Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

REMOVAL ACTION WORK PLAN
SEISMIC MODERNIZATION PROJECT
VENICE HIGH SCHOOL
13000 WEST VENICE BOULEVARD
LOS ANGELES, CALIFORNIA 90066

PREPARED FOR:

Office of Environmental Health and Safety
Los Angeles Unified School District
333 South Beaudry Avenue, 21st Floor
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PREPARED BY:

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August 31, 2016
Project No. 208571013

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

Subject: Removal Action Work Plan
Seismic Modernization Project
Venice High School
13000 West Venice Boulevard
Los Angeles, California 90066

Dear Mr. Schanen:

Ninyo & Moore has prepared this Removal Action Work Plan (RAW) for the removal of arsenic impacted soil located within the Seismic Modernization Project area of the subject school site. This task was performed in accordance with your authorization on behalf of the Los Angeles Unified School District. This RAW summarizes the previous findings, opinions, and conclusions regarding the environmental status of the above-referenced site as presented in Ninyo & Moore's Preliminary Environmental Assessment report dated July 5, 2016. This RAW also includes an Engineering Evaluation/Cost Analysis of three remedial alternatives and discussion of implementing the proposed removal action.

We appreciate this opportunity to be of service on this project. If you have any questions regarding this report, please contact the undersigned at your convenience.

Sincerely,
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1. INTRODUCTION AND SUMMARY

This document presents a Removal Action Workplan (RAW) for the removal of arsenic impacted soil located within the Seismic Modernization Project (SMP) area of the Venice High School at 13000 West Venice Boulevard, in Los Angeles, California (site; Figure 1). This RAW has been prepared by Ninyo & Moore Geotechnical and Environmental Sciences Consultants (Ninyo & Moore) on behalf of the Los Angeles Unified School District (LAUSD). LAUSD proposes modernization of the SMP area; the area west of the SMP will be used as a staging area during upgrade activities (Figure 2). The modernization project will replace the existing lunch pavilion.

Based on the results of soil samples collected by Ninyo & Moore, elevated concentrations of arsenic were reported in the SMP area (Ninyo & Moore, 2016). The screening level for arsenic at the site is 12 milligrams per kilogram (mg/kg), which is based on the Department of Toxic Substances Control's (DTSC's) statistical evaluation of arsenic concentrations at 19 school sites within southern California (DTSC, 2007).

1.1. Purpose of the RAW

Based on the information obtained from the Preliminary Environmental Assessment (PEA) performed by Ninyo & Moore (Ninyo & Moore, 2016), shallow soil at the site has been impacted by arsenic. The purposes of this RAW are to:

- Summarize the chemical and physical data from the PEA,
- Estimate the affected area of the site and volumes of soil affected, and;
- Propose measures to remove the arsenic concentrations in the affected areas of the site to levels below regulatory screening levels for the protection of human health and the environment.

The PEA report for the site included text, tables, figures, and appendices that contained various supporting documentation (e.g., historical site information, data, maps, etc.). Due to the large volume of information, these supporting documents are not included in this RAW, but are incorporated by reference. The reader is referred to Section 3 for reference and background information.

Based on the data collected during the PEA, the LAUSD has determined that "Response Action" is required to address the potential threat or hazard posed by the presence of elevated levels of arsenic at concentrations above the site-specific cleanup goal (CG; 12 mg/kg) at the site. The RAW includes a description of the on-site impact, a plan for conducting the removal action (RA), and the goals to be achieved by the RA, as required by the California Health and Safety Code (H&SC) Section 25323.1. The RAW is also consistent with the criteria specified in the H&SC Section 25356.1(h).

1.2. Removal Action Objectives

Site-specific RA objectives (RAOs) have been established to protect human health and the environment, and serve as a means of screening potential remedial alternatives for further evaluation. Ninyo & Moore has identified the following RAOs:

- Minimize potential exposure through ingestion, inhalation, or direct contact with the shallow soils containing elevated concentrations of arsenic that may pose risk to human health;
- Protect human health and the environment by minimizing generation and release of fugitive dust potentially containing elevated concentrations of arsenic into the ambient air in excess of South Coast Air Quality Management District (SCAQMD) requirements; and
- Minimize potential migration of elevated concentrations of arsenic from soils into air, surface water, or groundwater.

The remedial goals developed and adopted for arsenic impacted soil at the site will be responsive to these RAOs. The primary remedial goal for the site is performance-based and focuses on restoring the surface soils to normal conditions with regards to the elevated arsenic detected in shallow soil.

The goal of this RAW is for impacted soil with arsenic concentrations exceeding the CG to be excavated, removed from the site, and disposed of off-site. The proposed action at the site focuses on reducing the threat to human health, and the environment, and to provide a solution that reduces the toxicity, mobility, and volume of impacted soil. Ninyo & Moore has preliminarily determined that the proposed action is the preferred RA remedy based on the three broad technology evaluation criteria: effectiveness, implementability, and cost.

2. SITE DESCRIPTION

The following discusses site information in more detail.

2.1. Site Name

The site is identified by LAUSD as Venice High School.

2.2. Site Address

The current site address is:

13000 Venice Boulevard
Los Angeles, California

Venice Indoor Pool uses an address of 2490 South Walgrove Avenue. Other addresses that have been associated with the property include: 2438, 2445, and 2470 South Walgrove Avenue.

2.3. Designated Contact Person

The designated LAUSD contact person for this project is Mr. Dane Robinson, Site Assessment Project Manager.

2.4. Contact Person, Mailing Address, and Telephone Number

Contact information for this project is provided below:

Mr. Patrick Schanen
Environmental Health Manager
Los Angeles Unified School District
Office of Environmental Health and Safety
333 South Beaudry Street, 21st Floor
Los Angeles, California 90017

Mr. Schanen can be reached at (213) 241-3356. His facsimile number is (213) 241-6816.

2.5. EPA Identification Number

United States Environmental Protection Agency (EPA) Identification Number (ID) CAD982025058 has been assigned to the Site. This EPA ID number must be used for waste profiling and disposal purposes during implementation of the RAW. During this RAW, the RA contractor hired by the LAUSD will obtain a temporary EPA ID number from DTSC or EPA, or use this EPA ID Number for generation, transportation and off-site disposal of wastes.

2.6. Assessor's Parcel Number(s) and Maps

The Los Angeles County Tax Assessor Parcel Number for the site is 4236-011-900. According to the Los Angeles County Assessor, the parcel is zoned as [Q]PF-1XL for public facilities.

2.7. Ownership

The LAUSD is the current owner of the property.

2.8. Site Location

The site is located at 13000 West Venice Boulevard, in Los Angeles California in the Venice neighborhood of Los Angeles, California. The site includes one parcel occupying approximately 28.92 acres, bounded on the northwest by West Venice Boulevard, on the northeast by residential properties facing on Lyceum Avenue, on the southeast by West Zanja Street, and on the southwest by South Walgrove Avenue (AECOM, 2014).

According to the United States Geological Survey (USGS) Venice Quadrangle Map, dated 1964 (photorevised in 1981), the site is at approximately 35 feet above mean sea level. The site slopes to the southwest (USGS, 1964).

3. BACKGROUND INFORMATION

The following discusses background information in more detail.

3.1. Site Information

The first high school buildings were developed around 1913. After extensive damage suffered from the 1933 Long Beach earthquakes, new buildings were constructed in 1935 and 1936, many of which are still in use. The site is comprised of one parcel of approximately 28.92 acres. Buildings on the property include administration and classroom buildings, an auditorium, shop buildings, a boiler room, two gymnasiums, a cafeteria, a swimming pool, on the south corner of the site that is operated in cooperation with the City of Los Angeles, a student store, and maintenance buildings. A continuation high school (Phoenix High School) operates out of a building located on the east corner of the site, adjacent to the baseball field. The remainder of the property is developed with a tennis court, parking lots, sports fields, a running track, and a garden area at the west corner of the property (AECOM, 2014).

3.2. Surrounding Land Use

The site is surrounded mostly by residential properties, except for the properties adjacent to the site on the north, which include commercial facilities. The property is bordered by West Venice Boulevard to the northwest, South Walgrove Avenue to the southwest, and West Zanja Street to the southeast (Figure 1).

3.3. Previous Site Investigations

The following sections describe previous site investigations.

<u>Phase I Environmental Site Assessment Report</u>

Ninyo & Moore reviewed the Phase I Environmental Site Assessment (ESA) Report prepared by AECOM, dated April 4, 2014 (AECOM, 2014). Review of the Phase I ESA identified the following recognized environmental conditions (RECs) (as that defined in ASTM International Standards E1527-2013) currently or historically located on site:

Site RECs

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

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

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

SMP Area RECs

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

- Due to the age of the structures on-site, lead-based paint (LBP), and organochlorine pesticides (OCPs) in soils will be assessed in accordance with the DTSC, Interim Guidance, Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers, revised June 9, 2006 (DTSC, 2006).

- Due to their age, many of the buildings located on the project area may contain asbestos containing materials (ACMs) and LBP.

Preliminary Environmental Assessment Report

Ninyo & Moore conducted a PEA in January 2016, with subsequent step-out sampling conducted in March, May and June 2016 (Ninyo & Moore, 2016). The primary objectives were to evaluate if soil was impacted by arsenic and lead, which were identified as chemicals of potential concern (COPC) based on PEA investigation conducted at the site, delineate any arsenic- and lead-impacted soils, evaluate risk to human health and/or the environment, and determine the construction contractor's soil disposal requirements and potential soil reuse options for the project area.

The following summarizes the 2016 PEA investigation findings (Ninyo & Moore, 2016):

- OCPs were not detected above the laboratory reporting limits in the eight composite samples collected at approximately 0.5 feet below ground surface (bgs).
- Concentrations of lead in the soil samples by X-ray fluorescence analysis ranged from 1 to 91 mg/kg. Reported concentrations of lead from the fixed laboratory analysis ranged from 6.1 to 69 mg/kg, below the California Human Health Screening Level (CHHSL) value of 80 mg/kg for residential land use.
- Soil sampling performed during the PEA, in the SMP area reported various boring locations which contained elevated concentrations of arsenic at a maximum concentration of 100 mg/kg, exceeding the DTSC's established upper limit threshold of 12 mg/kg for Southern California soils (DTSC, 2007). Following the completion of the PEA field activities, lateral and vertical delineation of arsenic impacted soil was conducted on the northwestern boundary of the SMP at 1.5 feet bgs, and at 2.5, and 4.0 feet bgs, on the northeastern portion of the SMP boundaries (Figure 2).
- Based on laboratory results, arsenic impacted soil is non-hazardous, under asphalt and concrete pavement, and poses no risk to the students, faculty and staff at the school.
- Currently, there are no complete exposure pathways for the arsenic in soil to come into contact with students, faculty or staff.
- Arsenic and lead concentrations in soil did not exceed the Soluble Threshold Limit Concentration and Toxic Characteristic Leaching Procedure thresholds for California and federal waste characterization.

4. SITE GEOLOGY AND HYDROLOGY

The following sections provide a description of the site geology and hydrology.

4.1. Site Geology

The site is located within the Los Angeles Basin, between the Peninsular Ranges and Transverse Ranges geomorphic provinces of California (Norris et al, 1990). The basin is also referred to as the Los Angeles Depositional Basin. According to the Geologic Map of the Venice Quadrangle, the Site area is underlain by recent alluvium derived mostly from the Santa Monica Mountains. Alluvial deposits consist of unconsolidated floodplain deposits of gravel, sand, and clay. These deposits are underlain by sandstone and interbedded silty shale of the Monterey Formation. Depth to bedrock beneath the site is unknown (USGS, 1964).

4.2. Site Hydrogeology

The following sections discuss the site hydrology in terms of both surface waters and groundwater.

4.2.1. Surface Waters

There are no natural surface water bodies, such as streams, rivers, ponds, and lakes, at the Site. The nearest surface water is the Marina del Rey, approximately 1 mile south of the site.

4.2.2. Groundwater

Groundwater information specific to the site was not available. According to the State Water Resources Control Board (SWRCB) GeoTracker website (www.geotracker.swrcb.ca.gov), groundwater in the vicinity area was measured approximately between 19.41 to 23.04 feet bgs. Direction of groundwater flow is to the southwest (GeoTracker, 2015).

5. NATURE, SOURCE, AND EXTENT OF CONTAMINATION

Summary of the nature, source, and extent of arsenic in soil is presented below.

5.1. Type, Source, and Location of Contaminants

The elevated arsenic concentrations in soil are located primarily within the SMP area of the site. The source of the arsenic-impacted soil may be the attributed to the historical use of arsenical-based herbicides containing this metal prior to paving, for weed control. Specific locations where impacted arsenic in soil was identified and delineated within the SMP area of the site are summarized in Ninyo & Moore's PEA report (Ninyo & Moore, 2016). Tables and Figures from the PEA are presented in Appendix A.

5.2. Extent and Volume of Contamination

Ninyo & Moore estimated the volume of soil with elevated arsenic concentrations above 12 mg/kg based on the extents shown on Figure 3. The lateral and vertical extents of the "hotspots" were established during the PEA based on results of subsequent step outs (in all four primary directions) or step down sample results above 12 mg/kg (Figure 3). The volume of soil with elevated concentrations of arsenic is estimated in Table 3. The total volume of soil proposed for excavation is approximately 71.70 cubic yards. Based on an assumed conversion factor of 1.4 tons per cubic yard, it is estimated that the total amount of soil to be excavated will weigh approximately 100.38 tons (see Table 3). Additional excavations may be necessary, based on the results of confirmation sampling as discussed in Section 9.0. Based on the waste characterization analytical data for waste generated during the PEA, the impacted soils will be classified as non-hazardous for offsite disposal purposes.

5.3. Potential Health Effects of Arsenic

Arsenic can affect receptors when airborne dust is inhaled, ingested, or by passing through the skin. Arsenic should be handled as a carcinogen and with extreme caution. Arsenic 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 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.

5.4. Receptors Potentially Affected by the Site

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 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 residents are assumed to be exposed via inhalation of airborne particulate and vapor emissions from the site.

5.5. Exposure Pathways and Media of Concern

As discussed in the preceding sections, the site was developed as a high school and consists of athletic fields, vegetated planters and bare soil, hardscape (concrete and asphalt pavements, sidewalk), and buildings. The receptor population includes school children, faculty, and staff.

Potential receptors could be exposed to arsenic at the site. A Conceptual Site Model presented in the PEA Guidance manual describes potential chemical sources, release mechanisms, transport media, routes of environmental transport, exposure media, and potential human receptors. Exposure to chemicals can occur only if a complete pathway exists by which human receptors may be exposed to chemicals in soil, water, or air. For the arsenic concentrations found in shallow soil, the potentially complete exposure pathways could include dermal contact, dust inhalation, and incidental ingestion.

6. ENGINEERING EVALUATION/COST ANALYSIS (EE/CA)

The following discusses cost analysis information in more detail.

6.1. Removal Action Scope

The purpose of this section of the RAW is to identify and screen possible RA alternatives that achieve the RAO 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 RA 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 EE/CA is required to address the implementability, effectiveness, and cost of a non-time-critical RA. 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 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 focuses on the degree to which a remedial action reduces toxicity, mobility, and volume through treatment; minimizes residual risk and affords long-term protection; minimizes short-term impacts and how quickly it achieves protection.

- **Implementability** – Remedial actions are evaluated with respect to technical feasibility and applicability to site conditions. Some examples of this criterion include the ability to obtain necessary permits, regulatory approval of remedial actions, and availability of necessary equipment and skilled workers to implement the RA.

- **Cost** – This criterion relates to relative cost screening based on approximate capital and operation and maintenance costs.

Following the initial screening, each remedial action alternative presented in this RAW is independently analyzed without consideration to the other alternatives. The analysis addresses the criteria listed below.

- **Short-term effectiveness** – This criterion evaluates the effects of the implementation of the remedial alternative during the construction and implementation phase through completion of remediation. It accounts for the protection of workers and the community during remedial activities and considers the environmental impacts resulting from implementing the action.

- **Long-term effectiveness and permanence** – This 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 the long-term controls that 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 criterion evaluates whether the remedial technology employed results in significant reduction in toxicity, mobility, or volume of the hazardous substances.

- **Implementability** – This criterion evaluates the technical and administrative feasibility of the alternatives, as well as the availability of the necessary equipment, material, and services to complete the RA. This includes the ability to construct and operate the alternative, ability to obtain services and equipment, ability to monitor the performance and effectiveness of technology, and the ability to obtain necessary approvals from oversight agencies.

- **Overall protection of human health and the environment** – This criterion evaluates whether the remedial alternative provides acceptable protection of human health and the environment.

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

6.2. Evaluation of Removal Action Alternatives

Three RA alternatives were evaluated for the arsenic-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 Through Surface Cap, and
- Alternative 3 – Excavation/Off-site Recycling or Disposal.

A description and evaluation of each of the three RA alternatives is discussed in the following sections and is presented in Table 4.

6.2.1. Alternative 1 – No Further Action

The no action alternative (Alternative 1) has been included to provide a baseline for comparison among other RAs. This alternative includes no institutional controls, no treatment of soil, and no monitoring.

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

6.2.2. Alternative 2 – Containment through Surface Cap

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

The containment alternative would involve some disturbance of the COPC-impacted soil during placement of the surface cap. Therefore, potential short-term risks to on-site workers, public health, and the environment could result from dust or particulates that may be generated during these activities. These risks could be mitigated using personal protective equipment for on-site workers and engineering controls, such as dust suppression and additional traffic and equipment operating safety procedures, for protection of the surrounding community. The short-term risks associated with this alternative would be low.

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

Containment through surface capping would not lessen toxicity or volume of arsenic but would limit mobility, specifically, accessibility to the contaminant.

Containment is a relatively simple technology that is easily implemented and offers quick installation times. Because of the permanence of leaving the arsenic on the site, obtaining and renewing permits and regulatory approval can be difficult in some situations.

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

Containment technologies are typically a low to moderate cost treatment group. A rough industry cost for containment can be approximately between $175,000 to $225,000 per acre for a soil and asphalt or concrete cap. The existing surface area that would need to be capped for the school site encompasses approximately 1,200 square feet ($19,000 to $22,000). Additional costs of approximately $100,000 are added for preparation of engineering plans, preparation of the 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 4.

Because the arsenic-impacted soil would remain in place, it is likely that it would be necessary to restrict land use at the site.

6.2.3. Alternative 3 – Excavation/Off-site Recycling or Disposal

This alternative includes excavation and off-site recycling, reuse, or direct landfilling of soils containing concentrations of arsenic above the CG of 12 mg/kg. An estimated 71.70 cubic yards (100.38 tons) of impacted soil would be excavated to depths ranging from approximately 0.5 to 4 feet bgs. Excavation and offsite disposal would be an effective means of removing impacted soil and would allow the site's RAO to be met. Excavated soils would be loaded onto trucks and transported to the appropriate approved receiving facility. If existing analytical data needs to be supplemented for waste characterization, soils would be sampled and analyzed to determine its classification as either non-hazardous or hazardous waste pursuant to EPA SW-846.

This alternative would remove impacted soils with the planned control measures of this RAW and 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 its approval by LAUSD, thus complying with applicable or relevant and appropriate requirements (ARARs) (Section 7.0).

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

This alternative is technically and administratively feasible, and would be relatively easy to permit. All of the activities involved are well proven and relatively simple including: soil sampling and analysis, excavation, potential temporary stockpiling, loading and transport, soil recycling, soil disposal, and preliminary rough grading.

