occurred along this fault zone since the Long Beach Earthquake. Two other faults recognized as A-P Zones are located north and east of the school. The Hollywood Fault is located approximately 11 miles to the north. The Whittier Fault is located approximately 14 miles to the east. The northern portion of the Los Angeles Basin is also cut by a set of shallow, northeast dipping thrust faults. The Compton Thrust has been identified in the southwest portion of the basin, while the complex, overlapping segments of the Puente Hills, Elysian Park and San Vicente Thrust Faults are located below the northeast portion of the basin. The school is located several miles northeast of where the Compton Thrust terminates at depth, and several miles southwest of the approximate shallow origin of one of the segments of the Puente Hills Thrust Fault.

According to the latest California Geological Survey (CDMG) Seismic Hazard Zone Map for the Southgate Quadrangle, soils in the vicinity of the school are potentially liquefiable during seismic events. The 1996 Safety Element of the City of Los Angeles General Plan had previously regarded the soils below this area as liquefiable.

There is no landslide hazard identified on the school or on neighboring properties. The closest landslide hazards are in the Baldwin Hills or in downtown Los Angeles, approximately six miles northwest and north of the school.

3.2 Groundwater

Shallower groundwater levels in the vicinity of the school existed until approximately 50 years ago. The Seismic Safety Element of the Los Angeles County General Plan contains a map showing areas with historic groundwater based on data from 1944 and 1969. According to this map, groundwater below the school was within 30 feet of the surface during this period.

Site investigation and groundwater remediation performed approximately 0.3 miles northwest of the school at 8825 Beach Street has encountered groundwater at relatively shallow depths, from 39 feet to greater than 60 feet bgs. These groundwater levels have been influenced by onsite groundwater extraction and injection activities, but provide a general groundwater depth. Another ongoing groundwater investigation and remediation project performed at a Los Angeles Department of Water and Power facility located at 8627 Fir Avenue, approximately 0.4 miles north of the school, has observed groundwater at a depth of between 42 and 45 feet bgs. The direction of groundwater flow is to the north at both of these facilities. No investigations conducted at the school have provided an accurate depth to the first occurrence of groundwater.

Groundwater well information archived at the Los Angeles County Department of Public Works (LACDPW) was reviewed for general depth to groundwater data. The closest routinely monitored groundwater well, well 1475B, is located 0.4 miles east-southeast of the school. It has a latest depth to groundwater of 136 feet bgs, which results in a water surface elevation of 24 feet below mean sea level (MSL). Well 1475C, located 1,000 feet farther to the east-southeast from the school, has a latest depth to groundwater of 124 feet bgs, which results in a water surface elevation of 17 feet below MSL. These wells are not monitoring the shallowest water table aquifer and the depth to water data can not be directly compared to the water level data observed in the nearby groundwater remediation projects.

3.3 Surface Water

The closest named or significant water body to the school is the Los Angeles River, a broad, engineered channel for flood control that runs from north to south in the vicinity of the school. It is 3.7 miles east of the school. The elevation at the northeast corner of the project area is approximately 118 feet above MSL.

According to California Federal Flood Insurance Rate Map #06037C, panel 1805F, the school is with Flood Zone X, indicating that the area is in an area of minimal flood hazard. Specifically, it is outside the area with a 0.2 percent (%) annual risk of flooding. The map was last updated on September 26, 2008.

The Safety Element for the Los Angeles County Master Plan shows the school within the area of potential inundation in the event of a local dam failure. The inundation map for the Hansen Dam, produced by the California Emergency Management Agency (Cal EMA), provides more detail regarding this inundation hazard. The school is not within the inundation area for Sepulveda Dam or Encino Dam. The school is not at risk of being flooded by a tsunami.

4.0 NATURE, SOURCE AND EXTENT OF CHEMICALS OF CONCERN

The nature, source and extent of arsenic and lead in soil within the project area is presented below.

4.1 Contaminant Descriptions and Sources

The earlier Accord Phase I ESA for the school property identified the following potential RECs:

- Based on the age of the project area buildings and the presence of earlier buildings, soils may have been impacted with lead due to the prior application of lead-based paints (LBP).

- Soils may be impacted with arsenic and Organochlorine Pesticides (OCPs) as a result of possible pesticide and/or herbicide application within the project area. These chemicals may have been applied during historical agricultural land use, while the later single-family homes were present, or prior to paving the current school campus.

- Potential surface soil impacts from any spills or releases of dielectric (cooling) oil containing Polychlorinated Biphenyls (PCBs) in the pad-mounted electrical transformer in the northeast section of the project area.

Weathering, scraping, and chipping of potential LBP surfaces may have caused lead to be released and accumulate in soil around past and current structures. The use of lead arsenate and arsenic trioxide as a termiticide and in general insecticides has been known to result in significant concentrations of these metals and OCPs in soils around structures with wood components built prior to January 1, 1989. Considering the age of existing structures within the project area and the initiation of agricultural land uses prior to the construction of the residences and school, lead, arsenic and OCPs may have been released to near-surface soils in the project area.

The Pinnacle PEA-E did not identify PCBs in soils adjacent to the pad-mounted transformer at the northeast corner of the project area. While several OCPs were detected at eleven of the boring locations within the project area, none of the soil samples had an OCP concentration above the applicable Regional Screening Level (RSL). Pinnacle advanced an additional soil boring during the PEA-E at the entrance to a small building used to store gasoline-powered equipment and a small volume of fuel. No fuel-related volatile organic compounds or total petroleum hydrocarbons were detected in these soil samples. No other previously unknown spills or releases of hazardous substances were identified within the project area during the PEA-E.

Arsenic-impacted soils were identified at three initial soil boring locations within the project area and lead-impacted soils were identified at one location within the project area. Each area of elevated arsenic and/or lead was delineated by advancing step-out borings. The locations of the impacted soils could not be linked to current activities or structures at the school and are regarded as non-point source contaminants. The tables and figures from Pinnacle's PEA-E are provided in Appendix A of this workplan.

4.2 Extent and Volume of Soil for Removal

Lead and/or arsenic concentrations in soil exceeded their respective screening levels for residential land uses at three sampling locations: PB-11, PB-27 and PB-34. Subsequent step-out sampling defined an estimated 35.2 cubic yards (in place) of soil above screening levels at these locations. These sampling locations and the results versus screening levels are depicted in Figures 4, 5 and 6. The areas for excavation are depicted in Figures 7, 8 and 9.

Using a bulk factor of 140%, an estimated surface volume of 49.3 cubic yards of material will be transported from the project area under this recommended scenario. Based on an estimated density for moist, silty sand of 2,800 pounds per cubic yard, this volume of soil would weight approximately 66.5 tons. The impacted soil volume for each initial boring location is provided in Table 2.

The analytical results generated during Pinnacle's PEA-E indicate that the impacted soil at these locations may be characterized as a non-hazardous waste. The analytical results generated during the PEA-E may be sufficient to characterize the soil for disposal. However, additional sampling and analysis of the transported material may be required, depending on the permit requirements of the selected destination.

4.3 Health Effects of Chemicals of Concern (Receptors and Pathways)

An exposure pathway describes the route a chemical, in a variety of forms, may take from a source to an exposure point where a receptor can interact with the chemical. A complete exposure pathway includes five components.

- A primary source(s) of contamination (e.g., storage tanks, the land application of a pesticide)
- A secondary source(s) of contamination (e.g., COC vapors, contaminated dust, subsurface soil contaminated by the migration of a release substance)
- Release mechanisms (e.g., direct contact of various media, wind-blown dust, storm water erosion, leaching from various media)
- Transport media (e.g., surface soil, air, storm water runoff)
- Receptors (e.g., persons or biota).

Typical exposure pathways include incidental ingestion of soil, dermal contact with soils and inhalation of contaminated fugitive dust. Since volatile chemicals were not identified as COCs within the designated project area, the inhalation of chemical vapors in outdoor and indoor air is not regarded as a significant exposure pathway. A summary of the site-specific receptor and pathway criteria for the project area is provided below.

Once released to soil, heavy metals such as arsenic and lead are relatively immobile. These substances are not easily soluble, and will not typically leach into surface water or migrate to groundwater. They will likely adsorb to soil particles, and they will not volatilize and migrate as vapors. Evidence of older surface releases or applications of these COCs that occurred prior to school development are less likely to be discovered in significant concentrations and over broad areas due to past ground surface grading conducted for school construction.

Arsenic can affect receptors when airborne material is inhaled, ingested, or by passing through the skin. Arsenic is regarded as a potential carcinogen, so materials containing elevated arsenic should be handled with extreme caution. Arsenic in the system can damage many body organs, including the skin, gastrointestinal tract, lungs, heart, blood vessels, immune system, urinary system, reproductive organs and the nervous system. Symptoms of arsenic exposure may include headache, drowsiness, confusion, convulsions, sore throat, irritated lungs, ulceration of nasal septum, dermatitis, respiratory distress, vomiting, diarrhea, possible liver damage, muscular tremors, and reproduction damage. Exposure to arsenic can also cause hyperpigmentation of the skin (darkening) and the appearance of scaly skin on the palms and soles.

Lead can also affect receptors when airborne material is inhaled, ingested, or by passing through the skin. Lead typically mimics calcium once it enters the system and also combines in various ways with proteins. As such, it resides in bone tissue as well as blood and other tissues. Short-term overexposures to lead may result in abdominal distress, anemia and general weakness, headaches and memory loss, and pain or tingling in extremities. Long-term exposures may result in high blood pressure, kidney disease and infertility. Cancers may also result from local concentrations of lead. Children and pregnant women are especially susceptible to over-exposures. Permanent mental retardation, behavioral effects and other neurological effects may result in exposed young or unborn children.

4.4 Exposure Points

The current location of these impacted soils below an asphalt pavement prevents a complete pathway to potential receptors (students, staff, onsite workers). The primary potential exposure point during future construction is expected to be dermal contact with surface soil with elevated COCs. However, exposure could also occur through inhalation of dust, or incidental ingestion of dust. These exposures will be mitigated by the removal action.

4.5 Potential Receptors

Current primary receptors are students and staff at the school. Secondary receptors include workers that arrive on campus to perform short-term tasks. The potential future receptors will also include workers involved in the demolition of current structures and construction of the new buildings.

According to the PEA Guidance Manual (DTSC, 2015), the exposure scenario for the screening evaluation assumes a hypothetical residential setting. Under the residential scenario, the primary receptors are assumed to be exposed 24 hours per day, 350 days per year, for 30 years for the reasonable maximum exposure case (i.e., 6 years for a child and 24 years for an adult). The surrounding residents may be exposed via inhalation of airborne particulates from the site.

4.6 Site Specific Clean-Up Goals

The screening level currently used for arsenic at LAUSD school sites is 12 mg/kg, which is the DTSC's upper bound estimate (95th percentile) for background concentrations in Southern California (DTSC, 2008). The SSCG for lead is 80 mg/kg, which is the DTSC Recommended Screening Level (DTSC-RSL) for lead in residential soil (DTSC, April 2019). These screening levels will be regarded as SSCGs for the removal action.

5.0 ENGINEERING EVALUATION/COST ANALYSIS

5.1 Identification and Analysis of Removal Action Alternatives

The purpose of this section of the RAW is to identify and screen possible remedial alternatives that achieve the RAOs discussed in Section 1.2. The screening of remedial action alternatives was conducted in general accordance with the EPA Guidance on Conducting Non-Time-Critical Removal Actions under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (EPA, 1993). The proposed remedial alternative will be conducted in accordance with protocols of the CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Under 40 Code of Federal Regulations (CFR) 300.415 of the NCP, an engineering evaluation/cost analysis (EE/CA) is required to select a remedial alternative. This section was prepared, as part of the RAW developed for the site, to aid in the evaluation of remediation alternatives for the mitigation of arsenic- and lead-impacted soil at the site, as such, were screened and evaluated on the basis of their effectiveness, Implementability, and cost, as defined below.

Effectiveness – This criterion assesses to what degree a remedial action can be expected to reduce toxicity, mobility, and volume through treatment or other mitigation; minimize residual risk and afford long-term protection; and minimize short-term impacts. It also considers at what rate it provides protection. Consideration of each alternative is evaluated in more detail using the following sub-criteria:

<u>Overall protection of human health and the environment</u> – This sub-criterion evaluates whether the remedial alternative provides generally acceptable protection of human health and the environment.

<u>Short-term effectiveness</u> – This sub-criterion evaluates the effects caused by the remedial alternative from the initial implementation phase through the completion of remediation. It considers the protection of workers and the community while performing remedial activities, as well as what environmental impacts may result from implementing the action.

<u>Long-term effectiveness and permanence</u> – This sub-criterion addresses issues related to the management of residual risk remaining on site following implementation of a given remedial action. The primary focus is placed on what long-term controls may be required to manage the risk posed by treating remaining residuals or by leaving untreated wastes on site.

Reduction of toxicity, mobility, or volume – This sub-criterion evaluates whether the remedial technology significantly reduces the toxicity, mobility, or volume of the site-specific COCs.

Implementability – This criterion evaluates the technical and administrative feasibility of the alternative. This includes the ability to perform or construct and operate the alternative, ability to obtain services and equipment, ability to monitor the performance and effectiveness of the method, and the ability to obtain necessary approvals from oversight agencies.

Cost Effectiveness – This criterion considers estimated initial costs and operation and maintenance costs. The actual costs will depend on competitively bid labor and material costs, competitive market conditions, the final project scope and design, and the implementation schedule.

5.2 Evaluation of Removal Action Alternatives

Following an initial screening, each remedial action alternative presented in this RAW will be independently analyzed without consideration to the other alternatives. Three remedial alternatives were evaluated for mitigating the arsenic-and lead-impacted soil at the site. These alternatives were evaluated using the criteria listed above. The three alternatives are:

- Alternative 1 – No Action
- Alternative 2 – Containment by a Surface Cap
- Alternative 3 – Excavation/Off-site Recycling or Disposal

A description and evaluation of each of the three remedial alternatives is provided in the following sections and is presented in Table 3.

5.2.1 Alternative 1 – No Further Action

The no-action alternative (Alternative 1) is typically included to provide a baseline for comparison among other remedial alternatives. This alternative includes no institutional controls, no treatment of soil, and no monitoring.

Alternative 1 does not require the implementation of any removal measures at the site. As such, there is no cost associated with this alternative. Since elevated arsenic and lead concentrations are present in shallow soils, this alternative would not reduce the health risk resulting from exposure to impacted soil at the site. In addition, as future construction work is performed for the site, workers and the public may be exposed to impacted soil, making this alternative unacceptable.

5.2.2 Alternative 2 – Containment by Surface Cap

Containment at the site would consist of capping the surface of the impacted areas with an engineered soil cover and/or membrane. The cap would be used to prevent a complete exposure pathway to school students and staff.

The application of the surface cap would result in some disturbance of the COC-impacted soil. Therefore, there is a potential short-term risk to on-site workers and the surrounding public from dust that may be generated during these activities. These risks could be mitigated using personal protective equipment for on-site workers and engineering controls such as dust suppression, and additional traffic and equipment operating safety procedures for protection of the surrounding community. The short-term risks associated with this alternative are low.

A surface cap would require long-term inspection and maintenance. Periodic inspections for settlement, ponding of liquids, erosion, and penetrations by vegetation or burrowing animals would be required. In addition, precautions would have to be taken to ensure that the integrity of the cap is not compromised by subsequent construction activities. Based on these factors, the effort required to ensure long-term effectiveness is considered moderate.

Containment by surface capping would not reduce the toxicity or volume of arsenic or lead, but it would limit the mobility of the impacted material. Proper maintenance of the cap would reduce accessibility to the impacted material.

Containment is a relatively simple technology that is easily implemented and offers short installation times. Because the elevated levels of arsenic and lead remain at the site, obtaining regulatory approval may be difficult. Local land use restrictions would also be required to eliminate future disturbances of these areas during school/residential property redevelopment.

This alternative provides good protection of human health if proper long-term operations and maintenance protocols are followed.

Containment technologies costs are typically low to moderate relative to other options. An approximate cost for containment is between $200,000 and $250,000 per acre for a soil, geotextile and asphalt or concrete cap. The surface area that would be required for the cap, including an extension over adjacent material, would be not exceed 1,000 square feet. This results in a cap cost of approximately $20,000 to $25,000. An additional cost of approximately $50,000 will be required for preparation of mitigation plans, preparation of an

Operation and Maintenance Plan, and establishment and recording of land use restrictions. A summary of the estimated costs to implement this alternative is presented in Table 3.

5.2.3 Alternative 3 – Excavation and Off-Site Disposal

This alternative includes excavation and off-site recycling, reuse, or landfilling of soils with arsenic concentrations above 12 mg/kg and/or lead concentrations above 80 mg/kg. Using a bulk factor of 140%, an estimated surface volume of 49.3 cubic yards of material will be transported from the project area under this recommended scenario. Based on an estimated density for moist, silty sand of 2,800 pounds per cubic yard, this volume of soil would weigh approximately 66.5 tons. Excavation and offsite disposal would be an effective means of removing the impacted soil and would allow the site's RAOs to be met. Excavated soils would be loaded onto trucks and transported to the appropriate approved receiving facility. The analytical results compiled to date support a non-hazardous waste characterization for this material. If existing analytical data needs to be supplemented for waste characterization for a particular disposal destination, soils would be sampled and analyzed pursuant to the destinations permit requirements.

This alternative would remove impacted soils under proper control measures to protect human health and the environment. Soil removal activities would be conducted in accordance with applicable local permit requirements (if any) and the requirements of this RAW after approval by LAUSD, thus complying with the applicable or relevant and appropriate requirements (ARARs) provided in Section 6.0.

This alternative provides long-term effectiveness by permanently removing the impacted soils from the site. However, it may result in temporary short-term impacts (including dust, noise, and traffic) to the local area. These impacts would be reduced through control measures to an acceptable level, thereby providing short-term effectiveness. Because this alternative would remove impacted soils, the accompanying toxicity, mobility and volume would be reduced to an optimum level.

This alternative is technically and administratively feasible, and would be relatively easy to permit. All of the activities involved are relatively simple including: soil sampling and analysis (if necessary), excavation, temporary stockpiling (if necessary), loading and transport, soil recycling or disposal, backfilling and compaction, preliminary rough grading, and restoring the asphalt pavement. All activities should be conducted in accordance with local permits by properly licensed contractors and transporters, which would also comply with State and Federal regulations.

The potential negative aspects of this alternative are minimal since the soil volume is small, the duration to implement Alternative 3 is less than one week, the costs in comparison to Alternative 2 are low, and the disruption to the neighborhood (traffic and noise) would be minimal. All field activities would be performed in accordance with applicable regulations to reduce noise and traffic issues to acceptable levels. Public issues concerning this alternative would be addressed satisfactorily by the LAUSD and community acceptance is anticipated.

In summary, Alternative 3, Excavation/Off-site Recycling or Disposal is a proven, readily implementable remedial approach commonly used to address shallow soil contamination at school sites. The process is straightforward and the equipment and labor required to implement this alternative are simple and readily available. Based on the past success related to the excavation and offsite disposal of shallow soil contamination at other LAUSD school sites, it is anticipated that this approach would be acceptable to the school and community.

5.3 Estimated Costs of Removal Action Alternatives

The estimated cost for implementing each of the three remedial alternatives is presented in Table 3.

There is no cost associated with Alternative 1.

The estimated cost for Alternative 2 ranges from to apply a surface cap over a maximum 1,000 square feet area impacted by arsenic and lead is approximately $25,000. This cost would increase if the adjacent area requiring capping would increase. Annual post-surface capping inspection and repair costs would be approximately $5,000 per year for 20 years, or $100,000. Preparation of engineering plans, preparation of the Operation and Maintenance Plan, and establishment and recording of land use restriction will be approximately $50,000. The total estimated cost for performing Alternative 2 including the RACR is approximately $215,000 (Table 3).

The major cost components for implementing Alternative 3 at the school are utility clearance, soil excavation, soil loading, transportation, disposal, dust suppression, backfilling with compacted imported soil and restoring the asphalt. No permits from the local agencies are expected to be required to excavate, transport, and dispose of the affected soil.

The estimated project costs for Alternative 3 include the cost incurred by the environmental consultant to coordinate the work, oversee soil excavation, conduct dust monitoring, perform confirmation soil sampling (if necessary), analyze soil samples at a laboratory, and prepare a Removal Action Completion Report (RACR). The estimated cost to excavation and stockpile or directly load the impacted material is $15,000. The unit cost for off-site transport and disposal or recycling of the non-hazardous, arsenic-impacted soils is approximately $200.00 per ton. This results in a cost for these tasks of approximately $10,000. An additional cost of $15,000 would be required for backfilling, compaction (by rolling) and replacing the asphalt pavement. Consulting fees of approximately $25,000 will be required for management oversight, field supplies, air monitoring, waste profiling, laboratory services (if necessary) and reporting. The total estimated cost for Alternative 3 with 66.5 tons of arsenic-impacted soil for mitigation is approximately $79,500 (Table 3).

5.4 Description of Selected Removal Action Alternative

Alternative 3 (Excavation and Offsite Disposal) is selected as the preferred alternative because it is easily implemented, effective, and eliminates short-term and long-term health risks due to elevated levels of arsenic in onsite soil.

Soil excavation would involve the use of conventional excavation equipment, such as backhoes, loaders, and dozers to remove the estimated 49.3 cubic yards (66.5 tons) of impacted soil from the site. Excavated soil would be either directly loaded into staged trucks, loaded into staged bins, or would be temporarily stockpiled on plastic sheeting near the excavation areas until it could be loaded out for offsite disposal.

The soils removed from the excavations would be transported offsite to an appropriately licensed facility for disposal. A direct read field XRF will be used to screen excavation floors and sidewalls to confirm that arsenic and lead affected soils have been removed. Confirmation soil samples will be collected and submitted to a California certified laboratory for arsenic or lead analysis (EPA Method 6020) to document that all arsenic or lead concentrations above SSCGs remain in the excavation areas.

The cost to implement Alternative 3 (Excavation and Offsite Disposal) is estimated to be $80,500 as shown in Table 3. This cost estimate is based on the excavation, load-out, transport, and disposal of an estimated 49.3 cubic yards (66.5 tons) of impacted soil. After completing the excavations and confirmation sampling, and receiving OEHS clearance, the exavation areas will be available for re-grading or backfill with clean imported soil. Costs are also included for consultant oversight of the remedial activities.

6.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS)

Based on the EE/CA presented in Section 5.0, Alternative 3 (Soil Excavation and Off-Site Disposal) has been selected as the preferred remedial response to address arsenic- and lead-impacted soil at the Site. This section discusses the ARARs for the proposed removal action.

6.1 Public Participation

Public participation is an integral component of the environmental investigation and remediation process.

Prior to conducting the PEA-E at the Site, the public was informed of the planned investigation activities by a public notice. It provided information regarding the future fieldwork, along with contact information for the LAUSD Project Manager. The notice was prepared in English and Spanish to DTSC standards and was printed on LAUSD letterhead. The notice was distributed to staff and the parents of students, and copies were delivered to nearby residents. The notice was also posted at the Site prior to commencement of fieldwork. A copy of this notice is included in Appendix E.

This RAW will be considered final when the public has had an opportunity to review it and comment. An updated public notice of the remedial activities will be published in public newspapers such as the Los Angeles Daily News (in English) and La Opinión (in Spanish). In addition, the notice will be distributed to staff and the parents of students, and copies will be delivered to nearby residents. The notice will identify the quantity of soil containing elevated COC concentrations; dates of the public comment period (i.e., March 1 to March 31, 2020); locations where hard copies of the RAW can be found for review; location and time for a public meeting to discuss the CMP and this RAW; how to submit comments; and the deadline to submit comments (i.e. April 1, 2020). A copy of the notice for each newspaper will be included in Appendix E of the Final RAW. After the public comment period the RAW will be amended as necessary to incorporate public comments received at the meeting or received by LAUSD. At a minimum, the date of this RAW will be updated, and the following will be added to Appendix E: a statement from LAUSD that no comments were received (alternatively public comments will be inserted), and a proof of publication from each newspaper.

6.2 California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA), modeled after the federal National Environmental Policy Act (NEPA) of 1969, was enacted in 1970 as a system to integrate environmental considerations with land-use development and management decisions in California. It is an administrative procedure to ensure comprehensive environmental review of cumulative impacts prior to project approval. It provides no agency enforcement, but allows challenges in the courts. CEQA applies to all proposed discretionary activities to be carried out or approved by California public agencies, unless an exemption applies. This RAW was included under CEQA as part of a larger Comprehensive Modernization Project.

The CEQA environmental review process for the 92nd Street Comprehensive Modernization Project began on May 21, 2018. The Draft Initial Study was prepared and released on April 10, 2019. After conducting a circulation study, historic survey, and several other studies, the Comprehensive Modernization Project was determined to not have a significant impact on the environment and, therefore, a Draft Negative Declaration was released. The public reviewed the draft document from April 10 to May 10, 2019. Four agencies sent comments about the project. However, there were no comments that required a change to the report. The State Clearinghouse sent a letter stating that State environmental requirements were met. The Initial Study and Mitigated Negative Declaration (IS/MND) will proceed to the Board of Education for approval in 2020.

6.3 Waste Management

The impacted soils to be removed have been characterized as non-hazardous waste, based on results of soil sampling conducted during the PEA-E. Additional sampling and analysis may be conducted, as necessary, to ensure that soils generated by the removal action have been properly characterized and profiled before they are transported off-site for disposal. Compliance with federal and state requirements for non-hazardous waste generation, temporary onsite storage, transportation, and disposal will be required of the contractor performing the excavation activities and will be monitored by the environmental consultant overseeing the field work.

Any container used for the temporary on-site storage of impacted material will be properly labeled and placed at a secure Site location in accordance with applicable regulations. The excavated material will be transported off-site for disposal within thirty days after its generation. All waste will be transported by a registered waste hauler under a non-hazardous waste manifest or bill of lading. Waste profiles will be developed and approved by the receiving facility before the soil is transported off-site. Only disposal facilities licensed to accept the waste will be considered.

6.4 South Coast Air Quality Management District

The Site is located in jurisdiction of the SCAQMD. The SCAQMD has four rules that address excavation, grading, and fugitive dusts (Rules 1150, 1166, 403, and 1466).

Rule 1150 applies to the excavation of sanitary landfills and does not apply to this project. Rule 1166 does not apply to this project because it concerns the excavation of volatile organic compound (VOC) contaminated soil and the impacted soil at 92nd Street ES is impacted with arsenic and lead, not VOCs.

Rule 1466 concerns the disturbance (excavation, grading, loading, stockpiling, handling, etc.) of soil that contain applicable toxic air contaminants (TACs). Both arsenic and lead are identified as TACs in the rule. However, the rule does not apply to excavation activities producing less than 50 cubic yards of impacted soil. Therefore, addressing the provisions of this rule to reduce the health risks to workers, staff and students from the soil removal activities is not required.

Several elements of Rule 403 (Fugitive Dust), such as protocols for the mitigation of potential fugitive dust emissions, have been incorporated into this RAW. Specifically, air monitoring will be conducted during the excavation, loading, and transport of impacted soils and mitigation measures will be implemented to minimize the generation of fugitive dust. Access to the Site will be controlled and excavation will not be conducted during times of high wind conditions (e.g., wind speed in excess of 25 miles per hour). Notification of the SCAQMD is required for medium or large excavation/grading operations that disturb more than 100 acres or move more than 5,000 or 10,000 cubic yards per day, respectively. This project does not qualify as a medium or large operation. Therefore, agency notification or the filing of a Fugitive Dust Emission Control Plan is not required.

6.5 State Water Resources Control Board

SWRCB Order No. 99-08-DWQ, National Pollutants Discharge Elimination System (NPDES) General Permit No. CAS000002, “Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity” (General Permit) describes the implementation of a Storm Water Pollution Prevention Plan (SWPPP) for construction projects. Since the work area is less than an acre in size, a SWPPP will not be required for this project. However, best management practices will be implemented for runoff control in accordance with regulatory requirements and activities that might be included in a site-specific SWPPP. If excavation is conducted during the rainy season, provisions will be made to prevent off-site migration of impacted soil in runoff. Measures may include placement of sandbags, straw rolls and hay bales to control runoff and to act as filters. If precipitation accumulates within any excavation, it will be pumped out and held in storage tanks or other containment until it can be properly characterized and disposed of in accordance with Federal, State, and local regulations.

6.6 Health and Safety Plan

All personnel conducting fieldwork at the Site will be responsible for operating 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.

A site-specific Health and Safety Plan (HASP) has been prepared for this project in accordance with current health and safety standards (Appendix B). The excavation contractor, environmental consultant, and any subcontractors conducting fieldwork in association with this RAW will either adopt and abide by the HASP or will develop their own safety plans that, at a minimum, meet the requirements of the HASP. The designated project Health and Safety Officer (HSO) will be responsible for maintaining compliance with the HASP. Daily tailgate health and safety meetings will be held and meeting participation will be documented in field forms that will be maintained with project records.

6.7 Quality Assurance Project Plan

Quality assurance/quality control (QA/QC) measures that will be used during project execution are documented in the site-specific Quality Assurance Project Plan (QAPP), a copy of which is included as Appendix C. The QAPP will assure that the sampling procedures for analytical data that may be generated during the project meet specified Data Quality Objectives (DQOs) and are of sufficient quality to support decisions for redevelopment of the Site for school use.

7.0 REMOVAL ACTION IMPLEMENTATION

This section describes the field procedures and the methods expected to be used to implement the remedial action.

7.1 Site Preparation and Security Measures

The following control measures will be implemented during field activities during remedial action implementation. Work can only begin at the largest excavation focused on initial boring PB-11 after the steel ramp in the work area is removed by LAUSD-Facilities. The ramp leads to the main classroom doors at the south side of the work area.

7.1.1 Delineation of Excavation Areas

The excavation areas focused on initial borings PB-11, PB-27 and PB-34 are shown in Figures 7, 8 and 9. The excavation boundaries will be marked with flags or paint prior to initiating excavation. Since the excavation depth will not exceed 2.5 feet bgs, no shoring or sloping at the margins of the excavation is required. A public notice regarding the work will be submitted to the adjacent residences and businesses at least five days before work begins.

The excavation at initial boring PB-11 extends south to a classroom building. A sufficient distance will be maintained from the classroom building by performing the excavation using properly-sized equipment and hand excavation as needed to avoid damaging the building.

7.1.2 Utility Clearance

Underground Service Alert (DigAlert) will be contacted at least 48 hours before subsurface work begins to identify the location of utilities that enter the property. Proposed excavation areas will be clearly marked with white paint as required by DigAlert. DigAlert will contact member utility owners of record within the site vicinity and notify them of the intent to excavate. Utility owners of record will be expected to clearly mark the position of their utilities on the ground surface throughout the designated area. Once marked, the contractor will be responsible for protecting existing utilities.

It is already known that the excavation at initial boring PB-11 will be located immediately south of a utility trench that runs from west to east. A three-foot distance will be maintained between the northern margin of this excavation and the southernmost utility line in this trench. The excavations at initial borings PB-27 and PB-34 may be within three feet of water lines. The intended area of excavation is not expected to disrupt these lines.

7.1.3 Site Security

Fencing and locked gates surrounding the school will isolate the work area from trespassers or unauthorized personnel that are not allowed on site. Additonal security measures while the fieldwork is being performed may include, but are not limited to the following:

- Posting notices directing visitors to the Site Manager.
- Maintaining a visitor's log. Visitors must have prior approval from the Site Manager to enter the site. In addition, visitors will not be permitted to enter the site without first receiving site-specific health and safety training from the Site Safety Manager.
- Installing barrier fencing to restrict access to sensitive areas such as exclusion zones.
- Providing adequate site security to ensure that unauthorized personnel do not have access to work areas and/or excavated materials.
- Before leaving the site, all personnel must sign out in the visitors' log.
- Maintaining a safe and secure work area, including areas where equipment is stored or placed, at the close of each workday.
- A temporary visual plastic barrier installed along the school boundary fence adjacent to the work areas.
- Persons requesting site access will be required to demonstrate a valid purpose for access and provide appropriate documentation to demonstrate they have received proper training. After work hours, access to the site will be controlled by the perimeter fence and locked gates.

7.1.4 Contaminant Control

Contaminant control measures are not required because arsenic is not expected to migrate in the soil matrix. However, arsenic in dust that may be produced during excavation activities is a potential contaminant migration route. This potential concern will be controlled by dust mitigation measures described in the excavation plan in subsection 7.3.4. Additionally, careful visual monitoring will be conducted to ensure dust suppression techniques are effective in minimizing dust from traveling off-site during excavation and loading.

Due to the small area of disturbance for on-site soil removal (less than one acre), a storm water pollution prevention plan will not be required. However, Best Management Practices will be implemented to minimize off-site transport of soil with storm water runoff. If possible, the fieldwork will be scheduled to avoid inclement weather.

7.1.5 Permits and Plans

No permits for grading will be required from the City of Los Angeles, Division of Public Works. No specific air or other permitting requirements have been identified for the proposed remedial activities at this time. Temporary no parking permits may be required to clear the curb area for truck access to the loading area near the west campus gate.

7.2 Field Documentation

The following paragraphs discuss the field documentation procedures for this work.

7.2.1 Field Logbooks

Field activity logs will document where, when, how, and from whom project information was obtained. Log entries will be complete and accurate enough to allow reconstruction of field activities. Each page will be consecutively numbered, dated, and noted with the time of entry. Entries will be legible, written in ink, and signed by the individual making the entries. Language will be factual, objective, and free of personal opinions or other terminology which might prove inappropriate. If an error is made, a line will be made through the error and the correct information will be entered. Corrections will be dated and initialed. No entries will be rendered unreadable.

7.2.2 Chain-of-Custody Records

Chain-of-custody records will be used to document sample collection and shipment to a laboratory for analyses. The forms will be completed and will accompany the samples for each laboratory and each shipment. If multiple coolers are transported to a single laboratory on a single day, chain-of-custody form(s) will be completed and transported with the samples for each cooler. The chain-of-custody records will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is either in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorized personnel. Until receipt by the laboratory, the custody of the samples will be the responsibility of the person who collected the sample.

7.2.3 Photographs

Photographs will be taken at selected excavation locations and at other areas of interest on the site. They will serve to complement information entered in the field activity logbooks. When a photograph is taken, the following information will be written in the activity logbooks, or will be recorded in a separate field photography log.

- Time, date, location, direction, and if appropriate, weather conditions.
- Description of the subject photographed.
- Name of person taking the photograph.

7.3 Excavation Activities

The following subsections describe the remedial activities to be performed while excavating and transporting the material for disposal.

7.3.1 Confined Space Entry Requirements

A permit for a confined space entry is not required for the shallow removal activities at the site.

7.3.2 Demolition of Pavements

The excavation areas are asphalt-paved. Prior to excavating the arsenic-impacted soil, the asphalt pavement above the excavation areas will be sawcut, carefully removed and separately stockpiled for disposal. The soil below the asphalt will not be disturbed while removing the asphalt.

7.3.3 Shoring

Due to the shallow maximum excavation depth of 2.5 feet bgs, the need for engineered shoring is not anticipated.

7.3.4 Temporary Stockpile and Staging Operations

The impacted soil intended for removal has been profiled as non-hazardous waste. Therefore, it may be loaded directly into trucks or bins if a disposal destination has been selected and approved by OEHS. Direct loading may take place concurrently with excavation operations using the same equipment. Designated loaders at the excavation may move soil to the bins while excavation equipment moves impacted soil from the excavation areas to a local staging area. Based on the volumes of soil to be excavated at the site, the location of the excavations and the availability of analytical data for waste characterization, most of this material should be able to be directly loaded into trucks or bins for transport and disposal.

While stockpiling onsite during excavation activities is not expected, the following discussion may apply if it is necessary to temporarily stockpile the excavated soil for subsequent offsite transport.

The staging process will be conducted in a manner to minimize the generation of dust. When possible, excavated soil will be placed in covered roll-off bins for later offsite transport. If a bin is not available, the soil will be placed on an impermeable barrier base (e.g., visquene) at the staging area and at the end of each day, and covered with similar material to prevent any storm water run-off and/or dust generation. If significant rainfall is anticipated, the staging areas will be bermed to contain any runoff.

The temporary onsite storage of excavated soil will be secured and properly labeled with non-hazardous waste signs until scheduled for loading. The material will remain onsite for no longer than seven days after its generation.

7.3.5 Decontamination Area

Vehicles, excavators, and hand-held equipment will be decontaminated prior to leaving the site. A decontamination area will be prepared on site prior to impacted-soil excavation. This area will be designed to contain material generated during the decontamination process. The decontamination area will be in an area easily accessible to incoming and outgoing vehicles and equipment, and will include methods for removing soil from vehicle tires, if any accumulates. In addition, personnel overseeing decontamination procedures will be responsible for ensuring soil is not tracked off site.

Materials removed from excavation equipment and rinsate collected during decontamination of impacted tools and equipment will be containerized and stored on site pending profiling and disposal. After decontamination, the equipment will be visually inspected for signs of residue. Decontamination rinseate will be appropriately disposed of upon receipt of laboratory profiling data.

Entry of personnel and equipment into the soil removal excavation areas (exclusion zones) will be limited to avoid unnecessary exposure and related transfer of contaminated soil. The surfaces of excavation equipment will be brushed off to remove loose soil prior to their removal from the exclusion zone. If necessary, equipment that comes into direct contact with impacted soil will be decontaminated in a pre-designated area on pallets or plastic sheeting. Clean equipment will be stored on plastic sheeting in uncontaminated areas. All soil containers will be closed and tops secured at the end of each work day to prevent potential exposure. Containers will be closed and secured prior to loading onto transport trucks to prevent potential loss of material during transport to the disposal facility. The remediation contractor will inspect each container before it leaves the Site. Since roll-off transport trucks are not anticipated to traverse any impacted areas or bare ground, they should not require any decontamination prior to leaving the Site. If trucks become potentially contaminated or are tracking dirt, they must stop at a decontamination station lined with plastic sheeting and/or rumble plates. Any soil adhering to the tires or exterior surfaces will be brushed off and collected onto the plastic sheeting. Street sweeping of adjacent public streets will be conducted, if necessary, to reduce the potential for fugitive dust and migration of contamination.

Any sampling equipment that is reused will be decontaminated to assure the quality of samples collected and/or to avoid cross contamination. Disposable equipment intended for one time use will not be decontaminated, but will be packaged for appropriate disposal. Decontamination will occur prior to and after each designated use of reusable sampling equipment, using the following procedures:

- Non-phosphate detergent and tap water wash, using a brush if necessary
- Initial deionized/distilled water rinse
- Final deionized/distilled water rinse
- Allowed to air dry.

7.3.6 Air and Meteorological Monitoring

Air monitoring will be performed while impacted or potentially impacted materials are being disturbed or handled. The environmental consultant will perform the following air monitoring:

- Monitoring dust levels in the exclusion zone and other locations. The environmental consultant will identify conditions that require cessation of work, e.g. wind speeds high enough to result in visible dust emissions from the excavations or stockpiles that cross the property line, despite the application of dust mitigation measures. Work will cease in the event that onsite activities generate dust that reaches beyond the school property, so that dust control measures can be modified.
- Coordinating general site safety activities including all daily hazard communication, safety practices and procedure briefings.
- Overseeing personal decontamination practices.
- Performing general site safety leadership, support and recordkeeping activities.

Meteorological monitoring will be conducted over the duration of the field operations for:

- Air temperature;
- Wind direction;
- Wind speed;
- Heat index;
- Barometric pressure;
- Relative humidity; and
- Rainfall (if any).

General observations of wind direction and speed will be noted using a windsock or equivalent device. If precipitation is expected, it will be measured with a rain gauge. The remaining meteorological parameters listed above, including wind speed, will be measured with a Kestrel® 4000 Pocket Weather and Environmental Meter or equivalent. If sustained winds of 25 mph are observed or anticipated for more than 30 minutes, excavation, earth moving and/or loading activities will cease.

7.3.7 Dust Control

Dust control measures will be performed during remedial activities to reduce the potential for fugitive dust and migration of contamination in compliance with requirements contained in SCAQMD Rule 403. Factors considered in providing dust control include wind speed and direction. The designated Health and Safety Officer will have the authority to stop work in the event that on-site activities generate dust levels in excess of established action levels or if wind conditions change creating an uncontrollable condition.

During remediation activities, isolation fencing will be placed around each excavation area if students or staff are onsite. The fencing will be fitted with windscreen to minimize the off-site migration of windborne dust.

The generation of dust will be controlled with the use of water as a dust suppressant. The water will be available from an on-site hose bib near the excavation with sufficient water pressure to provide the volume of water required to properly wet the excavated areas. Dust suppression will be performed by applying a light water spray to soil stockpiles, exposed excavation surfaces, excavator buckets, and internal pavements, as necessary, to maintain blowing dust from leaving the school campus.

While on-site, all vehicles will maintain slow speeds (i.e., less than 5 miles per hour) for safety purposes and to control dust generation. Efforts will be made to minimize the soil drop height from excavator or loader buckets into the transport trucks. If wind speeds exceed an amount at which engineering controls are determined to be ineffective (e.g., sustained 25 mph windspeed for 15 minutes), excavation and/or loading will cease.

7.3.8 Soil Excavation

Excavation and removal of impacted soil will be performed in stages due to access constraints, commencing at the smaller excavations focused at initial borings PB-27 and PB-34. Soil will be removed to the lateral and vertical extents shown on Figures 7, 8 and 9 using a small backhoe or Bobcat. Confirmation sampling is not expected to be required at any of the locations. At the end of each work day, excavated areas will be secured with fencing, delineators, and caution tape as needed to minimize the occurrence of accidents or unauthorized entry.

Once LAUSD-OEHS approves completion of the soil removal action, the excavation areas can be re-graded or backfilled with clean soil. As can be seen from Figures 7, 8 and 9, the maximum excavation depth is 2.5 feet bgs, and most excavation areas are 1.5 feet deep. The total initial in-place volume of impacted soil is estimated to be approximately 35.2 cubic yards. This increases to approximately 49.3 cubic yards once it is excavated. This estimated surface volume of 49.3 cubic yards of excavated soil is to be direct loaded into haul trucks or loaded into 10-cubic yard steel roll-off containers.

All fieldwork will be completed by properly trained and equipped environmental workers using conventional construction equipment, such as mini-excavators or Bobcats, and small front-end loaders. Buckets used for excavation will have a smooth blade edge (no teeth). Due to the small excavation sizes, the need to protect underground utilities, and restricted access, hand digging will be necessary to complete the excavation at each location. Mechanized equipment can likely be utilized to begin each of the smaller excavations at PB-27 and PB-34, and will be able to perform nearly all of the excavation at PB-11.

The soil from each excavation area (PB-11, PB-27 and PB-34) should be profiled as non-hazardous and can be mixed with each other. As the soil is excavated from PB-27 and PB-34, it will be placed into one-cubic-yard hoppers and transferred to the waste staging area west of the excavation at initial boring PB-11 (Figures 3 and 7). Soil will be prevented from spillage out of the hoppers during transfer to the staging area by avoiding overfilling and/or securing a cover over the top of the hopper, as necessary. Soil will be transferred to the staging area using a forklift. A flagman on foot will accompany each load transported to the staging area to safeguard other workers, vehicles, and structures. Waste soil will be transferred from the hoppers into 10-cubic yard, steel roll-off bins. Use of the storage bins will reduce potential for onsite exposure and reduce additional stockpiling and loading effort. Soil stockpiling should be eliminated if possible to reduce field time.

The lateral and vertical limits of the excavations have been delimited by soil sampling conducted during the PEA-E. The excavation at PB-11 is directly south of a utility corridor. It is not known what backfill material was used in this utility trench. Advancing the excavation at PB-11 to the north will be stopped if the removal of soil adjacent to this trench appears to encounter loose backfill or undermine any permanent structures or utilities in this trench. Excavation areas will be controlled to avoid dust generation with physical barriers (such as perimeter fencing with windscreen), soil wetting, and air monitoring. Following removal of the impacted soil, excavated areas will be secured with high-visibility fencing or caution tape, as necessary, to prevent unauthorized entry and render them safe until they can be backfilled or otherwise returned to level grade.

7.3.9 Waste Segregation

Based on the analytical data generated during the PEA-E, the soil excavated from the three individual areas can be managed as non-hazardous waste. No waste segregation will be required. It is anticipated that excavated soil will require three to four haul trucks or seven to eight 10-cubic yard roll-off bins for transport. The excavation contractor and environmental consultant will oversee waste pickup and bin loading operations to ensure that a properly completed waste manifest accompanies each load and that it is directed to the appropriate disposal facility, based on its waste classification.

Storage bins will be labeled to indicate the source of the soil and its waste classification as nonhazardous. Labels that indicate the waste generator, waste type, accumulation start date, and contact information will be applied to the outside of all roll-off bins that may temporarily store impacted soil for disposal.

7.4 Sampling and Analysis Plan

7.4.1 Waste Profile Sampling

During the PEA the highest arsenic concentrations were confined to three particular areas at and surrounding initial borings PB-11, PB-27 and PB-34. Seven soil samples with arsenic concentrations exceeding ten times the Soluble Threshold Limit Concentration (STLC) for arsenic of 5 mg/L were analyzed for soluble arsenic using the STLC Method and the Waste Extraction Test (WET) Method. None of these soil samples contained a soluble arsenic concentration above the arsenic STLC of 5 mg/L.

One soil sample had a lead concentration exceeding the LAUSD screening level of 80 mg/kg. This soil sample was also collected from boring PB-34. Six soil samples with lead concentrations exceeding ten times the STLC for lead of 5 mg/L were analyzed for soluble lead using the STLC Method. None of these soil samples contained a soluble lead concentration above the lead STLC of 5 mg/L.

Based on the maximum detected arsenic and lead concentrations, and the STLC analysis, the contaminated soil in excavation areas PB-11, PB-27 and PB-34 should be profiled as non-hazardous waste. The data from the PEA will be provided to the remediation contractor so the disposal facility can complete a soil profile. The waste profile from the licensed disposal facility will need to be provided to OEHS for approval of the disposal facility and waste profile.

7.4.2 Confirmation Sampling

Arsenic (and lead for excavation area PB-11) contamination in soil will be screened in the field using a direct X-ray fluorescence (XRF) unit to determine if arsenic detections meet the SSCGs. When X-ray fluorescence indicates that the SSCGs have been met, confirmation samples will be collected for laboratory analysis. Sidewall samples will be collected at approximately one sample for each 10 linear feet of sidewall, with a minimum of one sidewall sample collected from each excavation sidewall, which is less than 10 linear feet wide. Each sidewall location will consist of one sample collected at the midpoint in depth (approximately halfway between the excavation floor and the ground surface surrounding the excavation perimeter). Bottom samples will be collected at the rate of one sample for each 25 square feet of excavation area at the midpoint of each interval.

Confirmation samples for the COC will be collected using a clean trowel or plastic disposable trowels and transferred directly into sampling jars or tubes. The final confirmation samples will be properly covered, labeled and stored on Site in a cooled chest prior to delivery to a California laboratory certified by the Environmental Laboratory Accreditation Program.

Confirmation soil samples will be delivered to the laboratory on the same day collected, if time permits, and no later than the day following collection. The samples will be secured under proper chain-of-custody documentation until delivery. Confirmation samples will be analyzed for arsenic and lead (where necessary) using EPA Method 6020.

If confirmation sampling results indicate the target cleanup goals have not been attained, further soil sampling and soil excavation will be conducted. The excavation will terminate when the cleanup goals are met or it becomes impractical to continue excavating, such as the excavation boundary reaching a subsurface utility, a property boundary, or a site/building feature (i.e. building wall, planter wall, fence line, building staircase or ramp). In this case, the excavated areas will be backfilled in accordance with procedures outlined in Section 7.6.

7.5 Transportation Plan for Off-Site Disposal

A transportation plan indicating how the excavated soil will be hauled off from the site, describing truck routes for off-site disposal, and listing the frequency of truck trips and any holding areas at the site is presented in Appendix D. The plan also identifies entrance and exit gates, truck routes, truck inspection/check points, and personnel and small equipment decontamination areas. Areas of the site outside of the decontamination areas may be used for truck staging and loading. All truckloads will be documented by a non-hazardous bill of lading or manifest.

Prior to the start of field work, the relevant agencies will be contacted regarding potential road construction. If there is road construction along the planned truck route, then the transportation plan may be revised. This plan was prepared in general accordance with the DTSC's Transportation Plan, Preparation Guidance for Site Remediation (DTSC, 1994).

7.6 Site Restoration

Since the soil excavations from PB-11, PB-27 and PB-34 will be conducted at the start of the construction activities, the excavations will not be backfilled as part of the soil removal activities in this RAW. Once approved by LAUSD-OEHS, the general contractor can re-grade or backfill as needed. If import soil is required to backfill, the imported material will be from an OEHS-approved source, or will be characterized for import in accordance with OEHS Specification 01 4524 for Environmental Import/Export Materials Testing (LAUSD-OEHS, 2018).

OEHS Specification 01 4524 will also be followed to characterize any rinseate or solid waste remaining onsite from decontamination procedures. Once characterized, the wastes will be removed from the site within 30 days of production.

8.0 REMOVAL ACTION COMPLETION REPORT

After the remedial actions described in this RAW are completed, a draft RACR will be prepared and submitted to the LAUSD-OEHS for review and approval. The RACR will be prepared as expeditiously as possible upon completion of field activities and receipt of final analytical data (if required). At the minimum, the RACR will include the following information:

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

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

9.0 HOUSEKEEPING ACTIVITIES

LAUSD elected to perform removal of soil at sampling locations PB-27 and PB-34 as a separate housekeeping event. Housekeping events are local excavations of small volumes of soil (generally less than 10 cubic yards) to coordinate with construction schedules. Pinnacle was present during the event, and prepared a technical memorandum describing the work performed. This technical memoradum is provided as Appendix F of this RAW.

Due to the housekeeping event, the work described in this RAW will be focused solely on the soil removal at sampling location PB-11. This excavation is expected to generate 26.6 in place cubic yards of material (Table 2). All project elements described in this RAW and related documents will continue to apply to the soil removal at this location.

REFERENCES

Accord Engineering, Inc., July 28, 2017, *Phase I Environmental Site Assessment, Proposed Modernization at the 92nd Street Elementary School, 9211 South Grape Street, Los Angeles, California 90002*, 40 pp.

California Department of Toxic Substances Control, 1994, *Transportation Plan Preparation Guidance for Site Remediation, Interim Final*.

Chernoff, G., Bosan, W., and Oudiz, D., 2007, Determination of a Southern California Regional Background Arsenic Concentration in Soil. Department of Toxic Substance Control, March.

Department of Toxic Substances Control, 2006*, 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*.

Department of Toxic Substances Control, 2015 revision, *Preliminary Endangerment Assessment Guidance Manual*.

Department of Toxic Substances Control, April 2019 Update, *Human Health Risk Assessment Note 3 – DTSC-Modified Screening Levels (DTSC-RSLs)*.

Los Angeles Unified School District, Office of Environmental Health and Safety, 2018 Update, *Specification 01 4524 for Environmental Import/Export Materials Testing*.

Pinnacle Environmental Technologies, April 6, 2018, *Preliminary Environmental Assessment Equivalent Report, Seismic Modernization Project, 92nd Street Elementary School, 9211 Grape Street, Los Angeles, California*.

United States Environmental Protection Agency, 1993, *Guidance on Conducting Non-Time-Critical Removal actions under CERCLA* (Publication 9360.0-32).

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-1-6"	3/27/18	ND < 1	1.2
PB-1-18"	3/27/18	ND < 1	1.3
PB-1-30"	3/27/18	ND < 1	1.4
PB-2-6"	3/27/18	38	4.7
PB-2-18"	3/27/18	ND < 1	ND < 1
PB-2-30"	3/27/18	ND < 1	ND < 1
PB-3-6"	3/27/18	4.5	1.6
PB-3-18"	3/27/18	1.8	1.2
PB-3-30"	3/27/18	ND < 1	1.4
PB-4-6"	3/27/18	51	2.9
PB-4-18"	3/27/18	1.9	1.2
PB-4-30"	3/27/18	ND < 1	1.6
PB-5-6"	3/27/18	6.6	1.0
PB-5-18"	3/27/18	ND < 1	ND < 1
PB-5-30"	3/27/18	ND < 1	ND < 1
PB-6-6"	3/27/18	44	5.4
PB-6-18"	3/27/18	6.1	1.1
PB-6-30"	3/27/18	ND < 1	1.2
PB-7-6"	3/27/18	11	5.4
PB-7-18"	3/27/18	1.3	4.1
PB-7-30"	3/27/18	14	6.4
PB-8-6"	3/27/18	50	1.3
PB-8-18"	3/27/18	6.6	ND < 1
PB-8-30"	3/27/18	ND < 1	1.2
PB-9-6"	3/27/18	2.5	1.7
PB-9-18"	3/27/18	3.9	3.8
PB-9-30"	3/27/18	44	1.3
PB-10-6"	3/27/18	18	6.8
PB-10-18"	3/27/18	ND < 1	1.7
PB-10-30"	3/27/18	ND < 1	1.9

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	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-11-6"	3/27/18	7.4	**100**
PB-11-18"	3/27/18	ND < 1	ND < 1
PB-11-30"	3/27/18	ND < 1	ND < 1
PB-11-A-6"	5/21/18	NA	**20**
PB-11-A-18"	5/19/18	NA	1.6
PB-11-AA-6"	8/13/18	NA	7.3
PB-11-AA-18"	8/13/18	NA	5.8
PB-11-B-6"	5/21/18	NA	**53**
PB-11-B-18"	5/19/18	NA	1.0
PB-11-BB-6"	8/13/18	NA	**61**
PB-11-BB-18"	8/13/18	NA	11
PB-11-C-6"	5/21/18	NA	**13**
PB-11-C-18"	5/19/18	NA	ND < 1
PB-11-CC-6"	8/13/18	NA	**120**
PB-11-CC-18"	8/13/18	NA	ND < 1
PB-11-D-6"	5/21/18	NA	**22**
PB-11-D-18"	5/19/18	NA	1.0
PB-11-DD-6"	8/13/18	NA	**120**
PB-11-DD-18"	8/13/18	NA	**18**
PB-12-6"	3/27/18	22	4.3
PB-12-18"	3/27/18	1.2	2.3
PB-12-30"	3/27/18	ND < 1	1.5
PB-13-6"	3/27/18	ND < 1	1.7
PB-13-18"	3/27/18	3.7	2.2
PB-13-30"	3/27/18	5.6	2.6
PB-14-6"	3/28/18	2.4	2.0
PB-14-18"	3/28/18	2.1	3.3
PB-14-30"	3/28/18	3.6	2.3

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Hazardous Waste Criteria	TTLC	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-15-6"	3/27/18	5.9	1.6
PB-15-18"	3/27/18	ND < 1	1.4
PB-15-30"	3/27/18	ND < 1	1.7
PB-16-6"	3/27/18	6.7	2.3
PB-16-18"	3/27/18	5.8	1.4
PB-16-30"	3/27/18	2.4	ND < 1
PB-17-6"	3/27/18	20	5.9
PB-17-18"	3/27/18	5.4	1.5
PB-17-30"	3/27/18	4.6	2.0
PB-18-6"	3/27/18	6.9	1.7
PB-18-18"	3/27/18	11	3.9
PB-18-30"	3/27/18	ND < 1	ND < 1
PB-19-6"	3/27/18	5.3	1.3
PB-19-18"	3/27/18	1.7	5.0
PB-19-30"	3/27/18	5.8	1.0
PB-20-6"	3/28/18	2.6	2.6
PB-20-18"	3/28/18	3.6	2.1
PB-20-30"	3/28/18	6.5	7.5
PB-21-6"	3/28/18	3.2	4.3
PB-21-18"	3/28/18	ND < 1	1.5
PB-21-30"	3/28/18	ND < 1	1.7
PB-22-6"	3/28/18	7.7	5.7
PB-22-18"	3/28/18	ND < 1	1.4
PB-22-30"	3/28/18	ND < 1	1.8
PB-23-6"	3/28/18	4.1	3.4
PB-23-18"	3/28/18	3.0	3.2
PB-23-30"	3/28/18	3.2	3.2
PB-24-6"	3/28/18	7.2	2.3
PB-24-18"	3/28/18	1.7	2.7
PB-24-30"	3/28/18	ND < 1	1.9

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	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-25-6"	3/28/18	8.8	1.8
PB-25-18"	3/28/18	1.4	2.0
PB-25-30"	3/28/18	ND < 1	1.2
PB-26-6"	3/28/18	2.3	1.9
PB-26-18"	3/28/18	2.0	1.5
PB-26-30"	3/28/18	9.2	2.6
PB-27-6"	3/27/18	17	**32**
PB-27-A-6"	5/21/18	NA	**16**
PB-27-A-18"	5/19/18	NA	1.5
PB-27-AA-6"	8/13/18	NA	**59**
PB-27-AA-18"	8/13/18	NA	1.7
PB-27-B-6"	5/21/18	NA	2.4
PB-27-C-6"	5/21/18	NA	**21**
PB-27-C-18"	5/21/18	NA	8.0
PB-27-CC-6"	8/13/18	NA	**91**
PB-27-CC-18"	8/13/18	NA	1.9
PB-27-D-6"	5/21/18	NA	ND < 1
PB-27-18"	3/27/18	13	2.9
PB-27-30"	3/27/18	14	1.3
PB-28-6"	3/27/18	54	1.3
PB-28-18"	3/27/18	7.0	1.8
PB-28-30"	3/27/18	ND < 1	ND < 1
PB-29-6"	3/27/18	37	1.4
PB-29-18"	3/27/18	10	2.1
PB-29-30"	3/27/18	15	2.4
PB-30-6"	3/27/18	58	1.9
PB-30-18"	3/27/18	ND < 1	ND < 1
PB-30-30"	3/27/18	ND < 1	1.4

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	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-31-6"	3/27/18	19	3.3
PB-31-18"	3/27/18	16	1.6
PB-31-30"	3/27/18	ND < 1	1.1
PB-32-6"	3/27/18	32	1.2
PB-32-18"	3/27/18	27	1.3
PB-32-30"	3/27/18	ND < 1	1.3
PB-33-6"	3/28/18	22	1.7
PB-33-18"	3/28/18	3.4	1.2
PB-33-30"	3/28/18	ND < 1	1.6
PB-34-6"	3/28/18	**84**	**14**
PB-34-A-6"	5/21/18	10	1.4
PB-34-B-6"	5/21/18	7.2	ND < 1
PB-34-C-6"	5/21/18	9.2	1.6
PB-34-D-6"	5/21/18	33	1.5
PB-34-18"	3/28/18	1.6	1.8
PB-34-30"	3/28/18	ND < 1	2.1
PB-35-6"	3/28/18	18	2.0
PB-35-18"	3/28/18	12	2.1
PB-35-30"	3/28/18	2.6	2.5
PB-36-6"	3/28/18	17	2.2
PB-36-18"	3/28/18	26	2.2
PB-36-30"	3/28/18	1.6	2.6
PB-37-6"	3/28/18	62	3.0
PB-37-18"	3/28/18	33	1.2
PB-37-30"	3/28/18	1.4	3.0
PB-38-6"	3/28/18	35	2.8
PB-38-18"	3/28/18	5.7	2.1
PB-38-30"	3/28/18	6.0	2.4

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-39-6"	3/28/18	45	8.5
PB-39-18"	3/28/18	11	1.1
PB-39-30"	3/28/18	10	1.2
PB-40-6"	3/28/18	9.1	3.2
PB-40-18"	3/28/18	5.4	3.2
PB-40-30"	3/28/18	7.4	3.5
PB-41-6"	3/28/18	14	2.7
PB-41-18"	3/28/18	6.0	3.1
PB-41-30"	3/28/18	11	4.0
PB-42-6"	3/28/18	6.7	3.1
PB-42-18"	3/28/18	8.9	2.6
PB-42-30"	3/28/18	4.4	4.5
PB-43-6"	3/28/18	12	7.3
PB-43-18"	3/28/18	24	1.6
PB-43-30"	3/28/18	31	2.2
PB-44-6"	3/28/18	10	2.5
PB-44-18"	3/28/18	2.0	3.5
PB-44-30"	3/28/18	1.8	2.5
PB-45-6"	3/28/18	9.3	3.2
PB-45-18"	3/28/18	5.1	2.9
PB-45-30"	3/28/18	6.3	2.2
PB-46-6"	3/28/18	28	5.4
PB-46-18"	3/28/18	8.2	3.4
PB-46-30"	3/28/18	1.9	2.4
PB-47-6"	3/28/18	18	4.4
PB-47-18"	3/28/18	7.1	3.5
PB-47-30"	3/28/18	2.8	3.1
PB-48-6"	5/21/18	1.7	5.4
PB-51-6"	8/19/18	NA	2.6
PB-53-6"	8/19/18	NA	1.5

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-61-6"	8/19/18	NA	11
PB-64-6"	8/19/18	NA	1.2
PB-64-18"	8/19/18	NA	2.6
PB-68-6"	8/19/18	NA	7.2
PB-68-18"	8/19/18	NA	ND < 1
PB-69-6"	8/19/18	NA	1.2
PB-70-6"	8/19/18	NA	11
PB-71-6"	8/19/18	NA	**35**
PB-71-18"	8/19/18	NA	2.4
PB-72-6"	8/19/18	NA	6.3
PB-72-18"	8/19/18	NA	ND < 1

NOTES:
TTLC - Total Threshold Limit Concentration
STLC - Soluble Threshold Limit Concentration
mg/kg - milligrams per kilogram
ND - Compound not present above the given reporting limit
NA - Sample not analyzed

TABLE 2
SUMMARY OF IMPACTED SOIL VOLUMES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Initial Boring Location	Estimated Bank Volume	Bulk Factor	Estimated Excavated Volume	Estimated Excavated Weight
	(cubic yards)	(percent)	(cubic yards)	(tons)
PB-11	26.6	140	37.2	50.3
PB-27	6.9	140	9.7	13.0
PB-34	1.7	140	2.4	3.2
Totals	**35.2**	**---**	**49.3**	**66.5**

NOTE:
Excavated weight based on a soil density of 2,800 pounds per excavated cubic yard.

TABLE 3
REMEDIAL ALTERNATIVE COST SUMMARY

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Task	Remedial Alternatives		
	1 (No Action)	**2** (Containment)	**3** (Excavation/ Disposal)
Environmental Consultant			
Project Management and Coordination	$0	$5,000	$7,500
Field Preparation, excavation marking, utility check	$0	$5,000	$5,000
Excavation Oversight, dust control, air monitoring	$0	$0	$10,000
Confirmation Sampling (if required)	$0	$0	$0
Engineering and Operations & Maintenance Plans, Land Use Restriction	$0	$50,000	$0
Removal Action Completion Report	$0	$10,000	$15,000
Annual Cap Inspection and Reporting for 20 Years	$0	$100,000	$0
Subcontractor Costs			
Soil Capping	$0	$25,000	$0
Excavation and Loading	$0	$0	$15,000
Transport and Disposal	$0	$0	$10,000
Backfill, Compaction, Asphalt Paving	$0	$0	$15,000
Other Direct Costs			
Travel, Permits, Field Supplies	$0	$20,000	$2,000
TOTALS	$0	$215,000	$79,500

APPENDIX A

Analytical Data Summaries and Figures from PEA-E

Base Map: USGS 7.5 Minute Topo Sheets, Southgate, 2015

NORTH

SCALE (miles)

0 0.5 1.0

PINNACLE
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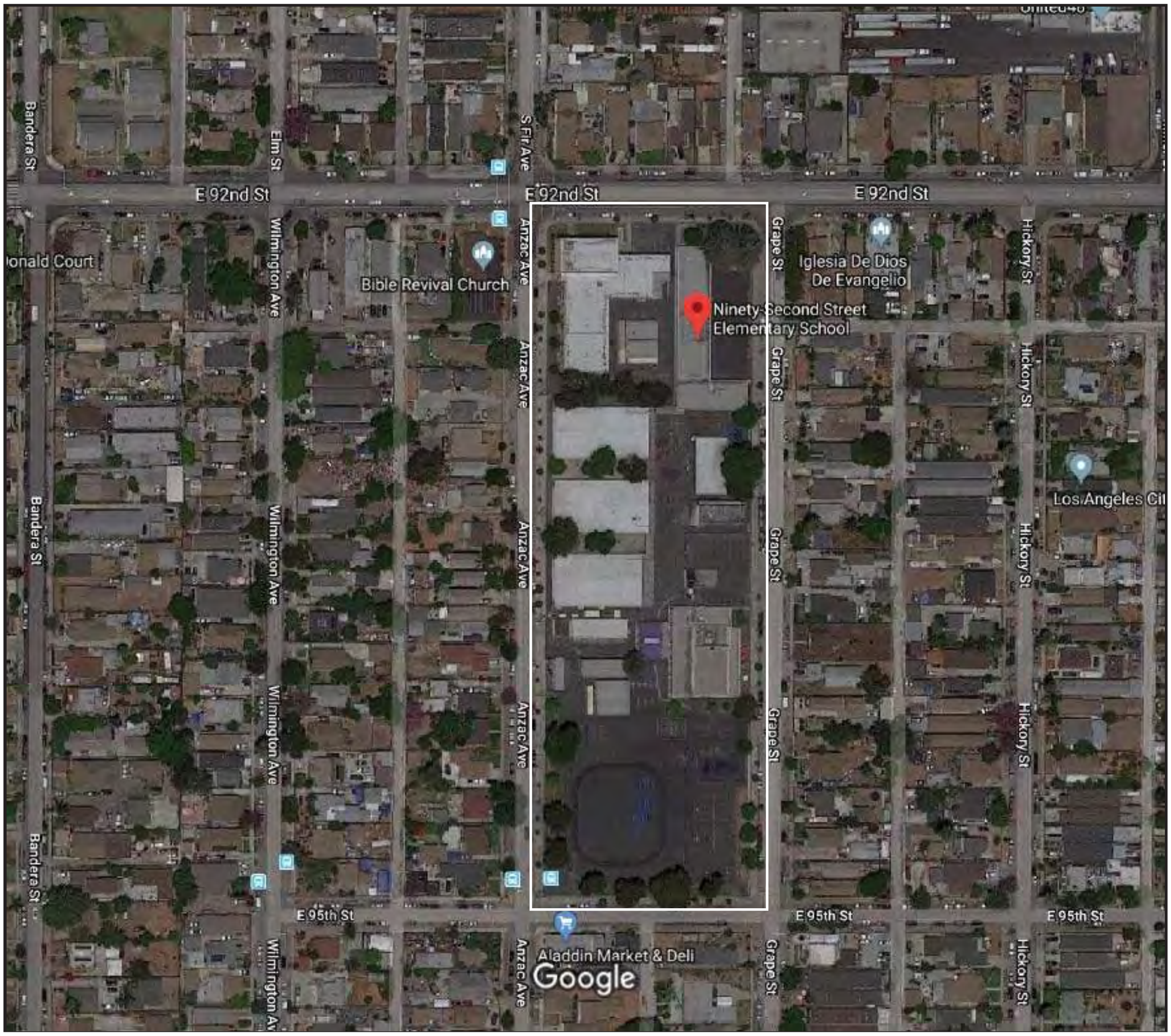
92nd St. Elementary School **9211 Grape Street** **Los Angeles, CA**	**Site Location Map**	**Figure 1**



Ref: Google Maps

NORTH

SCALE (feet)

0 150 300

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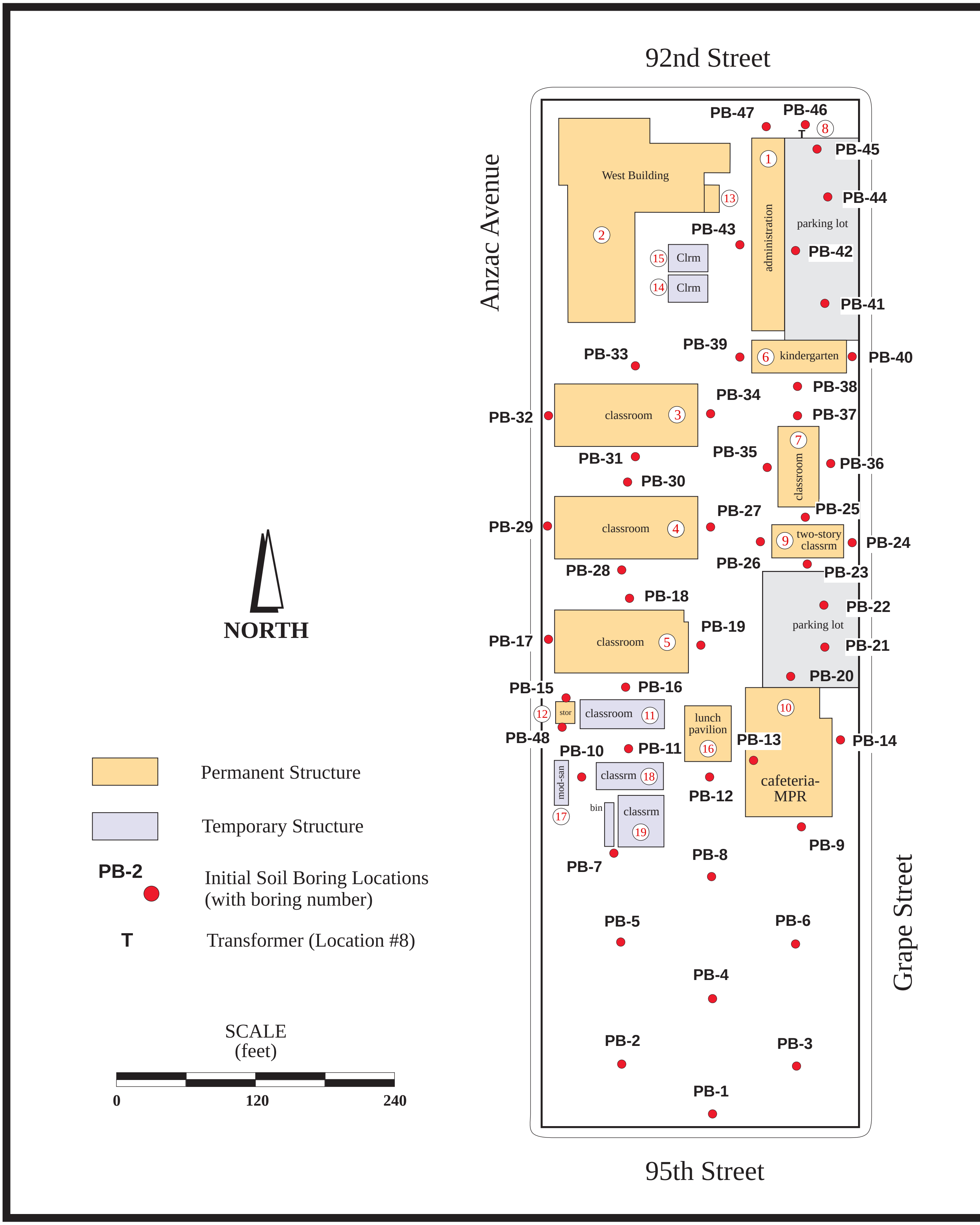
92nd St. Elementary School **9211 Grape Street** **Los Angeles, CA**	**Site Photograph**	**Figure 2**



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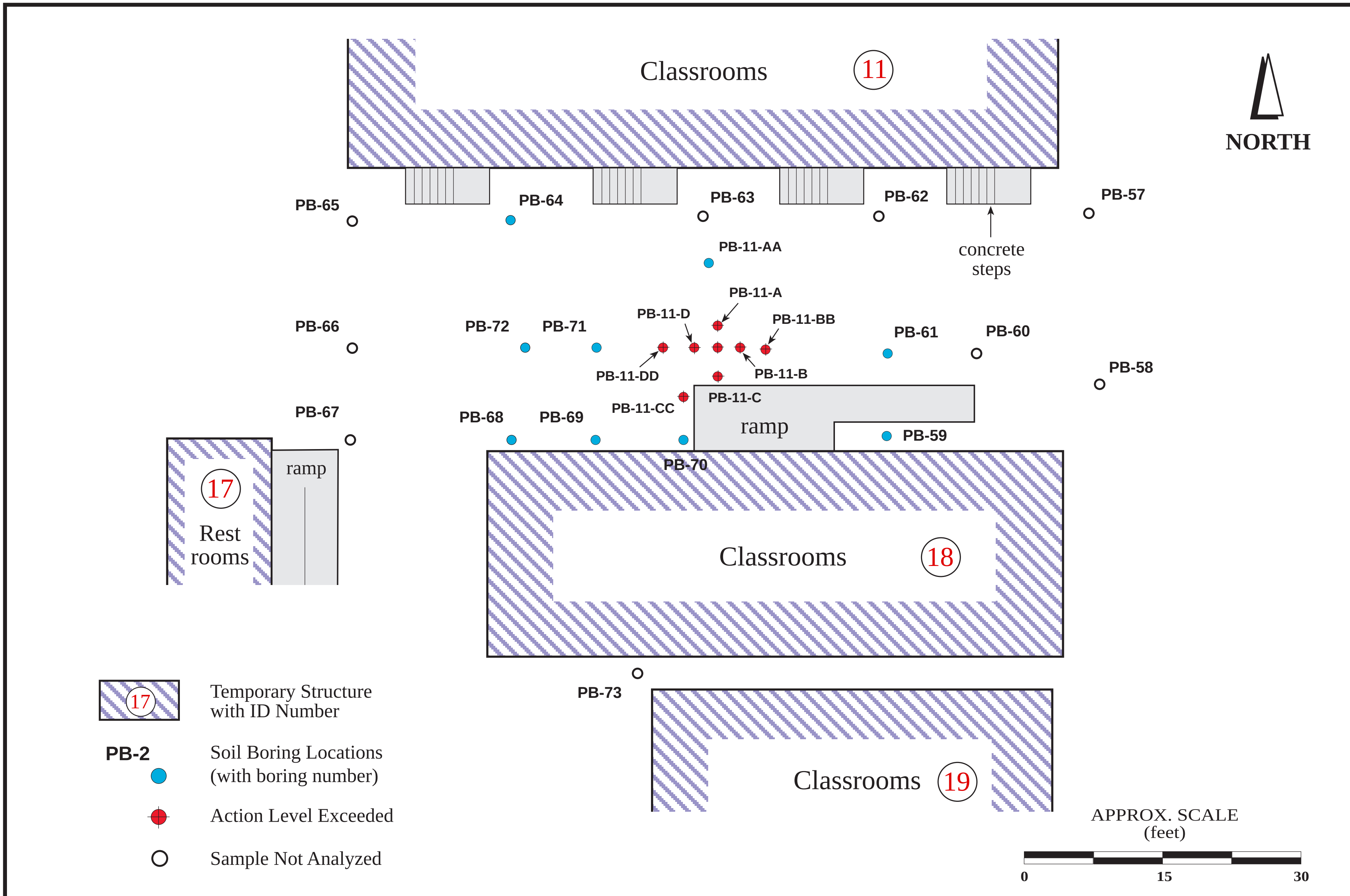
92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

Initial Boring Location Map

Figure 3



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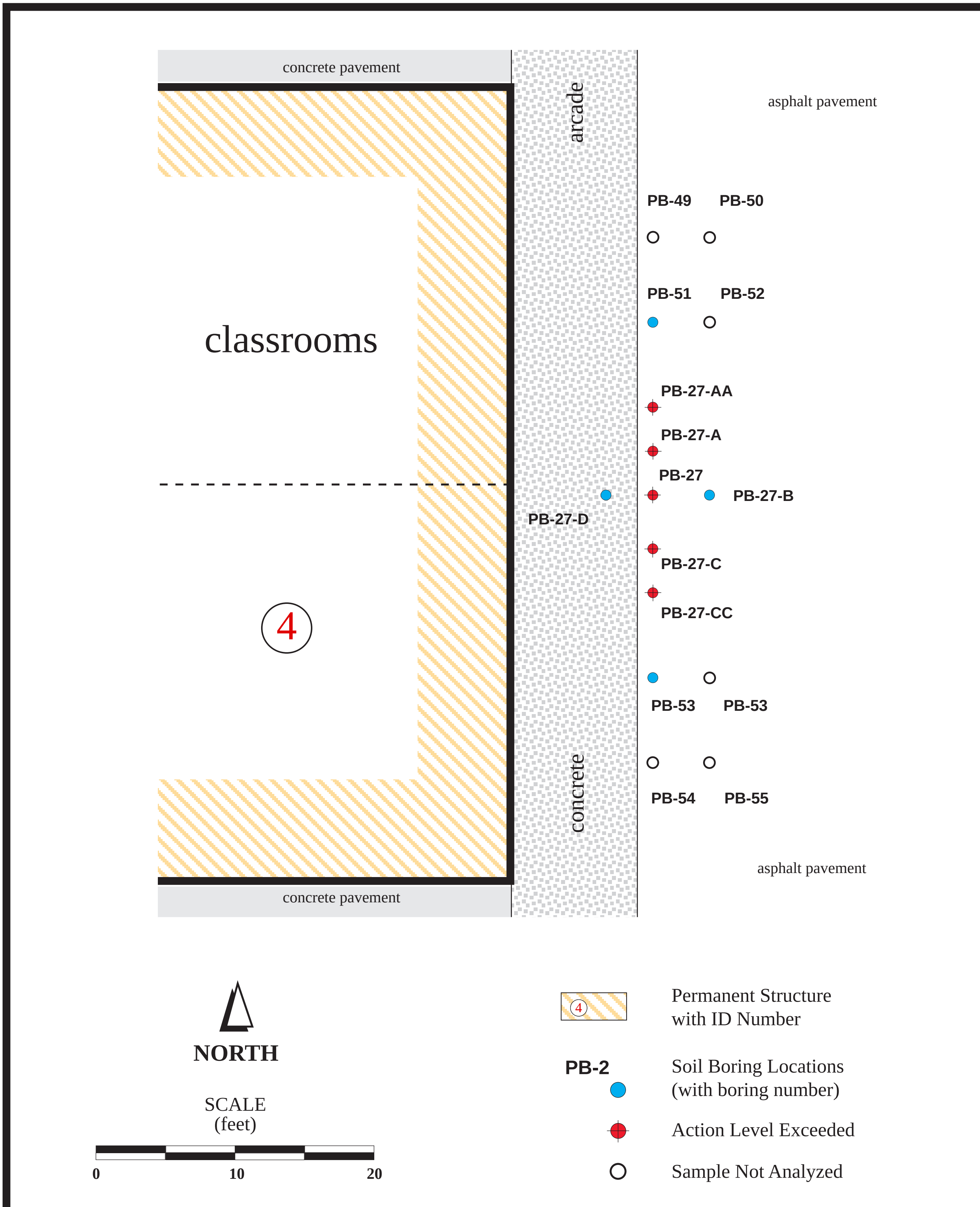
92nd Street Elementary School
9211 Grape Street
Los Angeles, California