All activities would be conducted in accordance with local permits by properly licensed contractors and transporters, which would also achieve State and Federal acceptance.

The potential negative aspects of this alternative are its implementation cost (due primarily to transportation and disposal costs) and temporary neighborhood disruption during field activities involving excavation noise and truck traffic. All field activities would be performed in accordance with applicable regulations, setting 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. 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 community.

6.3. Costs of Removal Action Alternatives

The estimated cost for implementing each of the three RA alternatives is presented in Table 4.

There is no cost associated with Alternative 1.

The estimated cost for Alternative 2 ranges from approximately $19,000 to $22,000 to surface cap the approximately 1,200 square feet area impacted by arsenic. This cost would be increased with additional site area that may need to be surface capped. Annual post-surface capping inspection and repair costs of $12,000 per year for 20 years, or $240,000. Additional costs will be required for management oversight and reporting (approximately

$13,000), as well as for negotiations with the DTSC, preparation of engineering plans, preparation of the Operation and Maintenance Plan, and establishment and recording of land use restriction (approximately $200,000). Thus, the total estimated cost for Alternative 2, is approximately $465,576.

The major cost components for implementing Alternative 3 are soil excavation, soil loading, transportation, disposal, dust suppression, and backfilling with imported soil. No permits from the local agencies are expected to be needed to complete the excavation, transportation, and disposal of affected soil. The estimated project costs for Alternative 3 include the cost incurred by the environmental consultant to coordinate the work, oversee the excavation, conduct dust monitoring, complete the confirmation soil sampling, analyze samples at a laboratory, and prepare a Removal Action Completion Report (RACR). The estimated cost for the excavation, off-site disposal or recycling of the arsenic-impacted soils (100.38 tons) in Alternative 3 is approximately $16,350 or $47.50 per ton, which includes landfill disposal fees. An additional fee of $8,420 would also apply for backfilling and compaction activities. If alternative appropriate facilities are used with the approval of the LAUSD and DTSC, costs per ton may vary. This estimate assumes the excavation of non-hazardous, arsenic impacted soil. Additional costs of approximately $45,400 will be required for management oversight, field supplies, air monitoring, waste profiling, laboratory services and reporting. Thus, the total estimated cost for Alternative 3 with 100.38 tons of arsenic impacted soil for disposal is approximately $70,170 (Table 4).

6.4. Comparative Analysis of Removal Action Alternatives

A comparative analysis was conducted to identify the advantages and disadvantages of each RA alternative. The comparative analysis was conducted to address the criteria listed in the beginning of Section 5.0. Site-specific conditions used in the comparative analysis considered the time constraints imposed on each of the remedial alternatives due to the projected LAUSD construction schedule. The comparison of the three alternatives is shown on Table 4.

6.5. Description of Selected Remedy

Alternative 3 (Excavation and Offsite Disposal) is selected as the preferred alternative because it is easily implemented, effective, and provides long-term assurance that future occupants of the site will not face significant health risks due to elevated levels of arsenic in soil.

Soil excavation would involve the use of conventional excavation equipment, such as backhoes, loaders, and dozers to remove the estimated 71.70 cubic yards (100.38 tons) of impacted soil from the site. Excavated soil would be either directly loaded into staged trucks, or would be temporarily stockpiled on plastic sheeting next to the excavation areas until it could be loaded out for offsite disposal.

The soils removed from the excavations would be transported offsite to an appropriate, licensed facility for disposal. After completion of the soil RAs at each location, confirmation soil sampling would be conducted along the excavation sidewalls and bottoms to verify that the CGs have been met. Imported soil that have been tested and certified to be clean, or soil from onsite borrow areas not impacted by the chemicals of concern, would be used to backfill the excavations.

The cost to implement Alternative 3 (Excavation and Offsite Disposal) is estimated to be $70,170 as shown in Table 4. This cost estimate is based on the excavation, load-out, transport, and disposal of an estimated 71.70 cubic yards (100.38 tons) of impacted soil, after which the excavations will be backfilled and compacted with a similar volume of clean imported fill. Costs are also included for environmental management and oversight of the remedial activities.

7. APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Remedial actions selected under Federal, State, and local ARARs as required under Section 121(d) of the CERCLA must comply with ARARs under federal environmental law or, where more stringent than the federal requirements, state or state subdivision environmental or facility sitting law. Where a State is delegated authority to enforce a federal statute, such as the

Resource Conservation and Recovery Act (RCRA), the delegated portions of the statute are considered to be a federal ARAR unless the State law is broader or more stringent than the federal requirement.

ARARs are categorized as chemical-specific, action-specific, or location-specific. Chemical-specific ARARs are health- or risk-based cleanup standards or methodologies that, when applied to site-specific conditions, result in the development of cleanup standards for contaminants in environmental media. Location-specific ARARs are restrictions placed on the concentration of hazardous substances or the conduct of activities because of the special location of the site, which have important geographical, biological, or cultural features. Examples of special locations include wetlands, flood plains, sensitive ecosystems, and seismically active areas. Action-specific ARARs are technology-based or activity-based requirements or limitations on actions taken to handle hazardous wastes. They are triggered by the particular remedial activities to accomplish a remedy.

7.1. Chemical-Specific ARARs

Chemical-specific ARARs are health- or risk-based numerical values or methodologies that, when applied to site-specific conditions, establish the allowable amount or concentration of a chemical that may be found in, or discharged to, the ambient environment. A summary of chemical-specific ARARs is provided in Table B1, Appendix B.

- DTSC site CG of 12 mg/kg for arsenic in soils.
- The preferred remedial action will not involve the generation of hazardous waste (e.g., excavation of impacted soil) during remediation activities. The federally authorized RCRA program implemented in the State of California requires that excavated wastes be characterized to determine if they are hazardous under RCRA's definition.

7.2. Location-Specific ARARs

Location-specific ARARs include restricted areas such as the vicinity of wetland, endangered species, or areas of historical or cultural significance. No location-specific ARARs were identified under regulatory agencies definition.

7.3. Action-Specific ARARs

Action-specific ARARs address requirements or limitations for treatment, transportation, and disposal of hazardous waste for remedial activities. These action-specific ARARs are triggered by the particular remedial activities conducted at the site. Remedial activities associated with the excavation have the potential to generate air contaminants, particulate matter, and hazardous waste. A summary of action-specific ARARs is provided in Table B2, Appendix B.

- Hazardous waste excavation activities are regulated by RCRA, CFR, Occupational Safety and Health Administration (OSHA), and California Code of Regulations, which evaluate if the waste generated during excavation activities is hazardous waste; management of hazardous wastes; transport of hazardous waste on highways and freeways; and health and safety issues for workers on- and off-site and the public. Hazardous waste will not be generated. Excavated soil has been characterized as non-hazardous.

- SCAQMD regulates air emissions by controlling stationary and mobile sources through combined state and local programs. Air emissions from excavation or transport of soils may trigger action-specific ARARs related to air emissions.

- SWRCB regulates storm water runoff for projects disturbing more than one acre of soil.

8. REMOVAL ACTION IMPLEMENTATION

This section describes the field procedures and the methods expected to be used to implement the RA:

8.1. Site Preparation and Security Measures

The following control measures will be implemented during field activities during RA implementation.

8.1.1. Delineation of Excavation Areas

The excavation areas are shown in Figure 3. The excavation boundaries will be marked with flags or paint prior to initiating excavation. If excavation depth exceeds approximately 4 feet bgs, a 1:1 or flatter slope will be maintained during the excavation; no shoring is anticipated. The site will be enclosed by a fence to protect workers and the public. At least 5 days prior to the start of excavation, a Start Work Notice will be submitted to the adjacent residences and businesses.

8.1.2. Utility Clearance

Prior to commencing excavation activities, Underground Service Alert (USA) will be contacted at least 48 hours in advance to identify the location of utilities that enter the property. Proposed excavation areas will be clearly marked with white paint or surveyors flagging as required by USA. USA 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. The contractor will be responsible for protecting existing utilities.

8.1.3. Security Measures

Appropriate barriers and/or privacy fencing should be installed prior to beginning the excavation process to ensure that work areas are secure and safe and that trespassers or unauthorized personnel are not allowed on site. Security measures 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 visual plastic barrier should be installed along the fence.

- 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 a locked gate.

8.1.4. Contaminant Control

Contaminant control measures are not required because arsenic in the soil are not expected to migrate. However, arsenic in dust during excavation activities is a potential contamination migration route. This potential concern will be controlled by dust mitigation measures described in the site specific health and safety plan, Appendix C. Additionally, an air monitoring station will be placed on site, and 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 prepared. However, Best Management Practices will be implemented to minimize transportation of soil off site due to storm water runoff.

8.1.5. Permits and Plans

No permits for grading from City of Los Angeles, Division of Public Works are required for this LAUSD soil RA. No specific air or other permitting requirements have been identified for the proposed RA activities at this time.

8.1.6. Demolition of Pavements

The excavation areas are paved. Prior to excavating the arsenic impacted soil, the concrete or the asphalt pavement in the excavation areas will be carefully removed and separately stockpiled for disposal, so as not to disturb the surrounding soil. This demolition is planned to expose the arsenic-impacted soil for excavation.

8.2. Field Documentation

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

8.2.1. 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 permit 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 obliterated or rendered unreadable.

8.2.2. Chain-of-Custody Records

Chain-of-custody (COC) records are used to document sample collection and shipment to laboratory (ies) for analyses. Sample shipments for analyses will be accompanied by a COC record. Form(s) will be completed and transported with the samples for each laboratory and each shipment. If multiple coolers are transported to a single laboratory on a single day, COC form(s) will be completed and transported with the samples for each cooler. The COC record will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is 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 sample collector.

8.2.3. 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.

8.3. Excavation

The following paragraphs describe the procedures during soil excavation at the site.

8.3.1. Confined Space Entry Requirements

Confined space entry permitting is not required for the removal activities at the site.

8.3.2. Temporary Stockpile Operations

Soil has been profiled as non-hazardous waste, and therefore will be loaded directly into trucks. Stockpiling onsite during excavation activities are not expected. However, if it is necessary to temporarily stockpile the excavated soil until offsite transportation, the following may apply. The staging process will be conducted in a manner to minimize the generation of dust. At the staging areas, excavated soil will be placed on an impermeable barrier base (e.g., plastic sheeting) and at the end of each day, covered with tarps or other proper materials (e.g., plastic sheeting) to prevent any storm water run-on and/or dust generation. If significant rainfall is anticipated, the staging areas will be bermed to contain any runoff. When possible, excavated soil may be placed in covered roll-off bins or drums, or may be loaded onto transportation trucks.

The temporary onsite storage of excavated soil wastes will be secured and properly labeled with non-hazardous waste signs until offsite transportation and disposal are ready for loading. In no case, will the waste storage be longer than 7 days after its generation. Direct loading will take place concurrently with excavation operations, with access of loaders to the stockpile from outside of the excavation areas, while excavation operations deposit impacted soil from the excavation areas to the staging areas.

During non-excavation hours, excavated soil stockpiles will be covered with plastic sheeting or other proper materials. Additional field applications may involve installation of a temporary canopy, liner, or other physical barrier that minimizes movement of materials from the site by wind, water, or any other mechanism.

8.3.3. Decontamination Area

Vehicles, excavation, 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 liquids and residue 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. In addition, personnel overseeing decontamination procedures will be responsible for ensuring soil is not tracked off site.

Materials removed from impacted equipment and rinsate collected during decontamination of impacted 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 rinsate will be appropriately disposed of upon receipt of laboratory profiling data.

8.3.4. Excavation Plan

Excavation and removal of impacted soil will be performed in stages due to site area constraints, commencing in the western portion of the SMP. Soil will be removed to the lateral and vertical extents shown on Figure 3 using a backhoe or rubber-tired, front-end loader. As the proposed vertical limits of excavation are reached, confirmation soil samples will be collected and submitted to the laboratory for analysis of arsenic to guide the removals. The confirmation sampling procedure is described in Section 9. At the end of each work day, excavated areas will be secured with fencing, delineators, and caution tape to minimize the occurrence of accidents or unauthorized entry.

Following completion of the RAs, collection and analysis of confirmation samples, and receipt of approval from LAUSD, the excavated area will be backfilled, regraded and finished to meet future use project specifications.

8.4. Air and Meteorological Monitoring

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

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

Wind direction will be monitored with a windsock or equivalent device, such as a portable Wind Dancer™ windsock system for relatively low wind speeds. Rainfall at the site will be measured with a rain gauge. The remaining meteorological parameters listed above will be measured with a Kestrel® 4000 Pocket Weather™ Tracker™, or equivalent.

If sustained winds of 25 mph occur for more than 25 minutes, excavation and earth moving activities will cease.

8.4.1. Air Monitoring

Air monitoring will be performed during all site activities in which impacted or potentially impacted materials are being disturbed or handled. The RA contractor will staff the site with an air monitoring/health and safety professional whose responsibilities will include:

- Monitoring dust levels in the exclusion zone and other locations. The site air monitoring professional will have the authority to stop-work in the event that on site activities generate dust levels that exceed the site or community action levels (see the chart in Section 8.4.2. below). The air-monitoring professional will monitor on-site meteorological instrumentation and/or coordinate with off-site meteorological professionals to identify conditions that require cessation of work, e.g. wind speeds high enough to result in visible dust emissions from the point-of-origin or crossing the property line, despite the application of dust mitigation measures.
- Ensure that all real-time aerosol monitors are properly calibrated and in good working condition. Real-time, data-logging aerosol monitors (personal data RAM or equivalent) will be used to measure dust levels. Real-time information will be posted daily, and discussed with site workers.
- Coordinate general site safety activities including all daily hazard communication, safety practices and procedure briefings.
- Oversight of personal decontamination practices.
- General site safety leadership, support and recordkeeping activities.

8.4.2. Air Monitoring Strategy and Methodologies

The RA contractor will monitor dust levels and airborne levels of the COPCs in the following locations:

- One location upwind of excavation operations (as determined by wind direction meter [see Section 8.4.3 below]).
- Three locations downwind of excavation operations.
- One location within the exclusion zone (with a technician).

Actual locations will be determined in the field. Air monitoring will be performed during an 8-hour period each day that RAW activities are conducted. The air-monitoring professional will check the equipment every 30 minutes during operation.

Because the site COPCs requiring soil excavation are primarily particulate-type contaminants, the RA contractor will focus on monitoring of airborne total dust levels generated by removal activities. The RA contractor will base dust control measures on the Action Levels specified in the chart below. An evaluation of the potential airborne concentrations of COPCs was performed based on the highest concentrations of COPCs in soil on site. The evaluation was performed to determine whether the real time monitoring fence line action level (FAL) of 50 micrograms per cubic meter (µg/m^3) for total dust would be protective for the adjacent community, and whether the site action level of 1 milligram per cubic meter (mg/m^3) for total dust (which is 10 percent of the threshold limit value [TLV] established by the American Conference of Governmental Industrial Hygienists) would be protective for site workers. The evaluation of potential airborne concentrations of COPCs was performed by Ninyo & Moore, based on the evaluation, the FAL of 50 µg/m^3 and Site Action Level of 1 mg/m^3 for total dust above upwind total dust levels would be protective for the community and site workers, respectively, based on the maximum concentrations of arsenic and lead detected on site. Through mathematical modeling, it was determined that compliance with these action levels would not allow site contaminants to approach their recognized exposure limits.

Action Levels for Particulates

Chemical Name	Odor Threshold	CAL/OSHA PEL[a]	ACGIH TLV[b]	Site Action Levels[c]	Community Action Level (Fence Line)[d]
Total Dust	N/A	10 mg/m^3	10 mg/m^3	1.0 mg/m^3	50 µg/m^3
Arsenic	N/A	0.01 mg/m^3	0.01 mg/m^3	1.0 ug/m^3	0.003 µg/m^3

Notes:
[a] Permissible Exposure Limits (Cal/OSHA Article 107, Table AC1)
[b] 1990-1991 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists.
[c] Site Action Level for total dust is calculated as 10 percent of threshold limit value or Permissible Exposure Limit (PEL) as measured by NIOSH methods. If this action level is met or exceeded, then additional dust mitigation measures will be implemented. If the site dust levels cannot be controlled reliably within 15 minutes, all work will cease and a certified Industrial Hygienist will be consulted.
[d] Community Action Level (FAL) of 50 µg/m^3 total dust/particulate is based on the BAAQMD regulation of 50 µg/m3 of total dust.

8.4.3. Meteorological Monitoring

On-site ambient weather conditions (wind speed and direction, and relative humidity) will be monitored by an on-site meteorological station. On-site meteorological monitoring will be performed simultaneously with the excavation activities to ensure necessary precautions have been taken.

8.5. Fugitive Dust Control Plan

The purpose of this plan is to establish procedures for air monitoring to mitigate fugitive dust during the remedial activities at the site. Implementation of the best available fugitive dust control measures will help reduce the total airborne suspended particulate matter generated by field activities thus reducing fugitive dust emissions during remediation. Tentative locations of dust monitoring equipment will be based on prevailing wind directions (see Section 8.4.2). These locations will be relocated as needed based on changes in wind direction, as determined from monitoring by an on-site weather station.

The emission of fugitive dust will not be allowed from any active operation, open storage pile, or disturbed surface area such that:

- The dust remains visible in the atmosphere beyond the property line of the emission source; or,
- The dust emission exceeds 20 percent opacity (estimated visually), if the dust emission is the result of movement of a motorized source.

Perimeter air monitoring will be conducted with a MIE DataRAM 2000 aerosol monitor, or equivalent. The DataRAM aerosol monitor measures concentrations of airborne dust, smoke, mists, haze and fumes and will be used for continuous unattended environmental monitoring of the site perimeter monitoring. The DataRAM will be used in place of alternative dust samplers that require off site laboratory sample analysis by OSHA Method 0500 to determine if the designated perimeter dust threshold has been exceeded. The DataRAM will provide continuous real-time data measurement of the total dust FAL of 50 $\mu g/m^3$ above up-wind background dust concentration.

DataRAM meters will be set up at approximately 5 feet above grade at the following site locations and operated for the duration of daily field activities.

- One location upwind of excavation operations (as determined by wind direction meter.
- Three locations downwind of excavation operations.

The DataRAM meters will be set with a flow rate of 2 liters per minute and will collect minimum, maximum, and average total aerosol concentration (ug/m^3) every 10 minutes of operating time. Each daytime hour of field time, the meters will be visually checked and the meter results will be reviewed and manually recorded.

8.6. 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 and heavy equipment decontamination area, truck inspection/check point, 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 waste manifest.

Prior to the start of field work, the relevant agencies will be contacted regarding potential road construction. If there is impact from 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). Dust mitigation measures will be implemented at the on-site truck routes in accordance with the Dust Monitoring and Control Plan in Appendix E.

8.7. Site Restoration

Upon completion of soil removal activities, the excavations will be backfilled and graded for redevelopment. The surface of the site will be graded and prepared to prevent run-off. Since the area of disturbance is less than one acre, a Storm Water Pollution Prevention Plan is not necessary.

9. CONFIRMATION SAMPLING AND IMPORT SOIL EVALUATION

9.1. Confirmation Sampling and Analyses

Following the RA, soil samples will be collected and analyzed from the bottom and sidewalls of the excavation to evaluate if the excavation extended a sufficient distance laterally and vertically to remove the soil that exceeds the CG for arsenic.

As discussed in Section 5.2, the extents of the proposed soil excavations are shown in Figure 3. Excavation depths will vary from approximately 0.5 to 4 feet bgs depending on the depth to which arsenic were detected above CG.

Confirmation soil samples will be collected on a systematic basis from the nodes of a generally square grid with a spacing of approximately 10 feet, or approximately 10 linear feet. In areas where the excavation sidewalls are approximately 4 feet bgs or deeper, two sidewall samples will be collected at the indicated 10-foot grid node. If the excavation sidewall separates two excavations of different depths (e.g., 1.5 feet bgs and 4 feet bgs), then one or more sidewall samples will be collected at the indicated 10-foot grid node at the middle of each step for multi-depth excavations. For the planned excavation, approximately 56 confirmation samples will be collected from the bottom and sidewalls at the locations and depths shown on Figure 3 and Table 5.

Samples will be collected in glass jars from the bottom and around the perimeter of the excavated area. Upon retrieval, the samples will be capped, labeled, placed in individual zip-lock bags, recorded on a COC document, and placed in storage pending delivery to a State-certified laboratory for chemical analyses. These samples will be analyzed for arsenic in general accordance with EPA Method 6020. If the results of these samples exceed the CG of 12 mg/kg, then additional excavation will be performed within the Project Area until the arsenic impacted soil is removed from the site. Confirmation soil sampling, analysis, and evaluation will be repeated, as previously described, within any resulting excavation. The excavation will be considered complete if the arsenic concentrations detected in the confirmation samples are less than 12 mg/kg.

9.2. Borrow Source Evaluation

Clean fill material will be imported to the site to backfill excavations and grade the site. The amount of clean fill material to be imported to the site will depend on the final extent of excavation and the quantity of stockpiled soil which is determined to be suitable for re-use as backfill material on site. Any soil imported to the Site will be tested and certified in accordance with LAUSD Section 01 4524 specifications – "Environmental Import/Export Materials Testing" (October 2011). The contractor will be responsible for providing documentation of the source of clean fill material and will be responsible for performing or providing documentation of the required geotechnical and environmental analysis of the clean import fill material.

10. PUBLIC PARTICIPATION

To fulfill the requirements of public participation for the RAW process, a project spokesperson will be designated. The spokesperson will coordinate news releases, notify affected citizens, establish an administrative record (as defined in the NCP 300.820) and notify the public of the Administrative Record. A mailing list will be generated (for properties within a ¼-mile radius of the site) and a key contacts list (local elected representatives, school officials, and local organizations) will be created. A community survey, mailing list, and key contact list will be submitted to the LAUSD for review and approval.

A public notice will be published in local newspapers (including one in Spanish, if available) informing the community of this proposed RAW and for public inspection at established Information Repositories, which are listed below.

- LAUSD Office of Environmental Health and Safety located at 333 S. Beaudry Avenue, 21st Floor, Los Angeles, CA 90017.
- Venice High School located at 13000 Venice Blvd, Los Angeles, CA 90002.
- Mar Vista Branch Library, 12006 Venice Boulevard, Los Angeles, CA 90066

Copies of this RAW will be placed in the Information Repositories for access by community members.

The date and location, if required, of the public meeting will be indicated in the public notice. A 30-day public comment period will be held to accept public comments on the proposed RA. Following the public meeting, and at the close of the public comment period, LAUSD will evaluate the comments and make appropriate revisions and finalize the RAW.

Prior to RAW implementation, a notice of field work will be prepared and posted at perimeter site locations, and distributed by the LAUSD five days prior to the start of RAW field activities. The work notice will be distributed to Venice High School students, staff and faculty, and nearby residents and businesses (i.e., within line-of-sight). The notice will also be laminated and posted along the fence line of the project. In addition, field notices will be mailed to the elected officials in order to keep them informed about their neighborhood school. The public notice will provide a general description of the fieldwork, along with the telephone number of the LAUSD Project Manager for further information.

11. PROJECT SCHEDULE AND REPORTING

An anticipated tentative schedule for RAW implementation is shown below. Proposed work will be completed during weekends or holidays, when school is not in session.

Task	Calendar Days to Complete	Tentative Start Date
Field Preparation	5 days	Early December 2016
RAW implementation and Confirmation Sampling.	5 days	Mid December 2016
Preparation of Draft RACR	30 days	February 2017

Following completion of the RA, a RACR will be prepared and submitted to the LAUSD for review and approval. The RACR will include a summary of the RA field activities and the following items:

- Site plan, soil excavation extents and confirmation sample location map;
- Tabulated analytical results;
- Air monitoring results;

- Certified analytical laboratory reports;
- Copies of the waste manifests.

12. REFERENCES

AECOM, 2014, Phase I Environmental Site Assessment, Venice High School, 13000 West Venice Boulevard, Los Angeles, California, dated April 4.

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, 1994, Preliminary Endangerment Assessment Guidance Manual: dated January (revised October 2015).

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, revised June 9.

DTSC, see Department of Toxic Substances Control.

EPA, see United States Environmental Protection Agency.

GeoTracker, see California State Water Resources Control Board.

Norris, R.M., and Webb, R.W., 1990, Geology of California, 2nd Edition, John Wiley & Sons, dated May 1.

Ninyo & Moore, 2015, Preliminary Environmental Assessment Equivalent Work Plan, Venice High School, 13000 West Venice Boulevard, Los Angeles, California, dated October 5.

Ninyo & Moore, 2016, Preliminary Environmental Assessment Equivalent Report, Seismic Modernization Project, Venice High School, 13000 West Venice Boulevard, Los Angeles, California, dated July 5.

State Water Resources Control Board, GeoTracker website, 2015, http://geotracker.swrcb.ca.gov.

United States Geological Survey, 1964 (Photorevised 1981), Venice Quadrangle, California, 7.5 Minute Series (Topographic) Map, Scale 1:24,000.

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

USGS, see United States Geological Survey.

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
W-B1-0.5	0.5	01/07/16	14.2	- -	**24**
W-B1-1.5	1.5	01/07/16	21	- -	7.0
W-B1-2.5	2.5	01/07/16	12	- -	- -
W-B1-5W-0.5	0.5	03/22/16	- -	- -	**91**
W-B1-5W-1.5	1.5	03/22/16	- -	- -	5.8
W-B1-5W-2.5	2.5	03/22/16	- -	- -	- -
W-B1-8W-0.5	0.5	03/22/16	- -	- -	**55**
W-B1-8W-1.5	1.5	03/22/16	- -	- -	7.0
W-B1-8W-2.5	2.5	03/22/16	- -	- -	- -
W-B1-5E-0.5	0.5	03/22/16	- -	- -	**100**
W-B1-5E-1.5	1.5	03/22/16	- -	- -	6.4
W-B1-5E-2.5	2.5	03/22/16	- -	- -	- -
DUP-11A	2.5	03/22/16	- -	- -	- -
W-B1-10E-0.5	0.5	03/22/16	- -	- -	**23**
W-B1-10E-1.5	1.5	03/22/16	- -	- -	6.2
W-B1-10E-2.5	2.5	03/22/16	- -	- -	- -
W-B1-5N-0.5	0.5	03/22/16	- -	- -	**23**
W-B1-5N-1.5	1.5	03/22/16	- -	- -	5.9
W-B1-5N-2.5	2.5	03/22/16	- -	- -	- -
W-B2-0.5	0.5	01/07/16	13	- -	7.7
W-B2-1.5	1.5	01/07/16	23.6	- -	- -
W-B2-2.5	2.5	01/07/16	16.7	- -	- -
W-B3-0.5	0.5	01/07/16	52	69	10
W-B3-1.5	1.5	01/07/16	19.4	- -	- -
W-B3-2.5	2.5	01/07/16	19.3	- -	- -
DUP1	2.5	01/07/16	21.2	- -	- -
W-B4-0.5	0.5	01/07/16	15	- -	**12**
W-B4-1.5	1.5	01/07/16	9	- -	9.8
W-B4-2.5	2.5	01/07/16	4	- -	- -
W-B4-5W-0.5	0.5	03/21/16	- -	- -	8.2
W-B4-5W-1.5	1.5	03/21/16	- -	- -	- -
W-B4-5W-2.5	2.5	03/21/16	- -	- -	- -
W-B4-10W-0.5	0.5	03/21/16	- -	- -	**16**
W-B4-10W-1.5	1.5	03/21/16	- -	- -	9.6
W-B4-10W-2.5	2.5	03/21/16	- -	- -	- -
W-B4-5S-0.5	0.5	03/21/16	- -	- -	**13**
W-B4-5S-1.5	1.5	03/21/16	- -	- -	6.8
W-B4-5S-2.5	2.5	03/21/16	- -	- -	- -
W-B4-10S-0.5	0.5	03/21/16	- -	- -	**17**
W-B4-10S-1.5	1.5	03/21/16	- -	- -	**12**
W-B4-10S-2.5	2.5	03/21/16	- -	- -	- -
W-B4-5E-0.5	0.5	03/21/16	- -	- -	8.4
DUP-3A	0.5	03/21/16	- -	- -	8.9
W-B4-5E-1.5	1.5	03/21/16	- -	- -	- -
W-B4-5E-2.5	2.5	03/21/16	- -	- -	- -
W-B4-10E-0.5	0.5	03/21/16	- -	- -	1.2
W-B4-10E-1.5	1.5	03/21/16	- -	- -	- -
W-B4-10E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B1-0.5	0.5	01/07/16	10	- -	**35**
SMP-B1-1.5	1.5	01/07/16	2	- -	8.2
SMP-B1-2.5	2.5	01/07/16	2	- -	- -
SMP-B1-5W-0.5	0.5	03/22/16	- -	- -	3.8
SMP-B1-5W-1.5	1.5	03/22/16	- -	- -	- -
SMP-B1-5W-2.5	2.5	03/22/16	- -	- -	- -

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
SMP-B1-10W-0.5	0.5	03/22/16	- -	- -	4.3
DUP-7A	0.5	03/22/16	- -	- -	**13**
SMP-B1-10W-1.5	1.5	03/22/16	- -	- -	2.8
SMP-B1-10W-2.5	2.5	03/22/16	- -	- -	- -
SMP-B1-5S-0.5	0.5	03/22/16	- -	- -	**32**
SMP-B1-5S-1.5	1.5	03/22/16	- -	- -	3.7
SMP-B1-5S-2.5	2.5	03/22/16	- -	- -	- -
DUP-10A	2.5	03/22/16	- -	- -	- -
SMP-B1-5E-0.5	0.5	03/22/16	- -	- -	**17**
SMP-B1-5E-1.5	1.5	03/22/16	- -	- -	5.5
SMP-B1-5E-2.5	2.5	03/22/16	- -	- -	- -
DUP-9A	2.5	03/22/16	- -	- -	- -
SMP-B1-10E-0.5	0.5	03/22/16	- -	- -	5.0
SMP-B1-10E-1.5	1.5	03/22/16	- -	- -	- -
SMP-B1-10E-2.5	2.5	03/22/16	- -	- -	- -
SMP-B1-5N-0.5	0.5	03/22/16	- -	- -	7.4
SMP-B1-5N-1.5	1.5	03/22/16	- -	- -	- -
SMP-B1-5N-2.5	2.5	03/22/16	- -	- -	- -
SMP-B1-10N-0.5	0.5	03/22/16	- -	- -	3.7
SMP-B1-10N-1.5	1.5	03/22/16	- -	- -	- -
SMP-B1-10N-2.5	2.5	03/22/16	- -	- -	- -
SMP-B2-0.5	0.5	01/07/16	5	- -	**26**
DUP3	0.5	01/07/16	12	- -	**60**
SMP-B2-1.5	1.5	01/07/16	4	- -	4.4
SMP-B2-2.5	2.5	01/07/16	2	- -	- -
SMP-B2-5S-0.5	0.5	03/21/16	- -	- -	6.8
SMP-B2-5S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B2-5S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B2-10S-0.5	0.5	03/21/16	- -	- -	5.0
SMP-B2-10S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B2-10S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B2-5E-0.5	0.5	03/21/16	- -	- -	**14**
SMP-B2-5E-1.5	1.5	03/21/16	- -	- -	4.1
SMP-B2-5E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B2-10.5E-0.5	0.5	03/21/16	- -	- -	9.0
SMP-B2-10.5E-1.5	1.5	03/21/16	- -	- -	- -
SMP-B2-10.5E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B2-5N-0.5	0.5	03/21/16	- -	- -	7.8
SMP-B2-5N-1.5	1.5	03/21/16	- -	- -	- -
SMP-B2-5N-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-0.5	0.5	01/07/16	22.4	6.1	**21**
SMP-B3-1.5	1.5	01/07/16	16	- -	6.7
SMP-B3-2.5	2.5	01/07/16	22.7	- -	- -
SMP-B3-5W-0.5	0.5	03/21/16	- -	- -	6.0
SMP-B3-5W-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-5W-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-10W-0.5	0.5	03/21/16	- -	- -	6.2
DUP-4A	0/5	03/21/16	- -	- -	5.7
SMP-B3-10W-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-10W-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-4S-0.5	0.5	03/21/16	- -	- -	5.5
SMP-B3-4S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-4S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-7.5S-0.5	0.5	03/21/16	- -	- -	6.6

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
DUP-5A	0.5	03/21/16	- -	- -	6.9
SMP-B3-7.5S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-7.5S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-3E-0.5	0.5	03/21/16	- -	- -	5.5
SMP-B3-3E-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-3E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-10E-0.5	0.5	03/21/16	- -	- -	7.2
SMP-B3-10E-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-10E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-5N-0.5	0.5	03/21/16	- -	- -	5.6
SMP-B3-5N-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-5N-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-5W-0.5	0.5	03/21/16	- -	- -	7.2
SMP-B6-5W-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-5W-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-9W-0.5	0.5	03/21/16	- -	- -	6.0
SMP-B6-9W-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-9W-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-5S-0.5	0.5	03/21/16	- -	- -	6.1
SMP-B6-5S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-5S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-10S-0.5	0.5	03/21/16	- -	- -	4.5
SMP-B6-10S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-10S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-5N-0.5	0.5	03/21/16	- -	- -	5.2
DUP-6A	0.5	03/21/16	- -	- -	6.1
SMP-B6-5N-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-5N-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-10N-0.5	0.5	03/21/16	- -	- -	6.1
SMP-B6-10N-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-10N-2.5	2.5	03/21/16	- -	- -	- -
SMP-B4-0.5	0.5	01/07/16	10	- -	5.8
SMP-B4-1.5	1.5	01/07/16	7	- -	- -
SMP-B4-2.5	2.5	01/07/16	10	- -	- -
SMP-B5-0.5	0.5	01/07/16	14	- -	2.1
SMP-B5-1.5	1.5	01/07/16	16	- -	- -
SMP-B5-2.5	2.5	01/07/16	17	- -	- -
DUP2	2.5	01/07/16	17.6	- -	- -
SMP-B6-0.5	0.5	01/07/16	6	- -	9.7
DUP4	0.5	01/07/16	3	- -	**38**
SMP-B6-1.5	1.5	01/07/16	4	- -	4.8
SMP-B6-2.5	2.5	01/07/16	3	- -	- -
SMP-B7-0.5	0.5	01/07/16	44	43	6.4
SMP-B7-1.5	1.5	01/07/16	5	- -	- -
SMP-B7-2.5	2.5	01/07/16	7	- -	- -
SMP-B8-0.5	0.5	01/07/16	7	- -	10
SMP-B8-1.5	1.5	01/07/16	4	- -	- -
SMP-B8-2.5	2.5	01/07/16	5	- -	- -
SMP-B9-0.5	0.5	01/07/16	16	8.4	11
SMP-B9-1.5	1.5	01/07/16	8	- -	- -
SMP-B9-2.5	2.5	01/07/16	9	- -	- -
DUP5	2.5	01/07/16	4	- -	- -
SMP-B10-0.5	0.5	01/07/16	10	- -	6.5
SMP-B10-1.5	1.5	01/07/16	1	- -	- -

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
SMP-B10-2.5	2.5	01/07/16	5	- -	- -
SMP-B11-0.5	0.5	01/07/16	11	- -	4.2
DUP7	0.5	01/07/16	3	- -	5.9
SMP-B11-1.5	1.5	01/07/16	7	- -	- -
SMP-B11-2.5	2.5	01/07/16	5	- -	- -
SMP-B12-0.5	0.5	01/07/16	74	33	4.4
SMP-B12-1.5	1.5	01/07/16	8	- -	- -
SMP-B12-2.5	2.5	01/07/16	1	- -	- -
SMP-B13-0.5	0.5	01/07/16	13	- -	10
SMP-B13-1.5	1.5	01/07/16	13	- -	- -
SMP-B13-2.5	2.5	01/07/16	18	- -	- -
SMP-B14-0.5	0.5	01/07/16	**91**	39	**16**
SMP-B14-1.5	1.5	01/07/16	15	- -	**16**
SMP-B14-2.5	2.5	01/07/16	9	- -	**16**
SMP-B14-A-4.0	4.0	03/22/16	- -	- -	8.3
SMP-B14-A-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-5.5W-0.5	0.5	03/22/16	- -	- -	6.9
SMP-B14-5.5W-1.5	1.5	03/22/16	- -	- -	**14**
SMP-B14-5.5W-2.5	2.5	03/22/16	- -	- -	6.6
SMP-B14-5.5W-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-5.5W-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-5.5W-5S-0.5	0.5	05/14/16	- -	- -	3.4
DUP1B	0.5	05/14/16	- -	- -	3.2
SMP-B14-5.5W-5S-1.5	1.5	05/14/16	- -	- -	**17**
SMP-B14-5.5W-5S-2.5	2.5	05/14/16	- -	- -	8.1
SMP-B14-5.5W-5S-5SW-0.5	0.5	06/04/16	- -	- -	3.0
SMP-B14-5.5W-5S-5SW-1.5	1.5	06/04/16	- -	- -	7.6
DUP-2C	1.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-5SW-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-5SW-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-10SW-0.5	0.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-10SW-1.5	1.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-10SW-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-10SW-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-5.5W-10S-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-5.5W-10S-1.5	1.5	05/14/16	- -	- -	10
SMP-B14-5.5W-10S-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-10W-0.5	0.5	03/22/16	- -	- -	3.2
SMP-B14-10W-1.5	1.5	03/22/16	- -	- -	5.2
SMP-B14-10W-2.5	2.5	03/22/16	- -	- -	- -
SMP-B14-10W-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-10W-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-10W-5S-0.5	0.5	06/04/16	- -	- -	3.3
SMP-B14-10W-5S-1.5	1.5	06/04/16	- -	- -	7.2
SMP-B14-10W-5S-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-10W-5S-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-15W-5S-0.5	0.5	06/04/16	- -	- -	- -
SMP-B14-15W-5S-1.5	1.5	06/04/16	- -	- -	- -
SMP-B14-15W-5S-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-15W-5S-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-5E-0.5	0.5	03/22/16	- -	- -	9.9
SMP-B14-5E-1.5	1.5	03/22/16	- -	- -	9.4
SMP-B14-5E-2.5	2.5	03/22/16	- -	- -	7.4
SMP-B14-5E-4.0	4.0	03/22/16	- -	- -	- -