PB-11
Stepout Boring
Location Map

Figure
4



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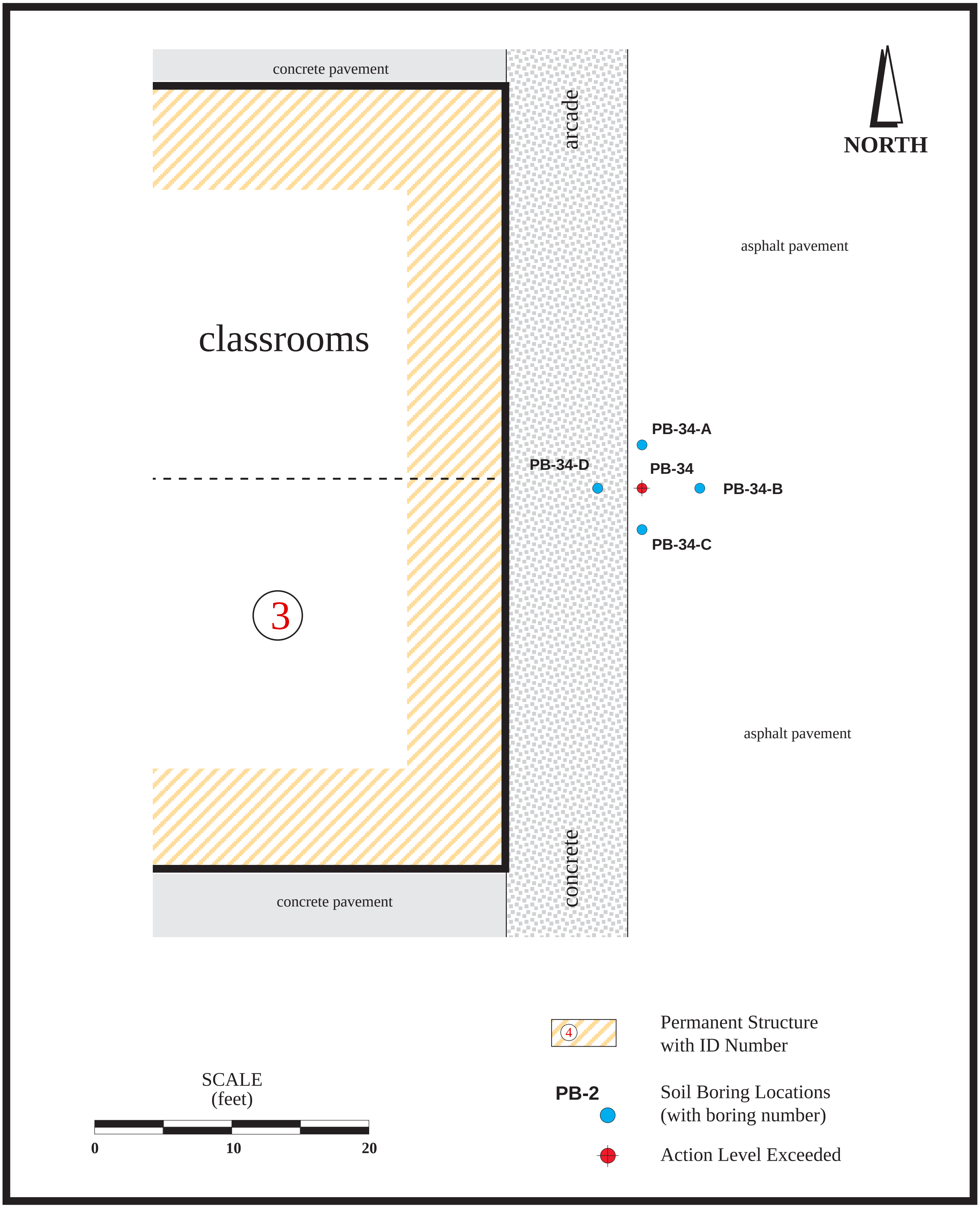
92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

PB-27
Stepout Boring
Location Map

Figure 5



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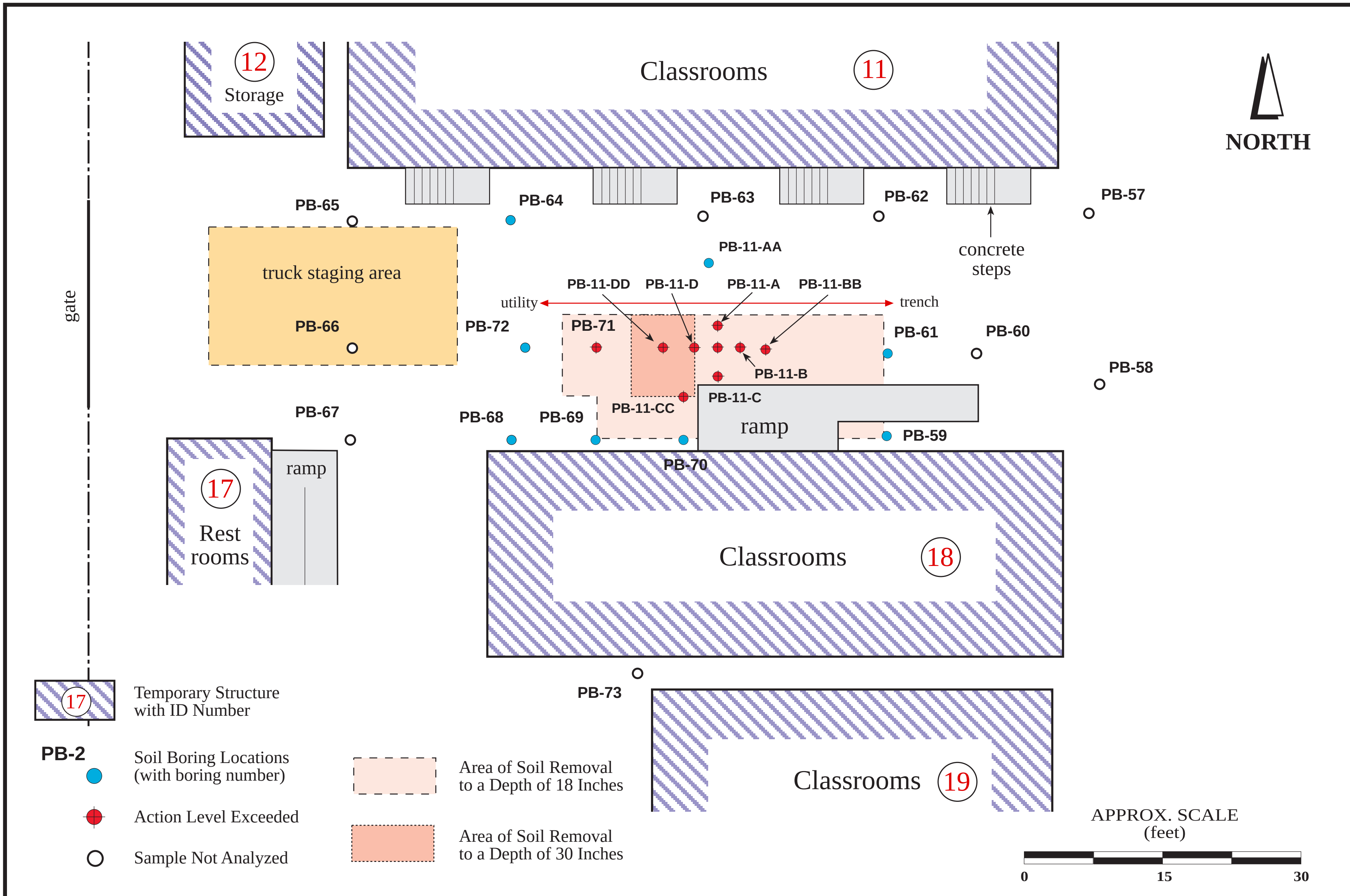
92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

PB-34
Stepout Boring
Location Map

Figure 6



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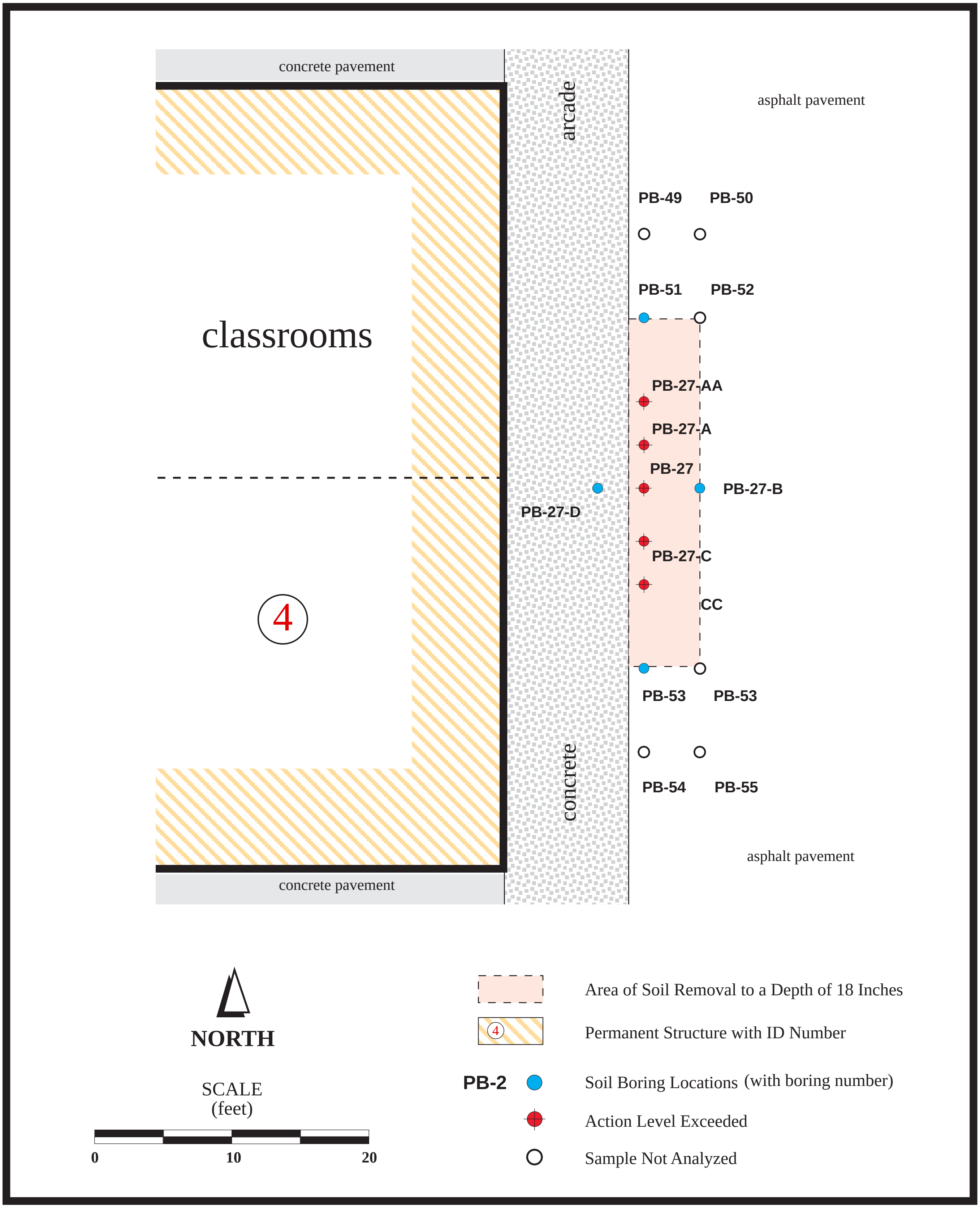
92nd Street Elementary School
9211 Grape Street
Los Angeles, California

Recommended Area for Soil Removal PB-11

Figure 7



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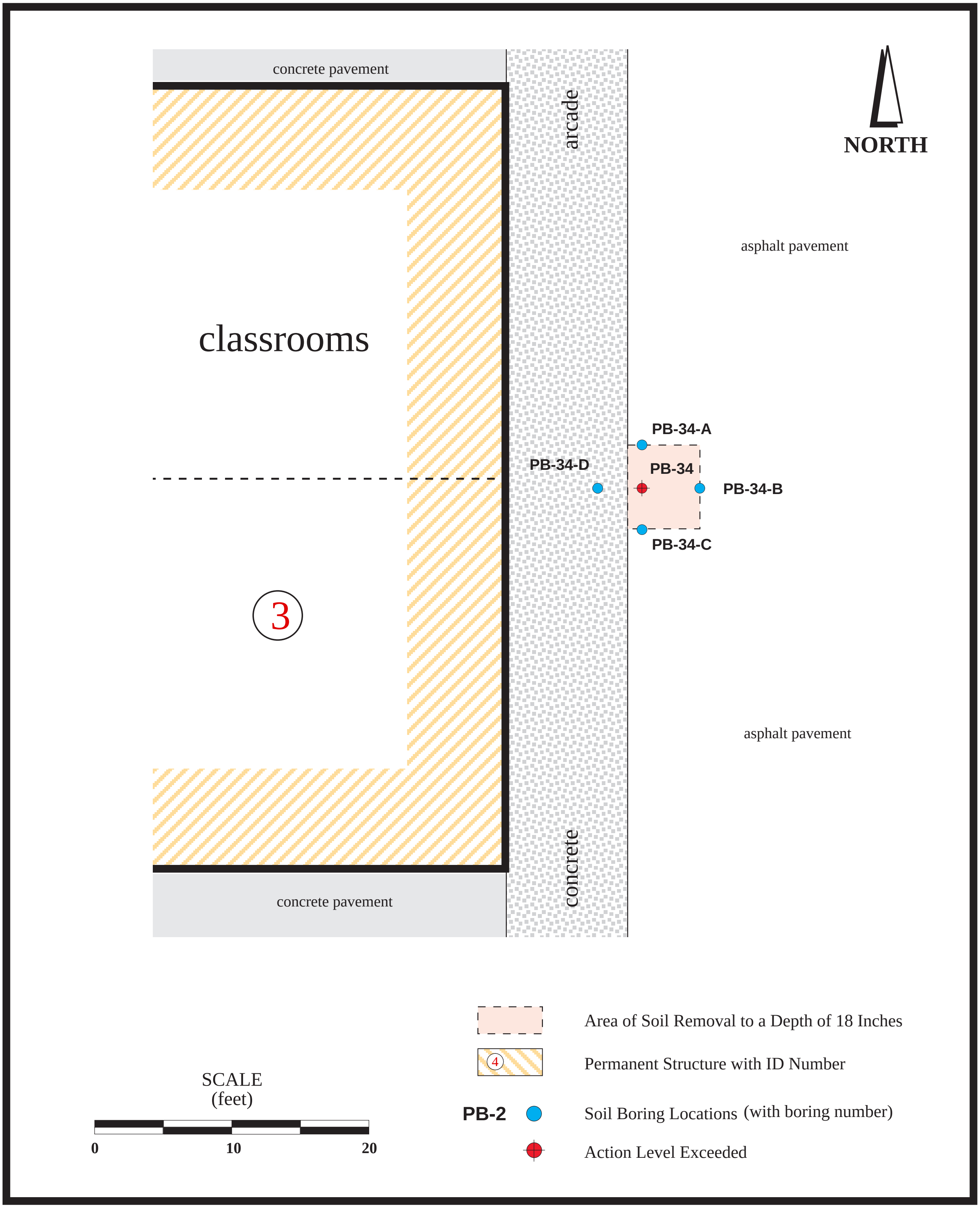
92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

Recommended Area for Soil Removal - PB-27

Figure 8



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92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

Recommended Area for Soil Removal - PB-34

Figure 9

TABLE 1
INITIAL SOIL SAMPLING RATIONALE

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Building or Area	Proposed Work	Concerns	Sampling Rationale	Number of Boring Locations	Boring Numbers	Analytical Methods	Sample Depths	Initial Analyses
South Playground	Repavement	Historical Pesticides Historical Agriculture	Areal Coverage	7	PB-1 to PB-6, PB-8	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	8
Storage Bin	Removal	Historical Pesticides Historical Agriculture Historical Storage	Targeted Location	1	PB-7	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	1
Cafeteria, Lunch Pavilion	Replacement	Historical Pesticides Historical Agriculture Lead	Targeted Perimeter	5	PB-9, PB-12 to PB-14, PB-20	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	5
Storage Building	Replacement	Historical Pesticides Historical Agriculture Lead Hazmat Storage	Targeted Perimeter	2	PB-15 and PB-48	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A VOCs - EPA Method 8260b TPH - EPA Method 8015m	6", 18", 30"	2
West Classroom Buildings	Replacement	Historical Pesticides Historical Agriculture Lead	Targeted Perimeter	14	PB-10, PB-11, PB-16 to PB-10, PB-27 to PB-30, PB-31 to PB-34	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	2
South Parking Lot	Repalcement	Historical Pesticides Historical Agriculture Lead	Areal Coverage	2	PB-21 and PB-22	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	2
East Two-Story Classroom	Replacement	Historical Pesticides Historical Agriculture Lead	Targeted Perimeter	4	PB-23 to PB-26	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	4
East Classroom	Replacement	Historical Pesticides Historical Agriculture Lead	Targeted Perimeter	3	PB-35 to PB-37	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	3

TABLE 1
INITIAL SOIL SAMPLING RATIONALE

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Building or Area	Proposed Work	Concerns	Sampling Rationale	Number of Boring Locations	Boring Numbers	Analytical Methods	Sample Depths	Initial Analyses
Kindergarten	Replacement	Historical Pesticides Historical Agriculture Lead	Targeted Perimeter	3	PB-38 to PB-40	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	3
Administration Building	Replacement	Historical Pesticides Historical Agriculture Lead	Targeted Perimeter	3	PB-42, PB-43 and PB-47	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	3
Main Parking Lot	Repavement	Historical Pesticides Historical Agriculture Lead	Areal Coverage	2	PB-41 and PB-44	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A	6", 18", 30"	2
Transformer (at northeast corner of campus)	None	Historical Pesticides Historical Agriculture Lead PCBs	Targeted Perimeter	2	PB-45 and PB-46	Arsenic - EPA Method 6010B Lead - EPA Method 6010B OCPs - EPA Method 8081A PCBs - EPA Method 8082	6", 18", 30"	2
		Total Number of Initial Borings		48				

TABLE 2
SUMMARY OF SOIL ANALYSES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Boring Number	Sample Depth	Initial or Stepout	Lead	Lead	Lead	Arsenic	Arsenic	Arsenic	Title 22 Metals	OCPs	PCBs	TPH	VOCs
	inches		EPA 6010B	STLC	TCLP	EPA 6010B	STLC	TCLP	6010B/7471A	EPA 8081A	EPA 8082	EPA 8015C	EPA 8260B
PB-1	6	Initial	X			X				X			
PB-1	18	Initial	X			X				X			
PB-1	30	Initial	X			X				X			
PB-2	6	Initial	X			X				X			
PB-2	18	Initial	X			X				X			
PB-2	30	Initial	X			X				X			
PB-3	6	Initial	X			X				X	X		
PB-3	18	Initial	X			X				X	X		
PB-3	30	Initial	X			X				X	X		
PB-4	6	Initial	X	X		X				X			
PB-4	18	Initial	X			X				X			
PB-4	30	Initial	X			X				X			
PB-5	6	Initial	X			X				X			
PB-5	18	Initial	X			X				X			
PB-5	30	Initial	X			X				X			
PB-6	6	Initial	X			X				X			
PB-6	18	Initial	X			X				X			
PB-6	30	Initial	X			X				X			
PB-7	6	Initial	X			X				X			
PB-7	18	Initial	X			X				X			
PB-7	30	Initial	X			X				X			
PB-8	6	Initial	X	X		X				X			
PB-8	18	Initial	X			X				X			
PB-8	30	Initial	X			X				X			
PB-9	6	Initial	X			X				X			
PB-9	18	Initial	X			X				X			
PB-9	30	Initial	X			X				X			
PB-10	6	Initial	X			X				X			
PB-10	18	Initial	X			X				X			
PB-10	30	Initial	X			X				X			
PB-11	6	Initial	X			X	X	X		X	X		
PB-11	18	Initial	X			X				X	X		
PB-11	30	Initial	X			X				X	X		
PB-11-A	6	Stepout				X							
PB-11-A	18	Stepout											
PB-11-AA	6	Stepout				X							
PB-11-AA	18	Stepout				X							
PB-11-B	6	Stepout				X	X	X					
PB-11-B	18	Stepout											
PB-11-BB	6	Stepout				X	X	X					
PB-11-BB	18	Stepout				X							
PB-11-C	6	Stepout				X							
PB-11-C	18	Stepout											
PB-11-CC	6	Stepout				X	X	X					
PB-11-CC	18	Stepout				X							
PB-11-D	6	Stepout				X							
PB-11-D	18	Stepout											
PB-11-DD	6	Stepout				X	X	X					
PB-11-DD	18	Stepout				X							
PB-12	6	Initial	X			X				X			
PB-12	18	Initial	X			X				X			
PB-12	30	Initial	X			X				X			
PB-13	6	Initial	X			X				X			
PB-13	18	Initial	X			X				X			
PB-13	30	Initial	X			X				X			
PB-14	6	Initial	X			X				X			
PB-14	18	Initial	X			X				X			
PB-14	30	Initial	X			X				X			
PB-15	6	Initial	X			X				X			
PB-15	18	Initial	X			X				X			
PB-15	30	Initial	X			X				X			
PB-16	6	Initial	X			X				X			
PB-16	18	Initial	X			X				X			
PB-16	30	Initial	X			X				X			
PB-17	6	Initial	X			X				X			
PB-17	18	Initial	X			X				X			
PB-17	30	Initial	X			X				X			
PB-18	6	Initial	X			X				X			
PB-18	18	Initial	X			X				X			
PB-18	30	Initial	X			X				X			
PB-19	6	Initial	X			X				X			
PB-19	18	Initial	X			X				X			
PB-19	30	Initial	X			X				X			
PB-20	6	Initial	X			X				X			
PB-20	18	Initial	X			X				X			
PB-20	30	Initial	X			X				X			
PB-21	6	Initial	X			X				X	X		
PB-21	18	Initial	X			X				X	X		
PB-21	30	Initial	X			X				X	X		

TABLE 2
SUMMARY OF SOIL ANALYSES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Boring Number	Sample Depth	Initial or Stepout	Lead	Lead	Lead	Arsenic	Arsenic	Arsenic	Title 22 Metals	OCPs	PCBs	TPH	VOCs
	inches		EPA 6010B	STLC	TCLP	EPA 6010B	STLC	TCLP	6010B/7471A	EPA 8081A	EPA 8082	EPA 8015C	EPA 8260B
PB-22	6	Initial	X			X				X			
PB-22	18	Initial	X			X				X			
PB-22	30	Initial	X			X				X			
PB-23	6	Initial	X			X				X			
PB-23	18	Initial	X			X				X			
PB-23	30	Initial	X			X				X			
PB-24	6	Initial	X			X				X			
PB-24	18	Initial	X			X				X			
PB-24	30	Initial	X			X				X			
PB-25	6	Initial	X			X				X			
PB-25	18	Initial	X			X				X			
PB-25	30	Initial	X			X				X			
PB-26	6	Initial	X			X				X			
PB-26	18	Initial	X			X				X			
PB-26	30	Initial	X			X				X			
PB-27	6	Initial	X			X				X			
PB-27	18	Initial	X			X				X			
PB-27	30	Initial	X			X				X			
PB-27-A	6	Stepout				X							
PB-27-A	18	Stepout											
PB-27-AA	6	Stepout				X	X	X					
PB-27-AA	18	Stepout				X							
PB-27-B	6	Stepout				X							
PB-27-BB	6	Stepout											
PB-27-BB	18	Stepout											
PB-27-C	6	Stepout				X							
PB-27-C	18	Stepout											
PB-27-CC	6	Stepout				X	X	X					
PB-27-CC	18	Stepout				X							
PB-27-D	6	Stepout				X							
PB-28	6	Initial	X	X		X				X			
PB-28	18	Initial	X			X				X			
PB-28	30	Initial	X			X				X			
PB-29	6	Initial	X			X				X			
PB-29	18	Initial	X			X				X			
PB-29	30	Initial	X			X				X			
PB-30	6	Initial	X	X		X				X			
PB-30	18	Initial	X			X				X			
PB-30	30	Initial	X			X				X			
PB-31	6	Initial	X			X				X	X		
PB-31	18	Initial	X			X				X	X		
PB-31	30	Initial	X			X				X	X		
PB-32	6	Initial	X			X				X			
PB-32	18	Initial	X			X				X			
PB-32	30	Initial	X			X				X			
PB-33	6	Initial	X			X				X			
PB-33	18	Initial	X			X				X			
PB-33	30	Initial	X			X				X			
PB-34	6	Initial	X	X		X				X			
PB-34	18	Initial	X			X				X			
PB-34	30	Initial	X			X				X			
PB-34-A	6	Stepout	X			X							
PB-34-B	6	Stepout	X			X							
PB-34-C	6	Stepout	X			X							
PB-34-D	6	Stepout	X			X							
PB-35	6	Initial	X			X				X			
PB-35	18	Initial	X			X				X			
PB-35	30	Initial	X			X				X			
PB-36	6	Initial	X			X				X			
PB-36	18	Initial	X			X				X			
PB-36	30	Initial	X			X				X			
PB-37	6	Initial	X	X		X				X			
PB-37	18	Initial	X			X				X			
PB-37	30	Initial	X			X				X			
PB-38	6	Initial	X			X				X			
PB-38	18	Initial	X			X				X			
PB-38	30	Initial	X			X				X			
PB-39	6	Initial	X			X				X			
PB-39	18	Initial	X			X				X			
PB-39	30	Initial	X			X				X			
PB-40	6	Initial	X			X				X			
PB-40	18	Initial	X			X				X			
PB-40	30	Initial	X			X				X			
PB-41	6	Initial	X			X				X			
PB-41	18	Initial	X			X				X			
PB-41	30	Initial	X			X				X			
PB-42	6	Initial	X			X				X			
PB-42	18	Initial	X			X				X			
PB-42	30	Initial	X			X				X			

TABLE 2
SUMMARY OF SOIL ANALYSES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Boring Number	Sample Depth	Initial or Stepout	Lead	Lead	Lead	Arsenic	Arsenic	Arsenic	Title 22 Metals	OCPs	PCBs	TPH	VOCs
	inches		EPA 6010B	STLC	TCLP	EPA 6010B	STLC	TCLP	6010B/7471A	EPA 8081A	EPA 8082	EPA 8015C	EPA 8260B
PB-43	6	Initial	X			X				X			
PB-43	18	Initial	X			X				X			
PB-43	30	Initial	X			X				X			
PB-44	6	Initial	X			X				X			
PB-44	18	Initial	X			X				X			
PB-44	30	Initial	X			X				X			
PB-45	6	Initial	X			X				X	X		
PB-45	18	Initial	X			X				X	X		
PB-45	30	Initial	X			X				X	X		
PB-46	6	Initial	X			X				X	X		
PB-46	18	Initial	X			X				X	X		
PB-46	30	Initial	X			X				X	X		
PB-47	6	Initial	X			X				X			
PB-47	18	Initial	X			X				X			
PB-47	30	Initial	X			X				X			
PB-48	6	Initial	X			X				X		X	X
PB-48	18	Initial											
PB-48	30	Initial											
PB-49	6	Stepout											
PB-49	18	Stepout											
PB-50	6	Stepout											
PB-50	18	Stepout											
PB-51	6	Stepout				X							
PB-51	18	Stepout											
PB-52	6	Stepout											
PB-52	18	Stepout											
PB-53	6	Stepout				X							
PB-53	18	Stepout											
PB-54	6	Stepout											
PB-54	18	Stepout											
PB-55	6	Stepout											
PB-55	18	Stepout											
PB-56	6	Stepout											
PB-56	18	Stepout											
PB-57	6	Stepout											
PB-57	18	Stepout											
PB-58	6	Stepout											
PB-58	18	Stepout											
PB-59	6	Stepout											
PB-59	18	Stepout											
PB-60	6	Stepout											
PB-60	18	Stepout											
PB-61	6	Stepout				X							
PB-61	18	Stepout											
PB-62	6	Stepout											
PB-62	18	Stepout											
PB-63	6	Stepout											
PB-63	18	Stepout											
PB-64	6	Stepout				X							
PB-64	18	Stepout				X							
PB-65	6	Stepout											
PB-65	18	Stepout											
PB-66	6	Stepout											
PB-66	18	Stepout											
PB-67	6	Stepout											
PB-67	18	Stepout											
PB-68	6	Stepout				X							
PB-68	18	Stepout				X							
PB-69	6	Stepout				X							
PB-69	18	Stepout											
PB-70	6	Stepout				X							
PB-70	18	Stepout											
PB-71	6	Stepout				X							
PB-71	18	Stepout				X							
PB-72	6	Stepout				X							
PB-72	18	Stepout				X							
PB-73	6	Stepout											
PB-73	18	Stepout											
Soil Drum									X	X	X	X	X
Water Drum												X	X
		Number of Analyses	147	6	0	179	7	7	1	142	19	3	3

NOTES:
X- - Analysis performed on the designated sample.

TABLE 3
SUMMARY OF SOIL ANALYTICAL RESULTS

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Analyzed Compounds	Number of Analyzed Samples	Number of Samples with Detections	Range of Detections
Lead	**146**	**112**	**1.1-84 mg/kg**
STLC Lead	*6*	*3*	*1.4-4.4 mg/L*
Arsenic	**179**	**173**	**1.0-120 mg/kg**
STLC Arsenic	*7*	*6*	*1.0-3.0 mg/L*
TCLP Arsenic	*7*	*4*	*0.44-0.69 mg/L*
OCPs	**142**	**11**	
4,4'-DDT	*142*	*8*	*2.2-20 µg/kg*
4,4'-DDE	*142*	*4*	*2.8-44 µg/kg*
Dieldrin	*142*	*2*	*2.2-9.4 µg/kg*
Chlordane	*142*	*5*	*11-100 µg/kg*
Title 22 Metals	**1**	**1**	
Barium	1	1	44 mg/kg
Chromium	1	1	5.6 mg/kg
Cobalt	1	1	3.6 mg/kg
Copper	1	1	6.0 mg/kg
Lead	1	1	1.9 mg/kg
Nickel	1	1	4.0 mg/kg
Vanadium	1	1	12 mg/kg
Zinc	1	1	20 mg/kg
TPH	3	0	
VOCs	3	0	
PCBs	18	0	

NOTES:
mg/kg - milligrams per kilogram
µg/kg - Micrograms per kilogram
mg/L - milligrams per liter

TABLE 4
SUMMARY OF SOIL ANALYTICAL RESULTS
ORGANOCHLORINE PESTICIDES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Organochlorine Pesticides (OCPs) (ug/kg)			
		4,4'-DDT	**4,4'-DDE**	**Dieldrin**	**Chlordane**
	EPA Method	EPA Method 8081A			
	Reporting Limit	2 µg/kg	2 µg/kg	2 µg/kg	8.5 µg/kg
	EPA RSL	1,900	2,000	34	1,700
PB-1-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-1-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-1-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-2-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-2-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-2-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-3-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-3-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-3-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-4-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-4-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-4-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-5-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-5-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-5-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-6-6"	3/27/18	5.9	44	9.4	100
PB-6-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-6-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-7-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-7-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-7-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-8-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-8-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-8-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-9-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-9-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-9-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-10-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-10-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-10-30"	3/27/18	6.3	ND < 2	ND < 2	ND < 8.5

TABLE 4
SUMMARY OF SOIL ANALYTICAL RESULTS
ORGANOCHLORINE PESTICIDES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Organochlorine Pesticides (OCPs) (ug/kg)			
		4,4'-DDT	**4,4'-DDE**	**Dieldrin**	**Chlordane**
	EPA Method	EPA Method 8081A			
	Reporting Limit	2 µg/kg	2 µg/kg	2 µg/kg	8.5 µg/kg
	EPA RSL	1,900	2,000	34	1,700
PB-11-6"	3/27/18	2.2	ND < 2	ND < 2	ND < 8.5
PB-11-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-11-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-12-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-12-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-12-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-13-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-13-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-13-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-14-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-14-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-14-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-15-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-15-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-15-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-16-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-16-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-16-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-17-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-17-18"	3/27/18	ND < 2	ND < 2	2.2	ND < 8.5
PB-17-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-18-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-18-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-18-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-19-6"	3/27/18	2.8	ND < 2	ND < 2	ND < 8.5
PB-19-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-19-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-20-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-20-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-20-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5

TABLE 4
SUMMARY OF SOIL ANALYTICAL RESULTS
ORGANOCHLORINE PESTICIDES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Organochlorine Pesticides (OCPs) (ug/kg)			
		4,4'-DDT	**4,4'-DDE**	**Dieldrin**	**Chlordane**
	EPA Method	EPA Method 8081A			
	Reporting Limit	2 µg/kg	2 µg/kg	2 µg/kg	8.5 µg/kg
	EPA RSL	1,900	2,000	34	1,700
PB-21-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-21-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-21-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-22-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-22-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-22-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-23-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-23-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-23-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-24-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-24-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-24-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-25-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-25-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-25-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-26-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-26-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-26-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-27-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-27-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-27-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-28-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-28-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-28-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-29-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-29-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-29-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-30-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-30-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-30-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5

TABLE 4
SUMMARY OF SOIL ANALYTICAL RESULTS
ORGANOCHLORINE PESTICIDES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Organochlorine Pesticides (OCPs) (ug/kg)			
		4,4'-DDT	**4,4'-DDE**	**Dieldrin**	**Chlordane**
	EPA Method	EPA Method 8081A			
	Reporting Limit	2 µg/kg	2 µg/kg	2 µg/kg	8.5 µg/kg
	EPA RSL	1,900	2,000	34	1,700
PB-31-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-31-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-31-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-32-6"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-32-18"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-32-30"	3/27/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-33-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-33-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-33-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-34-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-34-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-34-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-35-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-35-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-35-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-36-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-36-18"	3/28/18	20	27	ND < 2	ND < 8.5
PB-36-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-37-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-37-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-37-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-38-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-38-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-38-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-39-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-39-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-39-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-40-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-40-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-40-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5

TABLE 4
SUMMARY OF SOIL ANALYTICAL RESULTS
ORGANOCHLORINE PESTICIDES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Organochlorine Pesticides (OCPs) (ug/kg)			
		4,4'-DDT	**4,4'-DDE**	**Dieldrin**	**Chlordane**
	EPA Method	EPA Method 8081A			
	Reporting Limit	2 µg/kg	2 µg/kg	2 µg/kg	8.5 µg/kg
	EPA RSL	1,900	2,000	34	1,700
PB-41-6"	3/28/18	ND < 2	ND < 2	ND < 2	17
PB-41-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-41-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-42-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-42-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-42-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-43-6"	3/28/18	ND < 2	ND < 2	ND < 2	17
PB-43-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-43-30"	3/28/18	2.6	ND < 2	ND < 2	11
PB-44-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-44-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-44-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-45-6"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-45-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-45-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-46-6"	3/28/18	2.5	3.2	ND < 2	ND < 8.5
PB-46-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-46-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-47-6"	3/28/18	2.7	2.8	ND < 2	23
PB-47-18"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-47-30"	3/28/18	ND < 2	ND < 2	ND < 2	ND < 8.5
PB-48-6"	5/21/18	ND < 2	ND < 2	ND < 2	ND < 8.5

NOTES:

Pesticides not included on this table were not detected above the laboraotry reporting limit

All chlordane isomers included with the reported general compound result

µg/kg - Micrograms per kilogram

ND - Compound not present above the given reporting limit

EPA RSL - US Environmental Protectyion Agency Regional Screening Limit (residential soil), Nov. 2018

TABLE 5
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	TTLC	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-1-6"	3/27/18	ND < 1	1.2
PB-1-18"	3/27/18	ND < 1	1.3
PB-1-30"	3/27/18	ND < 1	1.4
PB-2-6"	3/27/18	38	4.7
PB-2-18"	3/27/18	ND < 1	ND < 1
PB-2-30"	3/27/18	ND < 1	ND < 1
PB-3-6"	3/27/18	4.5	1.6
PB-3-18"	3/27/18	1.8	1.2
PB-3-30"	3/27/18	ND < 1	1.4
PB-4-6"	3/27/18	51	2.9
PB-4-18"	3/27/18	1.9	1.2
PB-4-30"	3/27/18	ND < 1	1.6
PB-5-6"	3/27/18	6.6	1.0
PB-5-18"	3/27/18	ND < 1	ND < 1
PB-5-30"	3/27/18	ND < 1	ND < 1
PB-6-6"	3/27/18	44	5.4
PB-6-18"	3/27/18	6.1	1.1
PB-6-30"	3/27/18	ND < 1	1.2
PB-7-6"	3/27/18	11	5.4
PB-7-18"	3/27/18	1.3	4.1
PB-7-30"	3/27/18	14	6.4
PB-8-6"	3/27/18	50	1.3
PB-8-18"	3/27/18	6.6	ND < 1
PB-8-30"	3/27/18	ND < 1	1.2
PB-9-6"	3/27/18	2.5	1.7
PB-9-18"	3/27/18	3.9	3.8
PB-9-30"	3/27/18	44	1.3
PB-10-6"	3/27/18	18	6.8
PB-10-18"	3/27/18	ND < 1	1.7
PB-10-30"	3/27/18	ND < 1	1.9

TABLE 5
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	**Sample Date**	**Total Lead**	**Arsenic**
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-11-6"	3/27/18	7.4	**100**
PB-11-18"	3/27/18	ND < 1	ND < 1
PB-11-30"	3/27/18	ND < 1	ND < 1
PB-11-A-6"	5/21/18	NA	**20**
PB-11-A-18"	5/19/18	NA	1.6
PB-11-AA-6"	8/13/18	NA	7.3
PB-11-AA-18"	8/13/18	NA	5.8
PB-11-B-6"	5/21/18	NA	**53**
PB-11-B-18"	5/19/18	NA	1.0
PB-11-BB-6"	8/13/18	NA	**61**
PB-11-BB-18"	8/13/18	NA	11
PB-11-C-6"	5/21/18	NA	**13**
PB-11-C-18"	5/19/18	NA	ND < 1
PB-11-CC-6"	8/13/18	NA	**120**
PB-11-CC-18"	8/13/18	NA	ND < 1
PB-11-D-6"	5/21/18	NA	**22**
PB-11-D-18"	5/19/18	NA	1.0
PB-11-DD-6"	8/13/18	NA	**120**
PB-11-DD-18"	8/13/18	NA	**18**
PB-12-6"	3/27/18	22	4.3
PB-12-18"	3/27/18	1.2	2.3
PB-12-30"	3/27/18	ND < 1	1.5
PB-13-6"	3/27/18	ND < 1	1.7
PB-13-18"	3/27/18	3.7	2.2
PB-13-30"	3/27/18	5.6	2.6
PB-14-6"	3/28/18	2.4	2.0
PB-14-18"	3/28/18	2.1	3.3
PB-14-30"	3/28/18	3.6	2.3

TABLE 5
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-15-6"	3/27/18	5.9	1.6
PB-15-18"	3/27/18	ND < 1	1.4
PB-15-30"	3/27/18	ND < 1	1.7
PB-16-6"	3/27/18	6.7	2.3
PB-16-18"	3/27/18	5.8	1.4
PB-16-30"	3/27/18	2.4	ND < 1
PB-17-6"	3/27/18	20	5.9
PB-17-18"	3/27/18	5.4	1.5
PB-17-30"	3/27/18	4.6	2.0
PB-18-6"	3/27/18	6.9	1.7
PB-18-18"	3/27/18	11	3.9
PB-18-30"	3/27/18	ND < 1	ND < 1
PB-19-6"	3/27/18	5.3	1.3
PB-19-18"	3/27/18	1.7	5.0
PB-19-30"	3/27/18	5.8	1.0
PB-20-6"	3/28/18	2.6	2.6
PB-20-18"	3/28/18	3.6	2.1
PB-20-30"	3/28/18	6.5	7.5
PB-21-6"	3/28/18	3.2	4.3
PB-21-18"	3/28/18	ND < 1	1.5
PB-21-30"	3/28/18	ND < 1	1.7
PB-22-6"	3/28/18	7.7	5.7
PB-22-18"	3/28/18	ND < 1	1.4
PB-22-30"	3/28/18	ND < 1	1.8
PB-23-6"	3/28/18	4.1	3.4
PB-23-18"	3/28/18	3.0	3.2
PB-23-30"	3/28/18	3.2	3.2
PB-24-6"	3/28/18	7.2	2.3
PB-24-18"	3/28/18	1.7	2.7
PB-24-30"	3/28/18	ND < 1	1.9

TABLE 5
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-25-6"	3/28/18	8.8	1.8
PB-25-18"	3/28/18	1.4	2.0
PB-25-30"	3/28/18	ND < 1	1.2
PB-26-6"	3/28/18	2.3	1.9
PB-26-18"	3/28/18	2.0	1.5
PB-26-30"	3/28/18	9.2	2.6
PB-27-6"	3/27/18	17	**32**
PB-27-A-6"	5/21/18	NA	**16**
PB-27-A-18"	5/19/18	NA	1.5
PB-27-AA-6"	8/13/18	NA	**59**
PB-27-AA-18"	8/13/18	NA	1.7
PB-27-B-6"	5/21/18	NA	2.4
PB-27-C-6"	5/21/18	NA	**21**
PB-27-C-18"	5/21/18	NA	8.0
PB-27-CC-6"	8/13/18	NA	**91**
PB-27-CC-18"	8/13/18	NA	1.9
PB-27-D-6"	5/21/18	NA	ND < 1
PB-27-18"	3/27/18	13	2.9
PB-27-30"	3/27/18	14	1.3
PB-28-6"	3/27/18	54	1.3
PB-28-18"	3/27/18	7.0	1.8
PB-28-30"	3/27/18	ND < 1	ND < 1
PB-29-6"	3/27/18	37	1.4
PB-29-18"	3/27/18	10	2.1
PB-29-30"	3/27/18	15	2.4
PB-30-6"	3/27/18	58	1.9
PB-30-18"	3/27/18	ND < 1	ND < 1
PB-30-30"	3/27/18	ND < 1	1.4

TABLE 5
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	**Sample Date**	**Total Lead**	**Arsenic**
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-31-6"	3/27/18	19	3.3
PB-31-18"	3/27/18	16	1.6
PB-31-30"	3/27/18	ND < 1	1.1
PB-32-6"	3/27/18	32	1.2
PB-32-18"	3/27/18	27	1.3
PB-32-30"	3/27/18	ND < 1	1.3
PB-33-6"	3/28/18	22	1.7
PB-33-18"	3/28/18	3.4	1.2
PB-33-30"	3/28/18	ND < 1	1.6
PB-34-6"	3/28/18	**84**	**14**
PB-34-A-6"	5/21/18	10	1.4
PB-34-B-6"	5/21/18	7.2	ND < 1
PB-34-C-6"	5/21/18	9.2	1.6
PB-34-D-6"	5/21/18	33	1.5
PB-34-18"	3/28/18	1.6	1.8
PB-34-30"	3/28/18	ND < 1	2.1
PB-35-6"	3/28/18	18	2.0
PB-35-18"	3/28/18	12	2.1
PB-35-30"	3/28/18	2.6	2.5
PB-36-6"	3/28/18	17	2.2
PB-36-18"	3/28/18	26	2.2
PB-36-30"	3/28/18	1.6	2.6
PB-37-6"	3/28/18	62	3.0
PB-37-18"	3/28/18	33	1.2
PB-37-30"	3/28/18	1.4	3.0
PB-38-6"	3/28/18	35	2.8
PB-38-18"	3/28/18	5.7	2.1
PB-38-30"	3/28/18	6.0	2.4

TABLE 5
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	**Sample Date**	**Total Lead**	**Arsenic**
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-39-6"	3/28/18	45	8.5
PB-39-18"	3/28/18	11	1.1
PB-39-30"	3/28/18	10	1.2
PB-40-6"	3/28/18	9.1	3.2
PB-40-18"	3/28/18	5.4	3.2
PB-40-30"	3/28/18	7.4	3.5
PB-41-6"	3/28/18	14	2.7
PB-41-18"	3/28/18	6.0	3.1
PB-41-30"	3/28/18	11	4.0
PB-42-6"	3/28/18	6.7	3.1
PB-42-18"	3/28/18	8.9	2.6
PB-42-30"	3/28/18	4.4	4.5
PB-43-6"	3/28/18	12	7.3
PB-43-18"	3/28/18	24	1.6
PB-43-30"	3/28/18	31	2.2
PB-44-6"	3/28/18	10	2.5
PB-44-18"	3/28/18	2.0	3.5
PB-44-30"	3/28/18	1.8	2.5
PB-45-6"	3/28/18	9.3	3.2
PB-45-18"	3/28/18	5.1	2.9
PB-45-30"	3/28/18	6.3	2.2
PB-46-6"	3/28/18	28	5.4
PB-46-18"	3/28/18	8.2	3.4
PB-46-30"	3/28/18	1.9	2.4
PB-47-6"	3/28/18	18	4.4
PB-47-18"	3/28/18	7.1	3.5
PB-47-30"	3/28/18	2.8	3.1
PB-48-6"	5/21/18	1.7	5.4
PB-51-6"	8/19/18	NA	2.6
PB-53-6"	8/19/18	NA	1.5

TABLE 5
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-61-6"	8/19/18	NA	11
PB-64-6"	8/19/18	NA	1.2
PB-64-18"	8/19/18	NA	2.6
PB-68-6"	8/19/18	NA	7.2
PB-68-18"	8/19/18	NA	ND < 1
PB-69-6"	8/19/18	NA	1.2
PB-70-6"	8/19/18	NA	11
PB-71-6"	8/19/18	NA	**35**
PB-71-18"	8/19/18	NA	2.4
PB-72-6"	8/19/18	NA	6.3
PB-72-18"	8/19/18	NA	ND < 1

NOTES:
Pesticides not included on this table were not detected above the laboratory reporting limit.
All chlordane isomers included with the reported general compound result
µg/kg - micrograms per kilogram
ND - Compound not present above the given reporting limit
EPA RSL - US Environmental Protection Agency Regional Screening Limit (residential soil), May 2016.