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
SMP-B14-5E-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-10E-0.5	0.5	03/22/16	- -	- -	9.7
SMP-B14-10E-1.5	1.5	03/22/16	- -	- -	- -
SMP-B14-10E-2.5	2.5	03/22/16	- -	- -	- -
SMP-B14-10E-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-10E-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-4.5S-0.5	0.5	03/22/16	- -	- -	4.2
SMP-B14-4.5S-1.5	1.5	03/22/16	- -	- -	11
SMP-B14-4.5S-2.5	2.5	03/22/16	- -	- -	7.5
SMP-B14-4.5S-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-4.5S-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-9.5S-0.5	0.5	03/22/16	- -	- -	3.1
SMP-B14-9.5S-1.5	1.5	03/22/16	- -	- -	- -
SMP-B14-9.5S-2.5	2.5	03/22/16	- -	- -	- -
SMP-B14-9.5S-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-9.5S-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-5N-0.5	0.5	03/22/16	- -	- -	**14**
SMP-B14-5N-1.5	1.5	03/22/16	- -	- -	**17**
SMP-B14-5N-2.5	2.5	03/22/16	- -	- -	5.9
SMP-B14-5N-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-5N-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-5N-5W-0.5	0.5	05/14/16	- -	- -	7.1
DUP2B	0.5	05/14/16	- -	- -	6.9
SMP-B14-5N-5W-1.5	1.5	05/14/16	- -	- -	**14**
SMP-B14-5N-5W-2.5	2.5	05/14/16	- -	- -	6.1
SMP-B14-5N-10W-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-5N-10W-1.5	1.5	05/14/16	- -	- -	6.0
SMP-B14-5N-10W-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-10N-1.5	1.5	03/22/16	- -	- -	**13**
SMP-B14-10N-2.5	2.5	03/22/16	- -	- -	6.2
SMP-B14-10N-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-10N-5.0	5.0	03/22/16	- -	- -	- -
DUP8A	5.0	03/22/16	- -	- -	- -
SMP-B14-10N-5W-0.5	0.5	05/14/16	- -	- -	6.3
SMP-B14-10N-5W-1.5	1.5	05/14/16	- -	- -	7.2
SMP-B14-10N-5W-2.5	2.5	05/14/16	- -	- -	6.4
SMP-B14-10N-10W-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-10N-10W-1.5	1.5	05/14/16	- -	- -	- -
SMP-B14-10N-10W-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-5N-5E-0.5	0.5	05/14/16	- -	- -	5.9
SMP-B14-5N-5E-1.5	1.5	05/14/16	- -	- -	**13**
SMP-B14-5N-5E-2.5	2.5	05/14/16	- -	- -	8.7
DUP4B	2.5	05/14/16	- -	- -	9.0
SMP-B14-5N-10E-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-5N-10E-1.5	1.5	05/14/16	- -	- -	10
SMP-B14-5N-10E-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-10N-5E-0.5	0.5	05/14/16	- -	- -	**12**
SMP-B14-10N-5E-1.5	1.5	05/14/16	- -	- -	**20**
SMP-B14-10N-5E-2.5	2.5	05/14/16	- -	- -	6.3
DUP3B	2.5	05/14/16	- -	- -	5.9
SMP-B14-10N-5E-5NE-0.5	0.5	06/04/16	- -	- -	9.5
SMP-B14-10N-5E-5NE-1.5	1.5	06/04/16	- -	- -	6.9
SMP-B14-10N-5E-5NE-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-10N-5E-5NE-3.0	3.0	06/04/16	- -	- -	- -

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
SMP-B14-10N-5E-10NE-0.5	0.5	06/04/16	- -	- -	- -
SMP-B14-10N-5E-10NE-1.5	1.5	06/04/16	- -	- -	- -
SMP-B14-10N-5E-10NE-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-10N-5E-10NE-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-10N-10E-0.5	0.5	05/14/16	- -	- -	7.9
SMP-B14-10N-10E-1.5	1.5	05/14/16	- -	- -	8.3
SMP-B14-10N-10E-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-15N-0.5	0.5	05/14/16	- -	- -	6.1
SMP-B14-15N-1.5	1.5	05/14/16	- -	- -	8.2
SMP-B14-15N-2.5	2.5	05/14/16	- -	- -	5.5
SMP-B14-15N-5E-0.5	0.5	06/04/16	- -	- -	6.2
SMP-B14-15N-5E-1.5	1.5	06/04/16	- -	- -	8.7
DUP-1C	1.5	06/04/16	- -	- -	8.3
SMP-B14-15N-5E-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-15N-5E-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-20N-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-20N-1.5	1.5	05/14/16	- -	- -	- -
SMP-B14-20N-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-20N-5E-0.5	0.5	06/04/16	- -	- -	- -
SMP-B14-20N-5E-1.5	1.5	06/04/16	- -	- -	- -
SMP-B14-20N-5E-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-20N-5E-3.0	3.0	06/04/16	- -	- -	- -
SMP-B15-0.5	0.5	01/07/16	9	- -	- -
SMP-B15-1.5	1.5	01/07/16	4	- -	- -
SMP-B15-2.5	2.5	01/07/16	2	- -	- -
SMP-B16-0.5	0.5	01/07/16	18	34	8.3
SMP-B16-1.5	1.5	01/07/16	6	- -	- -
SMP-B16-2.5	2.5	01/07/16	2	- -	- -
SMP-B17-0.5	0.5	01/07/16	43	- -	11
SMP-B17-1.5	1.5	01/07/16	4	- -	- -
SMP-B17-2.5	2.5	01/07/16	4	- -	- -
SMP-B18-0.5	0.5	01/07/16	4	- -	3.9
SMP-B18-1.5	1.5	01/07/16	4	- -	- -
SMP-B18-2.5	2.5	01/07/16	4	- -	- -
SMP-B19-0.5	0.5	01/07/16	5	- -	2.5
SMP-B19-1.5	1.5	01/07/16	17	- -	- -
SMP-B19-2.5	2.5	01/07/16	1	- -	- -
Quality Control Sample (µg/L)					
EB-1	NA	01/07/16	- -	ND<0.040	ND<5.0
QCEB-032116	NA	03/21/16	- -	- -	ND<5.0
QCEB-032216	NA	03/22/16	- -	- -	ND<5.0
QCEB-051416	NA	05/15/16	- -	- -	ND<5.0
QCEB-060416	NA	05/15/16	- -	- -	ND<5.0
Regulatory Screening Criteria					
RSL (mg/kg)			400	400	0.68
DTSC SLs (mg/kg)			80*	80*	0.082
DTSC Clean Up Levels			NL	NL	12

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
Hazardous Waste Criteria					
TTLC (mg/kg)			1,000	1,000	500
STLC (mg/l)			5	5	5
TCLP (mg/l)			5	5	5

Notes:

Initial PEA sampling event conducted on January 7, 2016
Step out sampling event conducted on March 21, and 22, 2016
Step out sampling event conducted on May 16, 2016
Step out sampling event conducted on June 4, 2016
- - not analyzed
µg/L - micrograms per liter
* - Revised California Human Health Screening levels for Lead, residential land use (September, 2009)
bgs - below ground surface
DTSC SLs- Department of Toxic Substances Control- modified screening levels (October, 2010)
DTSC Acceptable Clean Up Levels- DTSC's Determination of a Southern California Regional Background Arsenic concentrations in soil (March, 2008).
DUP5 - duplicate sample result listed immediately below its respective primary sample result
EPA - United States Environmental Protection Agency
mg/kg - milligram per kilogram
mg/l - milligram per liter
NA - not applicable
ND - not detected above method reporting limit
NL - not listed
RSL - EPA Regional Screening Level for Residential Land Use (November, 2015)
STLC - Soluble Threshold Limit Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
XRF - X-Ray fluorescence

TABLE 2 – SUMMARY SOIL ANALYTICAL RESULTS FOR OCPs

Sample ID	Depth (feet bgs)	Date Sampled	OCPs by EPA Method 8081B (µg/kg)																			
			Aldrin	Alpha-BHC	Beta-BHC	Gamma-BHC (Lindane)	delta-BHC	Chlordane	4,4-DDD	4,4-DDE	4,4-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
Composite A	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite B	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite C	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite D	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite E	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite F	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite G	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite H	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Quality Control Sample (µg/L																						
EB-1	NA	1/7/16	ND<0.016	ND<0.0031	ND<0.0092	ND<0.0071	ND<0.012	ND<0.007	ND<0.0061	ND<0.0083	ND<0.014	ND<0.0069	ND<0.0052	ND<0.0068	ND<0.0071	ND<0.0054	ND<0.013	ND<0.0081	ND<0.0093	ND<0.0059	ND<0.0088	ND<0.03
Regulatory Screening Criteria																						
CHHSLs (µg/kg)	Composite Ratio (Composite: Discrete)	1:2	16	NL	NL	250	NL	215	1,150	800	800	16	NL	NL	NL	NL	NL	NL	60	NL	NL	NL
		1:3	10	NL	NL	160	NL	140	760	530	530	10	NL	NL	NL	NL	NL	NL	40	NL	NL	NL
		1:4	5	NL	NL	125	NL	105	575	400	400	5	NL	NL	NL	NL	NL	NL	20	NL	NL	NL
RSLs (µg/kg)			39	860	300	570	NL	1,700	2,300	2,000	1,900	34	470,000	NL	NL	19,000	NL	NL	130	70	320,000	490

Notes:
Composite A (W-B1-0.5, W-B2-0.5, W-B3-0.5, WB4-0.5)
Composite B (SMP-B5-0.5, SMP-B4-0.5, SMP-B3-0.5)
Composite C (SMP-B2-0.5, SMP-B1-0.5)
Composite D (SMP-B6-0.5, SMP-B7-0.5, SMP-B8-0.5, SMP-B9-0.5)
Composite E (SMP-B10-0.5, SMP-B11-0.5, SMP-B12-0.5, SMP-B13-0.5)
Composite F (SMP-B14-0.5, SMP-B15-0.5, SMP-B19-0.5)
Composite G (Duplicate sample) (SMP-B14-0.5, SMP-B15-0.5, SMP-B19-0.5)
Composite H (SMP-B16-0.5, SMP-B17-0.5, SMP-B18-0.5)
µg/kg- micrograms per kilogram
bgs - below ground surface
CHHSLs - California Human Health Screening levels for soil, residential land use (Cal/EPA, 2006)
EPA - United States Environmental Protection Agency
ID - identification
NA - not applicable
ND - not detected above laboratory reporting limit
NL - not listed
OCPs - organochlorine pesticides
RSLs - EPA Regional Screening Level for Residential Land Use (November, 2015)

TABLE 3 – PROPOSED SOIL EXCAVATION AREAS AND ESTIMATED VOLUME/WEIGHT

Excavation Area	Length (ft)	Width (ft)	Surface Area (ft^2)	Depth (ft)	Volume (ft^3)	Volume (yd^3)	Weight of Non-Haz (Tons; x 1.4)
A	4.2	10.5	44.1	1.5	66.15	2.45	3.43
B	10.5	10.5	110.25	1.5	165.38	6.13	8.58
C	8.4	10.5	88.2	1.5	132.30	4.90	6.86
D	10.5	10.5	110.25	1.5	165.38	6.13	8.58
E	10.5	6.3	66.15	1.5	99.23	3.68	5.15
F	8.4	8.4	70.56	1.5	105.84	3.92	5.49
G	10.5	6.3	66.15	2.5	165.38	6.13	8.58
H	10.5	10.5	110.25	2.5	275.63	10.21	14.29
I	21.0	4.2	88.2	2.5	220.50	8.17	11.43
J	6.3	6.3	39.69	2.5	99.23	3.68	5.15
K	10.5	10.5	110.25	4.0	441.00	16.33	22.87
		Total Volume/Weight of Arsenic Impacted Soil				**71.70**	**100.38**

Notes:
ft - feet
ft^2 - square feet
ft^3 - cubic feet
yd^3- cubic yard
non-Haz - non-hazardous waste

TABLE 4 - REMEDIAL ALTERNATIVE COST COMPARISON

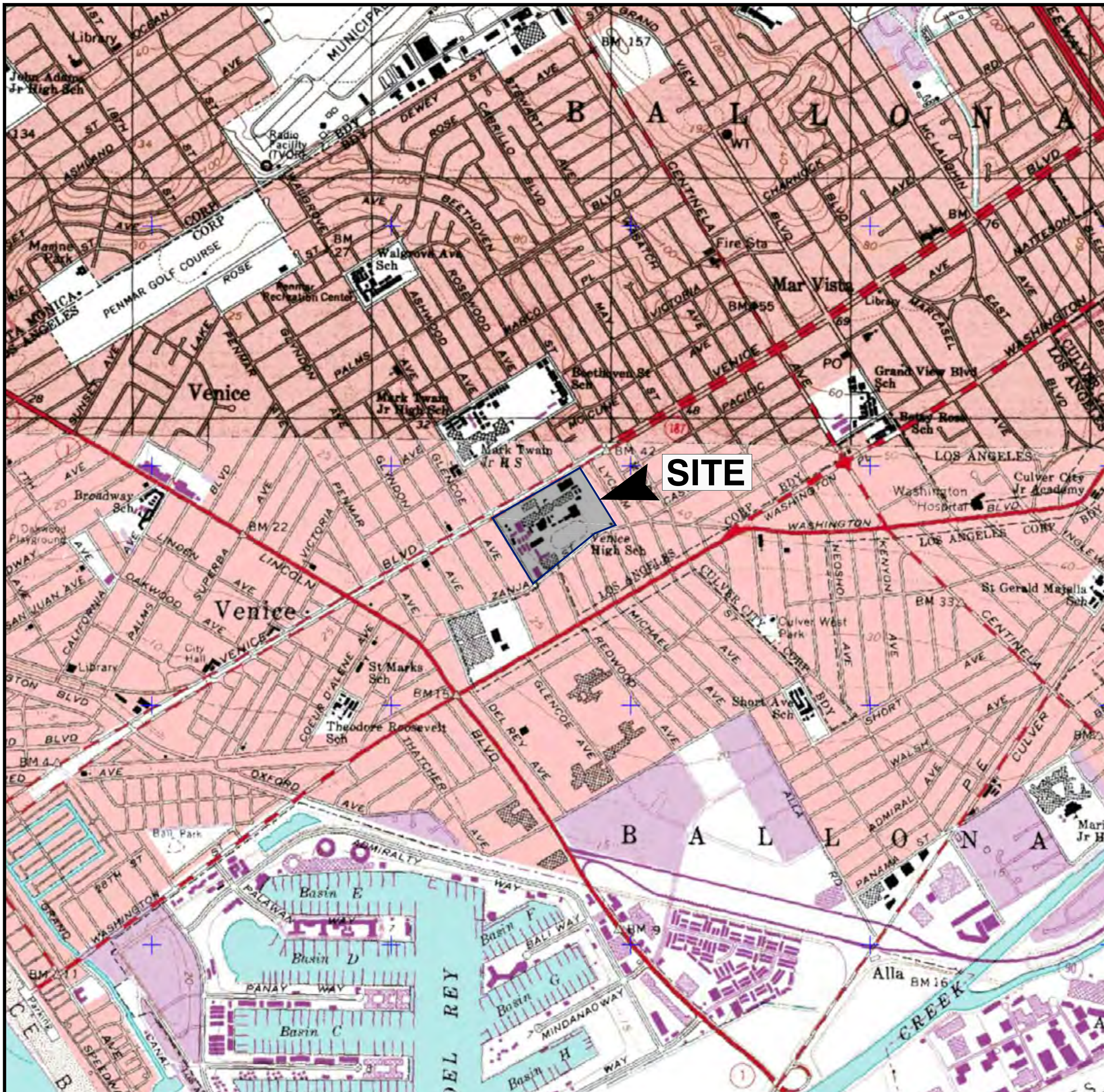
Task	Remedial Alternatives*		
	Alternative 1	**Alternative 2**	**Alternative 3**
Depth of Excavation	0	0	Up to 4 feet bgs
Volume of Soil to be Transported (cubic yards)	0	0	71.70
Direct Costs			
Excavation, Transportation, Disposal, Dust Suppression, and Backfilling	$0	$0	$24,770
Soil Capping	$0	$14,618	$0
Stormwater Management Plan	$0	$0	$0
Other Direct Costs (Environmental Consultant)			
Project Coordination	$0	$0	$7,500
Field Sampling Layout and Excavation Boundary Markout	$0	$0	$2,500
Supplemental Sampling and Analysis	$0	$0	$0
Excavation Oversight and Air Monitoring	$0	$0	$14,000
Confirmation Sampling Analysis	$0	$0	$1,400
Annual Cap Inspection (20 years)	$0	$240,000	$0
Removal Action Completion Report	$0	$13,187	$20,000
Engineering and O&M Plans, Land Use Restrictions	$0	$100,000	$0
Indirect Costs			
License, Permits, Fees, Operational Costs, and Supplies	$0	$24,000	$0
Total Cost Before Contingency	$0	$391,805	$0
Contingency	$0	$58,771	$0
Total	**$0**	**$450,576**	**$70,170**

Notes:
* Alternative 1 - No further action.
* Alternative 2 - Containment through surface cap.
* Alternative 3 - Excavation and off-site recycling or disposal with confirmation soil sampling.
bgs - below ground surface
O&M - Operation and Maintenance

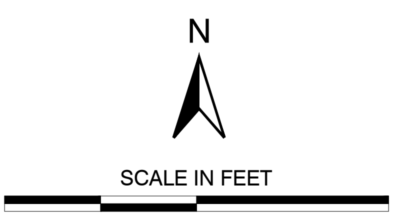
TABLE 5 – PROPOSED RAW SOIL SAMPLING PROGRAM

Excavation Area	No. of Confirmation Samples	Depth of Confirmation Samples	Laboratory Analytical Method
A	5	1.5 feet bgs	Arsenic by EPA Method 6020
B	4	1.5 feet bgs	Arsenic by EPA Method 6020
C	4	1.5 feet bgs	Arsenic by EPA Method 6020
D	4	1.5 feet bgs	Arsenic by EPA Method 6020
E	7	1.5 feet bgs	Arsenic by EPA Method 6020
F	5	1.5 feet bgs	Arsenic by EPA Method 6020
G	5	2.5 feet bgs	Arsenic by EPA Method 6020
H	4	2.5 feet bgs	Arsenic by EPA Method 6020
I	8	2.5 feet bgs	Arsenic by EPA Method 6020
J	5	2.5 feet bgs	Arsenic by EPA Method 6020
K	5	4.0 feet bgs	Arsenic by EPA Method 6020
Total No. of confirmation samples = 56 samples			

Notes:
bgs - below ground surface
EPA - United States Environmental Protection Agency
No. - number
RAW - removal action workplan

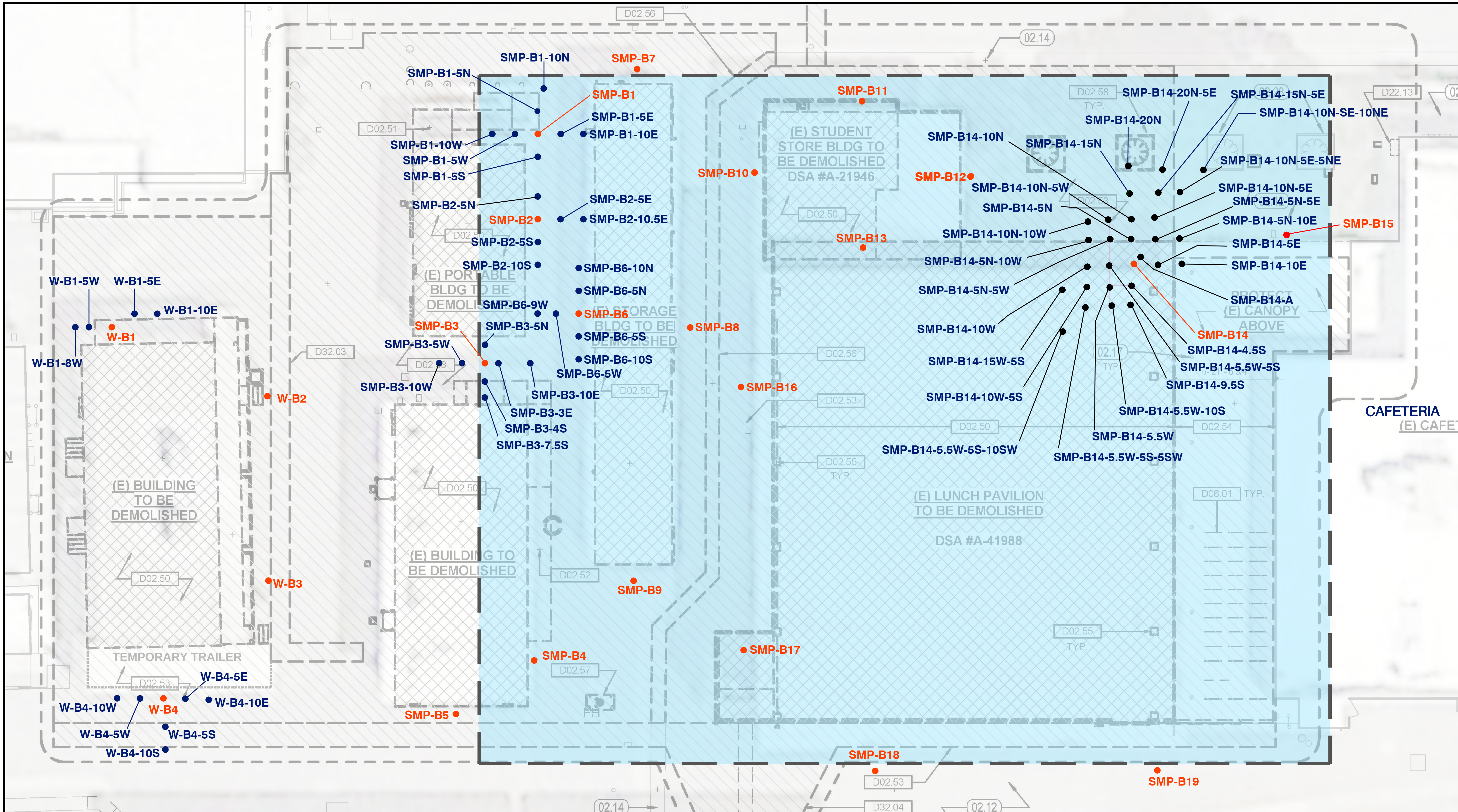


REFERENCE: UNITED STATES GEOLOGICAL SURVEY, 1981, VENICE 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP, SCALE 1:24,000.



NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		SITE LOCATION	FIGURE
PROJECT NO.	DATE	VENICE HIGH SCHOOL 13000 VENICE BOULEVARD LOS ANGELES, CALIFORNIA	1
208571013	8/16		



N

SCALE IN FEET

0 20 40

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

NOTE:

1. W-B2 AND W-B3 ARE 4 FEET AWAY FROM THE WALL. REMAINING SAMPLES ARE 2 FEET AWAY FROM THE WALL.

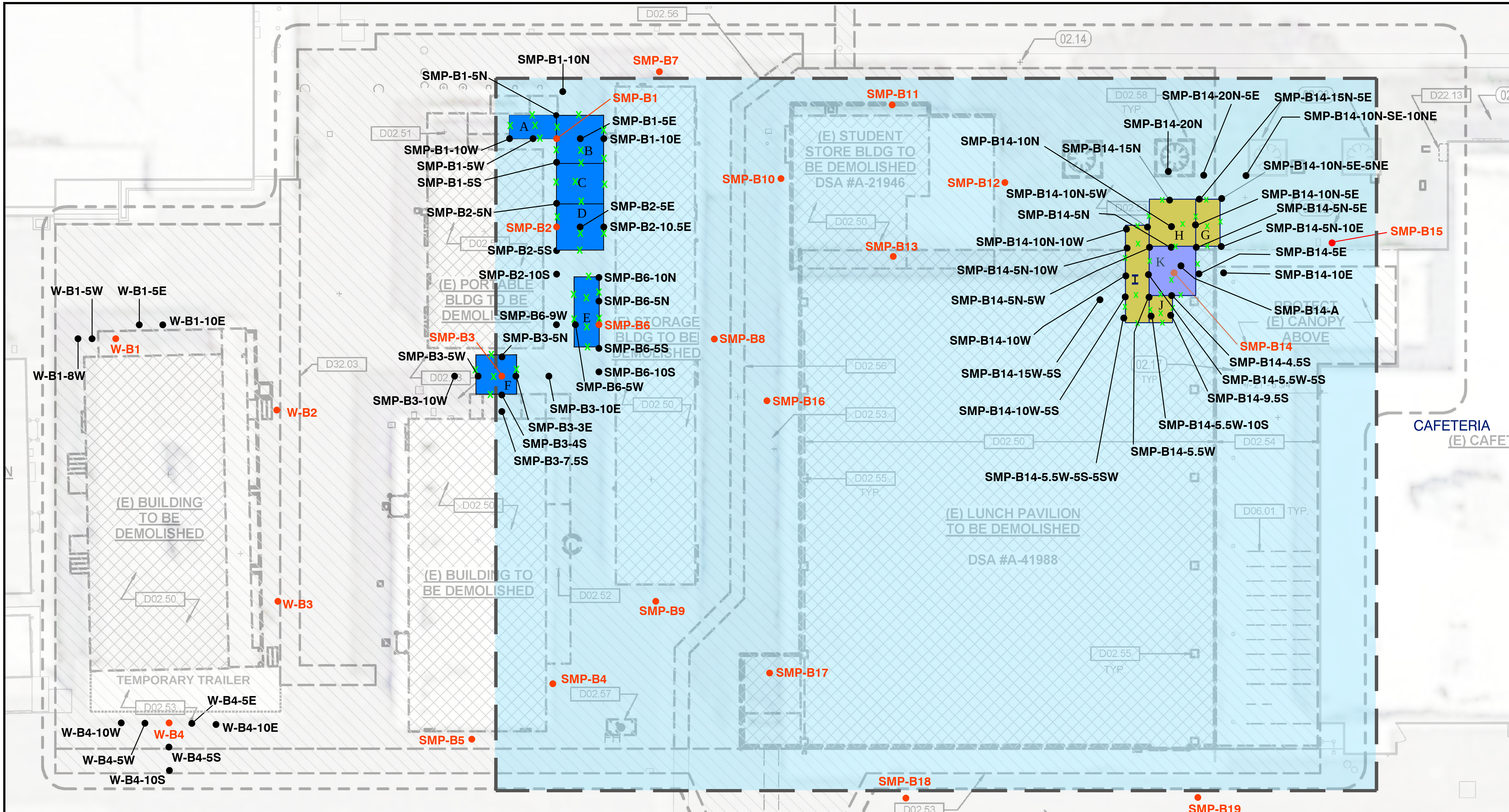
LEGEND

[dashed box]	SEISMIC MODERNIZATION PROJECT (SMP) SITE BOUNDARY
SMP-B1 ●	PRIMARY SOIL BORING LOCATION
SMP-B1-5W ●	STEP-OUT BORING LOCATION

REFERENCE: GOOGLE EARTH IMAGERY, 2016.

Ninyo & Moore	SITE PLAN AND PEA SAMPLING LOCATIONS	FIGURE
PROJECT NO. 208571013 / DATE 8/16	VENICE HIGH SCHOOL 13000 VENICE BOULEVARD LOS ANGELES, CALIFORNIA	2

208571013_SP.dwg, Jul 29, 2016, 1:56am, SN, GK



NOTE:

1. W-B2 AND W-B3 ARE 4 FEET AWAY FROM THE WALL. REMAINING SAMPLES ARE 2 FEET AWAY FROM THE WALL.

SCALE IN FEET

0 20 40

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND

SEISMIC MODERNIZATION PROJECT (SMP) SITE BOUNDARY

SMP-B1 ● PRIMARY SOIL BORING LOCATION

SMP-B1-5W ● STEP-OUT BORING LOCATION

PROPOSED EXCAVATION LIMITS AND DEPTHS

1.5 FEET BELOW GROUND SURFACE (FT BGS)

2.5 FT BGS

4.0 FT BGS

X PROPOSED CONFIRMATION SAMPLE LOCATION

REFERENCE: GOOGLE EARTH IMAGERY, 2016.

Ninyo & Moore

PROPOSED RAW SOIL EXCAVATION AREAS AND CONFIRMATION SAMPLES

VENICE HIGH SCHOOL
13000 VENICE BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE
208571013	8/16

FIGURE

3

208571013_PEA.dwg, Jul 29, 2016, 1:56am, SN, GK

APPENDIX A

2016 PEA SAMPLING RESULTS (TABLES AND FIGURES)

TABLE 2 - SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
W-B1-0.5	0.5	01/07/16	14.2	- -	**24**
W-B1-1.5	1.5	01/07/16	21	- -	7.0
W-B1-2.5	2.5	01/07/16	12	- -	- -
W-B1-5W-0.5	0.5	03/22/16	- -	- -	**91**
W-B1-5W-1.5	1.5	03/22/16	- -	- -	5.8
W-B1-5W-2.5	2.5	03/22/16	- -	- -	- -
W-B1-8W-0.5	0.5	03/22/16	- -	- -	**55**
W-B1-8W-1.5	1.5	03/22/16	- -	- -	7.0
W-B1-8W-2.5	2.5	03/22/16	- -	- -	- -
W-B1-5E-0.5	0.5	03/22/16	- -	- -	**100**
W-B1-5E-1.5	1.5	03/22/16	- -	- -	6.4
W-B1-5E-2.5	2.5	03/22/16	- -	- -	- -
DUP-11A	2.5	03/22/16	- -	- -	- -
W-B1-10E-0.5	0.5	03/22/16	- -	- -	**23**
W-B1-10E-1.5	1.5	03/22/16	- -	- -	6.2
W-B1-10E-2.5	2.5	03/22/16	- -	- -	- -
W-B1-5N-0.5	0.5	03/22/16	- -	- -	**23**
W-B1-5N-1.5	1.5	03/22/16	- -	- -	5.9
W-B1-5N-2.5	2.5	03/22/16	- -	- -	- -
W-B2-0.5	0.5	01/07/16	13	- -	7.7
W-B2-1.5	1.5	01/07/16	23.6	- -	- -
W-B2-2.5	2.5	01/07/16	16.7	- -	- -
W-B3-0.5	0.5	01/07/16	52	69	10
W-B3-1.5	1.5	01/07/16	19.4	- -	- -
W-B3-2.5	2.5	01/07/16	19.3	- -	- -
DUP1	2.5	01/07/16	21.2	- -	- -
W-B4-0.5	0.5	01/07/16	15	- -	**12**
W-B4-1.5	1.5	01/07/16	9	- -	9.8
W-B4-2.5	2.5	01/07/16	4	- -	- -
W-B4-5W-0.5	0.5	03/21/16	- -	- -	8.2
W-B4-5W-1.5	1.5	03/21/16	- -	- -	- -
W-B4-5W-2.5	2.5	03/21/16	- -	- -	- -
W-B4-10W-0.5	0.5	03/21/16	- -	- -	**16**
W-B4-10W-1.5	1.5	03/21/16	- -	- -	9.6
W-B4-10W-2.5	2.5	03/21/16	- -	- -	- -
W-B4-5S-0.5	0.5	03/21/16	- -	- -	**13**
W-B4-5S-1.5	1.5	03/21/16	- -	- -	6.8
W-B4-5S-2.5	2.5	03/21/16	- -	- -	- -
W-B4-10S-0.5	0.5	03/21/16	- -	- -	**17**
W-B4-10S-1.5	1.5	03/21/16	- -	- -	**12**
W-B4-10S-2.5	2.5	03/21/16	- -	- -	- -
W-B4-5E-0.5	0.5	03/21/16	- -	- -	8.4
DUP-3A	0.5	03/21/16	- -	- -	8.9
W-B4-5E-1.5	1.5	03/21/16	- -	- -	- -
W-B4-5E-2.5	2.5	03/21/16	- -	- -	- -
W-B4-10E-0.5	0.5	03/21/16	- -	- -	1.2
W-B4-10E-1.5	1.5	03/21/16	- -	- -	- -
W-B4-10E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B1-0.5	0.5	01/07/16	10	- -	**35**
SMP-B1-1.5	1.5	01/07/16	2	- -	8.2
SMP-B1-2.5	2.5	01/07/16	2	- -	- -
SMP-B1-5W-0.5	0.5	03/22/16	- -	- -	3.8
SMP-B1-5W-1.5	1.5	03/22/16	- -	- -	- -
SMP-B1-5W-2.5	2.5	03/22/16	- -	- -	- -

TABLE 2 - SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
SMP-B1-10W-0.5	0.5	03/22/16	- -	- -	4.3
DUP-7A	0.5	03/22/16	- -	- -	**13**
SMP-B1-10W-1.5	1.5	03/22/16	- -	- -	2.8
SMP-B1-10W-2.5	2.5	03/22/16	- -	- -	- -
SMP-B1-5S-0.5	0.5	03/22/16	- -	- -	**32**
SMP-B1-5S-1.5	1.5	03/22/16	- -	- -	3.7
SMP-B1-5S-2.5	2.5	03/22/16	- -	- -	- -
DUP-10A	2.5	03/22/16	- -	- -	- -
SMP-B1-5E-0.5	0.5	03/22/16	- -	- -	**17**
SMP-B1-5E-1.5	1.5	03/22/16	- -	- -	5.5
SMP-B1-5E-2.5	2.5	03/22/16	- -	- -	- -
DUP-9A	2.5	03/22/16	- -	- -	- -
SMP-B1-10E-0.5	0.5	03/22/16	- -	- -	5.0
SMP-B1-10E-1.5	1.5	03/22/16	- -	- -	- -
SMP-B1-10E-2.5	2.5	03/22/16	- -	- -	- -
SMP-B1-5N-0.5	0.5	03/22/16	- -	- -	7.4
SMP-B1-5N-1.5	1.5	03/22/16	- -	- -	- -
SMP-B1-5N-2.5	2.5	03/22/16	- -	- -	- -
SMP-B1-10N-0.5	0.5	03/22/16	- -	- -	3.7
SMP-B1-10N-1.5	1.5	03/22/16	- -	- -	- -
SMP-B1-10N-2.5	2.5	03/22/16	- -	- -	- -
SMP-B2-0.5	0.5	01/07/16	5	- -	**26**
DUP3	0.5	01/07/16	12	- -	**60**
SMP-B2-1.5	1.5	01/07/16	4	- -	4.4
SMP-B2-2.5	2.5	01/07/16	2	- -	- -
SMP-B2-5S-0.5	0.5	03/21/16	- -	- -	6.8
SMP-B2-5S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B2-5S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B2-10S-0.5	0.5	03/21/16	- -	- -	5.0
SMP-B2-10S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B2-10S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B2-5E-0.5	0.5	03/21/16	- -	- -	**14**
SMP-B2-5E-1.5	1.5	03/21/16	- -	- -	4.1
SMP-B2-5E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B2-10.5E-0.5	0.5	03/21/16	- -	- -	9.0
SMP-B2-10.5E-1.5	1.5	03/21/16	- -	- -	- -
SMP-B2-10.5E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B2-5N-0.5	0.5	03/21/16	- -	- -	7.8
SMP-B2-5N-1.5	1.5	03/21/16	- -	- -	- -
SMP-B2-5N-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-0.5	0.5	01/07/16	22.4	6.1	**21**
SMP-B3-1.5	1.5	01/07/16	16	- -	6.7
SMP-B3-2.5	2.5	01/07/16	22.7	- -	- -
SMP-B3-5W-0.5	0.5	03/21/16	- -	- -	6.0
SMP-B3-5W-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-5W-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-10W-0.5	0.5	03/21/16	- -	- -	6.2
DUP-4A	0/5	03/21/16	- -	- -	5.7
SMP-B3-10W-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-10W-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-4S-0.5	0.5	03/21/16	- -	- -	5.5
SMP-B3-4S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-4S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-7.5S-0.5	0.5	03/21/16	- -	- -	6.6

TABLE 2 - SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
DUP-5A	0.5	03/21/16	- -	- -	6.9
SMP-B3-7.5S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-7.5S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-3E-0.5	0.5	03/21/16	- -	- -	5.5
SMP-B3-3E-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-3E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-10E-0.5	0.5	03/21/16	- -	- -	7.2
SMP-B3-10E-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-10E-2.5	2.5	03/21/16	- -	- -	- -
SMP-B3-5N-0.5	0.5	03/21/16	- -	- -	5.6
SMP-B3-5N-1.5	1.5	03/21/16	- -	- -	- -
SMP-B3-5N-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-5W-0.5	0.5	03/21/16	- -	- -	7.2
SMP-B6-5W-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-5W-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-9W-0.5	0.5	03/21/16	- -	- -	6.0
SMP-B6-9W-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-9W-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-5S-0.5	0.5	03/21/16	- -	- -	6.1
SMP-B6-5S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-5S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-10S-0.5	0.5	03/21/16	- -	- -	4.5
SMP-B6-10S-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-10S-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-5N-0.5	0.5	03/21/16	- -	- -	5.2
DUP-6A	0.5	03/21/16	- -	- -	6.1
SMP-B6-5N-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-5N-2.5	2.5	03/21/16	- -	- -	- -
SMP-B6-10N-0.5	0.5	03/21/16	- -	- -	6.1
SMP-B6-10N-1.5	1.5	03/21/16	- -	- -	- -
SMP-B6-10N-2.5	2.5	03/21/16	- -	- -	- -
SMP-B4-0.5	0.5	01/07/16	10	- -	5.8
SMP-B4-1.5	1.5	01/07/16	7	- -	- -
SMP-B4-2.5	2.5	01/07/16	10	- -	- -
SMP-B5-0.5	0.5	01/07/16	14	- -	2.1
SMP-B5-1.5	1.5	01/07/16	16	- -	- -
SMP-B5-2.5	2.5	01/07/16	17	- -	- -
DUP2	2.5	01/07/16	17.6	- -	- -
SMP-B6-0.5	0.5	01/07/16	6	- -	9.7
DUP4	0.5	01/07/16	3	- -	**38**
SMP-B6-1.5	1.5	01/07/16	4	- -	4.8
SMP-B6-2.5	2.5	01/07/16	3	- -	- -
SMP-B7-0.5	0.5	01/07/16	44	43	6.4
SMP-B7-1.5	1.5	01/07/16	5	- -	- -
SMP-B7-2.5	2.5	01/07/16	7	- -	- -
SMP-B8-0.5	0.5	01/07/16	7	- -	10
SMP-B8-1.5	1.5	01/07/16	4	- -	- -
SMP-B8-2.5	2.5	01/07/16	5	- -	- -
SMP-B9-0.5	0.5	01/07/16	16	8.4	11
SMP-B9-1.5	1.5	01/07/16	8	- -	- -
SMP-B9-2.5	2.5	01/07/16	9	- -	- -
DUP5	2.5	01/07/16	4	- -	- -
SMP-B10-0.5	0.5	01/07/16	10	- -	6.5
SMP-B10-1.5	1.5	01/07/16	1	- -	- -