TABLE 6
SUMMARY OF SOIL ANALYTICAL RESULTS
POLYCHLORINATED BIPHENYLS

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Polychlorinated Biphenyls (PCBs) (µg/kg)						
		Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
	EPA Method	EPA Method 8082						
	Reporting Limit	10 µg/kg						
	EPA RSL	6,700	200	170	230	230	240	240
PB-3-6"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-3-18"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-3-30"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-11-6"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-11-18"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-11-30"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-21-6"	3/28/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-21-18"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-21-30"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-31-6"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-31-18"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-31-30"	3/27/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16

TABLE 6
SUMMARY OF SOIL ANALYTICAL RESULTS
POLYCHLORINATED BIPHENYLS

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Polychlorinated Biphenyls (PCBs) (µg/kg)						
		Aroclor 1016	**Aroclor 1221**	**Aroclor 1232**	**Aroclor 1242**	**Aroclor 1248**	**Aroclor 1254**	**Aroclor 1260**
	EPA Method	EPA Method 8082						
	Reporting Limit	10 µg/kg						
	EPA RSL	6,700	200	170	230	230	240	240
PB-45-6"	3/28/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-45-18"	3/28/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-45-30"	3/28/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-46-6"	3/28/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-46-18"	3/28/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16
PB-46-30"	3/28/18	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16	ND < 16

NOTES:

µg/kg - Micrograms per kilogram

ND - Compound not present above the given reporting limit

EPA RSL - US Environmental Protectyion Agency Regional Screening Limit (residential soil), May 2016

TABLE 7
SUMMARY OF SOIL ANALYTICAL RESULTS
SOLUBLE LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total and Soluble Waste Concentrations						Waste Characterization
		Lead	Lead STLC	Lead TCLP	Arsenic	Arsenic STLC	Arsenic TCLP	
	EPA Method	6010B	STLC	TCLP	6010B	STLC	TCLP	
	Reporting Limit	various	0.2	0.1	various	5	5	
	Units	mg/kg	mg/L	mg/L	mg/kg	mg/L	mg/L	
	Hazardous Waste Limit	1,000	5	5	500	5	5	
PB-4-6"	3/27/18	51	ND < 1	NA	2.9	NA	NA	Non-Hazardous
PB-8-6"	3/27/18	50	3.6	NA	1.3	NA	NA	Non-Hazardous
PB-11-6"	3/27/18	7.4	NA	NA	100	2.7	0.55	Non-Hazardous
PB-11-B-6"	3/27/18	NA	NA	NA	53	2.8	0.69	Non-Hazardous
PB-11-BB-6"	3/27/18	NA	NA	NA	61	1.6	0.44	Non-Hazardous
PB-11-CC-6"	3/28/18	NA	NA	NA	120	1.3	ND < 0.25	Non-Hazardous
PB-11-DD-6"	3/27/18	NA	NA	NA	120	3.0	0.65	Non-Hazardous
PB-27-AA-6"	3/27/18	NA	NA	NA	59	1.0	ND < 0.25	Non-Hazardous
PB-27-CC-6"	3/27/18	NA	NA	NA	91	ND < 1	ND < 0.25	Non-Hazardous

TABLE 7
SUMMARY OF SOIL ANALYTICAL RESULTS
SOLUBLE LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total and Soluble Waste Concentrations						Waste Characterization
		Lead	Lead STLC	Lead TCLP	Arsenic	Arsenic STLC	Arsenic TCLP	
EPA Method		6010B	STLC	TCLP	6010B	STLC	TCLP	
Reporting Limit		various	0.2	0.1	various	5	5	
Units		mg/kg	mg/L	mg/L	mg/kg	mg/L	mg/L	
Hazardous Waste Limit		1,000	5	5	500	5	5	
PB-28-6"	3/28/18	54	1.4	NA	1.3	NA	NA	Non-Hazardous
PB-30-6"	3/28/18	58	ND < 1	NA	1.9	NA	NA	Non-Hazardous
PB-34-6"	3/28/18	84	4.4	NA	14	NA	NA	Non-Hazardous
PB-37-6"	3/28/18	62	ND < 1	NA	3.0	NA	NA	Non-Hazardous

NOTES:
STLC - Solutble Threshold Limit Concentration
TTLC - Total Threshold Limit Concentration
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
ND - Compound not present above the given reporting limit
NA - not analyzed

TABLE 8
SUMMARY OF IMPACTED SOIL VOLUMES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Initial Boring Location	Estimated Bank Volume	Bulk Factor	Estimated Excavated Volume	Estimated Excavated Weight
	(cubic yards)	(percent)	(cubic yards)	(tons)
PB-11	26.6	140	37.2	50.3
PB-27	6.9	140	9.7	13.0
PB-34	1.7	140	2.4	3.2
Totals	**35.2**	**---**	**49.3**	**66.5**

TABLE 9
SUMMARY OF COPC DETECTIONS

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

COPCs	Maximum Detected Concentration	Action/ Screening Level	Source for Action/ Screening Level
	mg/kg	mg/kg	
Arsenic	120.0	12	DTSC
Lead	84.0	80	DTSC/SL
4,4'-DDE	0.044	2.0	RSL
4,4'-DDT	0.020	1.9	RSL
Dieldrin	0.009	0.13	RSL
Chlordane	0.100	31	RSL

NOTES
COPC - Contaminant of Potential Concern
mg/kg - milligrams per kilogram
DTSC - Department of Toxic Substances Control
SL - Screening Level
RSL - Regional Screening Level

APPENDIX B

Health and Safety Plan

HEALTH AND SAFETY PLAN
for the
REMEDIAL ACTION WORKPLAN

92nd Street Elementary School
9211 South Grape Street
Los Angeles, California

June 28, 2019

Prepared for:

Los Angeles Unified School District

333 South Beaudry Avenue, 21st Floor
Los Angeles, California 90017

Prepared by:

PINNACLE
ENVIRONMENTAL TECHNOLOGIES
2 Santa Maria
Foothill Ranch, California 92610
(949) 470-3691

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1.0 ORGANIZATIONAL STRUCTURE

This section of the Health and Safety Plan (HASP) describes lines of authority, responsibilities, and means of communication for health and safety functions at this Site.

The organizational structure of this HASP is consistent with OSHA requirements in 29 CFR 1910.120(b)(2) and provides the following site-specific information:

- The supervisor who has the responsibility and authority to direct all field operations
- The Site health and safety officer who has the responsibility and authority to develop and implement this HASP and verify compliance
- Other roles needed for field operations and emergency response and their general functions and responsibilities
- The lines of authority, responsibility, and communication for safety and health functions

This document will be reviewed and updated as necessary to reflect any updates in the organizational structure at this Site.

1.1 Roles and Responsibilities

The purpose of this section is to identify the personnel involved in the development and implementation of the Site HASP and to describe their roles and responsibilities. This section also identifies other contractors involved in field operations and establishes the lines of communication among them for safety and health matters.

All personnel and visitors on this site must comply with the requirements of this HASP. The specific responsibilities and authority of management, health and safety, and other personnel on this Site are detailed in the following paragraphs.

Project Manager (PM)

The PM has responsibility and authority to direct all work operations. The PM coordinates health and safety functions with the Site Safety and Health Officer (SSHO), has the authority to oversee and monitor the performance of the SSHO, and bears ultimate responsibility for the proper implementation of this HASP.

The specific duties of the PM are:

- Preparing and coordinating the Site work plan
- Providing the Site supervisor with work assignments and overseeing performance
- Coordinating health and safety efforts with the SSHO
- Ensuring effective emergency response through coordination with the Emergency Response Coordinator (ERC)
- Serving as primary Site liaison with public agencies and officials and Site contractors

The qualified alternate Project Manager (PM) for the Site should also be identified.

Site Safety and Health Officer (SSHO)

The SSHO has full responsibility and authority to develop and implement this HASP and to verify compliance [Note: if the preceding statement does not apply to the SSHO, be sure that it applies to one of the positions listed here]. The SSHO reports to the Project Manager. The SSHO is on Site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SSHO are:

- Managing the safety and health functions on this Site
- Serving as the Site's point of contact for safety and health matters
- Ensuring Site monitoring, worker training, medical surveillance, and effective selection and use of PPE
- Assessing Site conditions for unsafe acts and conditions and providing corrective action
- Assisting the preparation and review of this HASP
- Maintaining effective health and safety records as described in this HASP
- Coordinating with the Emergency Response Coordinator (ERC), Site Supervisor(s), and others as necessary for safety and health efforts

The qualified alternate Site Safety and Health Officer (SSHO) for this Site should also be identified.

Emergency Response Coordinator (ERC)

The ERC is responsible for assessing Site conditions, directing, and controlling emergency response activities and personnel in accordance with the Site Emergency Response Plan. The ERC reports to the Project Manager (PM). The ERC will ensure the evacuation, emergency transport, and treatment of Site personnel and will notify the appropriate emergency response units and management staff in accordance with the emergency response plan of this HASP. Specific duties of the ERC include:

- Developing and reviewing the emergency response plan
- Conducting emergency response rehearsals
- Ensuring effective emergency response to and evacuation of the Site
- Coordinating emergency response functions with the Site Safety and Health Officer (SSHO), and integrating Site emergency response plans with the disaster, fire, and/or emergency response plans of local, state, and federal organizations and agencies

The qualified alternate Emergency Response Coordinator (ERC) for this Site should also be identified.

Site Supervisor

The Site Supervisor on larger projects is responsible for field operations and reports to the Project Manager (PM). In the case of this field project, the Site Supervisor responsibilities will merged with the PM responsibilities. The Site Supervisor ensures the implementation of the HASP requirements and procedures in the field. The specific responsibilities of the Site Supervisor are:

- Executing the work plan and schedule as detailed by the PM
- Coordination with the Site Safety and Health Officer (SSHO) on safety and health
- Ensuring Site work compliance with the requirements of this HASP

Site Field Staff

Site workers are responsible for complying with this HASP, using the proper PPE, reporting unsafe acts and conditions, and following the lines of authority established for this project Site. The remaining workers on the Site will be employees of subcontracted to the prime contractor.

Decontamination Manager

The Decontamination Manager is responsible for decontamination procedures, equipment, and supplies. The specific responsibilities of the Decontamination Manager are:

- Setting up decontamination lines and the solutions appropriate for the type of contamination on Site
- Controlling the decontamination of all equipment, personnel, and samples from the contaminated areas
- Assisting in disposal of contaminated clothing and materials
- Ensuring all required equipment is available and in working order
- Providing for collection, storage, and disposal of waste

A qualified alternate Decontamination Manager for this Site should also be identified.

Security Officer

The Security Officer for this Site is responsible for managing and maintaining Site security. The specific responsibilities of the Security Officer are:

- Conducting routine area patrols
- Controlling facility access and egress
- Assisting with communication during an emergency
- Securing accident/incident scenes
- Maintaining a log of Site access and egress

The qualified alternate Security Officer for this Site should also be identified.

1.2 Identification of Other Site Contractors

The contractors, consultants and subcontractors on this Site who could be affected by the tasks and operations associated with the workplan and this HASP are listed in Table 1 below.

Table 1 - Other Site Contractors and Subcontractors	
Company	Function
Excavation (Prime) Contractor	*Excavation, loading, backfilling (if necessary)*
Environmental Consultant	*Confirmation sampling, atmospheric monitoring*
Disposal Site	*Destination for excavated material*
Trucking Firm	*Soil/rinseate transport for disposal*

The prime contractor on the project may decide to operate under their company HASP. If so, the prime contractor will integrate health and safety procedures in this HASP with critical elements in their own HASP. If any decontamination water is produced and contained in drums, another firm may be selected to pick up the drums for disposal.

1.3 Local/State/Federal Agency Representatives

Local/state or federal oversight will not be performed during this project. The environmental aspects of the project will be managed by the Office of Environmental Health and Safety (OEHS) at LAUSD. The Project Manager at OEHS will be Mr. Steven Morrill. He will be reviewing the RAW and will be familiar with the work being performed. He may be present at the Site while field tasks are being performed.

2.0 SITE CHARACTERIZATION AND JOB HAZARD ANALYSIS

This section of the HASP identifies and describes safety and health hazards associated with Site work, in compliance with 29 CFR 1910.120(b)(4)(ii)(A), 1910.120(c) and 1910.120(i). The purpose of characterization and job hazard analysis is to identify and quantify the health and safety hazards associated with each Site task and operation, and to evaluate the risks to workers. With this information, risks are then eliminated if possible, or effectively controlled. The information contained in this section of the HASP is essential to effective preparation of all other sections of the HASP. This section of the HASP includes:

- Site history
- Job hazard analysis
- Chemical and biological hazard information
- Employee notification of hazards

2.1 Site History

Single-family homes occupied the current school property until the earliest school structures were built in the early 1930's. These buildings were located at the northern portion of the block. The remaining structures and playgrounds that fill to the block today were built in the 1960's. There are 19 primary structures on the school campus (Figure 2). Twelve of these are permanent structures (Figure 3). These include six classroom buildings, an administration building at the northeast corner of the campus, and the West Building located at the northwest corner of the campus. The West Building is the largest and oldest structure at the school. It was built in the early 1930s and is the oldest structure on the campus. Five of the six permanent classroom buildings are single-story structures. A two-story classroom building is located on the east side of the school, immediately north of a parking lot at the center of campus.

A single structure incorporating the cafeteria/kitchen and multi-purpose room (MPR) is located south of the center parking lot. A lunch pavilion is located immediately west of the cafeteria/kitchen/MPR. A small storage building is located on the west side of the campus, west of the lunch pavilion. Power equipment and a small volume of gasoline is kept in the storage building.

There are seven temporary structures on the campus (Figure 3). Five of these are located on the west side of campus, west of the cafeteria/kitchen/MPR. Three of these structures are classrooms, one structure is an attached pair of rest rooms, and the fifth structure is a large storage bin. The two other temporary structures are two small bungalows adjacent to the West Building on the north side of campus.

The West Building and two smaller adjacent temporary buildings are not included within the project area. The project area was determined by LAUSD construction project staff and OEHS based on their plans to modernize the cafeteria/kitchen/MPR, lunch pavilion, and numerous classroom structures with new buildings.

A paved playground for the students is located on the southern third of the school campus. Playground equipment occupies the northeast corner of the playground. Basketball courts are located at the southeast corner of the playground and a set of multipurpose baseball/kickball fields are located in the center and west portions of the playground. A small oval track constructed using a thin pavement of rubberized asphalt on the asphalt pavement is located within the area occupied by the ball fields.

The parking areas and most of the areas between classrooms are asphalt-paved. Arcades connecting the three classrooms on the west side of campus, the kindergarten building located south of the main parking lot, and the main administration building have concrete-paved walkways. The areas between the three classrooms on the west side of campus are also concrete paved. The largest landscaped area on the campus is at the corner of 92nd Street and Grape Street. Other smaller landscaped areas and tree wells have little ground cover other than smaller trees, vines and shrubs. The mature trees on campus did not appear to be distressed.

Accord Engineering produced a Phase I ESA Report for the whole school campus dated July 28, 2017. Their assessment did not identify any previously conducted environmental investigations for the school or contiguous property. However, it identified potential Recognized Environmental Conditions (RECs) within the project area that were used to produce the scope of work for PEA-E. Pinnacle used their own observations to augment the RECs produced by Accord. Pinnacle produced a Preliminary Environmental Assessment – Equivalent (PEA-E) dated April 6, 2019 that identified soils with arsenic and lead concentrations above screening levels. Pinnacle subsequently produced this Removal Action Workplan (RAW) to mitigate the impacted soils.

2.2 Job Hazard Analysis

The excavation and oversight activities at the Site may result in exposure to biological, chemical, and physical hazards. Preparation of this HASP was based on review of the RAW.

The chemicals of concern (COCs) in soil may result in toxicological exposure hazards and enter the body primarily via inhalation, ingestion. Less likely routes include skin absorption, and/or injection. The permissible exposure limit (PEL) for a chemical is defined by the California Department of Occupational Safety and Health (CAL/OSHA) in the California Code of Regulations (CCR), Title 26, Section 5155, and other sections where necessary. A PEL refers to the airborne concentration of a substance that an adult worker may be repeatedly exposed to for eight hours per day, for a 40-year working lifetime, without adverse effect. Most PELs are expressed as time-weighted averages. CAL/OSHA also has promulgated short-term exposure limits (STEL; usually 15 or 30 minutes) for certain substances. A few substances have ceiling concentration (the highest allowable concentration in the workplace) that cannot be exceeded, even instantaneously. Substances that can enter the body in a gaseous form through the skin are denoted by CAL/OSHA with an "s."

Variations in individual susceptibility may result in a small number of workers experiencing discomfort to some or all chemicals at concentrations equal to or below the PEL. A smaller percentage of individuals may be affected more seriously from exposures at or below the PEL due to aggravation of a pre-existing condition or by development of an occupational illness. The PEL is based on research conducted by the National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH) and are based on the best available information from industrial experience, animal studies, and other sources.

Listed below are the types of physical hazards that may be present during activities at the Site:

- Slip, Trip, or Fall - These types of hazards result from unleveled surfaces, slippery surfaces, and hard-to-see objects located across walking paths (e.g., rope, cords, etc.). They are responsible for over 60% of work-related injuries.
- Housekeeping and Sanitation - In order to permit safe and efficient work conditions, all work areas will be kept clean and free from debris. All hand tools will be kept in storage until they are needed for use. Trash containers will be leak proof, clean, and maintained in a sanitary condition. If vermin are encountered, an approved extermination method will be initiated. Potable water will be used for first aid, drinking, and personal hygiene purposes. Ground surfaces will be kept free from standing water. Disposable drinking cups will be provided, along with water coolers. Community drinking cups will not be permitted.
- Falling Objects - Hard hats, safety glasses, and steel-toed footwear will be required for personnel in all work areas.
- Traffic Safety - During normal business hours, there may be a significant level of traffic coming to and from the Site. Pedestrian traffic on the Site and on bordering public streets may be at risk as traffic enters and exits the Site.
- Noise - High noise levels (in excess of 85 decibels [db] for extended periods) can result in temporary and permanent loss of hearing. Areas where noise levels exceed 85 db will be designated and hearing protection will be provided and worn.

Table 2 contains the job hazard analysis information for this site and the planned hazard controls. The chemical hazards are identified for each distinct combination of location and task. Based on the task at a particular location, anticipated physical hazards are also identified. Then, based on the best available knowledge of how that task/operation will be performed, the likelihood of exposure to the hazards identified for the task/operation at that location is indicated. The final section in Table 2 lists the control measures implemented to protect employees from the hazards identified. The information provided here is designed to satisfy the job hazard analysis requirements of 1910.120(b)(4)(ii)(A) and the workplace hazard assessment requirements of 1910.132(d).

Table 3 summarizes health hazard information for COCs listed in Table 2. Table 2 will be modified by the Project Manager or the Site Safety and Health Officer when:

- The Scope of Work is changed by adding, eliminating, or modifying tasks
- New methods of performing Site tasks are selected
- Observation of the performance of Site tasks results in a revised characterization of the hazards
- New chemical, biological, or physical hazards are identified
- Exposure data indicate changes in the concentration and/or likelihood of exposure
- New/different control measures are selected

These tables summarize the information used to select and implement the specific exposure controls identified in the remainder of the HASP. If the tables are modified, related provisions elsewhere in the HASP will also be modified.

Table 2: Site-Specific Job Hazard Analysis – Three locations on campus

JHA Number: 1	Task/Operation	Location Where Task/Operation Performed
	Soil Excavation/Transport	Three locations, center and west campus
Date of JHA:	**Employee Certifying this JHA** (in accordance with 1910.132(d)(2))	
6/28/19	**Print Name:** **Keith Thompson**	**Signature** Keith Thompson

Chemical Hazards

Chemical Name	Source	Concentration	Exposure Potential during Task
Arsenic (soil)	Non-point release to soil	120 mg/kg	likely
Lead (soil)	Non-point release to soil	84 mg/kg	likely

Biological Hazards

Name of Biological Hazard	Source	Concentration	Exposure Potential during Task
None			N/A

Physical Hazards

Name of Physical Hazard	Source	Exposure Potential during Task
Noise	Operation of saws, excavation/loading equipment	likely
Slip, trip, fall	Adjacent to operating equipment, decontamination areas with spilled water	likely
Falling objects	Equipment falling off of drill rig	unlikely
Traffic	Traffic on surrounding streets	likely
Housekeeping/sanitation	Not maintaining a clean work area and not observing worker decontamination practices	unlikely
Shock hazard	Electrical saws	likely

Control Measures Used

Engineering Controls: (*if feasible, list/describe)*

Turn engines off when not equipment is not in use. All electric plugs and cords will be checked for wear, and will be kept out of any spilled water.

Work Practices: (*describe*)

All workers will wear hearing protection and hard hats. Work areas will be dried to prevent slipping. No unused equipment will be left on the ground in work areas or at locations where they may fall onto workers. Traffic delineators will be placed around the work area, which will be well lighted if work continues into evening. Workers will clean hands before eating or drinking. Rest rooms will be available for workers.

PPE: Level D

Table 3 – Summary of Primary Hazardous Substances

Hazardous Substance Name	Characteristics of Substance	Route(s) of Entry	Target Organ(s) Effected	Exposure Limits	Exposure Signs & Symptoms
Arsenic	Naturally-occurring metalloid, found and used in organic and inorganic compounds. No odor, taste or color at expected concentrations.	Inhalation, ingestion	Carcinogen, liver, kidney, skin, bladder, lungs, heart, especially acute in pregnant women and children	PEL and TLV: 0.01 mg/m^3 (TWA)	Skin pigmentation changes and lesions, vomiting, abdominal pain, diarrhea, tingling of extremities, cramping.
Lead	Naturally-occurring metalloid, found and used in organic and inorganic compounds. No odor, taste or color at expected concentrations.	Inhalation, ingestion	Cardiovascular, respiratory, kidney, mental functions, especially acute in pregnant women and children	PEL and TLV: 0.05 mg/m^3 (TWA)	Headache, abdominal pain, fatigue, irritable, loss of appetite, tingling of extremities

3.0 WORKER TRAINING

Worker training includes 40-Hour Hazardous Waste Operations and Emergency Response, (HAZWOPER), 8-Hour HAZWOPER annual refresher training, and first aid training. All subcontractors within the work area are required to have current HAZWOPER training. Project specific training is evaluated prior to the initialization of new projects, and additional training is completed as necessary.

4.0 MEDICAL SURVEILLANCE

All workers who could potentially be exposed to concentrations of contaminants above the OSHA Permissible Exposure Limits (PELs) for 30 days per year or more are included in a Medical Surveillance Program. No prime contractor or subcontracted personnel on this project are expected to fall within this group.

5.0 SITE CONTROL

Simplified Site control procedures, as required by 29 CFR 1910.120(d), will be implemented before the start of Site tasks to control potential worker and public exposures to contaminants.

5.1 Work Zones

Work Zones at each location will be determined at the Site by the PM. In general, it is anticipated that the work zones will be defined relative to the location of the work activity. The Exclusion Zone (EZ) is considered the area within a 10-foot distance of the excavations and the routes for the local transport of soil to the truck loading area. The Contamination Reduction Zone (CRZ) is considered to be the area within a 20-foot diameter of the excavations and the routes for the transport of soil to the truck loading area. The Decontamination Zone (DZ) will be located at the CRZ.

5.2 Buddy System

When required by contract or when conditions exist that could be dangerous to life and health, a buddy system shall be implemented. These conditions are not expected on this project.

5.3 Site Access

Access to designated project areas will be controlled using a sign in/sign out procedure.

5.4 Communications

Onsite communications will be conducted through the use of verbal, hand signals, and cellular phones. Offsite communications will be conducted through the use of cellular phones. Personnel shall check in with their home office personnel each day before starting work, in the middle of the day, and at the end of the day.

5.5 General Work Safe Practices

General safe work practices to be implemented during work activities at this Site are summarized below.

- Minimize contact with contaminated materials. Do not place equipment on the bare ground. Do not sit or kneel on potentially contaminated surfaces.
- Smoking, eating, or drinking after entering the work zone and before decontamination will not be allowed. Use of illegal drugs and alcohol are prohibited.
- Practice good housekeeping. Keep everything orderly and out of potentially harmful situations.
- In an unknown situation, always assume the worst conditions.

- Be observant of your immediate surroundings and the surroundings of others. It is a team effort to notice and warn of impending dangerous situations. Withdrawal from a hazardous situation to reassess procedures is the preferred course of action.
- Conflicting situations may arise concerning safety requirements and working conditions and must be addressed and resolved rapidly by the PM to relieve any motivations or pressures to circumvent established safety policies.
- Unauthorized breaches of specified safety protocol will not be allowed. Workers unwilling or unable to comply with the established procedures will be discharged.

6.0 HAZARD ANALYSIS

Pertinent Site information (e.g. records of identified chemicals) and previous sampling data (e.g., soil analyses) have been reviewed to determine the chemicals of concern for the project.

A hazard analysis, including chemical (health, fire, and reactive), physical, and biological hazards, has been conducted for anticipated tasks associated with the project per 29 CFR 1910.120(c). Health hazards will be controlled by implementing personal protective equipment (Section 8.0). Fire, reactive, physical, and biological hazards shall be controlled by utilizing Specific Safe Work Practices (Section 9.0).

7.0 HEAT AND COLD STRESS

Due to the Site location and time of year, cold stress is not expected to be experienced by field personnel. However, heat stress may be experienced. The PM will confirm that all project personnel have the necessary training to prevent personnel injury due to heat, as dictated by weather conditions. The PM will record ambient conditions at the Site and inform Site personnel of the anticipated forecast for each day. Field personnel will be instructed to dress appropriately but protectively for the conditions expected to be encountered.

Because the scope of field services primarily involves equipment operations and manual work activity with intermittent exposure to ambient weather conditions, heat and cold stress are not expected to present a serious concern. The manual tasks predominately include manual excavation near buildings and utility trenches as needed, which will require minimal physically strenuous activity. In most cases, field staff will be at periodically rest and can take shelter in the shade or vehicles, and they will be in Level D PPE appropriate for the work. If transition to Level C or greater PPE is dictated, the guidance below will be revised by the PM to reflect the additional heat burden of outer protective clothing.

7.1 Cold Stress

As stated above, cold stress is not expected to be experienced by field personnel during this project.

7.2 Heat Stress

Heat stress can be a major hazard for field personnel, especially those wearing PPE. Depending upon the ambient conditions and the work being performed, the onset of heat stress can be rapid. Since the work to be performed is generally anticipated to only include intermittent, light work in Level D PPE, heat-related impacts are not expected. However, symptoms and measures for dealing with heat-related impacts are included below for general knowledge and monitoring.

Early signs of heat stress include heat rash, heat cramps (muscle spasms), discomfort, and drowsiness. Continued heat stress can result in heat exhaustion, with symptoms including pale, cool, moist skin; heavy perspiration; dizziness; nausea; and fainting.

Extreme heat stress can result in heat stroke, as body temperature regulation fails and the body temperature rises to critical levels. Symptoms of heat stroke include red, hot, usually dry skin; absence of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse; and coma.

Measures to prevent the occurrence of heat stress consist of acclimatization; avoiding overprotection; training and monitoring of personnel wearing PPE; scheduling of work and rest periods; and frequent replacement of fluids.

The ambient temperature will be monitored by the PM. If the ambient temperature is above 85°F, assuming 50/50 work/rest cycles and a light workload, then ACGIH procedures will be followed, including increasing the percent of rest. If symptoms of heat stress are exhibited by workers, worker pulse rates will be monitored during all tasks (as deemed appropriate by the PM).

A normal resting pulse rate will be determined prior to start of work. The pulse rate will be monitored as soon as possible at the beginning of a rest period. If the rate exceeds the determined normal resting pulse rate by 40 beats per minute (BPM), the next work period will be shortened by one-third without changing the rest period. If the pulse rate is greater than 40 BPM above the resting pulse rate at the start of the next rest period, the following work cycle will be shortened again by one-third. This will be repeated until the pulse rate at beginning of the rest period is less than 40 BPM above resting pulse rate.

8.0 PERSONAL PROTECTIVE EQUIPMENT

A description of the potential levels of personal protection is provided in Appendix C. Level D personal protective equipment (PPE) is expected to be required on this project. The level of protection may be upgraded or downgraded according to the action guidelines provided in Section 6.0 and Appendix A. PPE levels used shall be indicated in the Field Logbook. When using PPE, workers must adhere to the Personal Protective Equipment Program (29 CFR 1910.120[g] and 29 CFR 1910 Subpart I). If respirators are worn, workers must adhere to the Respiratory Protection Program (29 CFR 1910.134). Beards (e.g., facial hair interfering with the respirator seal) are not allowed when respirators are worn.

9.0 SPECIFIC SAFE WORK PRACTICES

Workers shall follow the Specific Safe Work Practices provided in Appendix C that have been developed for each hazard associated with each task as identified in Appendix A. Additionally, biological hazards are discussed in Appendix C.

10.0 DECONTAMINATION

PPE shall be decontaminated as per 29 CFR 1910.120(k). The decontamination procedures, equipment, and decontamination solution required for each task are provided in Appendix D.

Re-usable safety gear will be washed with detergent and water prior to re-use or removing from the work zone. Shovels and other hand tools will also be decontaminated with detergent and water, or as directed by the PM. All purge water and decontamination fluids will be handled in collected in 55-gallon drums for sampling and disposal later upon receipt of the analytical results. Safety gear or garb that cannot be decontaminated will be disposed of as an investigative derived waste (IDW) in accordance application local, state, and federal regulations.

11.0 EMERGENCY RESPONSE

The following emergency response information is provided as per 29 CFR 1910.120(j).

11.1 Site Map

Figure 1 provides directions to the nearest hospital. All personnel should call 911 and have an ambulance/emergency medical teams dispatched in the event of an emergency in lieu of trying to drive the nearest hospital.

11.2 Emergency Contacts

A list of contacts and telephone numbers for the applicable offsite emergency responders is provided below. The nature of the Site work and contaminants of concern should be reviewed, and the ability of offsite responders to respond to reasonably anticipated emergencies should be confirmed. If there are any concerns with offsite responsibilities, the appropriate individuals should be contacted directly to clarify their responsibilities.

- Fire Department: 911
- Hospital: 911
- Police Department: 911
- Emergency Medical Services (EMS): 911
- Fire Department: 911
- Client Contact (Steven Morrill) Office: 213-241-4672
- Client Contact (Steven Morrill) Cell: 626-808-3405
- Prime Contractor Project Manager Cell:
- Prime Contractor Project Manager Office:
- Prime Contractor Environmental Heath & Safety Officer Cell:
- Other: Ambulance 911

11.3 Emergency Response Equipment

The following emergency response equipment will be maintained in the project vehicle or at the project Site and shall be readily available to all personnel.

- Field First Aid Kit
- Fire Extinguisher – Type ABC
- Eyewash (Note: Capable of 15 minutes of free-flowing fresh water)
- Other: Half-face Respirator

11.4 Safety Orientation Meeting

All field personnel will attend a safety orientation meeting before beginning fieldwork. The meeting will be conducted by the PM and SSHO. Notes from the meeting will be recorded in the field notebook. Safety meetings will be held daily and if any changes are made to the HASP. New personnel will also be briefed regarding safety procedures

11.5 Communication

The emergency response communication system for the Site will incorporate:

- Verbal
- Cellular telephone and local communication devices
- Hand signals

  Hand gripping throat: Can't breathe

  Grip partner's wrist or both hands around waist: Leave area immediately

  Hands on top of head: Need assistance

  Thumbs up: OK, I am all right, I understand

  Thumbs down: No, negative

11.6 Emergency Response Procedures

In the event that an onsite emergency develops, notifications listed in Section 11.2 are to be followed immediately. Work will not continue after the emergency. The PM and/or SSHO will accompany the individual if he leaves the Site. The injury is to a subcontractor, the subcontractor's office will be notified by the PM or SSHO if other subcontractor personnel are not able to provide this notification.

Further general procedures are provided below:

- The PM, SSHO and ERC should be immediately notified via the onsite communication system. The ERC assumes control of the emergency response.
- The PM notifies the client contact of the emergency. The PM shall then contact the Environmental Health and Safety Officer.
- If applicable, the ERC shall notify offsite emergency responders (e.g. fire department, hospital, police department, etc.) and shall inform the response team as to the nature and location of the emergency onsite.
- If applicable, the ERC or PM evacuates the Site. Site workers should move to a predetermined evacuation point.
- For small fires, flames should be extinguished using the fire extinguisher. Large fires should be handled by the local fire department.
- In an unknown situation or if responding to toxic gas emergencies, appropriate PPE, including SCBAs, should be donned.
- If chemicals are accidentally spilled or splashed into eyes or on skin, use the eyewash and/or shower.

- If a worker is injured, first aid shall be administered by a certified first aid provider.
- Before continuing Site operations after an emergency involving toxic gases, the onsite field supervisor shall don a SCBA and utilize appropriate air monitoring equipment to verify that the Site is safe.
- An injured worker shall be decontaminated appropriately.
- After the response, the onsite field supervisor shall follow-up with the required company reporting procedures, including the Incident Response Form (Appendix E).

11.7 Personnel Conduct

All personnel will conduct themselves in a manner that will allow the most effective completion of the project goals. No actions either onsite or offsite will interfere with completion of the project. Therefore, it is the responsibility of all personal to ensure that they are prepared to perform their assigned tasks when they arrive at the Site. The SSHO will assess during the safety meeting whether all personal are prepared to work.

Activities that might reduce effectiveness include:

- Consumption of alcohol, illegal or other controlled substances
- Use of certain prescription or over-the-counter medicines
- Altered mental state
- Personal injury reducing physical capabilities
- Fatigue

Any individual found to be unfit for work will be prevented from entering the work area until they are found to be fit to return. The SSHO will record the incident and notify the PM. The subcontractor providing the person will be notified and allowed to replace the individual.

12.0 CONFINED SPACE ENTRY

The tasks for the anticipated projects do not involve confined space entry. If confined space entry is required in the future, then a specific health and safety procedure will be developed and employees will be properly trained for confined space entries.

13.0 SPILL CONTAINMENT

The tasks for this project involve the use of powered equipment. In the event a fuel spill occurs, the work area will have granular absorbent material to place over the spill and absorbent pads or booms will be placed downgrade from the spill to assist in collection. The used cleanup materials will be containerized and properly disposed according to local, state, and federal guidelines.

14.0 HAZARD COMMUNICATION

The following procedures shall be followed for all chemicals expected to be used on this project (e.g., decontamination solution, sample preservatives, etc.):

- Chemical containers (primary and secondary) shall be correctly and clearly labeled with the name of the chemical and the hazard(s) associated with that chemical (e.g. flammable, corrosive, etc.).
- Workers have received training on the hazards of these chemicals.
- Material Safety Data Sheets (MSDS) for chemicals and products used on the project will be kept onsite and will be reviewed by employees using the products. The type of chemicals used is generally limited to products such as decontamination products and pH buffers.
- If new chemicals are used, the MSDS is added to the file, and the employees will be trained on the chemical's characteristics.

15.0 DOCUMENTATION

Records documenting the Site safety program will be maintained. This will include information about medical clearance for each individual working at the Site, training, safety briefing, distribution of the HASP, incidents, safety completion report, and posting requirements. Records will be maintained in a health and safety logbook and appropriate health and safety forms.