TABLE 2 - SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
SMP-B10-2.5	2.5	01/07/16	5	- -	- -
SMP-B11-0.5	0.5	01/07/16	11	- -	4.2
DUP7	0.5	01/07/16	3	- -	5.9
SMP-B11-1.5	1.5	01/07/16	7	- -	- -
SMP-B11-2.5	2.5	01/07/16	5	- -	- -
SMP-B12-0.5	0.5	01/07/16	74	33	4.4
SMP-B12-1.5	1.5	01/07/16	8	- -	- -
SMP-B12-2.5	2.5	01/07/16	1	- -	- -
SMP-B13-0.5	0.5	01/07/16	13	- -	10
SMP-B13-1.5	1.5	01/07/16	13	- -	- -
SMP-B13-2.5	2.5	01/07/16	18	- -	- -
SMP-B14-0.5	0.5	01/07/16	**91**	39	**16**
SMP-B14-1.5	1.5	01/07/16	15	- -	**16**
SMP-B14-2.5	2.5	01/07/16	9	- -	**16**
SMP-B14-A-4.0	4.0	03/22/16	- -	- -	8.3
SMP-B14-A-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-5.5W-0.5	0.5	03/22/16	- -	- -	6.9
SMP-B14-5.5W-1.5	1.5	03/22/16	- -	- -	**14**
SMP-B14-5.5W-2.5	2.5	03/22/16	- -	- -	6.6
SMP-B14-5.5W-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-5.5W-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-5.5W-5S-0.5	0.5	05/14/16	- -	- -	3.4
DUP1B	0.5	05/14/16	- -	- -	3.2
SMP-B14-5.5W-5S-1.5	1.5	05/14/16	- -	- -	**17**
SMP-B14-5.5W-5S-2.5	2.5	05/14/16	- -	- -	8.1
SMP-B14-5.5W-5S-5SW-0.5	0.5	06/04/16	- -	- -	3.0
SMP-B14-5.5W-5S-5SW-1.5	1.5	06/04/16	- -	- -	7.6
DUP-2C	1.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-5SW-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-5SW-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-10SW-0.5	0.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-10SW-1.5	1.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-10SW-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-5.5W-5S-10SW-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-5.5W-10S-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-5.5W-10S-1.5	1.5	05/14/16	- -	- -	10
SMP-B14-5.5W-10S-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-10W-0.5	0.5	03/22/16	- -	- -	3.2
SMP-B14-10W-1.5	1.5	03/22/16	- -	- -	5.2
SMP-B14-10W-2.5	2.5	03/22/16	- -	- -	- -
SMP-B14-10W-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-10W-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-10W-5S-0.5	0.5	06/04/16	- -	- -	3.3
SMP-B14-10W-5S-1.5	1.5	06/04/16	- -	- -	7.2
SMP-B14-10W-5S-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-10W-5S-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-15W-5S-0.5	0.5	06/04/16	- -	- -	- -
SMP-B14-15W-5S-1.5	1.5	06/04/16	- -	- -	- -
SMP-B14-15W-5S-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-15W-5S-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-5E-0.5	0.5	03/22/16	- -	- -	9.9
SMP-B14-5E-1.5	1.5	03/22/16	- -	- -	9.4
SMP-B14-5E-2.5	2.5	03/22/16	- -	- -	7.4
SMP-B14-5E-4.0	4.0	03/22/16	- -	- -	- -

TABLE 2 - SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
SMP-B14-5E-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-10E-0.5	0.5	03/22/16	- -	- -	9.7
SMP-B14-10E-1.5	1.5	03/22/16	- -	- -	- -
SMP-B14-10E-2.5	2.5	03/22/16	- -	- -	- -
SMP-B14-10E-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-10E-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-4.5S-0.5	0.5	03/22/16	- -	- -	4.2
SMP-B14-4.5S-1.5	1.5	03/22/16	- -	- -	11
SMP-B14-4.5S-2.5	2.5	03/22/16	- -	- -	7.5
SMP-B14-4.5S-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-4.5S-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-9.5S-0.5	0.5	03/22/16	- -	- -	3.1
SMP-B14-9.5S-1.5	1.5	03/22/16	- -	- -	- -
SMP-B14-9.5S-2.5	2.5	03/22/16	- -	- -	- -
SMP-B14-9.5S-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-9.5S-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-5N-0.5	0.5	03/22/16	- -	- -	**14**
SMP-B14-5N-1.5	1.5	03/22/16	- -	- -	**17**
SMP-B14-5N-2.5	2.5	03/22/16	- -	- -	5.9
SMP-B14-5N-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-5N-5.0	5.0	03/22/16	- -	- -	- -
SMP-B14-5N-5W-0.5	0.5	05/14/16	- -	- -	7.1
DUP2B	0.5	05/14/16	- -	- -	6.9
SMP-B14-5N-5W-1.5	1.5	05/14/16	- -	- -	**14**
SMP-B14-5N-5W-2.5	2.5	05/14/16	- -	- -	6.1
SMP-B14-5N-10W-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-5N-10W-1.5	1.5	05/14/16	- -	- -	6.0
SMP-B14-5N-10W-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-10N-1.5	1.5	03/22/16	- -	- -	**13**
SMP-B14-10N-2.5	2.5	03/22/16	- -	- -	6.2
SMP-B14-10N-4.0	4.0	03/22/16	- -	- -	- -
SMP-B14-10N-5.0	5.0	03/22/16	- -	- -	- -
DUP8A	5.0	03/22/16	- -	- -	- -
SMP-B14-10N-5W-0.5	0.5	05/14/16	- -	- -	6.3
SMP-B14-10N-5W-1.5	1.5	05/14/16	- -	- -	7.2
SMP-B14-10N-5W-2.5	2.5	05/14/16	- -	- -	6.4
SMP-B14-10N-10W-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-10N-10W-1.5	1.5	05/14/16	- -	- -	- -
SMP-B14-10N-10W-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-5N-5E-0.5	0.5	05/14/16	- -	- -	5.9
SMP-B14-5N-5E-1.5	1.5	05/14/16	- -	- -	**13**
SMP-B14-5N-5E-2.5	2.5	05/14/16	- -	- -	8.7
DUP4B	2.5	05/14/16	- -	- -	9.0
SMP-B14-5N-10E-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-5N-10E-1.5	1.5	05/14/16	- -	- -	10
SMP-B14-5N-10E-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-10N-5E-0.5	0.5	05/14/16	- -	- -	**12**
SMP-B14-10N-5E-1.5	1.5	05/14/16	- -	- -	**20**
SMP-B14-10N-5E-2.5	2.5	05/14/16	- -	- -	6.3
DUP3B	2.5	05/14/16	- -	- -	5.9
SMP-B14-10N-5E-5NE-0.5	0.5	06/04/16	- -	- -	9.5
SMP-B14-10N-5E-5NE-1.5	1.5	06/04/16	- -	- -	6.9
SMP-B14-10N-5E-5NE-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-10N-5E-5NE-3.0	3.0	06/04/16	- -	- -	- -

TABLE 2 - SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
SMP-B14-10N-5E-10NE-0.5	0.5	06/04/16	- -	- -	- -
SMP-B14-10N-5E-10NE-1.5	1.5	06/04/16	- -	- -	- -
SMP-B14-10N-5E-10NE-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-10N-5E-10NE-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-10N-10E-0.5	0.5	05/14/16	- -	- -	7.9
SMP-B14-10N-10E-1.5	1.5	05/14/16	- -	- -	8.3
SMP-B14-10N-10E-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-15N-0.5	0.5	05/14/16	- -	- -	6.1
SMP-B14-15N-1.5	1.5	05/14/16	- -	- -	8.2
SMP-B14-15N-2.5	2.5	05/14/16	- -	- -	5.5
SMP-B14-15N-5E-0.5	0.5	06/04/16	- -	- -	6.2
SMP-B14-15N-5E-1.5	1.5	06/04/16	- -	- -	8.7
DUP-1C	1.5	06/04/16	- -	- -	8.3
SMP-B14-15N-5E-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-15N-5E-3.0	3.0	06/04/16	- -	- -	- -
SMP-B14-20N-0.5	0.5	05/14/16	- -	- -	- -
SMP-B14-20N-1.5	1.5	05/14/16	- -	- -	- -
SMP-B14-20N-2.5	2.5	05/14/16	- -	- -	- -
SMP-B14-20N-5E-0.5	0.5	06/04/16	- -	- -	- -
SMP-B14-20N-5E-1.5	1.5	06/04/16	- -	- -	- -
SMP-B14-20N-5E-2.5	2.5	06/04/16	- -	- -	- -
SMP-B14-20N-5E-3.0	3.0	06/04/16	- -	- -	- -
SMP-B15-0.5	0.5	01/07/16	9	- -	- -
SMP-B15-1.5	1.5	01/07/16	4	- -	- -
SMP-B15-2.5	2.5	01/07/16	2	- -	- -
SMP-B16-0.5	0.5	01/07/16	18	34	8.3
SMP-B16-1.5	1.5	01/07/16	6	- -	- -
SMP-B16-2.5	2.5	01/07/16	2	- -	- -
SMP-B17-0.5	0.5	01/07/16	43	- -	11
SMP-B17-1.5	1.5	01/07/16	4	- -	- -
SMP-B17-2.5	2.5	01/07/16	4	- -	- -
SMP-B18-0.5	0.5	01/07/16	4	- -	3.9
SMP-B18-1.5	1.5	01/07/16	4	- -	- -
SMP-B18-2.5	2.5	01/07/16	4	- -	- -
SMP-B19-0.5	0.5	01/07/16	5	- -	2.5
SMP-B19-1.5	1.5	01/07/16	17	- -	- -
SMP-B19-2.5	2.5	01/07/16	1	- -	- -
Quality Control Sample (µg/L)					
EB-1	NA	01/07/16	- -	ND<0.040	ND<5.0
QCEB-032116	NA	03/21/16	- -	- -	ND<5.0
QCEB-032216	NA	03/22/16	- -	- -	ND<5.0
QCEB-051416	NA	05/15/16	- -	- -	ND<5.0
QCEB-060416	NA	05/15/16	- -	- -	ND<5.0
Regulatory Screening Criteria					
RSL (mg/kg)			400	400	0.68
DTSC SLs (mg/kg)			80*	80*	0.082
DTSC Clean Up Levels			NL	NL	12

TABLE 2 - SOIL ANALYTICAL RESULTS FOR LEAD AND ARSENIC

Sample ID	Depth (feet bgs)	Date Sampled	XRF Analysis (mg/kg)	Lead by EPA Method 6010B (mg/kg)	Arsenic by EPA Method 6020 (mg/kg)
Hazardous Waste Criteria					
TTLC (mg/kg)			1,000	1,000	500
STLC (mg/l)			5	5	5
TCLP (mg/l)			5	5	5

Notes:

Initial PEA sampling event conducted on January 7, 2016
Step out sampling event conducted on March 21, and 22, 2016
Step out sampling event conducted on May 16, 2016
Step out sampling event conducted on June 4, 2016

- - not analyzed
µg/L - micrograms per liter
* - Revised California Human Health Screening levels for Lead, residential land use (September, 2009)
bgs - below ground surface
DTSC SLs- Department of Toxic Substances Control- modified screening levels (October, 2010)
DTSC Acceptable Clean Up Levels- DTSC's Determination of a Southern California Regional Background Arsenic concentrations in soil (March, 2008).
DUP5 - duplicate sample result listed immediately below its respective primary sample result
EPA - United States Environmental Protection Agency
mg/kg - milligram per kilogram
mg/l - milligram per liter
NA - not applicable
ND - not detected above method reporting limit
NL - not listed
RSL - EPA Regional Screening Level for Residential Land Use (November, 2015)
STLC - Soluble Threshold Limit Concentration
TCLP - Toxicity Characteristic Leaching Procedure
TTLC - Total Threshold Limit Concentration
XRF - X-Ray fluorescence

TABLE 3 – SOIL ANALYTICAL RESULTS FOR OCPs

Sample ID	Depth (feet bgs)	Date Sampled	OCPs by EPA Method 8081B (µg/kg)																			
			Aldrin	Alpha-BHC	Beta-BHC	Gamma-BHC (Lindane)	delta-BHC	Chlordane	4,4-DDD	4,4-DDE	4,4-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
Composite A	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite B	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite C	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite D	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite E	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite F	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite G	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Composite H	0.5	1/7/16	ND<0.46	ND<0.35	ND<0.37	ND<0.41	ND<0.22	ND<5	ND<0.36	ND<0.43	ND<0.42	ND<0.35	ND<0.48	ND<0.42	ND<0.34	ND<0.29	ND<0.43	ND<0.61	ND<0.43	ND<0.45	ND<0.91	ND<5
Quality Control Sample (µg/L)																						
EB-1	NA	1/7/16	ND<0.016	ND<0.0031	ND<0.0092	ND<0.0071	ND<0.012	ND<0.007	ND<0.0061	ND<0.0083	ND<0.014	ND<0.0069	ND<0.0052	ND<0.0068	ND<0.0071	ND<0.0054	ND<0.013	ND<0.0081	ND<0.0093	ND<0.0059	ND<0.0088	ND<0.03
Regulatory Screening Criteria																						
CHHSLs (µg/kg)	Composite Ratio (Composite: Discrete)	1:2	16	NL	NL	250	NL	215	1,150	800	800	16	NL	NL	NL	NL	NL	NL	60	NL	NL	NL
		1:3	10	NL	NL	160	NL	140	760	530	530	10	NL	NL	NL	NL	NL	NL	40	NL	NL	NL
		1:4	5	NL	NL	125	NL	105	575	400	400	5	NL	NL	NL	NL	NL	NL	20	NL	NL	NL
RSLs (µg/kg)			39	860	300	570	NL	1,700	2,300	2,000	1,900	34	470,000	NL	NL	19,000	NL	NL	130	70	320,000	490

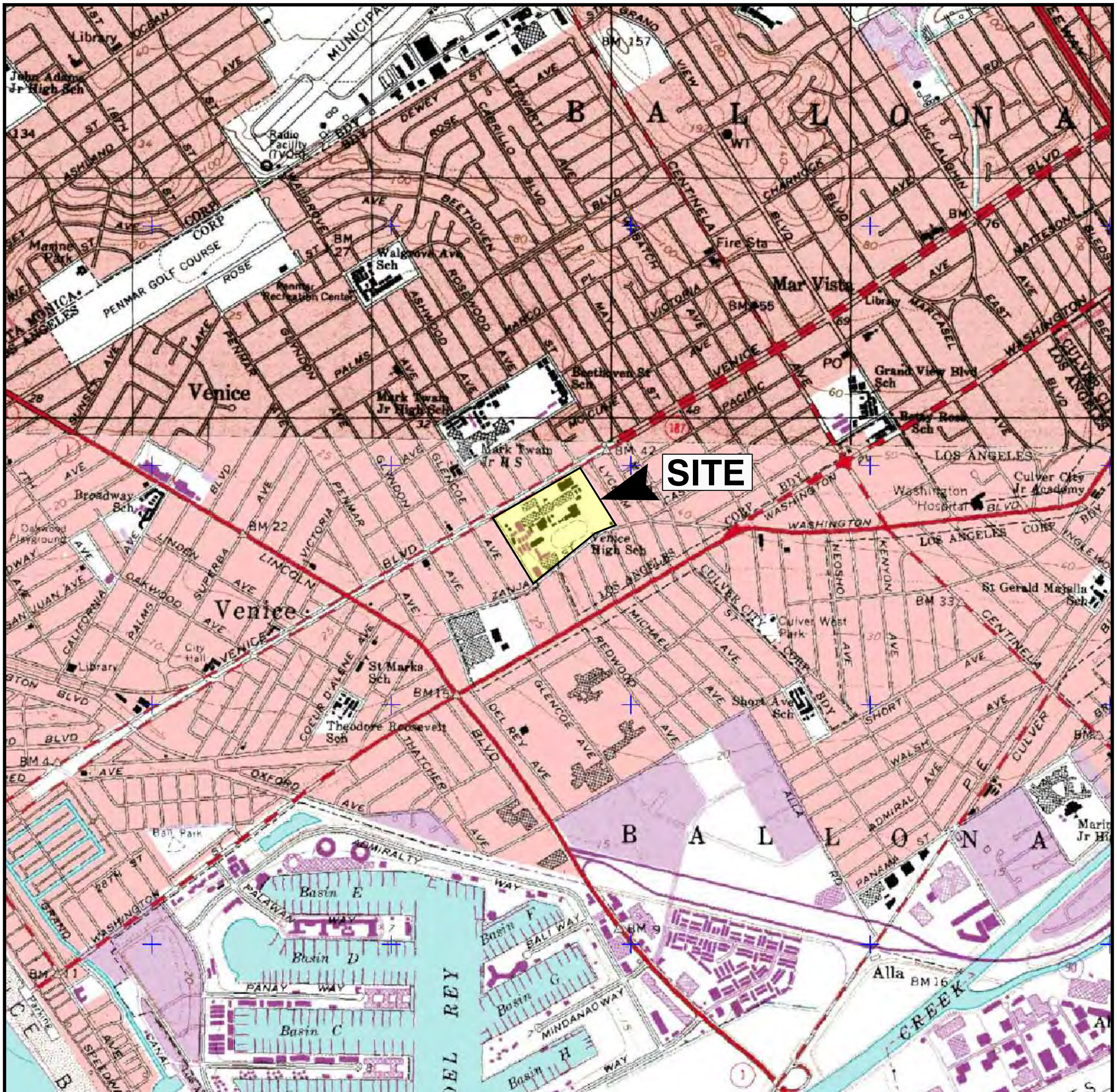
Notes:
Composite A (W-B1-0.5, W-B2-0.5, W-B3-0.5, WB4-0.5)
Composite B (SMP-B5-0.5, SMP-B4-0.5, SMP-B3-0.5)
Composite C (SMP-B2-0.5, SMP-B1-0.5)
Composite D (SMP-B6-0.5, SMP-B7-0.5, SMP-B8-0.5, SMP-B9-0.5)
Composite E (SMP-B10-0.5, SMP-B11-0.5, SMP-B12-0.5, SMP-B13-0.5)
Composite F (SMP-B14-0.5, SMP-B15-0.5, SMP-B19-0.5)
Composite G (Duplicate sample) (SMP-B14-0.5, SMP-B15-0.5, SMP-B19-0.5)
Composite H (SMP-B16-0.5, SMP-B17-0.5, SMP-B18-0.5)
µg/kg- micrograms per kilogram
bgs - below ground surface
CHHSLs - California Human Health Screening levels for soil, residential land use (Cal/EPA, 2006)
EPA - United States Environmental Protection Agency
ID - identification
NA - not applicable
ND - not detected above laboratory reporting limit
NL - not listed
OCPs - organochlorine pesticides
RSLs - EPA Regional Screening Level for Residential Land Use (November, 2015)

Table 4 - Proposed Soil Excavation Estimated Volumes

Area	Length (ft)	Width (ft)	Surface Area (ft^2)	Depth (ft)	Volume (ft3)	Volume (yd3)	Weight Tons (x1.4)
A	4.2	10.5	44.1	1.5	66.15	2.45	3.43
B	10.5	10.5	110.25	1.5	165.38	6.13	8.58
C	8.4	10.5	88.2	1.5	132.30	4.90	6.86
D	10.5	10.5	110.25	1.5	165.38	6.13	8.58
E	10.5	6.3	66.15	1.5	99.23	3.68	5.15
F	8.4	8.4	70.56	1.5	105.84	3.92	5.49
G	10.5	6.3	66.15	2.5	165.38	6.13	8.58
H	10.5	10.5	110.25	2.5	275.63	10.21	14.29
I	21.0	4.2	88.2	2.5	220.50	8.17	11.43
J	6.3	6.3	39.69	2.5	99.23	3.68	5.15
K	10.5	10.5	110.25	4.0	441.00	16.33	22.87
		Total Volume of Arsenic Impacted Soil				**71.70**	**100.38**

Notes:

ft^2 - square feet
ft^3 - cubic feet
SMP - Seismic Modernization Project
yd^3- cubic yard



REFERENCE: UNITED STATES GEOLOGICAL SURVEY, 1981, VENICE 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP, SCALE 1:24,000.