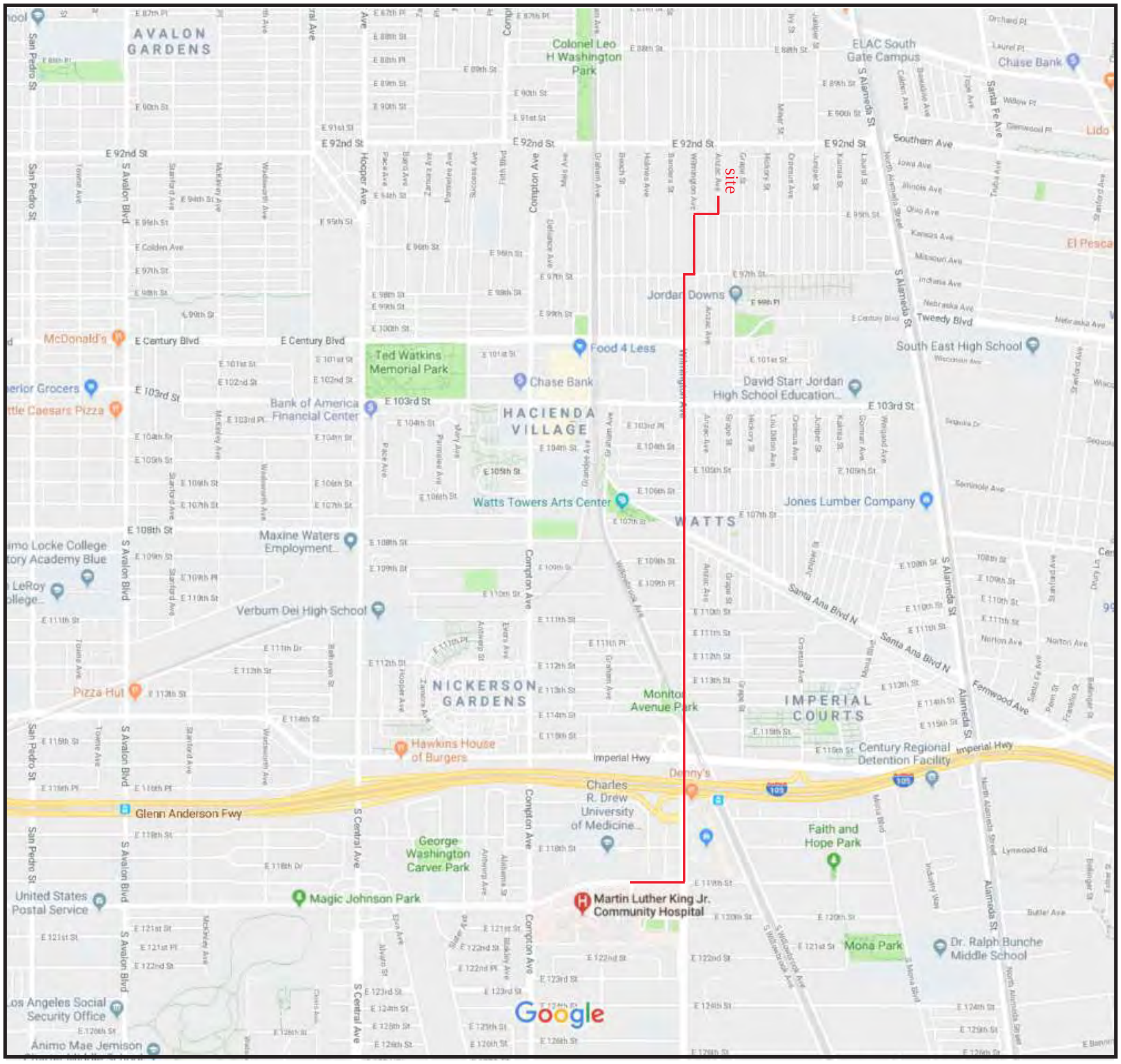
Records will be kept consistent with all applicable CAL/OSHA regulations. The following records will be maintained at the offices of each subcontractor:

- Hazard communication training
- Respiratory protection training
- Respiratory assignment
- Medical surveillance
- Safety inspection records
- Personal monitoring records
- Accident logs
- CAL/OSHA logs (200 form or equivalent)

The PM will maintain the following records at the Site.

- Persons onsite, their affiliation, and purpose
- Telephone conversations
- Excavation activities
- Work progress
- Site safety inspection records
- Tailgate safety meeting forms
- Worker illness/injury reports
- Copies of the RAW and this HASP
- Daily work activities and conditions
- Accident log

The subcontractors will maintain a log of excavation volumes and worker activities.



Base Map: Google Maps

NORTH

SCALE (miles)

0 0.2 0.4

PINNACLE
ENVIRONMENTAL TECHNOLOGIES
#2 Santa Maria, Foothill Ranch, CA 92610
Tel: (949) 470-3691 • Fax: (949) 595-0459

92nd St. Elementary School 9211 Grape Street Los Angeles, CA	Hospital Location Map	Figure 1

APPENDIX A

TASK SPECIFIC SAFE WORK PRACTICE FOR EXCAVATION TASKS

HAZARD IDENTIFICATION

Hazards generally encountered during excavation tasks include the following:

- Exposure to exhaust while advancing the excavations and loading soil.
- Back strain due to lifting tools and other equipment.
- Slipping on wet or muddy surfaces created by spilled or released water.
- Electrical hazards associated with use of electrical equipment around water or wet surfaces.
- Possible fluids splashing in eyes during decontamination tasks.
- Noise hazards from created from sawing or excavation equipment.
- Possible burst hydraulic hoses during excavation and loading.

HAZARD PREVENTION

- Workings will station themselves upwind or at a distance to limit exposure to exhaust fumes.
- Back strain will be avoided by employing proper lifting techniques. Equipment will only be lifted by the legs, preferably using two or three personnel for heavier or larger equipment.
- Slipping can be prevented by cleaning spilled or released water promptly and placing any used absorbent in drums for removal. Also, boots with good treads will be worn. All personnel will be alert of where others are walking to decrease the chance of slipping.
- Ground fault interrupters will be used in the absence of properly grounded circuitry, or when lights are used around wet conditions.
- Electrical extension cords should be protected or guarded from damage (i.e., cuts from other machinery) and be maintained in good condition.
- Eye protection should be worn as appropriate to prevent water from splashing into eyes.
- Hardhats will be worn when work is being performed with overhead equipment.
- Hearing protection will be worn when working near the drilling equipment for extended periods of time.
- Except of person operating equipment, other personnel will not be present immediately near pressurized hoses while the hydraulic equipment is in operation.

APPENDIX B

TASK SPECIFIC SAFE WORK PRACTICE FOR BIOLOGICAL HAZARDS

GENERAL BIOLOGICAL HAZARDS

SNAKES

Normally snakes avoid people and areas where people are working. However, when encountered, snakes may become aggressive. Remain alert for snakes and avoid areas that would make a good habitat for snakes. While not all snakes are poisonous, if bitten by a snake, seek immediate medical attention. Do not try to capture or kill the snake. It could may the situation worse or get other personnel bitten. There are three types of venomous snakes in Alabama - rattlesnakes, moccasins, and coral snakes. Snake venom has a local effect, causing swelling, fluid retention, and bruising. It affects the blood by causing problems with clotting, and it has systemic effects, causing nausea, vomiting, seizures, and unconsciousness.

Workers on this project are not expected to encounter snakes in the expected work areas.

OTHER ANIMALS

Normally wildlife avoids people and areas where activities are ongoing. Small animals, such as raccoons, infected with rabies or when cornered, may become aggressive. When working, remain alert for likely locations that animals inhabit. Avoid nests, dens, and holes in the ground that may be an animal's home. If bitten by an animal, seek medical attention immediately. Do not try to capture the animal; you may only get other personnel bitten.

TICK BITES

The Center for Disease Control (CDC) has noted the increase of Lyme Disease and Rocky Mountain Spotted Fever (RMSF), which are caused by bites from infected ticks that live in or near wooded areas, tall grass, or brush. Ticks are small, ranging in size of a comma up to about one quarter inch. They are sometimes difficult to see. The tick season extends from spring through summer. When embedded in the skin, they may look like a freckle.

Lyme Disease - Lyme Disease has occurred in 43 states, with the heaviest concentrations in the Northeast (Connecticut, Massachusetts, New Jersey, New York, Pennsylvania), the upper Midwest (Minnesota, Wisconsin), and along the Northern California coast. It is caused by deer ticks and the lone star ticks which have become infected with spirochetes. Male deer ticks are smaller, and completely black. Lone star ticks are smaller and chestnut brown in color.

Rocky Mountain Spotted Fever - Rocky Mountain Spotted Fever (RMSF) has occurred in 36 states, with the heaviest concentrations in Oklahoma, North Carolina, South Carolina, and Virginia. It is caused by Rocky Mountain Wood ticks, and dog ticks which have become infected with rickettsia. Both are black in color.

Symptoms - The first symptoms of either disease are flu-like chills, fever, headache, dizziness, fatigue, stiff neck, and bone pain. If immediately treated by a physician, most individuals recover fully in a short period. If not treated, more serious symptoms can occur.

Treatment - If you believe you have been bitten by a tick, or if any of the signs or symptoms noted above appears, contact the Project Manager, who will authorize you to visit a physician for an examination or possible treatment.

Protective Measures - Standard field gear (work boots, socks and work uniform) provides good protection against tick bites, particularly if the openings are taped. However, when working in the field, the following precautions should be taken when working in areas that might be infested with ticks:

- When in the field, check yourself often for ticks, particularly on your lower leg areas covered with hair.
- Spray outer clothing, particularly your pant legs and socks, BUT NOT YOUR SKIN, with an insect repellant that contains permethrin.
- When walking in wooded areas, avoid contact with bushes, tall grass, or brush as much as possible.
- If you find a tick, remove it by pulling on it gently. If the tick resists, cover the tick with salad oil for about 15 minutes to asphyxiate it, then remove it with tweezers.
- Do not use matches, a lit cigarette, nail polish, or any other type of chemical to "coax" the tick out.
- Be sure to remove all parts of the tick's body, and disinfect the area with alcohol or a similar antiseptic after removal.
- For several days to several weeks after removal of the tick, look for the onset of the signs of Lyme disease, such as a rash that looks like a bulls-eye or an expanding red circle surrounding a light area, frequently seen with a small welt in the center.
- Also, look for the onset of RMSF, such as inflammation that is visible in the form of a rash comprising many red spots under the skin, which appears 3 to 10 days after the tick bite.

While tick bites related to relapsing fever have been reported in Los Angeles County, they have only occurred in the San Gabriel Mountains. Encounters with ticks are not expected in the urban work area.

BEES, HORNETS, AND WASPS

Contact with stinging insects like bees, hornets, and wasps may result in Site personnel experiencing adverse health effects that range from mild discomfort to life threatening. Therefore, stinging insects present a serious hazard to Site personnel, and extreme caution must be exercised whenever Site and weather conditions increase the risk of encountering stinging insects.

Some of the factors related to stinging insects that increase the degree of risk associated with accidental contact are as follows:

- The nests of the insects are frequently found in remote wooded, grassy areas where many waste sites are located.
- The nests can be situated in trees, rocks, and bushes or in the ground, and are usually difficult to see.
- Accidental contact with these insects is highly probable, especially during warm weather conditions when insects are most active. If a Site worker accidentally disturbs a nest, the worker may be inflicted with multiple stings, causing extreme pain and swelling which can leave the worker incapacitated and in need of medical attention.
- Some people are hypersensitive to the toxins injected by a sting, and when stung, experience a violent and immediate allergic reaction resulting in a life- threatening condition known as anaphylactic shock.
- Anaphylactic shock manifests itself very rapidly and is characterized by extreme swelling of the body, eyes, face, mouth, and respiratory passages.
- The hypersensitivity needed to cause anaphylactic shock, can in some people accumulate over time and exposure, therefore, even if someone has been stung previously, and has not experienced an allergic reaction, there is no guarantee they will not have an allergic reaction upon receipt of another sting.

Protective Measures

With these things in mind and with the high probability of contact with stinging insects, all Site personnel will comply with the following safe work practices:

- If a worker knows that he is hypersensitive to bees, wasp or hornet stings, they must inform the PM of this condition prior to participation to Site activities.
- All Site personnel will be watchful for the presence of stinging insects in their nests, and will advise the PM or onsite field supervisor if a stinging insect nest or presence of a swarm of bees is located or suspected in the area.
- Any nests located onsite will be flagged off and Site personnel will be notified of its presence.
- If stung, personnel will immediately report the Pm or onsite field supervisor to obtain treatment and he/she will observe them for signs of allergic reaction.

- Site personnel with a known hypersensitivity to stinging insects will keep required emergency medication on or near their person at all times.

BITING INSECTS

Many types of biting insects such as mosquitoes, flies, and fleas may be encountered onsite. The use of insect repellant will be encouraged, if deemed necessary. The biting insects of greatest concern are spiders, especially the black widow and the brown recluse. These spiders are of special concern due to the significant adverse health effects that can be caused by their bite.

Black Widow Spider - The black widow is a coal-black bulbous spider 3⁄4 to 11⁄2 inches in length, with a bright red hourglass on the underside of the abdomen. The black widow is usually found in dark, moist locations, especially under rocks, rotting logs and may even be found in outdoor toilets where they inhabit the underside of the seat. Victims of a black widow bite may exhibit the following signs or symptoms:

- Sensation of pinprick or burning sensation at the time of the bite.
- Appearance of small punctures (but sometimes none are visible)
- After 15 to 60 minutes, intense pain is felt at the Site of the bite which spreads quickly, and is followed by a profuse sweating, ridged abdominal muscles, muscle spasms, breathing difficulties, slurred speech, poor coordination, dilated pupils and generalized swelling of face and extremities.

Brown Recluse and other Recluse Spiders - The brown recluse is brownish to tan in color, rather flat, 1/2 to 5/8 inches long with a dark brown "violin" shape on the underside. It may be found in trees, or in dark locations. Victims of a brown recluse bite may exhibit the following signs or symptoms:

- Blistering at the Site of the bite, followed by a local burning at the Site of the bite 30 to 60 minutes after the bite.
- Formation of a large, red, swollen, postulating lesion with a bulls-eye appearance.
- Systemic affects may include generalized rash, joint pain, chills, fever, nausea, vomiting; and pain may become severe after 8 hours, with the onset of tissue necrosis.

Tegenaria (Hobo/Aggressive House Spider) - The Tegenaria spider is brown without any distinguishing marks. It measures 10-15 mm in diameter including the legs. The Tegenaria is an outdoor spider, referred to as a funnel spider, for the shape of its web.

Victims of the Tegenaria spider may exhibit the following signs or symptoms:

- Sensation or pinprick at the location of the bite.
- Forming of a hard lesion surrounded by a pale halo (similar to a brown recluse bite).
- Ensuing blister will measure two to six inches and take months to heal.
- Bite may leave a permanent scar.

Treatment For Spider Bites - There is not effective first aid for these bites. Except for very young, very old, or very weak victims, these spider bites are not considered to be life threatening. However, medical treatment must be sought to reduce the extent of damage caused by the injected toxins. If either of these spiders are suspected or known to be onsite, the PM or onsite field supervisor will brief the Site personnel as to the identification and avoidance of the spiders. As with stinging insects, Site personnel should report the PM or onsite field supervisor if they locate either of these spiders onsite or notice any type of bite while involved in Site activities.

POISONOUS PLANTS

Poisonous plants are poisonous in different ways and cause symptoms depending if they are touched or consumed. Workers are not expected to consume plants during performance of their duties. Therefore, this procedure only discusses the side effects and first aid treatment of touching poisonous plants. Poison Ivy, Poison Oak, and Poison Sumac are the most common plants that cause a reaction in sensitive people.

Symptoms which occur after exposure to poisonous plants included severe redness and intense burning at the Site of exposure and blisters may occur. Wash the affected area as soon and as thoroughly as possible. You want to remove as much poison residue as possible. Use large quantities of water. Use calamine lotion or a thick paste of baking soda and water on the affected area. You can also soak in a tub with a good quantity of baking soda in the water. A hydrocortisone cream can also help to control the rash and itching. A systemic antihistamine such as Benadryl will help to control the swelling and itching. Do not pop blisters, and try not to scratch. Seek medical attention of the conditions worsen or if other symptoms occur.

Poisonous plants are not expected to be encountered in this urban work environment.

APPENDIX C

DECONTAMINATION PROCEDURES AND EQUIPMENT

Since no highly-impacted soil or water is expected to be produced in the work area, Level D protection will be used within the work area. However, gloves will be worn while working in the area of the excavations. Goggles are recommended while performing excavations tasks.

The following constitute the standard Level D equipment for this project.

1. Coveralls
2. Gloves
3. Boots/shoes, chemical-resistant steel toe and shank
4. Safety glasses or chemical splash goggles
5. Hard hat

Decontamination of personnel will consist of washing hands with detergent and water when leaving the work area. Hand tools will be decontaminated in a series of tubs. One tub will be filled with potable water and detergent for washing the tools and rod. The two remaining tubs will be filled with potable water for rinsing equipment. The equipment will be air-dried.

Excavation equipment will be cleaned of accumulated soil prior to leaving the Site. This will include scraping of loose material and washing areas if deemed necessary by the PM.

APPENDIX C

Quality Assurance Project Plan

QUALITY ASSURANCE PROJECT PLAN
for a
REMOVAL ACTION WORKPLAN

92nd Street Elementary School
9211 South Grape Street
Los Angeles, California

June 28, 2019

Prepared for:

Los Angeles Unified School District

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1.0 PURPOSE OF THIS DOCUMENT

The purpose of this Quality Assurance Project Plan (QAPP) is to describe the procedures and methodologies used to generate data of known and suitable quality. The data generated will allow a trustworthy assessment to be performed of the progress of the remedial actions taken at the site. These remedial actions are described in the Removal Action Workplan (RAW) for shallow soil at the 92nd Street Elementary School, of which this QAPP is a part.

2.0 SITE DESCRIPTION

There are 19 primary structures on the school campus. Twelve of these are permanent structures (Figure 2). These include six classroom buildings, an administration building at the northeast corner of the campus, and the West Building located at the northwest corner of the campus. The West Building is the largest and oldest structure at the school. It was built in the early 1930s and is the oldest structure on the campus. Five of the six permanent classroom buildings are single-story structures. A two-story classroom building is located on the east side of the school, immediately north of a parking lot at the center of campus.

A single structure incorporating the cafeteria/kitchen and multi-purpose room (MPR) is located south of the center parking lot. A lunch pavilion is located immediately west of the cafeteria/kitchen/MPR. A small storage building is located on the west side of the campus, west of the lunch pavilion. Power equipment and a small volume of gasoline is kept in the storage building.

There are seven temporary structures on the campus (Figure 2). Five of these are located on the west side of campus, west of the cafeteria/kitchen/MPR. Three of these structures are classrooms, one structure is an attached pair of rest rooms, and the fifth structure is a large storage bin. The two other temporary structures are two small bungalows adjacent to the West Building on the north side of campus.

The West Building and two smaller adjacent temporary buildings are not included within the project area. The project area was determined by LAUSD construction project staff and OEHS based on their plans to modernize the existing cafeteria/kitchen/MPR, lunch pavilion, and numerous classroom structures with new buildings.

A paved playground for the students is located on the southern third of the school campus. Playground equipment occupies the northeast corner of the playground. Basketball courts are located at the southeast corner of the playground and a set of multipurpose baseball/kickball fields is located in the center and west portions of the playground. A small oval track constructed using a thin pavement of rubberized asphalt on the asphalt pavement is located within the area occupied by the ball fields.

3.0 SCOPE OF WORK

The scope of work for this project consists of the excavation and offsite disposal of shallow soils impacted by arsenic and lead. These soils will be produced at three locations at the campus, one of which is substantially larger than the other two.

4.0 ORGANIZATION AND RESPONSIBILITIES

All onsite personnel will have a role in implementing the QAPP. The Project Manager (PM) will have the primary responsibility for organizing tasks related to quality assurance. The PM's responsibility include:

- Informing field personnel regarding their role in providing quality assurance
- Notifying the laboratory regarding project data quality goals
- Checking chain-of-custody records and field logs
- Reviewing the field and laboratory data to determine if data quality objectives were met.

The prime contractor responsible for excavation tasks will designate a Field Manager (FM) to communicate information regarding the QAPP. The responsibility of the prime contractor's FM will include:

- Reviewing and implementing roles described in the QAPP
- Reviewing field logs during injection to allow verification of injected product volumes to proper locations
- Notifying the PM regarding any variances from procedures in the QAPP

Soil samples will be collected from the excavations to confirm that the remaining soil has arsenic and lead concentrations below Site Specific Cleanup Goals (SSCGs). The samples will be analyzed on-site for arsenic and lead (where applicable) using a field x-ray fluorescence (XRF) instrument. Samples will also be collected and transported to a state-certified laboratory for confirmation of the field results. The off-site laboratory confirmation analyses will be conducted for arsenic and lead (where applicable) using USEPA Method 6020. The field XRF will have a reporting limit of 5 milligrams per kilogram (mg/kg). A reporting limit of 1 mg/kg for arsenic will be required for the off-site confirmation samples. A reporting limit of 5 mg/kg for lead will be required for the off-site confirmation samples.

The prime contractor and subcontractor field personnel also have a role in maintaining quality. They include:

- Reviewing and implementing roles described in the QAPP
- Maintaining proper field documentation
- Completing field logs during injection
- Maintaining control of samples until they are properly delivered and released
- Notifying the PM regarding any variances from procedures in the QAPP

5.0 DATA QUALITY OBJECTIVES

The Department of Toxic Substances Control (DTSC) requires that the Los Angeles Unified School District (LAUSD) and their contractors incorporate specified protocols to document the quality of the data collected during the implementation of the RAW. While DTSC is not overseeing this mitigation project, LAUSD is expecting their contractors to perform their tasks in accordance with DTSC requirements. Therefore, confirmation soil samples will be collected in compliance with U.S. Environmental Protection Agency (EPA) SW-846. Analyses will be performed by laboratories that are certified in the State of California for the analyses requested. The laboratory detection limits are included in Table 1. The use of these Data Quality Objectives (DQOs) for school study sites, including this Site, is intended to produce data that are suitable for use in a final Removal Action Completion Report (RACR). In the case of this project, the confirmation data will be generated to justify the completion of excavation activities in both a vertical and horizontal direction, and should conform with analytical data generated during the PEA-E.

The data generated for the RACR and other reports should be of sufficient quantity and quality to assess changes in the concentrations of chemicals of concern in the areas sampled. Precision, accuracy, completeness, representativeness and comparability are used to consider data quality.

Precision is the reproducibility of measurements under a given set of conditions. For larger data sets, precision may be expressed as the variability of a group of measurements compared to their average value. Variability may be attributable to changes in field practices or chemical analyses. Precision is determined by calculating a Relative Percentage Difference (RPD) of laboratory duplicates, matrix spike/matrix spike duplicate pairs, surrogate spikes and field duplicate samples:

$$RPD = 100 \times (X_1 - X_2)/((X_1 + X_2/2) \qquad \textit{Equation 1}$$

Where: RPD = Relative Percent Difference
X_1 = the larger of two observed values
X_2 = the smaller of two observed values

Accuracy is the degree of agreement of a measured value with a true or reference value. Accuracy can be measured using percent recovery data in the laboratory using spiked concentrations. Accuracy is a statistical measurement of correctness and includes components of random error and systematic error. It reflects the total error associated with a measurement. A measurement is accurate when the value reported does not differ within acceptable limits from the true value or the known concentration of a spike or standard.

The accuracy of laboratory analyses is assessed by laboratory control samples, surrogate standards, matrix spikes, and initial and continuing calibrations of instruments. Laboratory accuracy is expressed as the percent recovery (%R). Accuracy limits are statistically generated by the laboratory and are required by specified EPA methods. Surrogate percent recovery and control limits will be provided in laboratory reports in the RACR and other reports. If the percent recovery is determined to be outside of acceptance criteria, data will be qualified as described in the applicable validation procedure.

The calculation of percent recovery is provided below:

$$\%R = (C_1 - C_0)/C_t * 100 \qquad \textit{Equation 2}$$

Where:
%R = percent recovery
C_1 = measured concentration, spiked sample aliquot
C_0 = measured concentration, unspiked sample aliquot
C_t = concentration of spike added

Completeness is the percent of measurements made which are judged to be valid. Completeness can be measured by dividing the number of samples that are judged to be valid by the number of total samples.

For all confirmation sampling, the goal is for 100 percent of the measurements to be valid and acceptable.

Comparability is a qualitative parameter that evaluates the confidence with which one data set can be compared to another. Comparability can be enhanced by using standard analytical methods performed by the same certified laboratory.

Representativeness is the degree to which the sample data represent the characteristics of a population. Representativeness is a qualitative parameter that addresses the design of a sampling program. An example of representativeness is to evaluate if the number and locations of samples are sufficient for the purposes of an investigation/confirmation. In the case of this project, a sufficient number of soil analyses from the walls and floors of the three excavations to confirm that the impacted material has been removed.

Representativeness is also ensured through the following practices:

- Selecting the necessary number of sample, sample locations and sampling procedures that will depict as accurately and precisely as possible the matrix and conditions measured,
- Developing protocols for sample storage, preservation and transport that preserve the representativeness of the collected samples,
- Using documentation methods to ensure that protocols have been followed and that the samples are properly identified to maintain integrity and traceability, and
- Using standard, well documented analytical procedures to ensure consistent, representative data.

Since none of the above practices provide quantification of representativeness, quality control (QC) samples will be collected to assess factors that may be impacting representativeness and sample integrity. The following QC samples will be collected:

- Field blank - One field blank will be collected each sampling day to assess the contribution of contamination in samples through ambient conditions.
- Field duplicates - One field duplicate will be collected for approximately 10% of soil samples collected.
- Field equipment blank - One equipment blank from the hand auger or other field sampling equipment will be collected each day of sampling.

6.0 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES AND PROCEDURES

The designated PM will coordinate with the analytical laboratory to provide empty sample bottles coolers, icepacks, chain-of-custody forms, and custody seals. Upon completion of sampling, the chain-of-custody will be filled out and shipped with the samples to the laboratory. An important consideration for the collection of environmental data is the ability to demonstrate that the analytical samples have been obtained from predetermined locations and that they have reached the laboratory without alteration. Evidence of collection, shipment, laboratory receipt, and laboratory custody until disposal must be documented to accomplish this goal. Documentation will be accomplished through a chain-of-custody record that records each sample and the names of the individuals responsible for sample collection, transport, and receipt. A sample is considered in custody if it is:

- in a person’s actual possession,
- in view after being in physical possession,
- sealed so that no one can tamper with it after having been in physical custody; or is
- in a secured area, restricted to authorized personnel.

The recording of sample custody will be initiated by field personnel upon collection of samples. The samples will be packaged to prevent breakage or leakage during transport, and will be taken to the laboratory by sampling personnel the day of collection or the following morning.

6.1 Sample Identification

A discrete sample identification number will be assigned to each sample. These discrete sample numbers will be placed on each sample container and will be recorded, along with other pertinent data in a field notebook dedicated to the project. If blind samples are used, the sample location will be recorded in the field notebook along with a note indicating that the sample was submitted to the laboratory as a blind sample. The blind sample will be given a false identification number, and will not be identified as a blind duplicate. The sample identification label will designate the sample location ("PB-11C" for a specific confirmation soil sample in the excavation area at initial soil boring PB-11) and the date it was collected. For example, the fifteenth confirmation sample collected on August 2, 2019 from the excavation surrounding boring PB-11 would be identified as follows:

PB-11C15 8-2-19

Additional designations may be provided for samples collected from the wall or floor of the excavation, if necessary.

6.2 QA/QC Samples

The following QA/QC samples will be collected:

- Field blank - One field blank will be collected each sampling day to assess the contribution of contamination in samples through ambient conditions.
- Equipment Rinseate Blank (Equipment Blank) - One equipment blank will be collected each sampling day.
- Sample Duplicates - One duplicate will be collected for approximately 10% of confirmation soil samples collected. Daily information regarding sample collection will be recorded in field logbooks. Sample media (soil), sample identification numbers, and collection times will be recorded on chain-of-custody forms and/or in the field logbook.

Equipment blank samples will be collected daily for each type of reusable sampling equipment and analyzed for the same primary parameters (arsenic and lead) as the soil samples being analyzed on that day. In this case, the equipment blank will be collected from dedicated sampling equipment. To collect an equipment blank sample, distilled or deionized water will be carefully poured over or through the recently cleaned equipment, and collected directly into an appropriate sample container. Equipment blank samples will be stored and processed in the same manner as all other samples.

Duplicate soil samples will be collected and analyzed at a frequency of approximately 10% of the primary samples. The duplicate sample will be analyzed for the same primary parameters as the primary sample (arsenic and lead). Duplicate samples will be collected simultaneously with a standard sample from the same source under the same conditions. These samples will be taken through the same steps of sampling and analytical procedures. The duplicate sample will be submitted as a duplicate to the laboratory. The purpose of the duplicate sample is to assess laboratory performance through comparison of results with the original sample. Samples will be transferred under chain of custody control and will be subject to the laboratory's conventional QA/QC analytical procedures, including method blanks, laboratory control samples, and sample duplicate analyses.

6.3 Laboratory QA/QC Procedures

Laboratory QA/QC procedures will include the following:

- Laboratory analyses will be performed within the required holding time for all samples;
- Appropriate minimum reporting limits (RLs) will be used for each analysis;
- A state-certified testing laboratory will conduct the analysis;
- The signed laboratory report will include the following QA/QC data:
  - Method blank data;
  - Collection date, surrogate recovery, matrix spike, matrix spike duplicate, and calibration data;
  - The sample designation or locations, date of sample, type of sample, analysis, laboratory analytical method employed, sample volume, and the minimum detection limits (MDLs). Analytical data will be validated according to a Level I data review and the results of the validation will be included in each report.

7.0 UTILITY CLEARANCE

Prior to performing the field work at the Site, the onsite and offsite work areas will be marked for subsurface utilities in white spray paint, as required by law, and Underground Service Alert (USA) will be contacted at least 48 hours in advance of performing the field work. USA will mark and identify all the known locations of subsurface utilities in the surrounding public rights-of-way.

Following the USA marking, a private utility locating firm will be subcontracted to verify utility locations. The final outline for each excavation will be marked after completing both utility-locating efforts. Pictures of each excavation outline will be taken to verify that a satisfactory distance is maintained between the nearest utility and the injection point.

8.0 CONFIRMATION SAMPLING AND ANALYSIS

Confirmation samples will be analyzed in the field for the chemicals of concern (arsenic and lead) to confirm that the excavations have reached soils with concentrations of these metals that are below SSCGs. Calibration of the field equipment is necessary to maintain high quality analytical results.

8.1 Field XRF Analytical Procedures and Calibration

All laboratory analyses will be performed according to the established SW-846 and U.S. EPA Methods. The field instrument selected for soil screening must be capable of providing semi-quanitative analyses of the chemicals of concern (arsenic and lead) with a limit of detection (LOD) in conformance with EPA Method 6200 and the SSCGs.

Calibration refers to the checking of physical measurements of both field and laboratory instruments against accepted standards. It also refers to determining the response function for an analytical instrument, which is the measured net signal as a function of the given analyte concentration. These determinations have a significant impact on data quality and will be performed regularly. In addition, preventative maintenance is important to the efficient collection of data. Proper calibration policies and procedures will apply to all test and measuring equipment. For preventative maintenance purposes, critical spare parts will be obtained from the instrument manufacturer.

All field and laboratory instruments will be calibrated according to manufacturers' specifications. All laboratory instruments will be calibrated in accordance with established Standard Operating Procedures. Calibration will be performed prior to initial use and after periods of non-use. A record of calibration will be made in the field logbook each time a field instrument is calibrated.

The calibration procedures for all offsite analyses will follow the established SW-846 and U.S. EPA guidelines for the specific method. Certified standards will be used for all calibrations and calibration check measurements. The frequency and acceptance criteria for all offsite analyses will follow the guidelines outlined below.

The initial calibration will be performed by an experienced third party. During initial calibration, a minimum of one blank and three calibration standards that bracket the validated testing range will be analyzed singularly on one day. The concentration of the calibration standards will be prepared in the matrix produced from all the preparation steps of the method, taking into account any steps that are part of the method. Concentrations in the matrix will correspond to those in the field matrix as if the method preparation steps had been performed.

In addition to the initial calibration standards, the analysis of a calibration check standard is required prior to analysis of any samples. If the results of the calibration check standard are not acceptable, immediate re-analysis of the calibration check standard will be performed. If the results of the re-analysis still exceed the limits of acceptability, the system will be considered to have failed calibration. Sample analysis will be halted and will not resume until successful completion of initial calibration. Corrective actions taken to restore initial calibration will be documented in the field notebook.

Calibration standards will be analyzed each day analyses are performed to verify that instrument response has not changed from previous calibration. Each day before sample analysis, a mid-range concentration standard will be analyzed. The response must fall within the required percentage or two standard deviations of the mean response for the same concentration, as determined from prior initial/daily calibrations (see below). If the response fails this test, the daily standard will be re-analyzed. If the response from the second analysis fails this range, initial calibration will be performed before analyzing samples.

The field XRF instrument is expected to exhibit a linear response near the reporting limit, where field results are expected to be observed. For instruments with non-linear or non-zero-intercept calibration curves, daily calibration will consist of analysis of the low, middle, and high standards at the beginning of the day. When sample analyses are completed at the end of the day, the low and high standards will be analyzed. Instrument responses for each concentration determination must fall within two standard deviations of the mean response for the appropriate standard. For calibrations fitted by a quadratic equation, a minimum of four standards over the validated range are required, along with the highest level standard analyzed at the end of the day. For all other equations, one more standard than needed to meet the degrees of freedom for any lack-of-fit is required, as a minimum.

8.2 Bench Laboratory Procedures and Calibration

A number of bench laboratory samples will be analyzed that is equivalent to 10 percent of the total number of the field XRF analyses.

In addition to the analysis of QC samples described above, the offsite laboratories will perform, at a minimum, additional standard internal QC checks as follows:

- use of standard analytical reference materials for traceability of independent stock solutions prepared for calibration stocks, control spike stocks, and reference stock solutions;

- verification of initial calibration curves with independent reference stock solutions;
- verification of initial calibration curves with daily calibration standards according to;
- verification of continued calibration control by analysis of calibration standards to document calibration drift;
- analysis of control spikes to document method performance and control with respect to recent performance.

An attempt will be made to analyze all samples within the calibrated range of the analytical method. Dilution of a sample extract with extracting solvent, or of the original sample matrix with distilled/de-ionized water, will be performed if the concentration of an analyte is greater than the calibrated range of the method. This is not expected to be observed at this location.

Laboratory control samples will be used by the laboratory to assess analytical performance under a given set of standard conditions. These samples will be specifically prepared to contain some of the analytes of interest at known concentrations. The samples will be prepared independently of the calibration standards. Types of laboratory control samples that may be used are laboratory duplicates, matrix spikes, matrix spike duplicates, and surrogate spikes. The matrix spike/matrix spike duplicate samples will be used to evaluate precision according to Equation 1 in Section 4. Analysis of laboratory control samples will be used to estimate the analytical bias and accuracy by comparing measured results obtained during analysis to theoretical concentrations. This comparison will be measured using Equation 2 as presented in Section 4. The accepted range of RPD values for *matrix spike/matrix spike duplicate* samples for each laboratory analysis will be in accordance with the Methods presented in Appendix B. Stock solutions used to spike QC samples will be prepared independently of stocks used for calibration as required by appropriate EPA methods. Validation of spiked solutions will be performed on a regular basis before the solution is used.

8.3 Data Reduction and Validation

This subsection describes procedures for reducing, validating, and reporting data. All validated analytical data generated within the off-site laboratories will be extensively checked for accuracy and completeness by laboratory and project personnel. Records will be kept throughout the analytical process, during data generation, and during reporting so that adequate documentation to support all measurements is available. Recordkeeping, data reduction, validation, and reporting procedures are discussed in this section.

Data reduction will follow the requirements contained in the SW-846 and U.S. EPA analytical methods cited previously. Reduction involves the reformatting of data to present the desired end-product, *i.e.*, the concentrations of the contaminants. Reformatting will involve the process of performing calculations on the raw data and presenting all values in appropriate units. The information generated by the data reduction step will be used in the interpretation of the data qualifiers.

The responsibility for data acquisition and reduction of raw data resides with the individuals who perform the analysis. Raw data for the quantitative VOC analysis procedures used during this project will consist of peak areas for surrogates, standards, and target compounds. Analytical results will be reduced to concentration units appropriate for the medium being analyzed, i.e. milligrams per kilogram (mg/kg) for soil samples.

Table 1 – List of Compounds for Analyses

Parameter	LCS% Recovery Limits	Laboratory Replicates (RPD)	Matrix Spikes % Recoveries	Matrix Spikes Duplicates (RPD)	Reporting Limits (μg/L)
Arsenic	70-130%	40%	70-130%	40%	1 μg/L
Lead	85-115%	20%	70-130%	20%	5 μg/L

Data validation involves a review of the QC data and the raw data in order to identify any qualitative, unreliable, or invalid measurements. As a result, it will be possible to determine which samples, if any, are related to out-of-control QC samples. Laboratory data will be screened for inclusion of and frequency of the necessary QC supporting information, such as detection limit verification, initial calibration, continuing calibration, duplicates, matrix spikes, surrogate spikes, and the method and preparation blanks. QC supporting information will be screened to determine whether any datum is outside established control limits. If out-of-control data are discovered, appropriate corrective action will be determined by the lab based upon QC criteria for precision, accuracy, and completeness. Any out-of-control data without appropriate corrective action will be cause to qualify the affected measurement data.

The generated data will receive Level II data validation. For Level II field screening data quality, a data "package" including the results from sample blanks, method blanks, and supporting calibration information, will be recorded in a logbook maintained by the lab. The extent of contamination and the achievement of detection limits can be determined from this information. The sample results and QC parameters will be routinely evaluated by site personnel, and 10% of the analytical raw data results will be reviewed by the lab director to verify sample identity, instrument calibration, quantification limits, numerical computation, accuracy of transcriptions, and calculations.

At a minimum, the following data validation procedures will be followed. Each data package will be reviewed and the data validated prior to release. Checklists will be used to demonstrate that the data review was accomplished. The Laboratory Manager or a designee will perform the data review and validation.

The data review will include, but not be limited to, the following subjects:

- Completeness of laboratory data
- Evaluation of data with respect to reporting limits
- Evaluation of data with respect to control limits
- Review of holding time data
- Review of sample handling
- Correlation of laboratory data from related laboratory tests
- Comparison of the quality of the data generated with DQOs as stated in this document (on a daily basis, during routine analyses, and during internal laboratory audits)
- QC chart review, performed weekly, following receipt of control charts for analyses performed the previous week. Review shall consist of assessing trends, cycles, patterns, etc. This review shall also assess whether control corrective actions have been implemented.

The elements of data validation shall include, but not be limited to, the following items:

- Examination of chain of custody records to assess whether custody was properly maintained
- Comparison of data on instrument printouts with data recorded on worksheets or in notebooks
- Comparison of calibration and analysis dates and assessment of whether the same calibration was used for all samples within a lot
- Examination of chromatographic outputs for manual integrations, and documentation of the reasons for any manual integrations
- Comparison of standard, sample preparation, and injection records with instrument output to assess whether each output is associated with the correct sample
- Examination of calibration requirements, as specified in the methods
- Use of a hand-held calculator to perform all calculations on selected samples to assess the correctness of results
- Examination of all papers and notebooks to ensure that all pages are signed and dated, that all changes are initialed, dated, have sufficient explanation for the change, and that all items are legible.

The laboratory will retain all samples and sample extracts for at least six weeks following the data report submittal.

The results for each analyte in spiked QC samples will be determined using the same acceptable calibration curve that is used for environmental samples in the lot. Values above the practical quantitation limit (PQL) shall be reported as the found value. To correlate with past methods of reporting, raw values that fall below the method detection limit (MDL) will not be reported as "less than" the PQL. Values above the method detection limit (MDL) and less than the PQL will not be flagged with a "J". Results for QC samples will not be corrected, except as described below. Based on previous analyses on samples from the site, no dilutions should be required. Data will be reported using the correct number of significant figures.

Each day of analysis, the analyst will quantify each analyte in the method blank and spiked QC samples. A new lot of samples will not be introduced into the analytical instrument until results for QC samples in the previous lot have been calculated, plotted on control charts as necessary, and the entire analytical method shown to be in control. If time is a constraint, the calculation of associated environmental sample results may be postponed until a later date. The analyst will maintain control charts by the instrument so that the results of QC samples can be hand-plotted, in order to have an early indication of problems.

Data from the method blank will be reported, usually as less than the MDL for each analyte. Any values above the MDL shall be reported as the found value. Corrections to the QC samples, necessitated by background levels in the method blank, will be performed using instrument response values and not the found values calculated from the linear calibration curve. Reported entries will be in terms of concentration. The importance attached to finding measurable concentrations in the method blank is dependent on analyte and method. Identification of measurable concentrations in the method blanks will be reported in writing to the Lab Director for possible corrective actions.

All data will be reported, and numerical results will be reported, in terms of concentration in the environmental sample. Resultant found concentrations will be adjusted for dilution, etc. before being reported, and both the raw data and correction factors (*e.g.*, dilution factor) will be recorded in the data package submitted. Laboratory comments on the usability of the data will also be included.

9.0 DISPOSAL OF RESIDUAL MATERIAL

In the process of completing the remedial excavation work at the site, the prime and their subcontractors may generate different types of potentially contaminated materials that include the following:

- Used personal protective equipment (PPE)
- Disposable sampling equipment
- Decontamination fluids
- Absorbent

The EPA's National Contingency Plan (NCP) requires that management of waste generated during sampling comply with all applicable or relevant and appropriate requirements (ARARs) to the extent practicable. The sampling plan will follow the *Office of Emergency and Remedial Response (OERR) Directive 9345.3-02* (May 1991), which provides the guidance for the management of wastes. In addition, other legal and practical considerations that may affect the handling of wastes will be considered.

- Used PPE and disposable equipment will be double bagged and placed in a municipal refuse dumpster. These wastes are not considered hazardous and can be sent to a municipal landfill. Any PPE and disposable equipment that is to be disposed of which can still be reused will be rendered inoperable before disposal in the refuse dumpster.

- Decontamination water that may be generated while cleaning sampling equipment will consist of deionized/distilled/potable water, residual contaminants, and non-phosphate detergent. If produced, these fluids will be contained in 55-gallon drums for disposal in accordance with the above regulations.

- Spent absorbent that may be generated in the mitigation effort may contain residual contaminants or oils. These wastes will be contained in 55-gallon drums for disposal in accordance with the above regulations.

No soil cuttings are expected to be generated.

Base Map: USGS 7.5 Minute Topo Sheets, Southgate, 2015

NORTH

SCALE (miles)

0 0.5 1.0

PINNACLE
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#2 Santa Maria, Foothill Ranch, CA 92610
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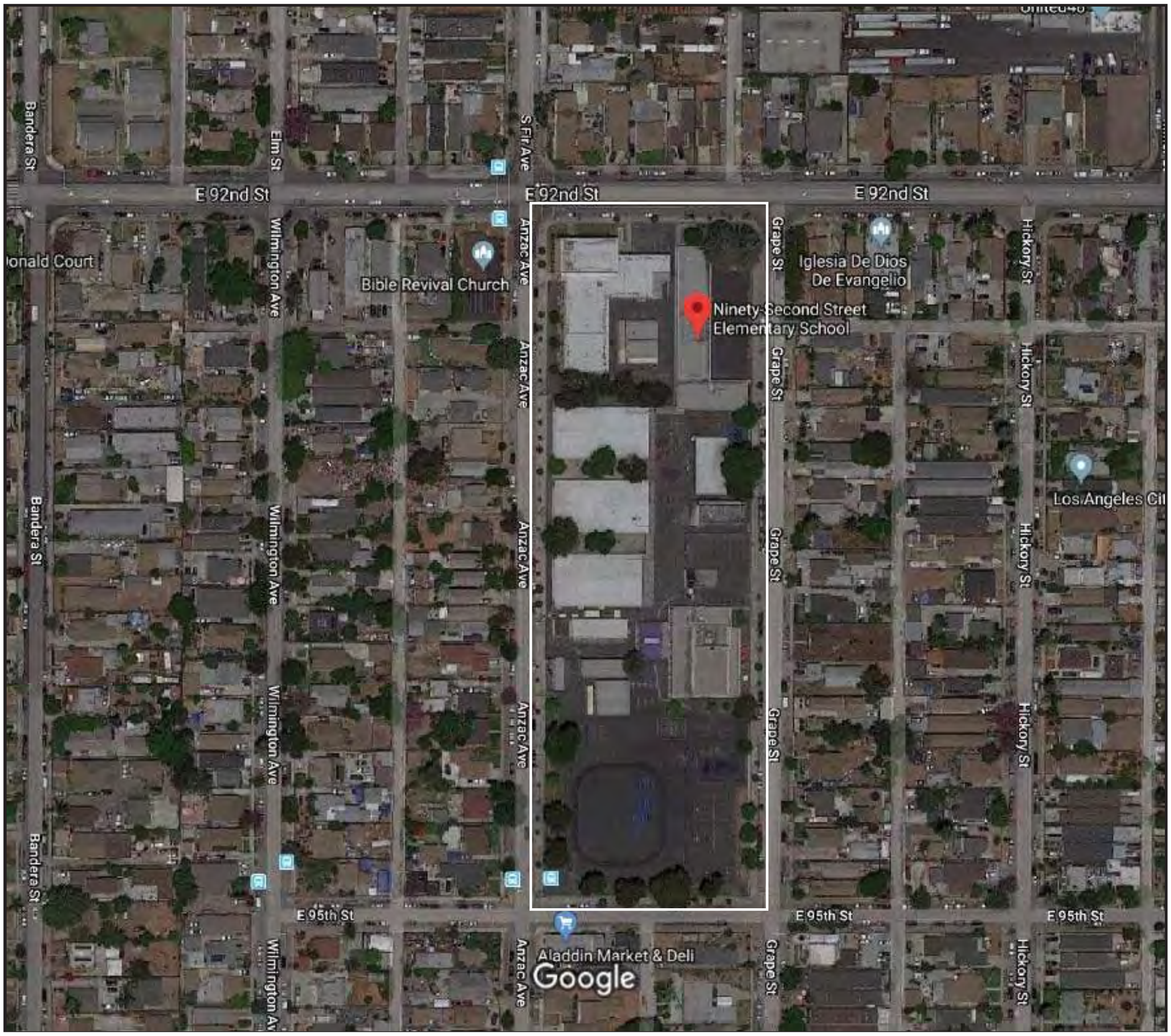
92nd St. Elementary School
9211 Grape Street
Los Angeles, CA

Site Location Map

Figure 1



Ref: Google Maps

NORTH

SCALE (feet)

0 150 300

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92nd St. Elementary School 9211 Grape Street Los Angeles, CA	Site Photograph	Figure 2

APPENDIX D

Transportation Plan

TRANSPORTATION PLAN
for a
REMOVAL ACTION WORKPLAN

92nd Street Elementary School
9211 South Grape Street
Los Angeles, California

June 28, 2019

Prepared for:

Los Angeles Unified School District

333 South Beaudry Avenue, 21st Floor
Los Angeles, California 90017

Prepared by:

PINNACLE
ENVIRONMENTAL TECHNOLOGIES
2 Santa Maria
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TABLES

FIGURES

1.0 PURPOSE OF THIS DOCUMENT

The purpose of this Transportation Plan is to ensure the lead- and arsenic-affected soils excavated from the 92nd Street Elementary School Comprehensive Modernization Project site are properly and legally handled and disposed of at an offsite disposal facility.

2.0 SITE DESCRIPTION

There are 19 primary structures on the school campus, which is located at 9211 Grape Street in Los Angeles (Figure 1). Twelve of these are permanent structures (Figure 2). These include six classroom buildings, an administration building at the northeast corner of the campus, and the West Building located at the northwest corner of the campus. The West Building is the largest and oldest structure at the school. It was built in the early 1930s and is the oldest structure on the campus. Five of the six permanent classroom buildings are single-story structures. A two-story classroom building is located on the east side of the school, immediately north of a parking lot at the center of campus.

A single structure incorporating the cafeteria/kitchen and multi-purpose room (MPR) is located south of the center parking lot. A lunch pavilion is located immediately west of the cafeteria/kitchen/MPR. A small storage building is located on the west side of the campus, west of the lunch pavilion. Power equipment and a small volume of gasoline is kept in the storage building.

There are seven temporary structures on the campus (Figure 2). Five of these are located on the west side of campus, west of the cafeteria/kitchen/MPR. Three of these structures are classrooms, one structure is an attached pair of rest rooms, and the fifth structure is a large storage bin. The two other temporary structures are two small bungalows adjacent to the West Building on the north side of campus.

The West Building and two smaller adjacent temporary buildings are not included within the project area. The project area was determined by LAUSD construction project staff and OEHS based on their plans to modernize the existing cafeteria/kitchen/MPR, lunch pavilion, and numerous classroom structures with new buildings.

A paved playground for the students is located on the southern third of the school campus. Playground equipment occupies the northeast corner of the playground. Basketball courts are located at the southeast corner of the playground and a set of multipurpose baseball/kickball fields is located in the center and west portions of the playground. A small oval track constructed using a thin pavement of rubberized asphalt on the asphalt pavement is located within the area occupied by the ball fields.

3.0 SCOPE OF WORK

The scope of work for this project consists of the excavation and offsite disposal of shallow soils impacted by arsenic and lead. These soils will be produced at three locations at the campus, one of which is substantially larger than the other two. The material will be staged and loaded at a location near an access gate to the campus and the largest of the three excavations.

All excavated soils shall be shipped by a properly licensed/registered and insured waste hauler via sealed or covered end-dump trucks under manifests or proper shipping documents to a proper disposal facility. Transportation of excavated materials shall be shipped in tarped or covered trucks. All removal, transportation, disposal, and Site restoration activities will be performed in accordance with all applicable federal, state, and local laws, regulations, and ordinances.

4.0 WASTE CHARACTERIZATION AND QUANTITY

Excavated soils are the primary waste to be transported from the site for disposal. Some fluids produced during decontamination procedures may also require transport from the school site. These will be contained in 55-gallon drums.

The primary chemical of concern is arsenic. A smaller portion of the arsenic-impacted material is also impacted by lead (Table 1).

4.1 Waste Management

Hazardous waste is regulated under both the Resource Conservation and Recovery Act (RCRA) and the California Health and Safety Code (H&SC). RCRA regulatory levels for D-listed wastes, using the Toxicity Characteristic Leaching Procedure (TCLP), are listed under Title 22 of the California Code of Regulations, Section 66261.24(a)(1) (22 CCR 66261.24(a)(1)). Non-RCRA hazardous waste is regulated only under H&SC and 22 CCR. The Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC) values for certain chemicals are listed under 22 CCR 66261.24(a)(2).

The TCLP and STLC limits for hazardous waste classification are 5 milligrams per liter for arsenic and lead. The STLC and TCLP for arsenic were not exceeded in the seven analyzed samples. The STLC for lead was not exceeded in the six analyzed samples. The TCLP level for lead was not analyzed in any of the soil samples (Table 2).

Since none of the soil to be excavated during this removal action has been characterized as a hazardous waste, a U.S. Environmental Protection Agency (USEPA) identification number for the Site is not expected to be required from the California Department of Toxic Substances

Control (DTSC) for proper waste management. Compliance with DTSC requirements of hazardous waste generation, temporary onsite storage, transportation, and disposal is required.

4.2 Contaminated Soil Control

After the delineated areas of impacted soil, shown on Figure 3, have been excavated to the appropriate depths, confirmation soil samples will be collected from the bottom and sidewalls of the excavations, as described in the RAW. The cleanup goals for the Site are also discussed in the RAW.

The truck loading area is immediately west of the largest excavation, and immediately east of the exit gate for the trucks. This will simplify loading trucks or bins during excavation or soon thereafter. The material from the two smaller excavations will require transport to the truck loading area to the south. Since they are smaller volumes, the use of a one cubic yard bin is suggested for containing and moving the material to the truck loading area. The bins can be loaded and moved by a Bobcat with interchangeable front tools.

4.3 Waste Quantity

An estimated 35.2 cubic yards (in place) of soil is present above screening levels at these three locations. These areas are depicted in Figures 3, 4 and 5.

Using a bulk factor of 140%, an estimated surface volume of 49.3 cubic yards of material will be transported from the project area under this recommended scenario. Based on an estimated density for moist, silty sand of 2,800 pounds per cubic yard, this volume of soil would weigh approximately 66.5 tons. The impacted soil volume for each initial boring location is provided in Table 3.

And estimated five trucks, five trips or a combination of trucks and trips will be required to transport the material for disposal.

4.4 Import Fill Material

If needed, an estimated 50 cubic yards of imported material will be required to backfill the three excavations. The imported material will be from an OEHS-approved source, or will be characterized for import in accordance with OEHS Specification 01 4524 for Environmental Import/Export Materials Testing (LAUSD-OEHS, 2018).

OEHS Specification 01 4524 will also be followed to characterize any rinseate or solid waste remaining onsite from decontamination procedures. Once characterized, the wastes will be removed from the site within 30 days of production.

5.0 SOIL LOADING

Soil will be removed with excavators or other types of earth moving equipment, as necessary. As soil is excavated, it will be loaded directly into transportation trucks for offsite disposal whenever possible. If temporary stockpiling is necessary, the excavated soil will be covered and may be stored in soil staging areas onsite.

5.1 Truck Loading Operations

In most cases it is anticipated that trucks will be loaded directly at or near the areas of excavation and driven to the designated disposal facility. While the soil is being loaded into the trucks, dust suppression will be performed by lightly spraying or misting the work areas with water. Water mist may also be used on soil placed in the transport trucks. After the soil is loaded into the transport trucks, the soil will be covered and otherwise contained to prevent soil from blowing or spilling out of the truck during transport to the disposal facility.

All vehicles will be cleaned of loss material prior to leaving the work area, as described in the RAW. The dump truck or roll-off bin portion of the truck will then be covered to prevent soil and/or dust from spilling out of the truck during transport to the disposal facility. Prior to leaving the loading area, each truck will be inspected by the onsite project manager to ensure that the payloads are adequately covered, the trucks are cleaned of loose soil, and the shipment is properly manifested.

5.2 Working Hours and Duration

During school operation, trucking times must be pre-approved by LAUSD. In most cases, excavation may be conducted between 7:00 AM to 3:00 PM. In this case the work areas must be isolated from school operations with fencing. During school non-operational days, truck loading and unloading may also be conducted between 7:00 AM to 3:00 PM daily. It is expected that loading operations will require one day. If needed, excavation, truck loading, and unloading and offsite transport to the licensed disposal facility may be conducted on Saturdays from 8:00 AM to 3:00 PM.

6.0 TRANSPORTATION CONTROL

6.1 Dust Control During Transportation

Soil for offsite disposal will be transported in covered trailers/trucks, drums, or roll-off bins to an approved land disposal facility. All waste hauler vehicles will be cleaned of loose material prior to leaving the work area. Imported clean fill materials will be transported in covered trailers/trucks to the Site. If necessary, a street sweeper will be operated on the local streets adjacent to the Site to mitigate any potential residual dust or track out of soils.

6.2 Traffic Control

Prior to loading or unloading at the Site, all trucks will be staged onsite as much as possible to avoid impacts on the local streets. This will require that the school not be in session, and the use of the east gate to the playground area. Careful coordination of trucks will be exercised to help avoid staging offsite and long wait times for trucks. Trucks will not be allowed to sit idling more than five minutes to avoid unnecessary exhaust fumes.

Preparation for trucks will include establishing no parking areas along the curbs near the designated gates to provide safer ingress and egress.

Trucks to be loaded or unloaded at the Site will only access the designated truck staging area through the west gate or east gate pre-designated by the Contractor and LAUSD. Waste hauling vehicles will not be able to enter other areas of the campus. A flag person will be located at the gates to assist the truck drivers to safely enter and depart the Site.

Traffic will be coordinated in such a manner that, at any given time, no more than two transportation trucks will be onsite to reduce truck traffic on surrounding surface streets and reduce dust generation during onsite transportation.

While on the Site, all vehicles are required to maintain a speed of 5 miles per hour (mph) or less, for safety purposes and for dust control measures. While on streets or freeways, all transporters will follow the speed limit requirements and defensive driving techniques (over traffic or road conditions) for traffic safety.

6.3 Transportation Routes

There are numerous alternate routes that can be taken to potential land disposal facilities. Proposed routes of transportation for offsite shipment of non-hazardous waste are described below, and will be updated if necessary. Given the variety of freeways within the Los Angeles area, there are numerous alternate routes that can be taken to the disposal facilities. However, with the exception of traffic conditions encountered during hauling, in the event that an alternate route is taken, the Contractor will verify the new truck route with OEHS prior to initiating field activities. The routes provided in this plan were selected to minimize truck travel time on surface streets and provide the shortest distance traveled. Additionally, given the characteristics of the material being transported, there are no apparent restrictions that would preclude the trucks from following these routes to the disposal facilities.

Before leaving the Site, the truck driver will be instructed to notify the Contractor Site manager. The truck driver will be provided with the cellular phone number for the Contractor Site manager. It will be the responsibility of the truck driver to contact the Contractor Site manager if problems arise after leaving the Site. It will be the responsibility of the Contractor Site manager to notify the LAUSD-OEHS of any unforeseen incidents.

The Los Angeles County Service Authority for Freeway Emergencies (SAFE) was created pursuant to California Streets & Highways Code Section 2550 et. seq. The SAFE is responsible for the operation and maintenance of the Los Angeles County Call Box System. There are more than 4,400 call boxes located throughout the Los Angeles County. These call boxes are situated at roadside locations along the truck route described above. The call boxes were placed to report roadside emergencies to the California Highway Patrol (CHP) dispatch center. The truck driver will be instructed to report any roadside emergency to the CHP using the Call Box System and also to notify the Site manager.

Since the total volume of imported and exported soil does not exceed 1,000 cubic yards, a "haul route permit" will not be required from the City of Los Angeles Department of Building and Safety.

Transportation of impacted soils or fill materials will be on arterial streets and/or freeways, approved for truck traffic, to minimize any potential impact on the local neighborhood. Moving along the proposed transportation routes, all street intersections (except those marked on the transportation route map) are controlled by traffic lights or stop signs. For those gates to and from the school, a flag person of the Contractor will be required during all trucking/hauling activities. The number of daily truckloads during implementation of the RAW is not expected to cause a disruption in local traffic.

Street Maintenance: All street surfaces adjacent to the school will be routinely inspected. The number of daily truckloads during implementation of the RAW is not expected to cause damage to surface streets. The Contractor is responsible for cleaning streets or school yards from spilled soils and the final cleanup after completion of field activities, such as washing paved areas.

7.0 OFFSITE SOIL DISPOSAL FACILITIES

Based on the results of waste profile and classification, the excavated non-hazardous waste will be transported under non-hazardous waste manifests to a proper offsite disposal facility. Once the facility has provided written acceptance, copies of waste profile reports used to secure disposal permission from the landfill will be provided to OEHS.

Compliance with the land disposal restrictions, as necessary, will be documented and provided to LAUSD-OEHS once written acceptance from the landfill is obtained. While remaining in California, all wastes will be properly managed, manifested, and transported by a registered waste hauler to a proper waste management facility. Based on the results of waste profile and classification, the non-hazardous soil will be transported under non-hazardous manifests or proper shipping documents to a proper offsite treatment facility in California.

The non-hazardous soil may be transported to the following facilities:

1. Waste Management - Simi Valley Landfill
   2801 Madera Road
   Simi Valley, California
   Phone: (805) 579-7267

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

3. Sunshine Canyon Landfill
   14747 San Fernando Road
   Sylmar, California 91342
   Phone: (818) 362-2124

Others locations must be pre-approved by LAUSD-OEHS Environmental Compliance Manager.

8.0 RECORD KEEPING

The Contractor will be responsible for maintaining a field logbook during the RAW activities. The field logbook will serve to document observations, onsite personnel, equipment arrival and departure times, and other vital project information. Logbook entries will be complete and accurate enough to permit reconstruction of field activities. Logbooks will be bound with consecutively numbered pages. Each page will be dated and the time of entry noted. All entries will be legible, written in black ink, and signed by the individual making the entries. Language will be factual, objective, and free of personal opinions or other terminology that might prove inappropriate. If an error is made, corrections will be made by placing a line through the error and entering the correct information. Corrections will be dated and initialed.

The Uniform Non-Hazardous Waste Manifest form will be used to track the movement of soil sent offsite as from the point of generation to the point of ultimate disposition.

The manifests will include information such as:

- Name and address of the generator, transporter, and the destination facility
- U.S. Department of Transportation (DOT) description of the waste being transported and any associated hazards
- Waste quantity
- Name and phone number of a contact in case of an emergency
- Other information required either by USEPA and DTSC

Before transporting the excavated soil offsite, an authorized representative of LAUSD will sign each waste manifest. The Contractor's Site manager will maintain one copy of the waste manifest onsite. Copies of the waste manifests, signed by the receiving facilities, will be included in the Removal Action Completion Report (RACR). While at the disposal facility, the truck will be weighed before offloading the payload. Weight tickets or bills of lading will be provided to the Contractor after the material has been shipped offsite.

9.0 HEALTH AND SAFETY

A site-specific health and safety plan (HSP) has been prepared and included in the RAW. Prior to the commencement of each day's activities, a tailgate health and safety meeting will be held. Everyone working at the Site will be required to be familiar with the HSP and attend the daily tailgate meetings or health and safety briefings. Everyone working at the Site will be required to sign the site-specific HSP to demonstrate that they are familiar with the HSP and that they participated in, or were briefed on, the daily tailgate meeting. The Contractor's Site manager will maintain this signature sheet.

10.0 REQUIREMENTS OF FILL MATERIALS

If needed, fill materials will be secured with LAUSD's approval. Selection of fill materials shall follow the latest revision of LAUSD's specification for Environmental Import/Export Materials Testing (Section 01 4524). All sources shall be approved by LAUSD prior to importing the fill materials to the Site. The same procedure will apply for all exported materials.

11.0 REQUIREMENTS OF TRANSPORTERS

Qualified transporters will be hired for hauling the excavated soil away or hauling fill materials to the Site.

11.1 License and Insurance

The selected haulers will be fully licensed and insured to transport the excavated soils or fill materials. Hazardous wastes must be shipped by a registered hazardous waste hauler. Prior to hiring, the Contractor shall verify the status of the registrations and insurance policies of the selected transporters.

11.2 Contingency Plan

Each transporter is required to have a contingency plan prepared to deal with the following conditions:

- When there are emergency situations (vehicle breakdown, accident, waste spill, waste leak, fire, explosion, etc.) during transportation of excavated soils from the Site to the destined disposal facility or during transportation of fill materials from a source to the Site;
- When the volumes of excavated soil change; or
- When waste characteristics change.

The Contingency Plan will be prepared in accordance with DTSC's guidance for preparing transportation plans for site remediation (DTSC, May 1994). Once the transporter is selected, a copy of its contingency plan will be attached to this Transportation Plan.

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-1-6"	3/27/18	ND < 1	1.2
PB-1-18"	3/27/18	ND < 1	1.3
PB-1-30"	3/27/18	ND < 1	1.4
PB-2-6"	3/27/18	38	4.7
PB-2-18"	3/27/18	ND < 1	ND < 1
PB-2-30"	3/27/18	ND < 1	ND < 1
PB-3-6"	3/27/18	4.5	1.6
PB-3-18"	3/27/18	1.8	1.2
PB-3-30"	3/27/18	ND < 1	1.4
PB-4-6"	3/27/18	51	2.9
PB-4-18"	3/27/18	1.9	1.2
PB-4-30"	3/27/18	ND < 1	1.6
PB-5-6"	3/27/18	6.6	1.0
PB-5-18"	3/27/18	ND < 1	ND < 1
PB-5-30"	3/27/18	ND < 1	ND < 1
PB-6-6"	3/27/18	44	5.4
PB-6-18"	3/27/18	6.1	1.1
PB-6-30"	3/27/18	ND < 1	1.2
PB-7-6"	3/27/18	11	5.4
PB-7-18"	3/27/18	1.3	4.1
PB-7-30"	3/27/18	14	6.4
PB-8-6"	3/27/18	50	1.3
PB-8-18"	3/27/18	6.6	ND < 1
PB-8-30"	3/27/18	ND < 1	1.2
PB-9-6"	3/27/18	2.5	1.7
PB-9-18"	3/27/18	3.9	3.8
PB-9-30"	3/27/18	44	1.3
PB-10-6"	3/27/18	18	6.8
PB-10-18"	3/27/18	ND < 1	1.7
PB-10-30"	3/27/18	ND < 1	1.9

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	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-11-6"	3/27/18	7.4	**100**
PB-11-18"	3/27/18	ND < 1	ND < 1
PB-11-30"	3/27/18	ND < 1	ND < 1
PB-11-A-6"	5/21/18	NA	**20**
PB-11-A-18"	5/19/18	NA	1.6
PB-11-AA-6"	8/13/18	NA	7.3
PB-11-AA-18"	8/13/18	NA	5.8
PB-11-B-6"	5/21/18	NA	**53**
PB-11-B-18"	5/19/18	NA	1.0
PB-11-BB-6"	8/13/18	NA	**61**
PB-11-BB-18"	8/13/18	NA	11
PB-11-C-6"	5/21/18	NA	**13**
PB-11-C-18"	5/19/18	NA	ND < 1
PB-11-CC-6"	8/13/18	NA	**120**
PB-11-CC-18"	8/13/18	NA	ND < 1
PB-11-D-6"	5/21/18	NA	**22**
PB-11-D-18"	5/19/18	NA	1.0
PB-11-DD-6"	8/13/18	NA	**120**
PB-11-DD-18"	8/13/18	NA	**18**
PB-12-6"	3/27/18	22	4.3
PB-12-18"	3/27/18	1.2	2.3
PB-12-30"	3/27/18	ND < 1	1.5
PB-13-6"	3/27/18	ND < 1	1.7
PB-13-18"	3/27/18	3.7	2.2
PB-13-30"	3/27/18	5.6	2.6
PB-14-6"	3/28/18	2.4	2.0
PB-14-18"	3/28/18	2.1	3.3
PB-14-30"	3/28/18	3.6	2.3

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Hazardous Waste Criteria	TTLC	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-15-6"	3/27/18	5.9	1.6
PB-15-18"	3/27/18	ND < 1	1.4
PB-15-30"	3/27/18	ND < 1	1.7
PB-16-6"	3/27/18	6.7	2.3
PB-16-18"	3/27/18	5.8	1.4
PB-16-30"	3/27/18	2.4	ND < 1
PB-17-6"	3/27/18	20	5.9
PB-17-18"	3/27/18	5.4	1.5
PB-17-30"	3/27/18	4.6	2.0
PB-18-6"	3/27/18	6.9	1.7
PB-18-18"	3/27/18	11	3.9
PB-18-30"	3/27/18	ND < 1	ND < 1
PB-19-6"	3/27/18	5.3	1.3
PB-19-18"	3/27/18	1.7	5.0
PB-19-30"	3/27/18	5.8	1.0
PB-20-6"	3/28/18	2.6	2.6
PB-20-18"	3/28/18	3.6	2.1
PB-20-30"	3/28/18	6.5	7.5
PB-21-6"	3/28/18	3.2	4.3
PB-21-18"	3/28/18	ND < 1	1.5
PB-21-30"	3/28/18	ND < 1	1.7
PB-22-6"	3/28/18	7.7	5.7
PB-22-18"	3/28/18	ND < 1	1.4
PB-22-30"	3/28/18	ND < 1	1.8
PB-23-6"	3/28/18	4.1	3.4
PB-23-18"	3/28/18	3.0	3.2
PB-23-30"	3/28/18	3.2	3.2
PB-24-6"	3/28/18	7.2	2.3
PB-24-18"	3/28/18	1.7	2.7
PB-24-30"	3/28/18	ND < 1	1.9

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Sample Number	**Sample Date**	**Total Lead**	**Arsenic**
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-25-6"	3/28/18	8.8	1.8
PB-25-18"	3/28/18	1.4	2.0
PB-25-30"	3/28/18	ND < 1	1.2
PB-26-6"	3/28/18	2.3	1.9
PB-26-18"	3/28/18	2.0	1.5
PB-26-30"	3/28/18	9.2	2.6
PB-27-6"	3/27/18	17	**32**
PB-27-A-6"	5/21/18	NA	**16**
PB-27-A-18"	5/19/18	NA	1.5
PB-27-AA-6"	8/13/18	NA	**59**
PB-27-AA-18"	8/13/18	NA	1.7
PB-27-B-6"	5/21/18	NA	2.4
PB-27-C-6"	5/21/18	NA	**21**
PB-27-C-18"	5/21/18	NA	8.0
PB-27-CC-6"	8/13/18	NA	**91**
PB-27-CC-18"	8/13/18	NA	1.9
PB-27-D-6"	5/21/18	NA	ND < 1
PB-27-18"	3/27/18	13	2.9
PB-27-30"	3/27/18	14	1.3
PB-28-6"	3/27/18	54	1.3
PB-28-18"	3/27/18	7.0	1.8
PB-28-30"	3/27/18	ND < 1	ND < 1
PB-29-6"	3/27/18	37	1.4
PB-29-18"	3/27/18	10	2.1
PB-29-30"	3/27/18	15	2.4
PB-30-6"	3/27/18	58	1.9
PB-30-18"	3/27/18	ND < 1	ND < 1
PB-30-30"	3/27/18	ND < 1	1.4

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-31-6"	3/27/18	19	3.3
PB-31-18"	3/27/18	16	1.6
PB-31-30"	3/27/18	ND < 1	1.1
PB-32-6"	3/27/18	32	1.2
PB-32-18"	3/27/18	27	1.3
PB-32-30"	3/27/18	ND < 1	1.3
PB-33-6"	3/28/18	22	1.7
PB-33-18"	3/28/18	3.4	1.2
PB-33-30"	3/28/18	ND < 1	1.6
PB-34-6"	3/28/18	**84**	**14**
PB-34-A-6"	5/21/18	10	1.4
PB-34-B-6"	5/21/18	7.2	ND < 1
PB-34-C-6"	5/21/18	9.2	1.6
PB-34-D-6"	5/21/18	33	1.5
PB-34-18"	3/28/18	1.6	1.8
PB-34-30"	3/28/18	ND < 1	2.1
PB-35-6"	3/28/18	18	2.0
PB-35-18"	3/28/18	12	2.1
PB-35-30"	3/28/18	2.6	2.5
PB-36-6"	3/28/18	17	2.2
PB-36-18"	3/28/18	26	2.2
PB-36-30"	3/28/18	1.6	2.6
PB-37-6"	3/28/18	62	3.0
PB-37-18"	3/28/18	33	1.2
PB-37-30"	3/28/18	1.4	3.0
PB-38-6"	3/28/18	35	2.8
PB-38-18"	3/28/18	5.7	2.1
PB-38-30"	3/28/18	6.0	2.4

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-39-6"	3/28/18	45	8.5
PB-39-18"	3/28/18	11	1.1
PB-39-30"	3/28/18	10	1.2
PB-40-6"	3/28/18	9.1	3.2
PB-40-18"	3/28/18	5.4	3.2
PB-40-30"	3/28/18	7.4	3.5
PB-41-6"	3/28/18	14	2.7
PB-41-18"	3/28/18	6.0	3.1
PB-41-30"	3/28/18	11	4.0
PB-42-6"	3/28/18	6.7	3.1
PB-42-18"	3/28/18	8.9	2.6
PB-42-30"	3/28/18	4.4	4.5
PB-43-6"	3/28/18	12	7.3
PB-43-18"	3/28/18	24	1.6
PB-43-30"	3/28/18	31	2.2
PB-44-6"	3/28/18	10	2.5
PB-44-18"	3/28/18	2.0	3.5
PB-44-30"	3/28/18	1.8	2.5
PB-45-6"	3/28/18	9.3	3.2
PB-45-18"	3/28/18	5.1	2.9
PB-45-30"	3/28/18	6.3	2.2
PB-46-6"	3/28/18	28	5.4
PB-46-18"	3/28/18	8.2	3.4
PB-46-30"	3/28/18	1.9	2.4
PB-47-6"	3/28/18	18	4.4
PB-47-18"	3/28/18	7.1	3.5
PB-47-30"	3/28/18	2.8	3.1
PB-48-6"	5/21/18	1.7	5.4
PB-51-6"	8/19/18	NA	2.6
PB-53-6"	8/19/18	NA	1.5

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB-61-6"	8/19/18	NA	11
PB-64-6"	8/19/18	NA	1.2
PB-64-18"	8/19/18	NA	2.6
PB-68-6"	8/19/18	NA	7.2
PB-68-18"	8/19/18	NA	ND < 1
PB-69-6"	8/19/18	NA	1.2
PB-70-6"	8/19/18	NA	11
PB-71-6"	8/19/18	NA	**35**
PB-71-18"	8/19/18	NA	2.4
PB-72-6"	8/19/18	NA	6.3
PB-72-18"	8/19/18	NA	ND < 1

NOTES:
TTLC - Total Threshold Limit Concentration
STLC - Soluble Threshold Limit Concentration
mg/kg - milligrams per kilogram
ND - Compound not present above the given reporting limit
NA - Sample not analyzed

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS
SOLUBLE LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total and Soluble Waste Concentrations						Waste Characterization
		Lead	Lead STLC	Lead TCLP	Arsenic	Arsenic STLC	Arsenic TCLP	
	EPA Method	6010B	STLC	TCLP	6010B	STLC	TCLP	
	Reporting Limit	various	0.2	0.1	various	5	5	
	Units	mg/kg	mg/L	mg/L	mg/kg	mg/L	mg/L	
	Hazardous Waste Limit	1,000	5	5	500	5	5	
PB-4-6"	3/27/18	51	ND < 1	NA	2.9	NA	NA	Non-Hazardous
PB-8-6"	3/27/18	50	3.6	NA	1.3	NA	NA	Non-Hazardous
PB-11-6"	3/27/18	7.4	NA	NA	100	2.7	0.55	Non-Hazardous
PB-11-B-6"	3/27/18	NA	NA	NA	53	2.8	0.69	Non-Hazardous
PB-11-BB-6"	3/27/18	NA	NA	NA	61	1.6	0.44	Non-Hazardous
PB-11-CC-6"	3/28/18	NA	NA	NA	120	1.3	ND < 0.25	Non-Hazardous
PB-11-DD-6"	3/27/18	NA	NA	NA	120	3.0	0.65	Non-Hazardous
PB-27-AA-6"	3/27/18	NA	NA	NA	59	1.0	ND < 0.25	Non-Hazardous
PB-27-CC-6"	3/27/18	NA	NA	NA	91	ND < 1	ND < 0.25	Non-Hazardous

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS
SOLUBLE LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total and Soluble Waste Concentrations						Waste Characterization
		Lead	Lead STLC	Lead TCLP	Arsenic	Arsenic STLC	Arsenic TCLP	
	EPA Method	6010B	STLC	TCLP	6010B	STLC	TCLP	
	Reporting Limit	various	0.2	0.1	various	5	5	
	Units	mg/kg	mg/L	mg/L	mg/kg	mg/L	mg/L	
	Hazardous Waste Limit	1,000	5	5	500	5	5	
PB-28-6"	3/28/18	54	1.4	NA	1.3	NA	NA	Non-Hazardous
PB-30-6"	3/28/18	58	ND < 1	NA	1.9	NA	NA	Non-Hazardous
PB-34-6"	3/28/18	84	4.4	NA	14	NA	NA	Non-Hazardous
PB-37-6"	3/28/18	62	ND < 1	NA	3.0	NA	NA	Non-Hazardous

NOTES:
STLC - Solutble Threshold Limit Concentration
TTLC - Total Threshold Limit Concentration
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
ND - Compound not present above the given reporting limit
NA - not analyzed

TABLE 3
SUMMARY OF IMPACTED SOIL VOLUMES

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Initial Boring Location	Estimated Bank Volume	Bulk Factor	Estimated Excavated Volume	Estimated Excavated Weight
	(cubic yards)	(percent)	(cubic yards)	(tons)
PB-11	26.6	140	37.2	50.3
PB-27	6.9	140	9.7	13.0
PB-34	1.7	140	2.4	3.2
Totals	**35.2**	**---**	**49.3**	**66.5**

NOTE:
Excavated weight based on a soil density of 2,800 pounds per excavated cubic yard.