N

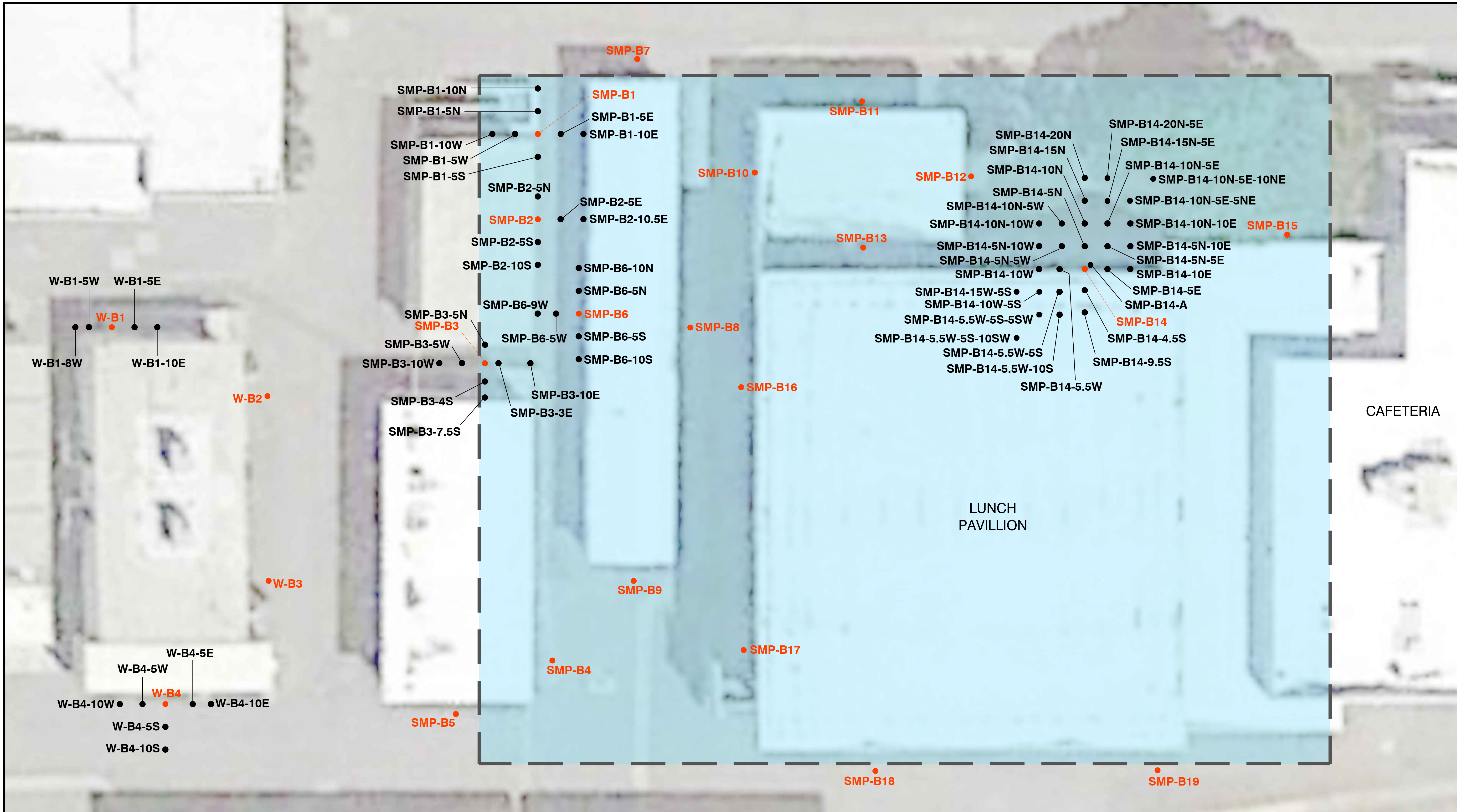
SCALE IN FEET

0 2,000 4,000

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		SITE LOCATION	FIGURE
PROJECT NO.	DATE	VENICE HIGH SCHOOL 13000 VENICE BOULEVARD LOS ANGELES, CALIFORNIA	1
208571011	7/16		

1_208571011-SL.dwg, Jul 05, 2016, 10:07am, SN



N

SCALE IN FEET

0 20 40

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

NOTE:

1. W-B2 AND W-B3 ARE 4 FEET AWAY FROM THE WALL. REMAINING SAMPLES ARE 2 FEET AWAY FROM THE WALL.

LEGEND

(dashed boundary)	SEISMIC MODERNIZATION PROJECT (SMP) SITE BOUNDARY
SMP-B1 ●	SOIL BORING
SMP-B1-5W ●	STEP-OUT LOCATION

REFERENCE: GOOGLE EARTH IMAGERY, 2015.

Ninyo & Moore		SITE PLAN AND STEP-OUT PEA SAMPLING LOCATIONS	FIGURE
PROJECT NO.	DATE	VENICE HIGH SCHOOL 13000 VENICE BOULEVARD LOS ANGELES, CALIFORNIA	2
208571011	7/16		

2_208571011-SP.dwg, Jul 05, 2016, 10:07am, SN

APPENDIX B

ARARS

TABLE B1 - CHEMICAL-SPECIFIC ARARs

Requirement	Citation(s)	Applicable or Relevant and Appropriate	Description
CHHSLs represent up-to-update information regarding human exposure.	DTSC CHHSLs	Applicable	CHHSLs were used for human health risk screening.
On-site waste generation. Determine if generated waste is a hazardous waste.	RCRA 22 CCR 66262	Applicable	Applicable for any operation where waste is generated. The determination of whether wastes generated during remedial actions are hazardous will be made as wastes are excavated.

Notes:
ARARs - Applicable or Relevant and Appropriate Requirements
CHHSLs - California Human Health Screening Levels
EPA - Environmental Protection Agency
CCR - California Code of Regulation
RCRA - Resource Conservation and Recovery Act

TABLE B2 - ACTION-SPECIFIC ARARs

Requirement	Citation	Applicable or Relevant and Appropriate	Description
On-site waste generation. Person who generates waste shall determine if that waste is a hazardous waste.	RCRA 22 CCR 66262.10(a), 66262.11	Applicable	Applicable for any operation where waste is generated. The determination of whether wastes generated during remedial actions are hazardous will be made as wastes are excavated.
Hazardous wastes accumulation. Generator may accumulate waste on-site for 90 days or less or must comply with requirement for operating a storage facility.	RCRA 22 CCR 66262.34	Not Applicable	Applicable for accumulation of waste for less than 90 days if the waste is hazardous waste and is stored on-site.
Container of RCRA hazardous waste must be in good conditions, closed during storage except to add or remove waste.	RCRA 22 CCR 66264.171, 173	Not applicable	See above comment.
Excavation, Transportation, and Disposal	40 CFR 261-265, 172-173, 177; 49 CFR Part 100-199	Applicable	Excavation, transportation, and disposal activities will be performed to meet the federal and state remedial action requirements pertaining to handling waste.
	OSHA 29 CFR 1910.120	Applicable	See above comment.
	CHSC Chapter 6.5, Articles 6, 6.5, 8	Applicable	See above comment.
	CCR Title 22, Division 4.5 Chapter 14 (Article 5) and Chapter 13 (article 1-5); CCR Title 8 Section 5192	Applicable	See above comment.
Off-site disposal rule for hazardous waste	40 CFR 300.440(a)(1)(3) and (4)	Not applicable	Substantive requirements pertaining to the identification of disposal facility deemed by USEPA to be in compliance.
Handling Hazardous Waste	(October 1985 DHHS 5 NIOSH, Publication NO. 85-115)	Not applicable	The Health & Safety Plan should address the potential exposure of workers at the site and the public to potential releases at and from the site during the remedial activities.
Fugitive dust may not be discharged to the atmosphere in amounts that exceed standards during 1-hour period.	SCAQMD Rule 403	Applicable	Fugitive dust emissions of particulate matter are expected from the excavation and waste handling. Measure will be taken during construction to control fugitive dust emissions.

TABLE B2 - ACTION-SPECIFIC ARARs

Requirement	Citation	Applicable or Relevant and Appropriate	Description
Dischargers whose projects disturb one or more acres of soil must obtain.	USEPA Water Quality Order 99-08-DWQ	Applicable	Develop and implement a Storm Water Prevention Plan (SWPP) that specifies Best Management Practices (BMPs) that will prevent construction pollutants from contacting storm water and with the intent of keeping products of erosion from moving off site into receiving waters.

Notes:
ARARs - Applicable or Relevant and Appropriate
RCRA - Resource Conservation and Recovery Act
CFR - Code of Federal Regulations
CCR - California Code of Regulations
OSHA - Occupational Safety and Health Administration
CHSC - California Health and Safety Code
DHHS - Department of Health and Human Services
NIOSH - National Institute for Occupational Safety and Health
EPA - United States Environmental Protection Agency
SCAQMD - Southern Coastal Air Quality Management District

APPENDIX C

HEALTH AND SAFETY PLAN

SITE-SPECIFIC HEALTH AND SAFETY PLAN
SEISMIC MODERNIZATION PROJECT
VENICE HIGH SCHOOL
13000 WEST VENICE BOULEVARD
LOS ANGELES, CALIFORNIA 90066

PREPARED FOR:

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

PREPARED BY:

Ninyo & Moore
Geotechnical and Environmental
Sciences Consultants
475 Goddard, Suite 200
Irvine, California 92618

August 31, 2016
Project No. 208571013

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NINYO & MOORE
Site Specific Health and Safety Plan

1. INTRODUCTION

This site-specific health and safety plan (HSP) has been developed by Ninyo & Moore to provide the minimum safety and health practices and procedures for Ninyo & Moore personnel, who will be engaged in the field activities related to the removal of arsenic impacted soil located within the Seismic Modernization Project (SMP) area of the Venice High School at 13000 West Venice Boulevard, in Los Angeles, California.

2. SITE DESCRIPTION

The project area is located within the property boundaries of Venice High School at 13000 West Venice Boulevard, in Los Angeles California. The site is bordered by West Venice Boulevard to the northwest, South Walgrove Avenue to the southwest, and West Zanja Street to the southeast. The site is comprised of one parcel of approximately 28.92 acres. Buildings on the property include administration and classroom buildings, an auditorium, shop buildings, a boiler room, two gymnasiums, a cafeteria, a swimming pool, on the south corner of the site that is operated in cooperation with the City of Los Angeles, a student store, and maintenance buildings. A continuation high school (Phoenix High School) operates out of a building located on the east corner of the site, adjacent to the baseball field. The remainder of the property is developed with a tennis court, parking lots, sports fields, a running track, and a garden area at the west corner of the property

3. SCOPE OF WORK

The objective of the work is to remove arsenic impacted soil located within the SMP area at the site. The following activities are proposed.

- Excavation, removal, and transportation of arsenic impacted soil.

4. ORGANIZATION AND RESPONSIBILITIES

Personnel responsible for fieldwork are identified in Table 1.

Table 1 – Responsible Personnel for the Site

Title	Name	Daytime	After Hours
Project Manager	Prasad Thimmappa	(949) 753-7070	(949) 279-5149
Field Team Leader(s)	Dennis Fee Denisse Hernandez Eric Roachell	(949) 753-7070	(949) 697-2093 (949) 689-7876 (949) 279-4914
Site Health and Safety Officer (SHSO)	Dennis Fee Denisse Hernandez Eric Roachell	(949) 753-7070	(949) 697-2093 (949) 689-7876 (949) 279-4914
Ninyo & Moore Corporate Safety and Health Manager	Steve Waide	(858) 576-100 X-1282	(858) 449-8619
Subcontractors	TBD		

5. HAZARD ANALYSIS

5.1. Physical Hazards

The physical hazards associated with the project activities may include noise; heavy equipment; falling, slipping, and tripping; heat stress; and general physical hazards. These physical hazards are discussed in the following sections.

5.1.1. Noise

Working near heavy construction equipment or a number of other site activities, can subject workers to noise exposures in excess of allowable limits. Nonessential personnel who do not need to be next to loud equipment should stay as far away as possible to lower the risk of noise-induced hearing loss. Personnel who operate or work next to heavy construction equipment will be required to wear hearing protection (ear plugs or muffs) to reduce their exposure to excessive noise. Persons who enter areas with noise levels in excess of 85 decibels will be required to wear hearing protection.

Subcontractor personnel will implement equivalent effective hearing conservation programs in accordance with their Program requirements.

5.1.2. Energized and Heavy Construction Equipment

Only experienced operators are allowed to work around heavy equipment. Site personnel will not operate or handle heavy equipment owned by subcontractors. The subcontractors will maintain and implement safety procedures according to their HSP. Only qualified subcontractor personnel will operate heavy equipment during field activities. Subcontractors will maintain in operating condition all appropriate safety devices on all machinery (e.g., backup alarms, emergency stops, guards) at all times. Subcontractors will implement effective safety programs for use of this type of equipment.

5.1.3. Vehicle and Heavy Equipment Operation

Vehicles will only be operated in authorized areas. When moving equipment, caution should be exercised in order not to damage equipment or cause injury. When backing up heavy vehicles (larger than pickup trucks), passenger vehicles, or pickups with obscured rear vision, a guide (or spotter) will be used to direct the vehicle. Extra caution will be exercised during vehicle operation on dike roads, industrial areas, and other close spaces. Personnel directing traffic will wear orange vests. Each vehicle will be equipped with a minimum of one fire extinguisher rated 3A:40B:40C.

5.1.4. Subcontractor-Furnished Equipment

The subcontractor is responsible for proper and safe operation of all the equipment they bring to the site. Ninyo & Moore employees will not operate subcontractor-furnished equipment unless that equipment is expressly provided for use by Ninyo & Moore personnel. This section does not prohibit use of power from subcontractor-provided generators or the handling of drilling tool components such as samplers.

5.1.5. Falling, Slipping, and Tripping

Work zone surfaces will be maintained in a neat and orderly state. Foot traffic will avoid areas where materials are stored on the ground. Tools and materials will not be left randomly on surfaces where not in direct use. The drilling crew supervisor will ensure that the work area around each drilling operation is maintained in a neat and orderly state. Hoses and cables will be grouped, routed to minimize hazards, and covered with a ramp or bridge or clearly marked with hazard tape or flags if such material will remain in place for more than one shift.

5.1.6. Manual Lifting Techniques

During any manual material-handling tasks, personnel will be trained to lift with the force of the load suspended on their legs and not on their backs. An adequate number of personnel or an appropriate mechanical device must be used to safely lift or handle heavy equipment. When heavy objects must be lifted manually, workers will keep the load close to the body and will avoid any twisting or turning motions to minimize stress on the lower back. The Site Health and Safety Officer (SHSO) can provide a lifting orientation and specific back stretching and warm-up exercises to help minimize the potential for back injuries. Use of these exercises by all field personnel at the start of each shift will be encouraged by the SHSO.

5.1.7. Lifting/Twisting Injuries

Use of hand augers subjects the sampler to forces which could cause back, shoulder or neck injury. Common-sense safety precautions will be followed such as frequent rest breaks, proper lifting technique and careful ergonomic practices.

5.2. General Physical Hazards

The site may include ditches, areas that are poorly drained, rough or uneven terrain, depressed areas (that may present oxygen deficiency or flammable gas collection areas), protruding objects, and impalement hazards. The SHSO will ensure that a careful prework walkover is made of work areas and potential access or egress routes. Unsafe areas may be flagged or taped by the SHSO and will be identified.

5.2.1. Overhead Electrical Hazards

Overhead cables may be present on sites. A detailed hazard analysis will be prepared by the subcontractor prior to operating heavy equipment (drilling rigs, excavators, cranes) underneath or within 20 feet of the maximum reach of the equipment. The analysis will consider equipment failure of overhead electrical hazards or switch gear.

5.2.2. Underground Cables

Because buried underground cables may be present at this site. An underground utility check will be performed before drilling. In addition, where records are inadequate or questionable, a utility search using specialized cable-detection equipment will be performed. Hand boring will be utilized to locate cables when their presence is suspected.

5.2.3. Soil Excavation/Trenching

Excavation of contaminated soil presents multiple hazards to workers including chemical exposure, fire and explosion hazards, confined space, and exposure to hazards of contacting unidentified energized utilities. A Competent Person will be on site during excavation activities and will identify the numerous safety issues associated with trenching and excavation.

5.2.4. Solar Radiation

The SHSO will encourage Program personnel working out of doors to utilize covering clothing or sunblock preparations to minimize the harmful effects of the sun's rays on the skin.

5.2.5. Heat Stress

Heat stress is an important health consideration on project sites. Weather conditions, characterized by high temperatures and low humidity, in conjunction with wearing personal protective clothing, may aggravate heat-stress problems. Standard measures, including designating a shaded rest area, taking frequent rest breaks, and performing heat-stress monitoring of workers, will be used to minimize heat-stress-related problems. A readily available supply of liquids, such as water and fluids containing electrolytes, will be available at the work site to replenish body fluids. Visual observation of workers by the SHSO for heat-stress-related signs and symptoms, and body core temperature monitoring will be performed when outside temperatures exceed 70 degrees Fahrenheit (°F) and impermeable clothing is being worn, when outside temperatures exceed 90°F in street clothes, or whenever other conditions warrant. Signs and symptoms of heat stress include profuse sweating, headache, skin flushing, dizziness, confusion, and rapid heart rate. Workers exhibiting a body core temperature of 100.4°F or greater (measured at the ear drum) will be removed to a cooler area or activity until body core temperature returns to below 99°F.

If persons exhibiting heat-stress symptoms are left untreated, the condition can elevate to heat stroke. Heat stroke is typically manifested by hot, dry skin with a body core temperature of 104°F or greater. Heat stroke can be fatal if treatment is delayed. Therefore, persons exhibiting heat-stroke symptoms need to have their core temperature reduced immediately by use of cold packs, cold water wipes, or immersion. Heat-stroke victims need to be transported to a professional medical facility immediately after the victim's core temperature has been reduced or while the victim's core temperature is being reduced.

5.3. Chemical Hazards

This section describes the toxicological (health) hazards associated with exposure to organic and inorganic chemicals and metals during the project. Chemicals which are expected to be encountered are discussed in the following sections.

In dry, arid desert conditions, exposure may occur principally by inhalation of contaminated particulates. Exposure to vapors can occur if trapped volatiles are exposed to the high heat conditions once the material is exposed to the atmosphere.

5.3.1. Lead

Lead may be encountered as a contaminant of soil in locations near tanks and other process equipment as a result of painting operations. Lead may also be encountered as a result of spills or leakage of lead additives to motor fuels. Lead is a toxic heavy metal and a suspected carcinogen that may be encountered in inorganic or organic forms.

Where lead is identified as present in sufficiently high concentrations, work will be conducted in accordance with the applicable Occupational Safety and Health Administration (OSHA) standards.

5.3.2. Arsenic

Inorganic arsenic may be found in areas where certain industrial residue may have contaminated soils. Arsenic may also be found in areas where arsenic was used as an herbicide. Some arsenic compounds may release a toxic gas when in an acidic environment. Arsenic is a toxic heavy metal. Inorganic arsenic is regulated by OSHA as a carcinogen

5.4. Biological Hazards

The SHSO will screen the area for biological hazards during the initial site visit and will discuss any problems with installation personnel during the pre-work review. Multiple biological hazards are present at the site. The most common hazards anticipated are discussed below.