Base Map: USGS 7.5 Minute Topo Sheets, Southgate, 2015

NORTH

SCALE (miles)

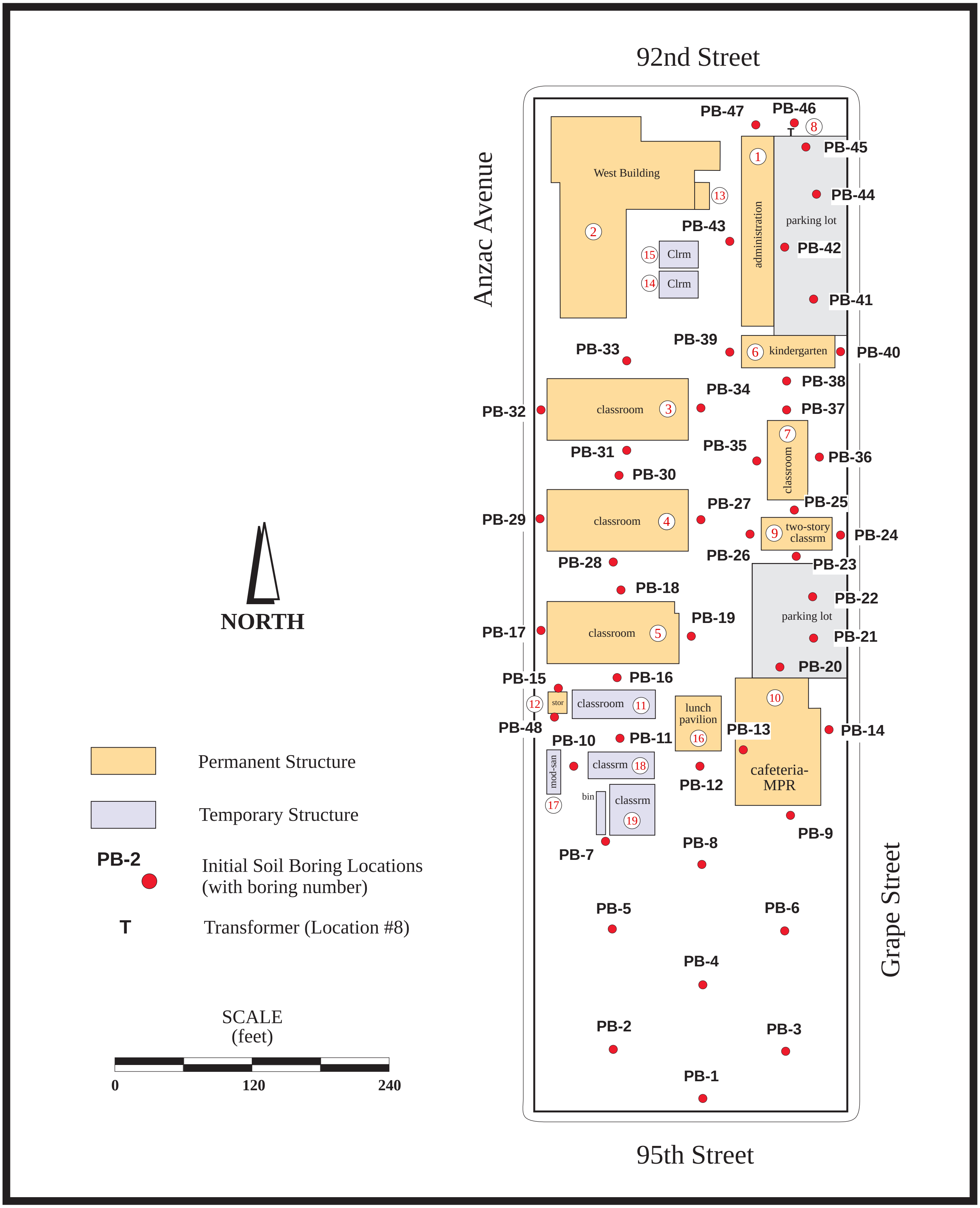
0 0.5 1.0

PINNACLE
ENVIRONMENTAL TECHNOLOGIES
#2 Santa Maria, Foothill Ranch, CA 92610
Tel: (949) 470-3691 • Fax: (949) 595-0459

92nd St. Elementary School
9211 Grape Street
Los Angeles, CA

Site Location Map

Figure 1



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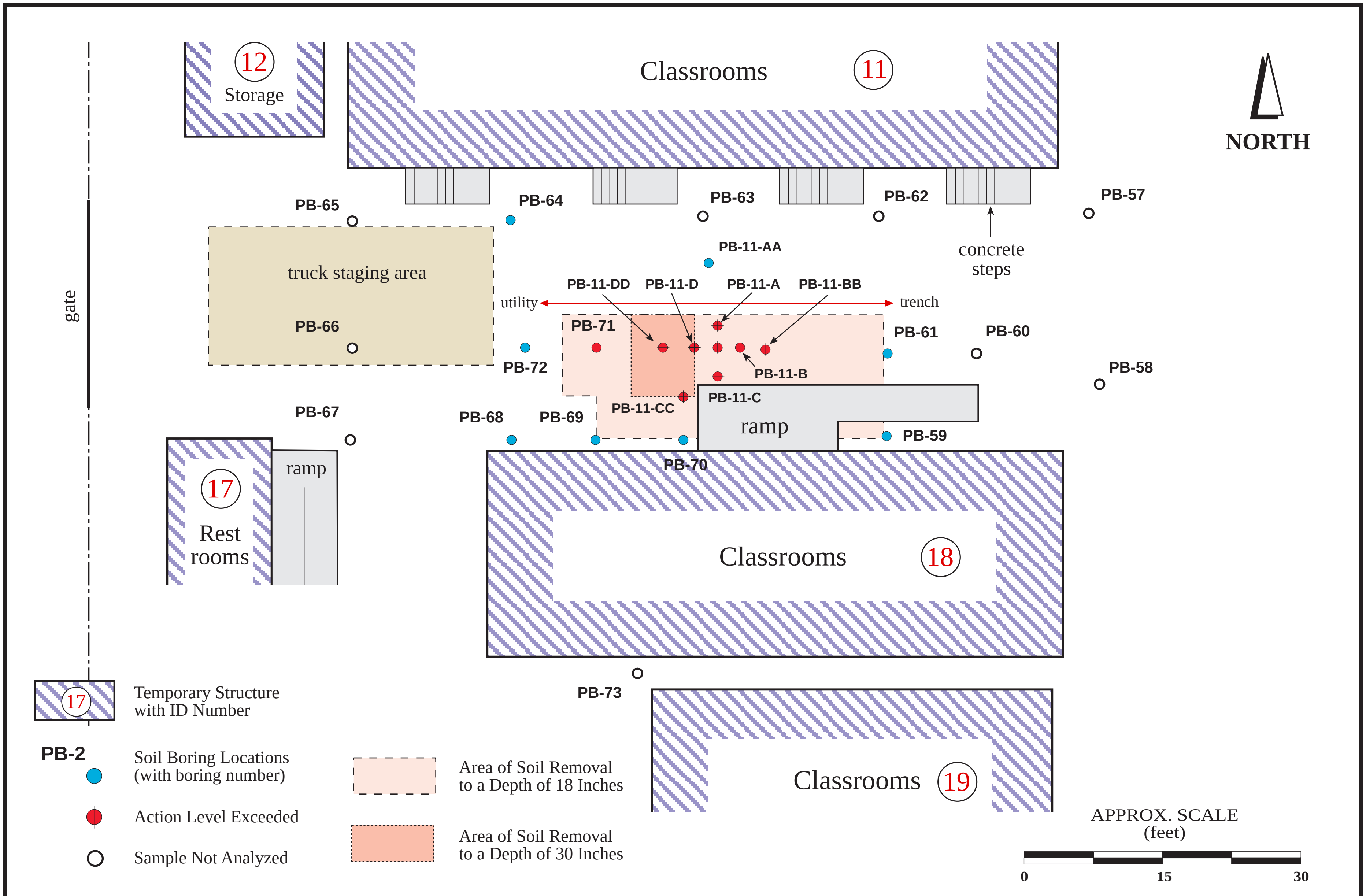
92nd Street Elementary School
9211 Grape Street
Los Angeles, California

Structure and Initial Boring Location Map

Figure 2



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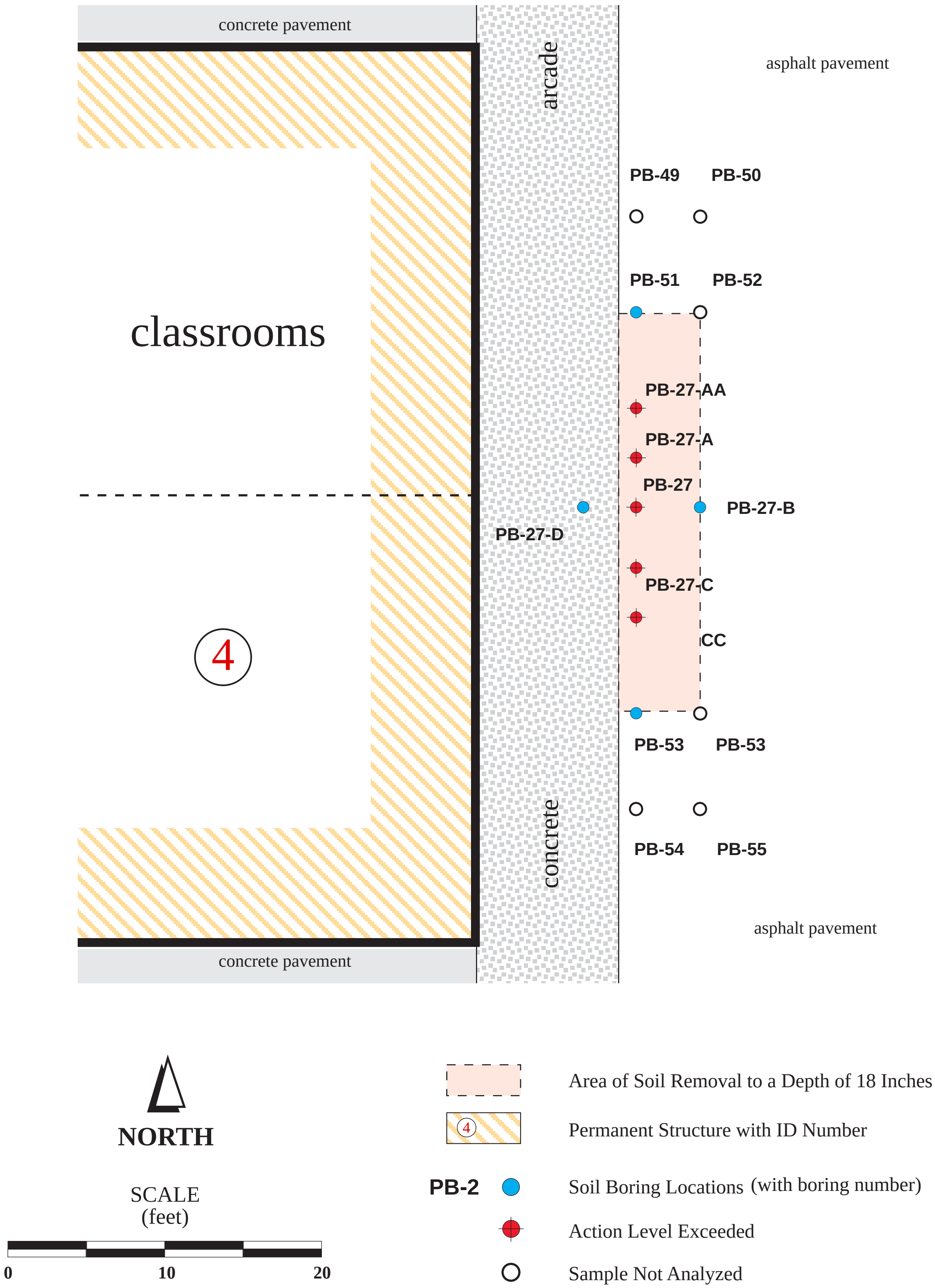
92nd Street Elementary School
9211 Grape Street
Los Angeles, California

Recommended Area for Soil Removal PB-11

Figure 3



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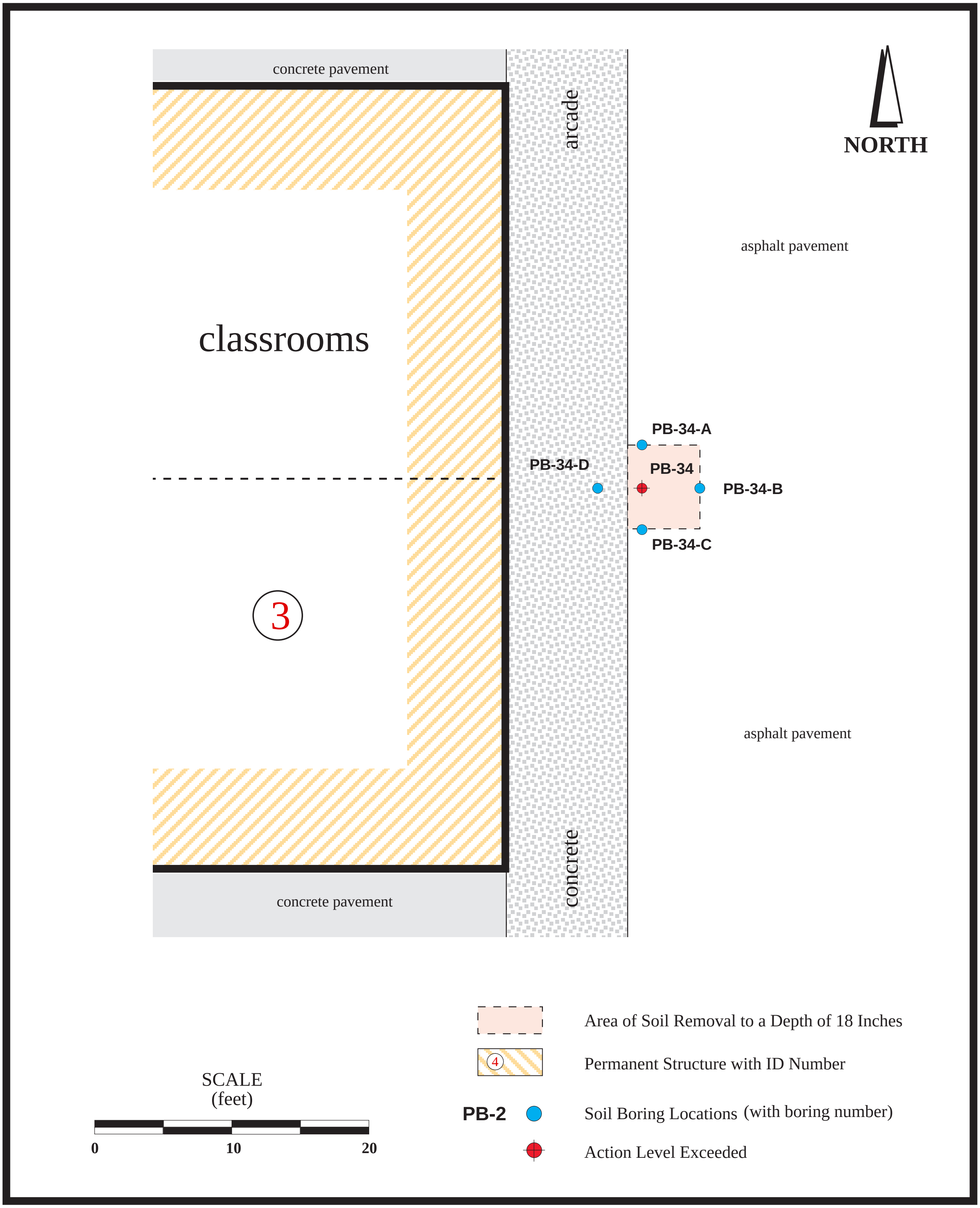
92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

Recommended Area for Soil Removal - PB-27

Figure 4



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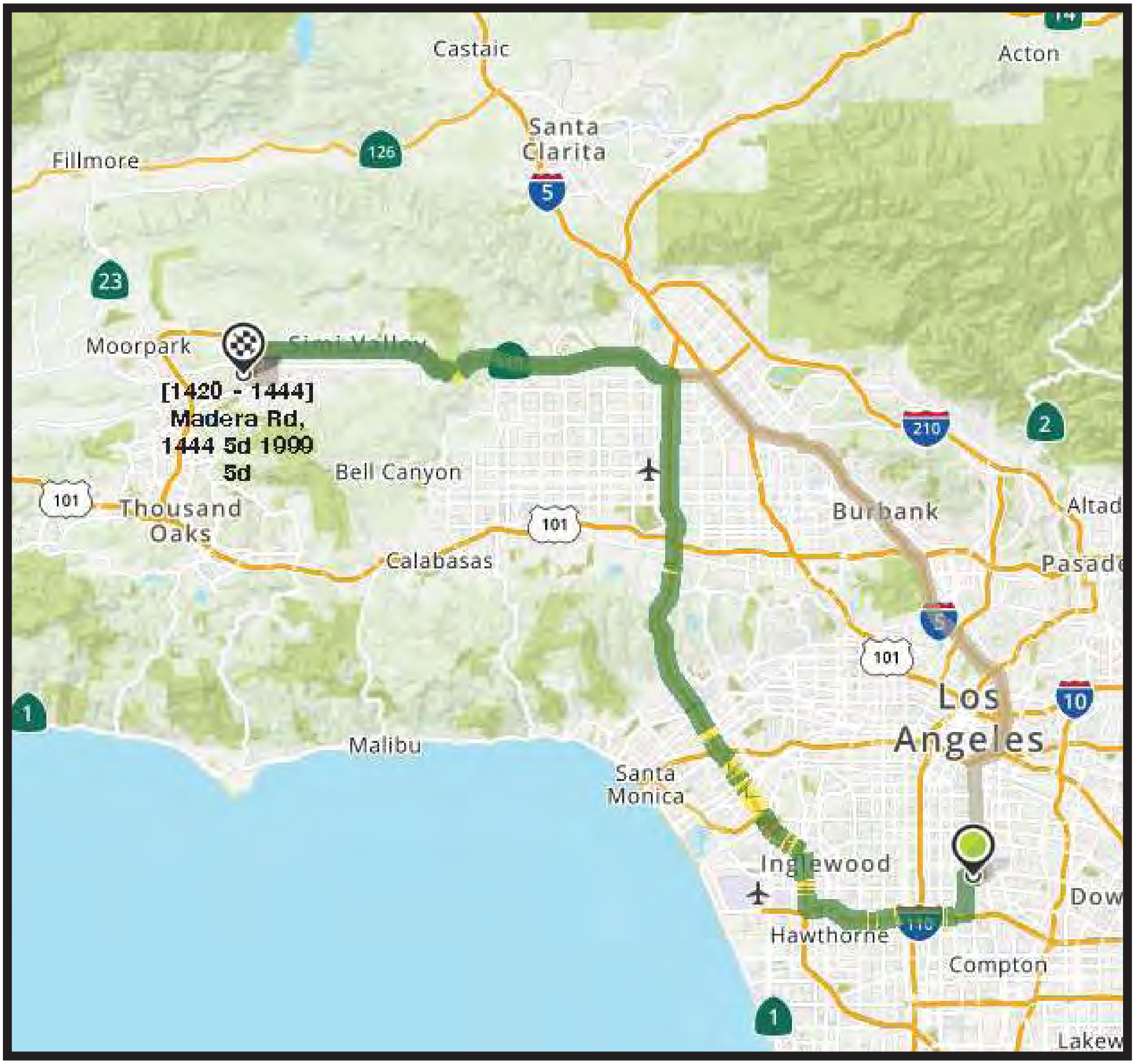
92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

Recommended Area for Soil Removal - PB-34

Figure 5



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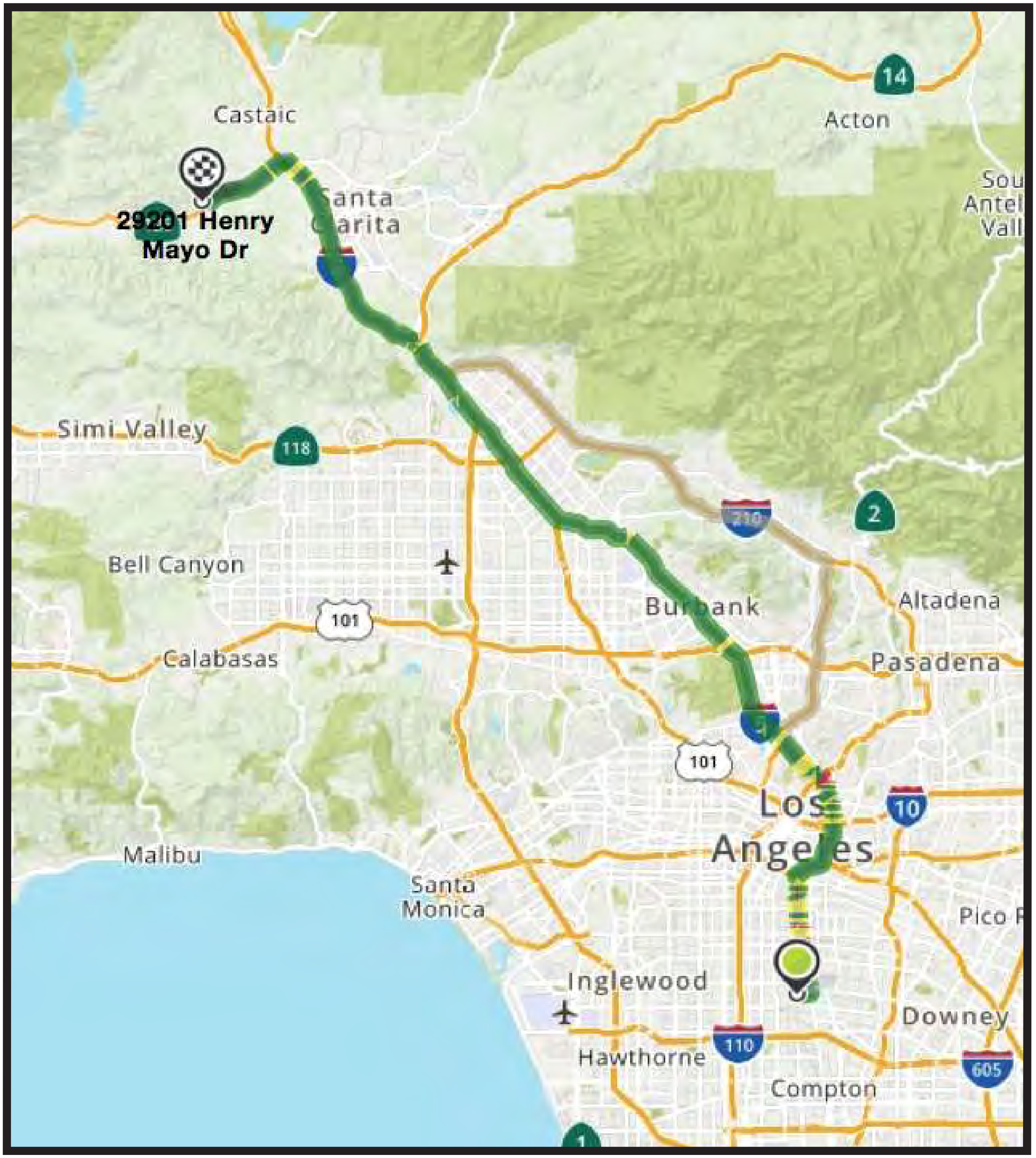
Tel: (949) 470-3691 • Fax: (949) 595-0459

92nd Street Elementary School **9211 Grape Street** **Los Angeles, California**	**Recommended Route to Simi Valley Landfill**	**Figure 6**



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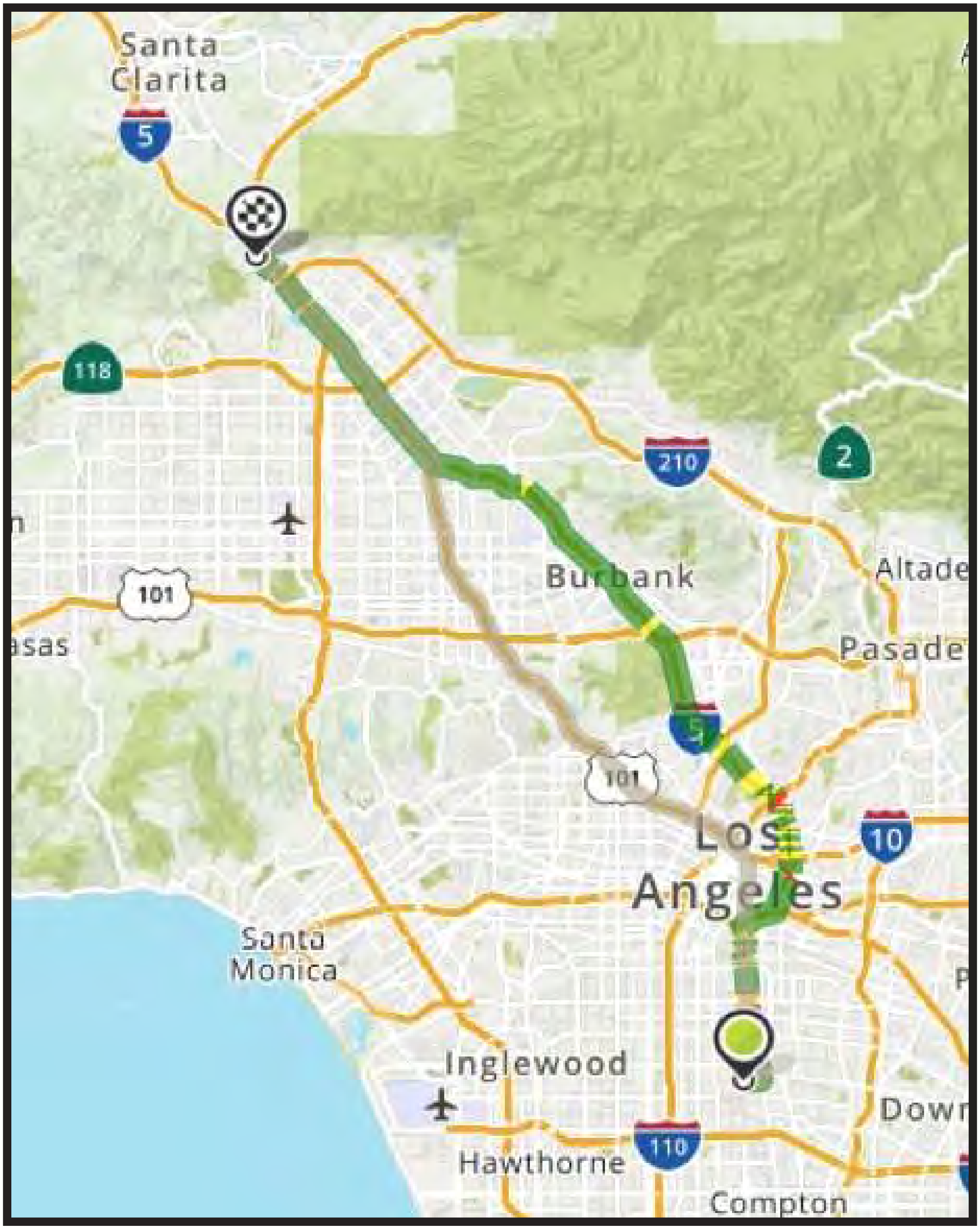
92nd Street Elementary School
9211 Grape Street
Los Angeles, California

Recommended Route to Chiquita Canyon Landfill

Figure 7



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92nd Street Elementary School
9211 Grape Street
Los Angeles, California

Recommended Route to Sunshine Canyon Landfill

Figure 8

APPENDIX E

Public Notice

Los Angeles Unified School District

Office of Environmental Health and Safety

VIVIAN EKCHIAN
Interim Superintendent of Schools

DIANE PAPPAS
Chief Executive Officer, District Operations & Digital Innovations

ROBERT LAUGHTON
Director, Environmental Health and Safety

CARLOS A. TORRES
Deputy Director, Environmental Health and Safety

March 1, 2018

TO: Neighbors and Community Members of the
92nd Street Elementary School

FROM: Los Angeles Unified School District
Office of Environmental Health and Safety

REGARDING: Environmental Assessment
92nd Street Elementary School, Los Angeles, California

The Los Angeles Unified School District (LAUSD) - Office of Environmental Health and Safety (OEHS) would like to provide you with advance notice for an Environmental Assessment (EA) that will be conducted within the boundaries of 92nd Street Elementary School, located at 9211 South Grape Street, Los Angeles, California 90002. The EA will focus on areas surrounding school facilities planned for renovation and modernization.

A licensed contractor, working on behalf of LAUSD, will perform the environmental investigation under the oversight of the LAUSD-OEHS. The environmental investigation will consist of soil sampling at locations on campus where existing buildings will be removed and new classrooms with support structures will be constructed. Soil will be analyzed for potential residual arsenic, lead-based paint, polychlorinated biphenyls (PCBs), and organochlorine pesticides (OCPs). If necessary, soil cleanup will be performed prior to construction activities to protect students, faculty, and staff.

Fieldwork is planned to be performed from March 26 through March 30, 2018, during the school spring break. Additional sampling, if needed, will be conducted on weekends or scheduled school breaks. Fieldwork is scheduled to be conducted between 7:00 am and 5:00 pm.

The results of the investigation will be submitted to LAUSD-OEHS in a report for review. The report will include an assessment of whether any of the above listed compounds are present in soil or building materials at concentrations that would require further assessment or mitigation, or if a response action will be necessary before the Site is cleared for construction activities. When the OEHS's review is complete, OEHS will issue a determination with regard to the assessment.

If you have any questions concerning the upcoming environmental investigation or other related activities for the proposed project, please contact Steven Morrill, LAUSD-OEHS, Site Assessment Project Manager at (213) 241-4672 (email at steven.morrill@lausd.net).

Distrito Escolar Unificado de Los Ángeles

Oficina de Salud y Seguridad Ambiental

VIVIAN EKCHIAN
Interim Superintendent of Schools

DIANE PAPPAS
Chief Executive Officer, District Operations & Digital Innovations

ROBERT LAUGHTON
Director, Environmental Health and Safety

CARLOS A. TORRES
Deputy Director, Environmental Health and Safety

1ero de marzo de 2018

A: Vecinos y Miembros Comunitarios de la Escuela Primaria 92nd Street

DE: Distrito Escolar Unificado de Los Ángeles
Oficina de Salud y Seguridad Ambiental

ASUNTO: Evaluación Ambiental
Escuela Primaria 92nd Street, Los Ángeles, California

La Oficina de Salud y Seguridad Ambiental (OEHS, por sus siglas en inglés) del Distrito Escolar Unificado de Los Ángeles (LAUSD) desea avisarle que se llevará a cabo una evaluación ambiental dentro de la Escuela Primaria 92nd Street. La escuela está ubicada en 9211 South Grape Street, Los Ángeles, California 90002. La evaluación ambiental se enfocará en áreas cerca de las instalaciones escolares en donde se planean actividades de renovación y modernización.

Un contratista licenciado, trabajando por parte del Distrito, realizará la investigación ambiental bajo la supervisión de la Oficina de Salud y Seguridad Ambiental. La investigación ambiental consistirá en la toma de muestras ambientales en áreas de la escuela donde se demolerán las estructuras existentes para la construcción de nuevas aulas de clases con nuevas estructuras de soporte. El suelo será analizado para identificar la presencia de arsénico, pintura a base de plomo, bifenilos policlorados y pesticidas organoclorados. Si es necesario, y para la protección de la salud de los estudiantes, maestros y del personal escolar, se realizará la limpieza ambiental del suelo antes de que inicien las actividades de construcción.

Se espera que los trabajos ambientales se realicen durante las vacaciones de primavera entre el 26 y 30 de marzo de 2018. Si es necesario tomar más muestras, los contratistas lo harán durante el fin de semana o cuando la escuela esté cerrada. Las horas de trabajo serán entre 7:00 am y 5:00 pm.

Los resultados de la investigación serán presentados al LAUSD-OEHS en un informe para su revisión. El informe incluirá una evaluación de la presencia de los compuestos mencionados anteriormente. La evaluación también identificará si los compuestos se encuentran en el suelo a niveles que requieran una evaluación adicional, mitigación o una "acción de respuesta" antes de que el área de estudio sea despejada para la construcción. Cuando finalice la revisión por parte de la Oficina de Salud y Seguridad Ambiental, el OEHS emitirá una conclusión con respecto a la evaluación ambiental.

Si tiene alguna pregunta acerca de estas actividades, por favor póngase en contacto con el gerente del proyecto Steven Morrill de la Oficina de Salud y Seguridad Ambiental del Distrito llamando al (213) 241-4672 (correo electrónico steven.morrill@lausd.net).

APPENDIX F

Housekeeping Technical Memorandum

December 1, 2020

Mr. Steven Morrill
Los Angeles Unified School District
Office of Environmental Health and Safety
333 South Beaudry Avenue, 21-223-05
Los Angeles, California 90017

SITE: LAUSD 92nd STREET ELEMENTARY SCHOOL
9211 GRAPE STRET
LOS ANGELES, CALIFORNIA 90002

SUBJECT: DESCRIPTION AND RESULTS OF HOUSEKEEPING ACTIVITIES

Dear Mr. Morrill,

Pinnacle Environmental Technologies (Pinnacle) has completed a Preliminary Environmental Assessment - Equivalent (PEA-E) and a Remedial Action Workplan (RAW) for the subject site, and has assisted the Office of Environmental Health and Safety (OEHS) in the characterization of excavated subsurface materials that have been exported from the subject site. Figures 1 and 2 provide the location of the subject site. Morillo Construction (Morillo) is the prime contractor on the modernization project currently being performed at the school. Housekeeping tasks identified while conducting the PEA-E were performed on November 5, 2020 by Pinnacle and Eagle Contracting (Eagle), a subcontrator to Morillo. This correspondence describes the tasks performed during this housekeeping event.

"Housekeeping" is a term used by OEHS for tasks involving the removal and disposal of smaller volumes of soil. It is typically performed when the excavated volumes are less than 10 cubic yards. Eagle performed the excavation and disposal of the soil produced during this housekeeping event. They provided a covered 10-yard bin for containing the material excavated from two areas identified for the housekeeping work. These two areas were focused on soil samples PB-27 and PB-34 collected during Pinnacle's PEA-E.

Figures 3 and 4 illustrate the original boundaries for the area intended for excavation at sample location PB-27, and the final limits of the excavation. The excavation area at boring PB-27 was reduced in size to maintain a safe distance from an active gas line paralleling the covered arcade to the west (Figure 4). Approximately 4.5 cubic yards (in place) of material were removed from this excavation. A properly-calibrated field x-ray fluorescence unit was used to screen the floor and walls of the excavation for arsenic prior to the collection of confirmation soil samples. Seven soil samples were collected from the excavation to confirm that no soils with arsenic above the LAUSD action level of 12 milligrams per kilogram (mg/kg) remained in place. Two samples were collected from the base of the excavation (PB27-1 and PB27-2). The remaining five soil samples (PB27-3 through PB27-7) were collected from the excavation walls (Figure 4). None of the confirmation samples had arsenic concentrations above the detection limit of 5 mg/kg (Table 1).

Figures 5 and 6 illustrate the planned and final outlines of the excavation at boring PB-34. The area at boring PB-34 was excavated to a depth of one foot, as originally planned. Approximately one cubic yard (in place) of material was removed at this location. A properly-calibrated field x-ray fluorescence unit was used to screen the floor and the walls of the excavation for arsenic and lead prior to the collection of confirmation soil samples. Three samples were collected from the open excavation to confirm that no soils with arsenic above the LAUSD action level of 12 mg/kg and no lead concentrations above the LAUSD action level of 80 mg/kg remained in place. One sample was collected from the base of the excavation (PB34-1). The remaining two soil samples (PB34-2 through PB34-3) were collected from the excavation walls (Figure 6). None of the confirmation samples had arsenic concentrations above the detection limit of 5 mg/kg. Lead concentrations did not exceed a concentration of 31 mg/kg (Table 1).

SunStar's laboratory report for the confirmation samples is attached to this letter report.

Pinnacle collected and analyzed one sample to characterize the excavated soil for disposal. The soil sample was produced by compositing three similar volumes of soil collected from random locations in the bin. The final composited sample was placed in two eight–ounce jars and Encore samplers that were chilled for transport to SunStar Laboratories (SunStar), a California-certified laboratory. The sample was analyzed for the following potential contaminants.

- Volatile organic compounds (VOCs) – EPA Method 8260B/EPA Method 5035
- Total petroleum hydrocarbons (full-scan) – Modified EPA Method 8015
- Title 22 Metals – EPA Method 6010B/7470A

The soil sample did not contain detectable concentrations of VOCs, gasoline-range TPH or diesel-range TPH. A low concentration of heavy-end TPH (36 mg/kg) was detected. The metals concentrations were well below their respective Total Threshold Limit Concentrations (TTLCs) and ten times their Soluble Threshold Limit Concentrations (STLCs).

SunStar's laboratory report for the characterization sample is attached to this letter report.

Pinnacle appreciates the opportunity to assist you on this project. Please contact us if you have any questions regarding these results.

Respectfully submitted,

PINNACLE ENVIRONMENTAL TECHNOLOGIES

REGISTERED GEOLOGIST
KEITH G. THOMPSON
No. 5543
STATE OF CALIFORNIA

Keith G. Thompson, P.G., C.Hg.
Principal

Attachments: Figures (6)
Table of Analytical Results
Laboratory Reports (2)

Base Map: USGS 7.5 Minute Topo Sheets, Southgate, 2015

NORTH

SCALE (miles)

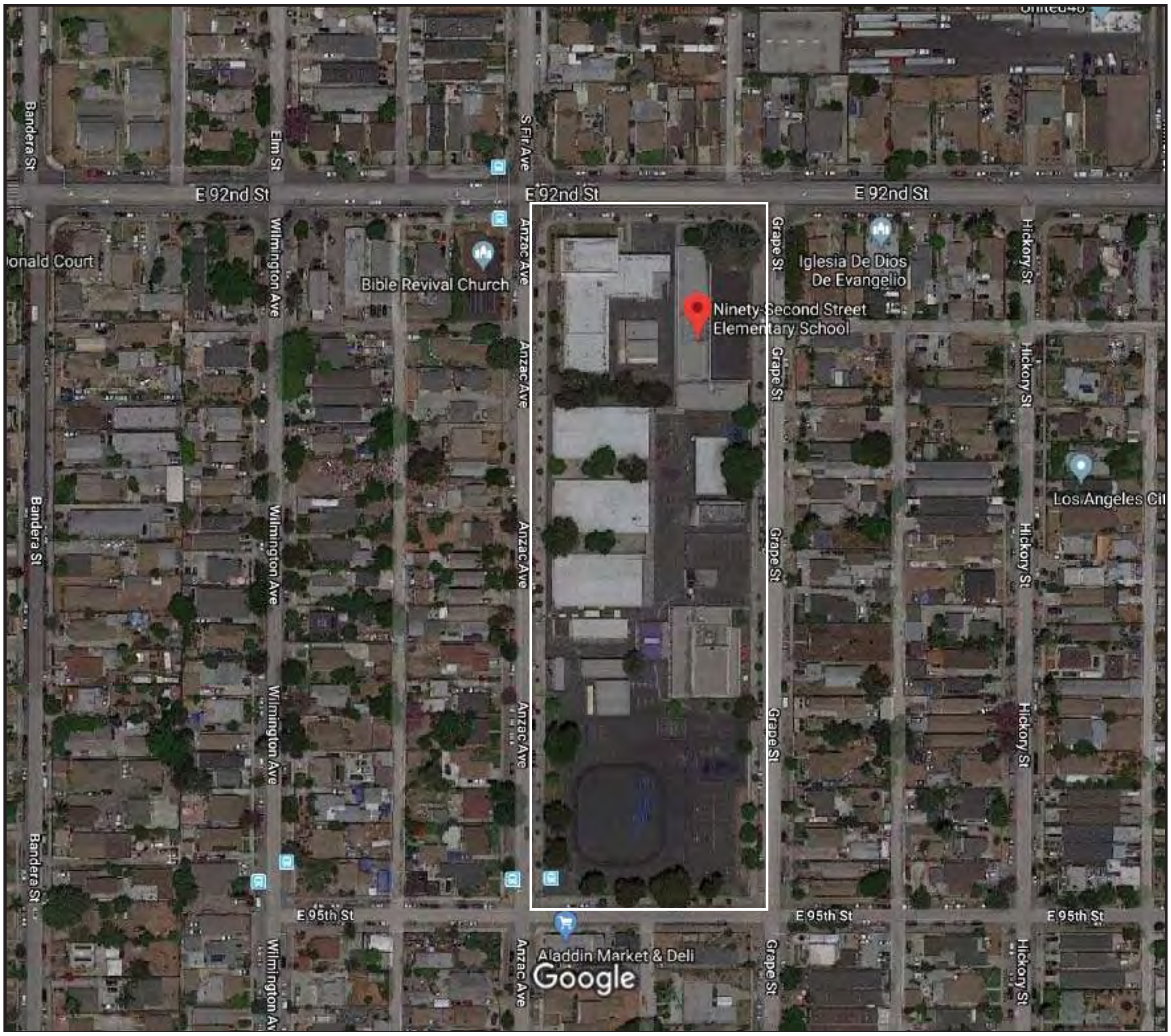
0 0.5 1.0

PINNACLE
ENVIRONMENTAL TECHNOLOGIES
#2 Santa Maria, Foothill Ranch, CA 92610
Tel: (949) 470-3691 • Fax: (949) 595-0459

92nd St. Elementary School
9211 Grape Street
Los Angeles, CA

Site Location Map

Figure 1



Ref: Google Maps

NORTH

SCALE (feet)

0 150 300

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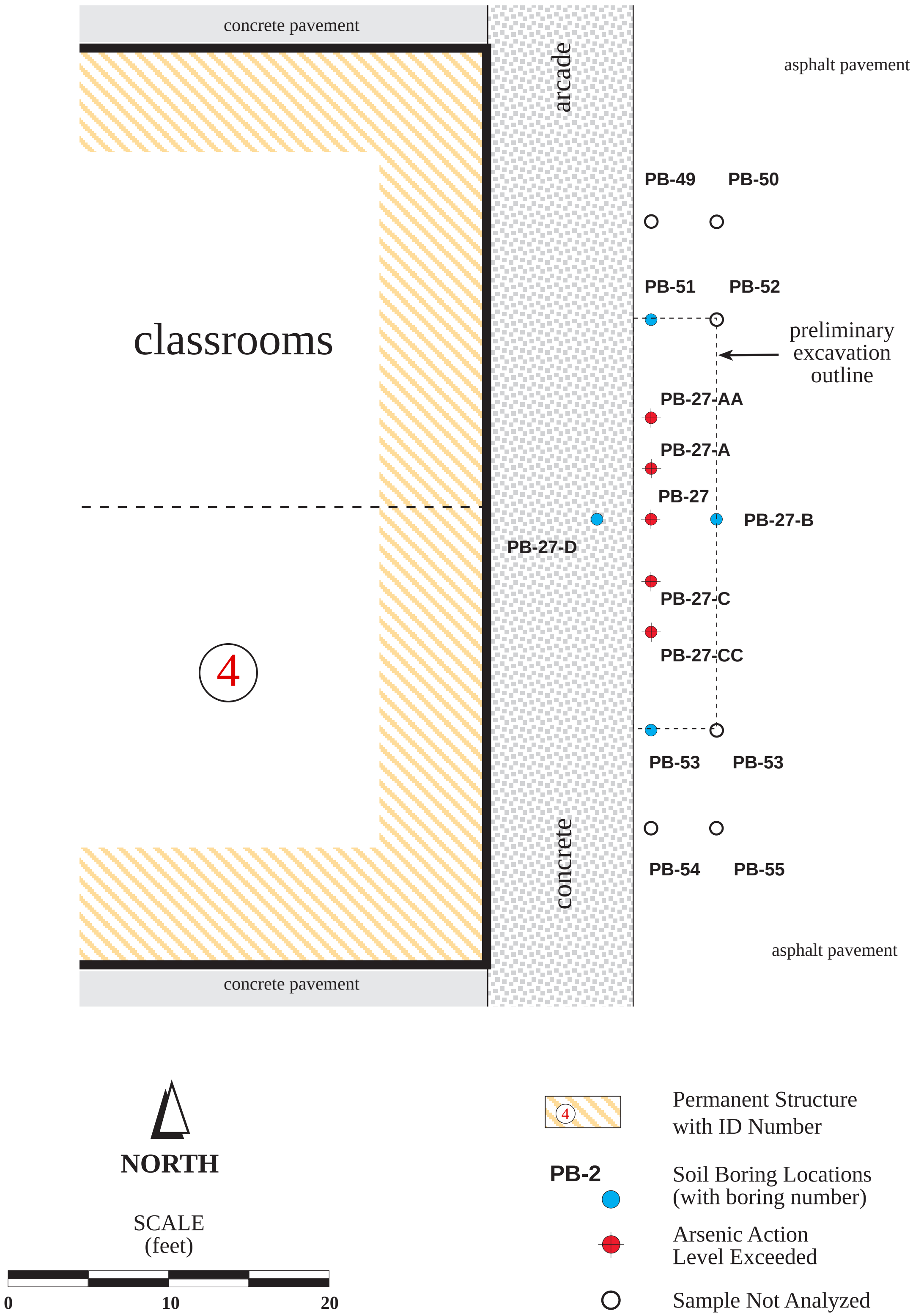
92nd St. Elementary School 9211 Grape Street Los Angeles, CA	Site Photograph	Figure 2



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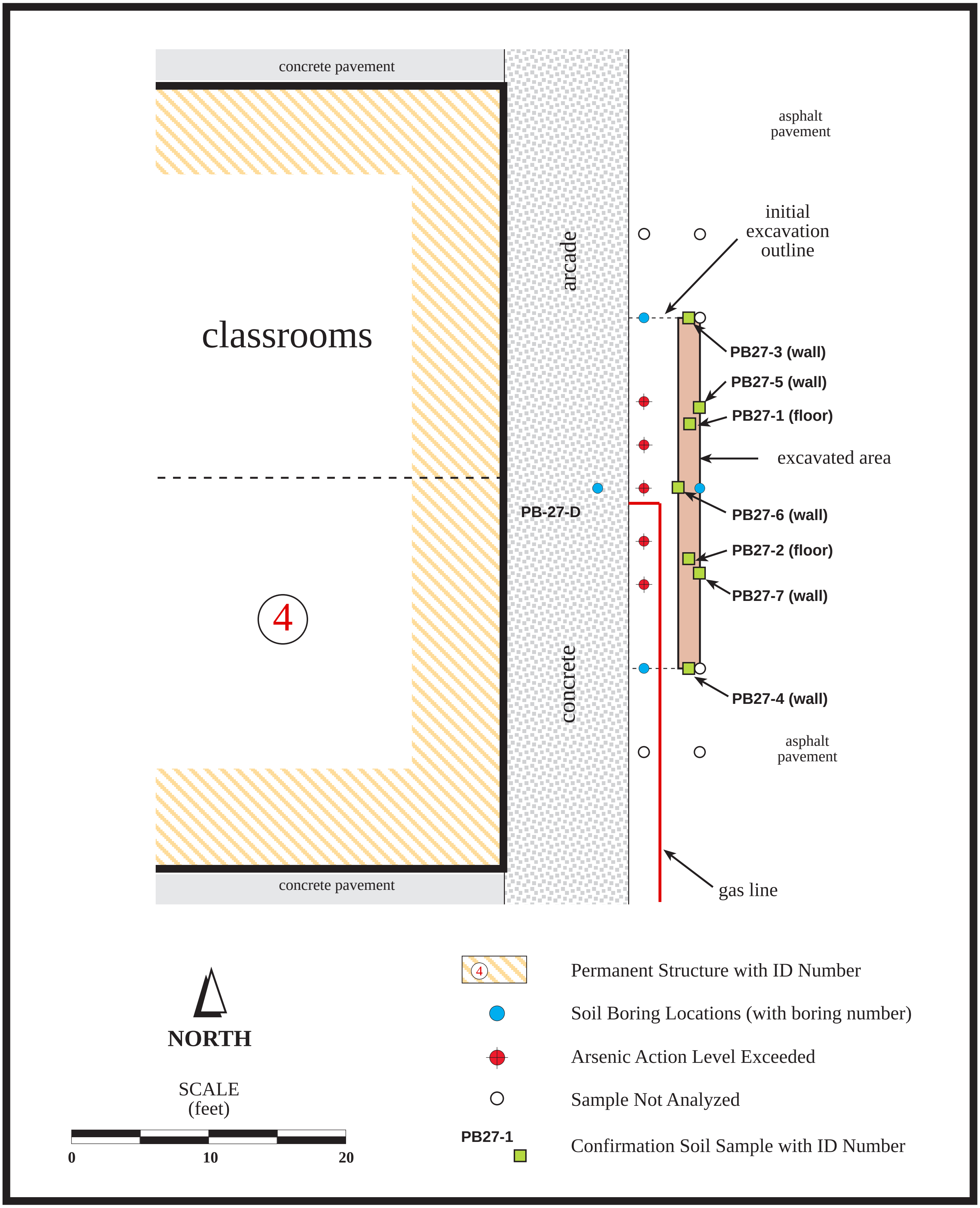
92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

PB-27
Boring
Location Map

Figure 3



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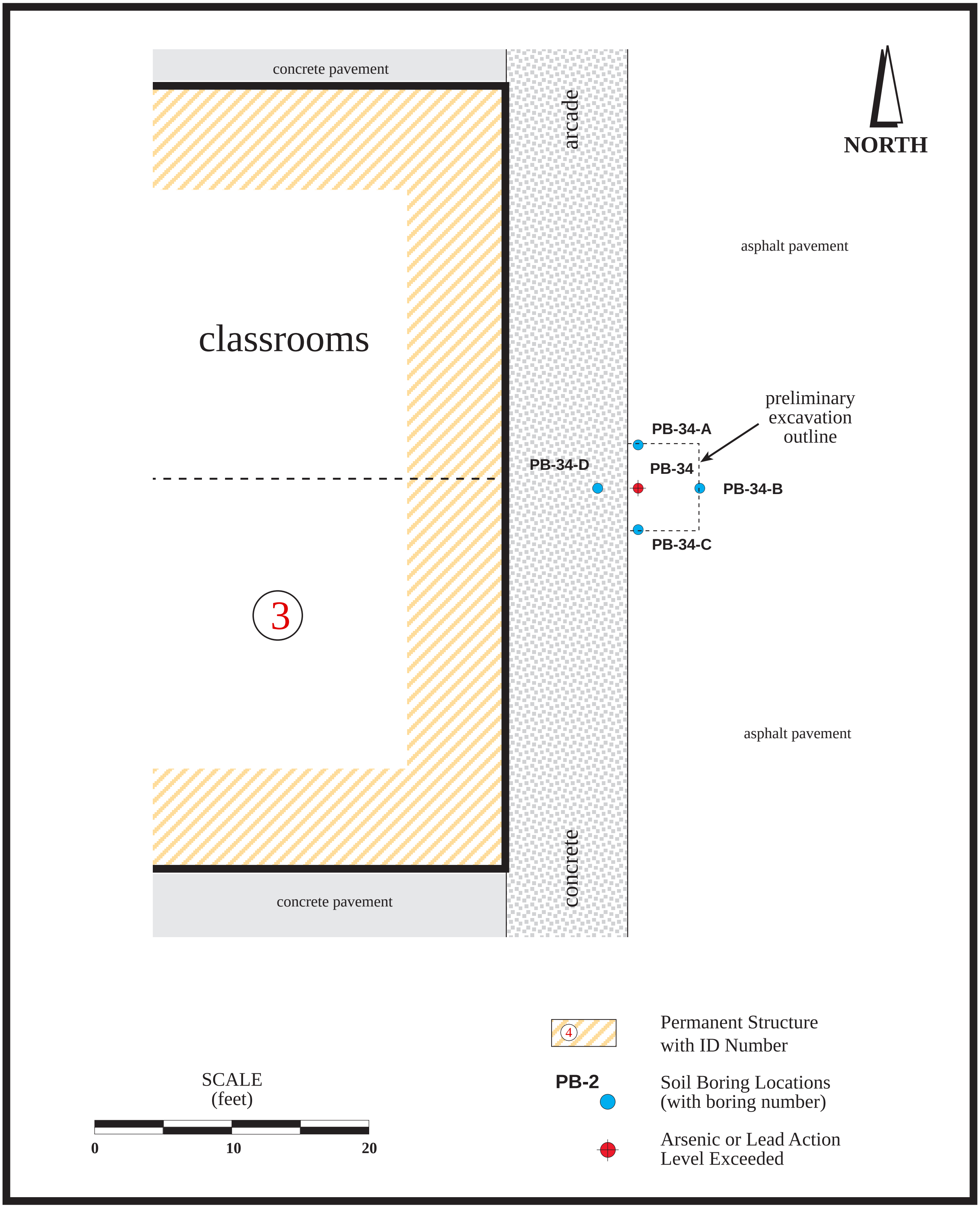
Tel: (949) 470-3691 • Fax: (949) 595-0459

92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

PB-27 Excavation Map

Figure 4



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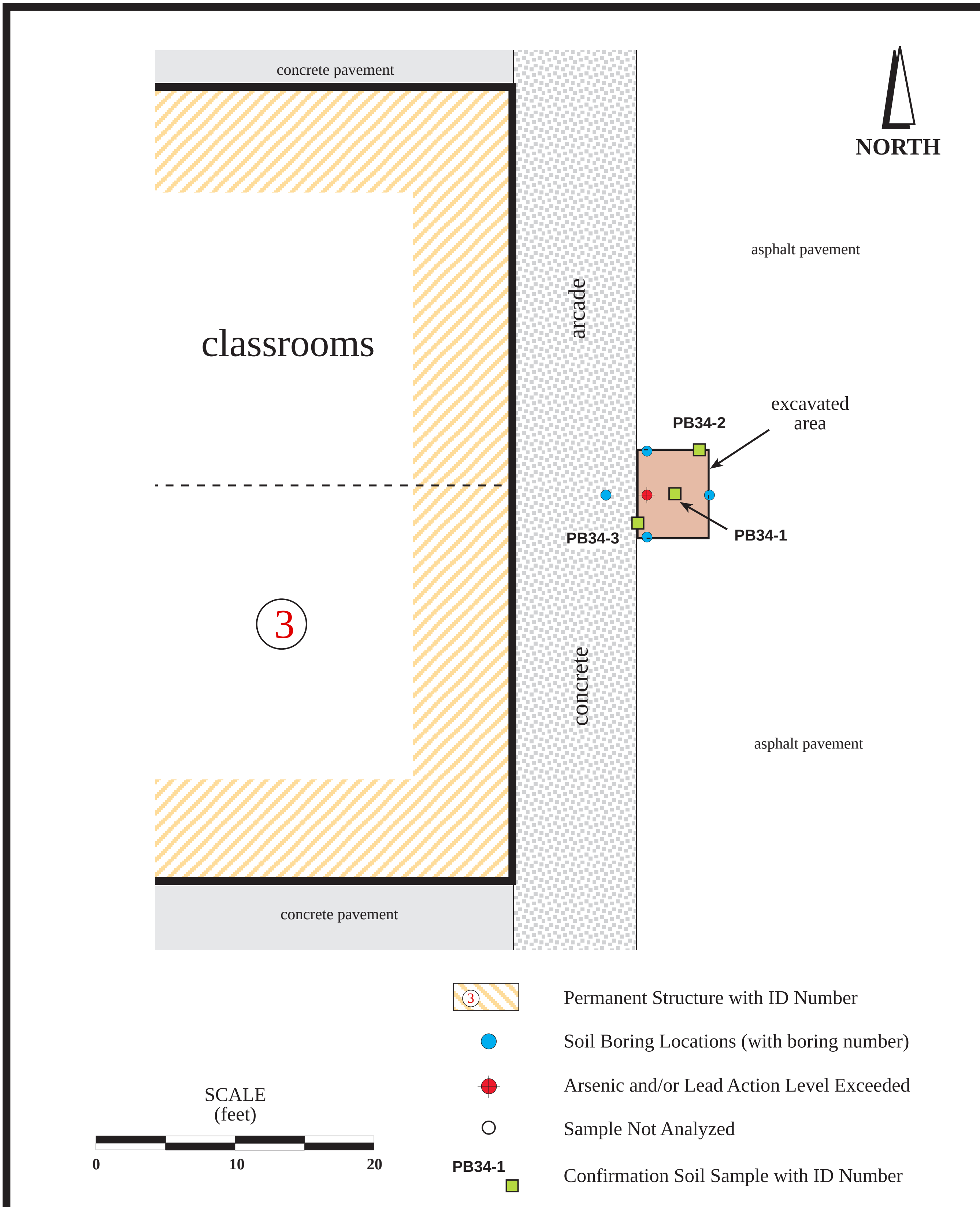
92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

PB-34 Boring Location Map

Figure 5



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ENVIRONMENTAL TECHNOLOGIES
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Tel: (949) 470-3691 • Fax: (949) 595-0459

92nd Street Elementary School
9211 Grape Street
Los Angeles, CA

PB-34 Excavation Location Map

Figure 6

TABLE 1
SUMMARY OF CONFIRMATION SOIL ANALYTICAL RESULTS
LEAD AND ARSENIC

92nd Street Elementary School
9211 Grape Street, Los Angeles, California

Sample Number	Sample Date	Total Lead	Arsenic
	EPA Method	EPA Method 6010B	
	Screening Level	80 mg/kg	12 mg/kg
Hazardous Waste Criteria	**TTLC**	1,000 mg/kg	500 mg/kg
	10 x STLC	50 ug/L	50 ug/L
PB27-1	11/5/20	NA	ND < 5
PB27-2	11/5/20	NA	ND < 5
PB27-3	11/5/20	NA	ND < 5
PB27-4	11/5/20	NA	ND < 5
PB27-5	11/5/20	NA	ND < 5
PB27-6	11/5/20	NA	ND < 5
PB27-7	11/5/20	NA	ND < 5
PB34-1	11/5/20	ND < 3	ND < 5
PB34-2	11/5/20	7.9	ND < 5
PB34-3	11/5/20	31	ND < 5

NOTES:
mg/kg - milligrams per kilogram
µg/kg - micrograms per kilogram
µg/L - micrograms per liter
ND - Compound not present above the given reporting limit
NA - Not analyzed

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

09 November 2020

Keith Thompson
Pinnacle Environmental Technologies
2 Santa Maria
Foothill Ranch, CA 92610

RE: 92nd St. ES

Enclosed are the results of analyses for samples received by the laboratory on 11/05/20 12:49. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Lee
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PB27-1	T203810-01	Soil	11/05/20 10:00	11/05/20 12:49
PB27-2	T203810-02	Soil	11/05/20 10:05	11/05/20 12:49
PB27-3	T203810-03	Soil	11/05/20 10:10	11/05/20 12:49
PB27-4	T203810-04	Soil	11/05/20 10:15	11/05/20 12:49
PB27-5	T203810-05	Soil	11/05/20 10:20	11/05/20 12:49
PB27-6	T203810-06	Soil	11/05/20 10:25	11/05/20 12:49
PB27-7	T203810-07	Soil	11/05/20 10:35	11/05/20 12:49
PB34-1	T203810-08	Soil	11/05/20 11:35	11/05/20 12:49
PB34-2	T203810-09	Soil	11/05/20 11:40	11/05/20 12:49
PB34-3	T203810-10	Soil	11/05/20 11:45	11/05/20 12:49

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Jeff Lee, Project Manager

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

DETECTIONS SUMMARY

Sample ID: PB27-1 **Laboratory ID:** T203810-01

No Results Detected

Sample ID: PB27-2 **Laboratory ID:** T203810-02

No Results Detected

Sample ID: PB27-3 **Laboratory ID:** T203810-03

No Results Detected

Sample ID: PB27-4 **Laboratory ID:** T203810-04

No Results Detected

Sample ID: PB27-5 **Laboratory ID:** T203810-05

No Results Detected

Sample ID: PB27-6 **Laboratory ID:** T203810-06

No Results Detected

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

Sample ID: PB27-7 **Laboratory ID:** T203810-07

No Results Detected

Sample ID: PB34-1 **Laboratory ID:** T203810-08

No Results Detected

Sample ID: PB34-2 **Laboratory ID:** T203810-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Lead	**7.9**	2.7	mg/kg	EPA 6010b	

Sample ID: PB34-3 **Laboratory ID:** T203810-10

Analyte	Result	Reporting Limit	Units	Method	Notes
Lead	**31**	3.0	mg/kg	EPA 6010b	

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB27-1

T203810-01 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Arsenic	ND	5.00	mg/kg	1	0110611	11/06/20	11/06/20	EPA 6010b	

SunStar Laboratories, Inc.

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Jeff Lee, Project Manager

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949.297.5027 Fax

Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB27-2

T203810-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Metals by EPA 6010B									
Arsenic	ND	4.55	mg/kg	1	0110611	11/06/20	11/06/20	EPA 6010b	

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB27-3

T203810-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				SunStar Laboratories, Inc.					
Metals by EPA 6010B									
Arsenic	ND	5.00	mg/kg	1	0110611	11/06/20	11/06/20	EPA 6010b	

SunStar Laboratories, Inc.

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB27-4

T203810-04 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Arsenic	ND	5.00	mg/kg	1	0110611	11/06/20	11/06/20	EPA 6010b	

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB27-5

T203810-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Metals by EPA 6010B									
Arsenic	ND	5.00	mg/kg	1	0110611	11/06/20	11/06/20	EPA 6010b	

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949.297.5020 Phone
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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB27-6

T203810-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			SunStar Laboratories, Inc.						
Metals by EPA 6010B									
Arsenic	ND	5.00	mg/kg	1	0110611	11/06/20	11/06/20	EPA 6010b	

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB27-7

T203810-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Metals by EPA 6010B									
Arsenic	ND	5.00	mg/kg	1	0110611	11/06/20	11/06/20	EPA 6010b	

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949.297.5027 Fax

Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB34-1
T203810-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

SunStar Laboratories, Inc.

Metals by EPA 6010B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	ND	4.55	mg/kg	1	0110630	11/06/20	11/07/20	EPA 6010b	
Lead	ND	3.0	"	"	0110531	11/05/20	11/05/20	"	

SunStar Laboratories, Inc.

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949.297.5027 Fax

Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB34-2

T203810-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			SunStar Laboratories, Inc.						
Metals by EPA 6010B									
Arsenic	ND	5.00	mg/kg	1	0110630	11/06/20	11/07/20	EPA 6010b	
Lead	**7.9**	2.7	"	"	0110531	11/05/20	11/05/20	"	

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949.297.5027 Fax

Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

PB34-3

T203810-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
				SunStar Laboratories, Inc.					
Metals by EPA 6010B									
Arsenic	ND	5.00	mg/kg	1	0110630	11/06/20	11/07/20	EPA 6010b	
Lead	**31**	3.0	"	"	0110531	11/05/20	11/05/20	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Lee, Project Manager

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0110531 - EPA 3050B										
Blank (0110531-BLK1)				Prepared & Analyzed: 11/05/20						
Lead	ND	3.0	mg/kg							
LCS (0110531-BS1)				Prepared & Analyzed: 11/05/20						
Lead	100	3.0	mg/kg	100		100	75-125			
Matrix Spike (0110531-MS1)	**Source: T203810-08**			Prepared & Analyzed: 11/05/20						
Lead	60.7	3.0	mg/kg	92.6	2.67	62.7	75-125			QM-05
Matrix Spike Dup (0110531-MSD1)	**Source: T203810-08**			Prepared & Analyzed: 11/05/20						
Lead	65.3	3.0	mg/kg	100	2.67	62.6	75-125	7.25	20	QM-05
Batch 0110611 - EPA 3050B										
Blank (0110611-BLK1)				Prepared & Analyzed: 11/06/20						
Arsenic	ND	5.00	mg/kg							
LCS (0110611-BS1)				Prepared & Analyzed: 11/06/20						
Arsenic	105	5.00	mg/kg	100		105	75-125			
Matrix Spike (0110611-MS1)	**Source: T203815-01**			Prepared & Analyzed: 11/06/20						
Arsenic	78.3	5.00	mg/kg	99.0	ND	79.1	75-125			
Matrix Spike Dup (0110611-MSD1)	**Source: T203815-01**			Prepared & Analyzed: 11/06/20						
Arsenic	75.7	5.00	mg/kg	98.0	ND	77.2	75-125	3.41	20	
Batch 0110630 - EPA 3050B										
Blank (0110630-BLK1)				Prepared: 11/06/20 Analyzed: 11/07/20						
Arsenic	ND	5.00	mg/kg							

SunStar Laboratories, Inc.

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Jeff Lee, Project Manager

SunStar Laboratories, Inc.
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949.297.5027 Fax

Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0110630 - EPA 3050B										
LCS (0110630-BS1)				Prepared: 11/06/20 Analyzed: 11/07/20						
Arsenic	95.6	5.00	mg/kg	100		95.6	75-125			
Matrix Spike (0110630-MS1)	**Source: T203810-08**			Prepared: 11/06/20 Analyzed: 11/07/20						
Arsenic	66.8	5.00	mg/kg	94.3	ND	70.8	75-125			QM-05
Matrix Spike Dup (0110630-MSD1)	**Source: T203810-08**			Prepared: 11/06/20 Analyzed: 11/07/20						
Arsenic	57.9	4.55	mg/kg	90.9	ND	63.7	75-125	14.3	20	QM-05

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Lake Forest, California 92630
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949.297.5027 Fax

Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/09/20 15:19

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

CHAIN OF CUSTODY RECORD

T203810

Site: 92nd St. ES
Address: 9211 Grape St. Los Angeles, CA

Project Manager: ☐ Malvey ☒ Thompson
Sampled By: ☒ Malvey ☑ Thompson
Laboratory: SunStar

TAT: NORM (RUSH) *
LARWQCB EDF: YES / (NO)
Page 1 of 1

PINNACLE SAMPLE ID	LABORATORY ID	Sample Time	Sample Date	J=Jar T = Tube V = VOA	EPA 5035 (EnCore)	TPH Full Scan EPA 8015M	TRPH EPA 418.1	VOC EPA 8260B	Oxygenates EPA 8260B	SVOC EPA 8270C	Pesticides PCB's EPA 8081/8082	Title 22 Metals	Arsenic 6020b	Lead 6010
PB27-1	01	1000	11/5/20	J									X	
PB27-2	02	1005											X	
PB27-3	03	1010											X	
PB27-4	04	1015											X	
PB27-5	05	1020											X	
PB27-6	06	1025											X	
PB-27-7	07	1035											X	
PB34-1	08	1135											X	X
PB34-2	09	1140											X	X
PB34-3	10	1145											X	X

Relinquished By: [signature]	Date/Time: 11/5/20 1250	Relinquished By:	Date/Time:	NOTES: * 24 hr TAT
Received By: [signature]	Date/Time: 11-5-20 1249	Received By:	Date/Time:	

PINNACLE ENVIRONMENTAL TECHNOLOGIES

2 Santa Maria
Foothill Ranch, CA 92610

4.3°C

Office Phone: (949) 470-3691
Office FAX: (949) 595-0459

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T203810

Client Name: Pinnacle Environmental Technologies   Project: 92nd St. ES

Delivered by: ☒ **Client** ☐ **SunStar Courier** ☐ **GLS** ☐ **FedEx** ☐ **UPS**

If Courier, Received by: ______   Date/Time Courier Received: ______

Lab Received by: Dan   Date/Time Lab Received: 11-5-20 12:49

Total number of coolers received: 0   Thermometer ID: _____SC-1_____   Calibration due : __8/17/21__

Temperature:	Cooler #1	4.5	°C +/- the CF (- 0.2°C) =	4.3	°C corrected temperature
Temperature:	Cooler #2		°C +/- the CF (- 0.2°C) =		°C corrected temperature
Temperature:	Cooler #3		°C +/- the CF (- 0.2°C) =		°C corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers)   Within criteria?   ☒**Yes** ☐**No** ☐**N/A**

If NO:

Samples received on ice? ☐Yes   ☐**No →** **Complete Non-Conformance Sheet**

If on ice, samples received same day collected? ☐Yes → Acceptable   ☐**No →** **Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☐Yes	☐No*	☒N/A
Sample containers intact	☒Yes	☐No*	
Sample labels match Chain of Custody IDs	☒Yes	☐No*	
Total number of containers received match COC	☒Yes	☐No*	
Proper containers received for analyses requested on COC	☒Yes	☐No*	
Proper preservative indicated on COC/containers for analyses requested	☐Yes	☐No*	☒N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☒ **Yes**	☐**No***	

* Complete Non-Conformance Receiving Sheet if checked   Cooler/Sample Review - Initials and date: DM 11-5-20

Comments:

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

10 November 2020

Keith Thompson
Pinnacle Environmental Technologies
2 Santa Maria
Foothill Ranch, CA 92610

RE: 92nd St. ES

Enclosed are the results of analyses for samples received by the laboratory on 11/05/20 12:48. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Lee
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
92 BIN	T203811-01	Soil	11/05/20 10:30	11/05/20 12:48

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PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

DETECTIONS SUMMARY

Sample ID: 92 BIN **Laboratory ID:** T203811-01

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**36**	10	mg/kg	EPA 8015B	
Barium	**88**	1.0	mg/kg	EPA 6010b	
Chromium	**10**	2.0	mg/kg	EPA 6010b	
Cobalt	**7.0**	2.0	mg/kg	EPA 6010b	
Copper	**14**	1.0	mg/kg	EPA 6010b	
Lead	**23**	3.0	mg/kg	EPA 6010b	
Nickel	**7.4**	2.0	mg/kg	EPA 6010b	
Vanadium	**26**	5.0	mg/kg	EPA 6010b	
Zinc	**100**	1.0	mg/kg	EPA 6010b	

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

92 BIN

T203811-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			SunStar Laboratories, Inc.						
Extractable Petroleum Hydrocarbons by 8015B									
C6-C12 (GRO)	ND	10	mg/kg	1	0110532	11/05/20	11/09/20	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	**36**	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*91.7 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	0110524	11/05/20	11/09/20	EPA 6010b	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	**88**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	11/09/20	"	
Cadmium	ND	2.0	"	"	"	"	11/09/20	"	
Chromium	**10**	2.0	"	"	"	"	"	"	
Cobalt	**7.0**	2.0	"	"	"	"	"	"	
Copper	**14**	1.0	"	"	"	"	"	"	
Lead	**23**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**7.4**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**26**	5.0	"	"	"	"	"	"	
Zinc	**100**	1.0	"	"	"	"	"	"	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	0110528	11/05/20	11/10/20	EPA 7471A Soil	

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

92 BIN

T203811-01 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	0.0025	mg/kg	1	0110612	11/06/20	11/06/20	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

92 BIN
T203811-01 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
cis-1,3-Dichloropropene	ND	0.0025	mg/kg	1	0110612	11/06/20	11/06/20	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.7 %*	*75.4-139*		*"*	*"*	*"*	*"*	
Surrogate: Dibromofluoromethane		*111 %*	*73.1-125*		*"*	*"*	*"*	*"*	
Surrogate: Toluene-d8		*95.9 %*	*82.6-117*		*"*	*"*	*"*	*"*	

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

Extractable Petroleum Hydrocarbons by 8015B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0110532 - EPA 3550B GC										
Blank (0110532-BLK1)				Prepared: 11/05/20 Analyzed: 11/09/20						
C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	*87.4*		*"*	*101*		*86.5*	*65-135*			
LCS (0110532-BS1)				Prepared: 11/05/20 Analyzed: 11/09/20						
C13-C28 (DRO)	470	10	mg/kg	505		92.5	75-125			
Surrogate: p-Terphenyl	*91.1*		*"*	*101*		*90.2*	*65-135*			
LCS Dup (0110532-BSD1)				Prepared: 11/05/20 Analyzed: 11/09/20						
C13-C28 (DRO)	520	10	mg/kg	505		102	75-125	9.77	20	
Surrogate: p-Terphenyl	*95.3*		*"*	*101*		*94.3*	*65-135*			

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0110524 - EPA 3050B										
Blank (0110524-BLK1)				Prepared: 11/05/20 Analyzed: 11/09/20						
Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	5.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							
LCS (0110524-BS1)				Prepared: 11/05/20 Analyzed: 11/09/20						
Arsenic	102	5.0	mg/kg	100		102	75-125			
Barium	103	1.0	"	100		103	75-125			
Cadmium	103	2.0	"	100		103	75-125			
Chromium	103	2.0	"	100		103	75-125			
Lead	105	3.0	"	100		105	75-125			
Matrix Spike (0110524-MS1)	**Source: T203800-23**			Prepared: 11/05/20 Analyzed: 11/09/20						
Arsenic	64.8	5.0	mg/kg	97.1	1.10	65.6	75-125			QM-05
Barium	158	1.0	"	97.1	92.9	66.8	75-125			QM-05
Cadmium	65.2	2.0	"	97.1	0.836	66.2	75-125			QM-05
Chromium	74.0	2.0	"	97.1	10.9	65.0	75-125			QM-05
Lead	76.7	3.0	"	97.1	30.2	47.9	75-125			QM-05

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0110524 - EPA 3050B										
Matrix Spike Dup (0110524-MSD1)	**Source: T203800-23**		Prepared: 11/05/20 Analyzed: 11/09/20							
Arsenic	64.3	5.0	mg/kg	94.3	1.10	67.0	75-125	0.645	20	QM-05
Barium	156	1.0	"	94.3	92.9	67.0	75-125	1.01	20	QM-05
Cadmium	63.4	2.0	"	94.3	0.836	66.3	75-125	2.73	20	QM-05
Chromium	74.1	2.0	"	94.3	10.9	67.0	75-125	0.197	20	QM-05
Lead	84.1	3.0	"	94.3	30.2	57.1	75-125	9.11	20	QM-05

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2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

Cold Vapor Extraction EPA 7470/7471 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0110528 - EPA 7471A Soil										
Blank (0110528-BLK1)				Prepared: 11/05/20 Analyzed: 11/10/20						
Mercury	ND	0.10	mg/kg							
LCS (0110528-BS1)				Prepared: 11/05/20 Analyzed: 11/10/20						
Mercury	0.345	0.10	mg/kg	0.417		82.7	80-120			
Matrix Spike (0110528-MS1)	**Source: T203806-01**			Prepared: 11/05/20 Analyzed: 11/10/20						
Mercury	0.369	0.10	mg/kg	0.417	0.0438	78.1	75-125			
Matrix Spike Dup (0110528-MSD1)	**Source: T203806-01**			Prepared: 11/05/20 Analyzed: 11/10/20						
Mercury	0.373	0.10	mg/kg	0.417	0.0438	79.0	75-125	1.03	20	

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0110612 - EPA 5030 GCMS										
Blank (0110612-BLK1)				Prepared & Analyzed: 11/06/20						
Bromobenzene	ND	0.0025	mg/kg							
Bromochloromethane	ND	0.0025	"							
Bromodichloromethane	ND	0.0025	"							
Bromoform	ND	0.0025	"							
Bromomethane	ND	0.0025	"							
n-Butylbenzene	ND	0.0025	"							
sec-Butylbenzene	ND	0.0025	"							
tert-Butylbenzene	ND	0.0025	"							
Carbon tetrachloride	ND	0.0025	"							
Chlorobenzene	ND	0.0025	"							
Chloroethane	ND	0.0025	"							
Chloroform	ND	0.0025	"							
Chloromethane	ND	0.0025	"							
2-Chlorotoluene	ND	0.0025	"							
4-Chlorotoluene	ND	0.0025	"							
Dibromochloromethane	ND	0.0025	"							
1,2-Dibromo-3-chloropropane	ND	0.0050	"							
1,2-Dibromoethane (EDB)	ND	0.0025	"							
Dibromomethane	ND	0.0025	"							
1,2-Dichlorobenzene	ND	0.0025	"							
1,3-Dichlorobenzene	ND	0.0025	"							
1,4-Dichlorobenzene	ND	0.0025	"							
Dichlorodifluoromethane	ND	0.0025	"							
1,1-Dichloroethane	ND	0.0025	"							
1,2-Dichloroethane	ND	0.0025	"							
1,1-Dichloroethene	ND	0.0025	"							
cis-1,2-Dichloroethene	ND	0.0025	"							
trans-1,2-Dichloroethene	ND	0.0025	"							
1,2-Dichloropropane	ND	0.0025	"							
1,3-Dichloropropane	ND	0.0025	"							
2,2-Dichloropropane	ND	0.0025	"							
1,1-Dichloropropene	ND	0.0025	"							
cis-1,3-Dichloropropene	ND	0.0025	"							
trans-1,3-Dichloropropene	ND	0.0025	"							
Hexachlorobutadiene	ND	0.0025	"							
Isopropylbenzene	ND	0.0025	"							

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0110612 - EPA 5030 GCMS										
Blank (0110612-BLK1)				Prepared & Analyzed: 11/06/20						
p-Isopropyltoluene	ND	0.0025	mg/kg							
Methylene chloride	ND	0.010	"							
Naphthalene	ND	0.0025	"							
n-Propylbenzene	ND	0.0025	"							
Styrene	ND	0.0025	"							
1,1,2,2-Tetrachloroethane	ND	0.0025	"							
1,1,1,2-Tetrachloroethane	ND	0.0025	"							
Tetrachloroethene	ND	0.0025	"							
1,2,3-Trichlorobenzene	ND	0.0025	"							
1,2,4-Trichlorobenzene	ND	0.0025	"							
1,1,2-Trichloroethane	ND	0.0025	"							
1,1,1-Trichloroethane	ND	0.0025	"							
Trichloroethene	ND	0.0025	"							
Trichlorofluoromethane	ND	0.0025	"							
1,2,3-Trichloropropane	ND	0.0025	"							
1,3,5-Trimethylbenzene	ND	0.0025	"							
1,2,4-Trimethylbenzene	ND	0.0025	"							
Vinyl chloride	ND	0.0025	"							
Benzene	ND	0.0025	"							
Toluene	ND	0.0025	"							
Ethylbenzene	ND	0.0025	"							
m,p-Xylene	ND	0.0050	"							
o-Xylene	ND	0.0025	"							
C6-C12 (GRO)	ND	0.25	"							
Surrogate: 4-Bromofluorobenzene	*0.0494*		*"*	*0.0500*		*98.7*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0543*		*"*	*0.0500*		*109*	*73.1-125*			
Surrogate: Toluene-d8	*0.0483*		*"*	*0.0500*		*96.5*	*82.6-117*			

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Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0110612 - EPA 5030 GCMS										
LCS (0110612-BS1)				Prepared & Analyzed: 11/06/20						
Chlorobenzene	0.0529	0.0025	mg/kg	0.0500		106	65.2-124			
1,1-Dichloroethene	0.0552	0.0025	"	0.0500		110	60.9-131			
Trichloroethene	0.0528	0.0025	"	0.0500		106	62.1-126			
Benzene	0.0498	0.0025	"	0.0500		99.5	65.3-127			
Toluene	0.0474	0.0025	"	0.0500		94.8	64.3-122			
Surrogate: 4-Bromofluorobenzene	*0.0484*		*"*	*0.0500*		*96.7*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0550*		*"*	*0.0500*		*110*	*73.1-125*			
Surrogate: Toluene-d8	*0.0486*		*"*	*0.0500*		*97.3*	*82.6-117*			
Matrix Spike (0110612-MS1)	**Source: T203815-01**			Prepared & Analyzed: 11/06/20						
Chlorobenzene	0.0441	0.0025	mg/kg	0.0497	ND	88.6	65.2-125			
1,1-Dichloroethene	0.0471	0.0025	"	0.0497	ND	94.8	60.9-131			
Trichloroethene	0.0450	0.0025	"	0.0497	ND	90.6	62.1-126			
Benzene	0.0431	0.0025	"	0.0497	ND	86.6	65.3-127			
Toluene	0.0396	0.0025	"	0.0497	ND	79.7	64.3-125			
Surrogate: 4-Bromofluorobenzene	*0.0482*		*"*	*0.0497*		*97.1*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0541*		*"*	*0.0497*		*109*	*73.1-125*			
Surrogate: Toluene-d8	*0.0486*		*"*	*0.0497*		*97.7*	*82.6-117*			
Matrix Spike Dup (0110612-MSD1)	**Source: T203815-01**			Prepared & Analyzed: 11/06/20						
Chlorobenzene	0.0457	0.0025	mg/kg	0.0492	ND	92.9	65.2-125	3.73	20	
1,1-Dichloroethene	0.0493	0.0025	"	0.0492	ND	100	60.9-131	4.49	20	
Trichloroethene	0.0479	0.0025	"	0.0492	ND	97.3	62.1-126	6.10	20	
Benzene	0.0454	0.0025	"	0.0492	ND	92.3	65.3-127	5.34	20	
Toluene	0.0415	0.0025	"	0.0492	ND	84.4	64.3-125	4.74	20	
Surrogate: 4-Bromofluorobenzene	*0.0482*		*"*	*0.0492*		*98.0*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0543*		*"*	*0.0492*		*110*	*73.1-125*			
Surrogate: Toluene-d8	*0.0477*		*"*	*0.0492*		*96.9*	*82.6-117*			

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Lee, Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Pinnacle Environmental Technologies	Project: 92nd St. ES	
2 Santa Maria	Project Number: [none]	**Reported:**
Foothill Ranch CA, 92610	Project Manager: Keith Thompson	11/10/20 16:25

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within acceptance criteria. The data is acceptable as no negative impact on data is expected.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Lee, Project Manager

CHAIN OF CUSTODY RECORD

T203811

Site: 92nd ST. ES
Address: 9211 Grape St.
Los Angeles, CA

Project Manager: ☐ Malvey ☒ Thompson
Sampled By: ☒ Malvey ☒ Thompson
Laboratory: Sun Star

TAT: ~~NORM~~ (RUSH) *
LARWQCB EDF: YES / (NO)
Page 1 of 1

PINNACLE SAMPLE ID	LABORATORY ID	Sample Time	Sample Date	J=Jar T = Tube V = VOA	EPA 5035 (EnCore)	TPH Full Scan EPA 8015M	TRPH EPA 418.1	VOC EPA 8260B	Oxygenates EPA 8260B	SVOC EPA 8270C	Pesticides PCB's EPA 8081/8082	Title 22 Metals		
92 ~~[illegible]~~ BIN	01	1030	11/5/20	2x8oz		X		X				X		

Relinquished By: [signature]	Date/Time: 11/5/20 1250	Relinquished By:	Date/Time: ~~11-5-20~~ ~~1249~~	NOTES: * 3 DAY TAT
Received By: [signature]	Date/Time: 11-5-20 1249	Received By:	Date/Time: [initials]	

PINNACLE ENVIRONMENAL TECHNOLOGIES

2 Santa Maria
Foothill Ranch, CA 92610

4.3°C

Office Phone: (949) 470-3691
Office FAX: (949) 595-0459

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T203811

Client Name: Pinnacle Environmental Technologies   Project: 92nd St. ES

Delivered by: ☒ **Client** ☐ **SunStar Courier** ☐ **GLS** ☐ **FedEx** ☐ **UPS**

If Courier, Received by: ______   Date/Time Courier Received: ______

Lab Received by: Dan   Date/Time Lab Received: 11-5-20 12:49

Total number of coolers received: 0   Thermometer ID: _____SC-1_____   Calibration due : __8/17/21__

Temperature:	Cooler #1	4.5	°C +/- the CF (- 0.2°C) =	4.3	°C corrected temperature
Temperature:	Cooler #2		°C +/- the CF (- 0.2°C) =		°C corrected temperature
Temperature:	Cooler #3		°C +/- the CF (- 0.2°C) =		°C corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers)   Within criteria? ☒**Yes** ☐**No** ☐**N/A**

If NO:

Samples received on ice? ☐Yes   ☐**No →** **Complete Non-Conformance Sheet**

If on ice, samples received same day collected? ☐Yes → Acceptable   ☐**No →** **Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☐Yes	☐No*	☒N/A
Sample containers intact	☒Yes	☐No*	
Sample labels match Chain of Custody IDs	☒Yes	☐No*	
Total number of containers received match COC	☒Yes	☐No*	
Proper containers received for analyses requested on COC	☒Yes	☐No*	
Proper preservative indicated on COC/containers for analyses requested	☐Yes	☐No*	☒N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☒ **Yes**	☐**No***	

* Complete Non-Conformance Receiving Sheet if checked   Cooler/Sample Review - Initials and date: DM 11-5-20

Comments:

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

WORK ORDER

T203811

SunStar Laboratories, Inc.

Client: **Pinnacle Environmental Technologies**
Project: **92nd St. ES**
Project Manager: **Jeff Lee**
Project Number: **[none]**

Report To:	**Invoice To:**
Pinnacle Environmental Technologies	Pinnacle Environmental Technologies
Keith Thompson	Keith Thompson
2 Santa Maria	2 Santa Maria
Foothill Ranch, CA 92610	Foothill Ranch, CA 92610
Phone: (949) 470-3691	Phone :(949) 470-3691
Fax: (949) 595-0459	Fax: (949) 595-0459

Date Due: 11/10/20 17:00 (3 day TAT)

Received By:	Dan Marteski	Date Received:	11/05/20 12:48
Logged In By:	Dan Marteski	Date Logged In:	11/05/20 13:02

Samples Received at: **4.3°C**

Custody Seals	No	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confir	No		

Analysis	Due	TAT	Expires	Comments
T203811-01 92 BIN [Soil] Sampled 11/05/20 10:30 (GMT-08:00) Pacific Time (US &				
8260	11/10/20 15:00	3	11/19/20 10:30	
8015 Carbon Chain	11/10/20 15:00	3	11/19/20 10:30	
6010 Title 22	11/10/20 15:00	3	11/10/20 10:30	

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22   7470/71 Hg

Reviewed By ____________________   Date ____________