5.4.1. Insects

Bees, wasps, yellow jackets, black widow spiders, scorpions, and brown recluse spiders present a potential hazard on this project, especially so for those individuals sensitized to those bites or stings. Prior to initial assignment on this project, personnel with known allergic responses to insect stings will be identified and field supervisors made aware of this condition. These personnel will also carry an antidote kit if so advised by their physician. The SHSO will confirm that the antidote kit is accessible and notify the emergency medical service providers in the event of any incident.

In all cases, a victim suspected of being bitten by either a black widow or brown recluse spider, or stung by a scorpion will receive medical attention. The venom from the brown recluse spider is capable of causing coma and kidney failure in its victim.

Protection methods against insects may be employed, such as the use of protective clothing or insect repellents, as well as extermination measures, and training in recognition and identification of harmful insects.

6. SITE CONTROL

For intrusive field activities such as excavations, precautions shall be taken to ensure that only authorized personnel with the proper training and personal protective equipment (PPE) enter work areas associated with the operation of heavy equipment and/or the potential for exposure to hazardous conditions/materials. In these areas, access is controlled with caution tape and/or barricades.

7. DECONTAMINATION

7.1. Personnel Decontamination

A three-station decontamination system will be established at each field location where excavation operations present an exposure risk to personnel. A minimal decontamination procedure (consisting of washing exposed skin with soap and water) shall be required.

7.2. Vehicle and Equipment Decontamination

The primary focus of any decontamination program is to minimize the spread of contaminated material beyond a given site. During field activities, a variety of heavy equipment, vehicles, and small equipment is anticipated. The level of potential contamination for vehicles and equipment at this site is “low” for support vehicles used in uncontaminated areas and/or for non-intrusive field activities, and “medium” for intrusive activities in potentially contaminated sites. For equipment coming from contaminated areas, items will be steam-cleaned and the cleaning solution captured and contained.

8. MEDICAL SURVEILLANCE REQUIREMENTS

All site personnel will be required to participate in their employer’s medical surveillance program before being permitted to work on location. The medical surveillance program for Ninyo & Moore employees is described in the Ninyo & Moore Injury and Illness Prevention

Program. Teaming partner or subcontractor medical surveillance programs are described in respective company documents. Subcontractors will be required to demonstrate, by document submittal, their maintenance of OSHA-compliant programs and to maintain records as required by the applicable contract. Specific exceptions to the medical surveillance requirements may be granted by the SHSO for site access by specialty subcontractors performing non-intrusive activity.

9. HAZARD MONITORING

During field activities, the following monitoring requirements will be mandated:

Table 2 – Chemical/Physical Agent Monitoring Requirements

Scope of Work Task	Chemical/ Hazard	Instrument	Responsible Group	Initial Frequency
Low Hazard				
Excavation hazards, soil sampling	Organic vapor	PID/FID	SSHR	Start of task, hourly, continuous if zone of contamination encountered
Moderate hazard				
Excavation hazards, soil sampling	Organic vapor	PID/FID	SSHR	Start of task, hourly, continuous if zone of contamination encountered

Notes:
[a] PID – photoionization detector
[b] FID – flame ionization detector

Table 3 – Monitoring Methods and Action Levels for Petroleum Hydrocarbon Only[1] Sites Using Screening Survey Instruments

Hazard	Method	Action Level[1]	Protection Action
Total Organic Vapor (benzene absent 5)	PID[2] or FID[3]	Background to 10 ppm[4] above background	No action required
		> 10 ppm	Air purifying respirator, half or full face, level C protection with organic vapor cartridges
		> 250 ppm	Supplied air protection, Level B
		> 250 ppm	STOP WORK

Notes:
1 All action levels are readings observed above background
2 photoionization detector
3 flame ionization detector
4 parts per million
5 Confirm benzene is less than 1 ppm with chromatography or colorimetric indicator tube specific for benzene in the presence of petroleum hydrocarbons (Drager, benzene 0.05, #CH24801 or equivalent)

Table 4 – Action Levels for Heat Stress

Type Measurement	Action Level	Action
Ear insertable core temperature	100.4 degrees F or greater	Remove from work
Ear insertable core temperature	<99 degrees F	Return to work

Table 5 – Frequency of Physiological Monitoring for Fit and Acclimated Workers

Adjusted Temperature[1]	Normal Work Ensemble[2] After Each:	Impermeable Ensemble After Each:
90° F (32.2° C) or above	45 minutes of work	15 minutes of work
86.5° F - 90° F (30.8° C - 32.2° C)	60 minutes of work	30 minutes of work
82.5° F - 86.5° F (28.1° C - 30.8° C)	90 minutes of work	60 minutes of work
76.5° F - 82.5° F (25.3° C - 28.1° C)	120 minutes of work	90 minutes of work
72.5° F - 76.5° F (22.5° C - 25.3° C)	150 minutes of work	120 minutes of work

Notes:
1 Calculate the adjusted air temperature (Ta adj) with the following equation: Ta adj(°F) = Ta(°F) + (13 X %sunshine / 100) Measure air temperature (Ta) with a standard mercury-in-glass thermometer with the bulb shielded from radiant heat. Estimate the percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to attenuate shadow (100% sunshine = no cloud cover and a sharp, distinct shadow; 0% sunshine = no shadow).
2 A normal work ensemble consists of coveralls or other cotton clothing with long sleeves and pants.

10. PERSONAL PROTECTIVE EQUIPMENT

All personnel are required to wear Fire Resistant Clothing coveralls while on site.

Based on analytical results for soil samples collected and tested during previous investigations, The following level of PPE will be mandated for the listed tasks:

Table 6 – Personal Protective Equipment (potential or actual chemical exposure)

Task	Hazard	Level	Body	Respirator	Skin	Other
Excavation/soil sampling	Minimal chemical exposure	D or Mod. D[a]	Normal work clothes Long pants	Half-face with HEPA[b] and OV[c] ready for use	Latex or nitrile gloves	Hard hat Safety glasses, Hard-toed boots

Notes:
a where the potential for heat stress exists, modified Level D may be downgraded to Level D if continuous monitoring verifies the absence of organic vapor
b HEPA – high-efficiency particulate air
c OV – organic vapor filter
NA – not applicable

11. EMPLOYEE TRAINING ASSIGNMENTS

11.1. General Training Requirements

A matrix summarizing training requirements for Ninyo & Moore personnel, subcontract supervisors and personnel, visitors, and vendors is presented in Table 10.

Table 7 – Training Assignment Matrix

Category	40-Hour Basic	8-Hour Refresher	24 Hours Supervised Experience	8-Hour Supervisor Refresher[4]	Site-Specific	N&M Safety Orientation	First Aid/CPR	Oxygen Qualified
N&M Employee	X	X	X		X	X	X[1]	X[2]
N&M or Subcontractor Supervisor	X[3]	X[3]	X	X[4]	X[5]	X[5]	X[1]	X[2]
Subcontractor	X[3]	X[3]	X		X[5]	X[5]	X[1]	X[2]
Visitor	X[6]	X[6]	X[7]		X			
Vendor	X[6]	X[6]	X[7]		X			

Notes:
1. At remote locations, (emergency responders more than 10 minutes away) a minimum of two people will be on-site, during fieldwork, who have a valid certificate in basic first aid/CPR from the American Red Cross (or equivalent) documented training.
2. At designated remote sites, a minimum of two people will be qualified to deliver oxygen.
3. The requirement for 40-hour basic and 8-hour refresher training for certain non-intrusive work shall be made on a case-by-case basis by the Corporate Safety Manager.
4. Employees may take supervisor training in lieu of standard refresher training.
5. A site-specific safety orientation must be given to all visiting/working personnel.
6. For vendors/visitors requiring controlled area access to work on contaminated equipment.
7. Not required if escorted.

12. CONFINED SPACE ENTRY

Confined spaces, including but not limited to trenches, ditches, holes, culverts, structures, and tanks, present multiple hazards including oxygen deficiency, toxic agent exposure, heat stress, engulfment, and other hazards. While shallow trenches will be excavated on-site, personnel will not enter any excavations greater than 4 feet in depth. If sampling soil is needed in excavations greater than 4 feet, sampling will take place from the excavator bucket at the surface.

Confined space entry is not anticipated nor is it authorized for project personnel or subcontractors during this work activity. If it becomes necessary to enter a confined space or trench greater than 4 feet in depth during this project, appropriate training, equipment and supervision will be put in place and the entry will be made in accordance with a specific confined space entry permit approved by the Corporate Safety Manager and/or a trench entry will be performed in accordance with OSHA 29 Code of Federal Regulations 1926.650-653. A designated OSHA-competent person for confined space work will be on-site during all confined space entry activities.

13. EMERGENCY RESPONSE

13.1. General

In the event of a medical emergency or fire during fieldwork, the standard "**911**" emergency telephone number shall be called from the on-site mobile phone or any base phone. A mobile telephone will be available during all field activities. On a daily basis, and at each work location, the SHSO and/or field team leader will verify that mobile phones are operational.

Pertinent personnel phone numbers are listed in Section 4. Emergency facility locations and phone numbers are listed below. All project vehicles shall maintain a copy of this section (Section 13) together with the appropriate emergency maps at all times, in a readily accessible location.

The emergency facility located in closest proximity to the site is Marina Del Rey Hospital. The hospital address is 4650 Lincoln Blvd, Marina Del Rey, California**.** The route from the site to the hospital is shown as Figure 1.

Table 8 – Emergency Phone Numbers
(to be posted by Site Health and Safety Officer at all phone locations)

Emergency	Number	Contact	Notes
Medical, Fire or Police	911	Emergency Operator	None
Medical Center (to be used only if local hospital/clinic will be first contact)	(310) 823-8911	Marina Del Rey Hospital 4650 Lincoln Blvd, Marina Del Rey, CA	None

14. SPILL PREVENTION AND CONTROL MEASURES

Preventive Measures

- Inspect all containers upon delivery to the site for visible defects and ensure that each drum or container includes a re-sealable lid.
- Set any 55-gallon drums on wooden pallets to facilitate transport via forklift.
- Perform weekly inspections of the storage area.
- Select flat areas for temporary storage away from high-traffic zones and storm or sewer drains.

Spill Containment Measures

The following actions will be taken by Ninyo & Moore field personnel assigned to the field activities in the event of a spill:

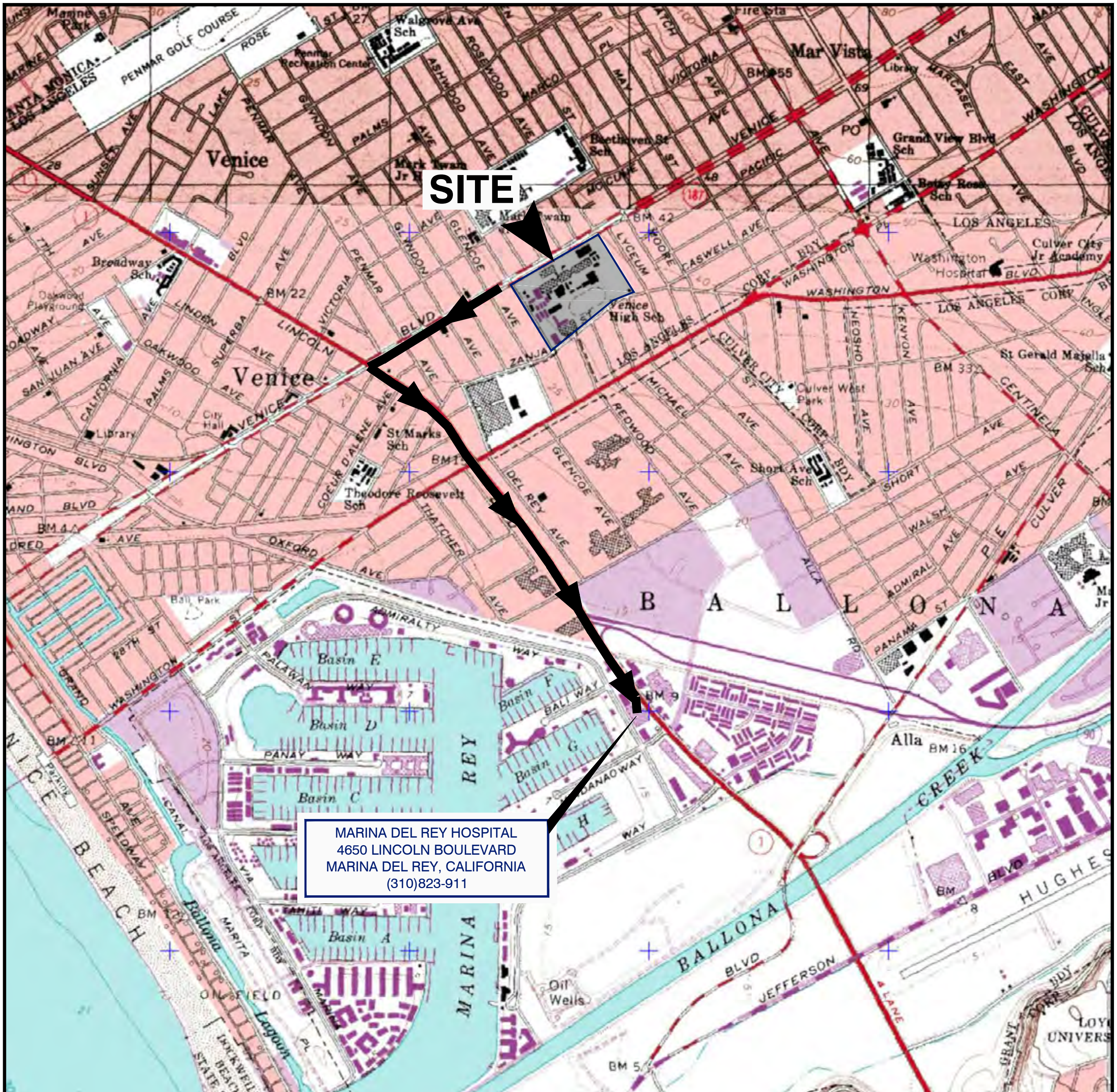
- the Site Coordinator (field team leader) and SHSO are to be notified immediately;
- workers not involved in spill containment and/or cleanup shall evacuate the immediate area and designated emergency response personnel attired in appropriate PPE (see Section 9), shall proceed to the spill area with a spill cleanup and control kit, including absorbent materials;
- attempts shall be made to stop the source(s) of spillage immediately;
- the SHSO shall monitor for exposure to chemicals or hazardous substances during spill cleanup work and shall stay at the spill area until the area has been cleared, inspected, and readied for reentry;
- a spill incident report shall be prepared by the SHSO;

14.1. Record Keeping and Notifications

The SHSO and Field Team Leader shall document the spill in an Incident Report which will be forwarded to the Corporate Safety Manager and Project Manager. Records of all hazardous materials releases shall be maintained with the project files and the facility operating record. The Project Manager will make any necessary notifications to off-site authorities and he and the Safety Manager will approve the reentry to the site for routine use and will issue a final release report pertaining to cleanup of the area.

FIGURE 1

HOSPITAL ROUTE



REFERENCE: UNITED STATES GEOLOGICAL SURVEY, 1981, VENICE 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP, SCALE 1:24,000.

N

SCALE IN FEET

0 2,000 4,000

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		HOSPITAL LOCATION	FIGURE
PROJECT NO.	DATE	VENICE HIGH SCHOOL 13000 VENICE BOULEVARD LOS ANGELES, CALIFORNIA	1
208571013	8/16		

208571013-HL.dwg, Aug 04, 2016, 10:27pm, SN, GK

Attachment A

Health and Safety Plan Acknowledgement Sheet

ONSITE WORKING PERSONNEL SIGN IN

The personnel listed below have 40-hour HAZWOPER training with current refresher status and have read and understood this Health and Safety plan, and agree to abide by its provisions.

Onsite Personnel Name	Signature	Company	Date

APPENDIX D

TRANSPORTATION PLAN

TRANSPORTATION PLAN FOR REMOVAL ACTION WORK PLAN VENICE HIGH SCHOOL 13000 WEST VENICE BOULEVARD LOS ANGELES, CALIFORNIA 90066

PREPARED FOR:
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Los Angeles Unified School District
333 South Beaudry Avenue, 21st Floor
Los Angeles, California 90017

PREPARED BY:
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August 31, 2016
Project No. 208571013

STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

This Transportation Plan was prepared for the sole use of the Los Angeles Unified School District (the District).The conclusions presented herein are based solely upon the agreed upon scope of work outlined in this report. Ninyo & Moore makes no warranties or guarantees as to the accuracy or completeness of information provided or compiled by others. It is possible that information exists beyond the scope of this investigation. Additional information, which was not found or available to Ninyo & Moore at the time of writing this report, may result in modification of the conclusions presented. This report is not a legal opinion. The services performed by Ninyo & Moore have been conducted in a manner consistent with the level of care ordinarily exercised by members of our profession currently practicing under similar conditions. No other warranty, expressed or implied, is made.

Prepared by:

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STATE OF CALIFORNIA

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TABLE OF CONTENTS

1. INTRODUCTION

Ninyo & Moore has prepared this Transportation Plan on behalf of the Los Angeles Unified School District (LAUSD) located in Los Angeles, California (site). The site is located at 13000 West Venice Boulevard, in Los Angeles, California.

1.1. Site Information

According to the United States Geological Survey (USGS) Venice Quadrangle Map, dated 1964 (photorevised in 1981), the site is at approximately 35 feet above mean sea level. The site slopes to the southwest (USGS, 1964). The Los Angeles County Tax Assessor Parcel Numbers for the Site is 4236-011-900. According to the Los Angeles County Assessor, the parcel is zoned [Q]PF-1XL for Public Facilities. Additional site background information is provided in the Preliminary Environmental Assessment (PEA) report (Ninyo & Moore, 2016).

The first high school buildings were developed around 1913. After extensive damage suffered from the 1933 Long Beach earthquakes, new buildings were constructed in 1935 and 1936, many of which are still in use. The site is comprised of one parcel of approximately 28.92 acres. Buildings on the property include administration and classroom buildings, an auditorium, shop buildings, a boiler room, two gymnasiums, a cafeteria, a swimming pool, on the south corner of the site that is operated in cooperation with the City of Los Angeles, a student store, and maintenance buildings. A continuation high school (Phoenix High School) operates out of a building located on the east corner of the site, adjacent to the baseball field. The remainder of the property is developed with a tennis court, parking lots, sports fields, a running track, and a garden area at the west corner of the property (AECOM, 2014).

1.2. Previous Site Investigations

The following section describe previous site investigations.

Phase I Environmental Site Assessment (ESA) Report

Ninyo & Moore reviewed the Phase I ESA Report prepared by AECOM, dated April 4, 2014 (AECOM, 2014). Review of the Phase I ESA identified the following recognized environmental conditions (RECs) (as that defined in ASTM International Standards E1527-2013) currently or historically located on site:

Site RECs

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

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

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

SMP Area RECs

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

- Due to the age of the structures on-site, lead-based paint (LBP), and organochlorine pesticides (OCPs) in soils will be assessed in accordance with the Department of Toxic Substances Control (DTSC), Interim Guidance, Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers, revised June 9, 2006 (DTSC, 2016).

- Due to their age, many of the buildings located on the project area may contain asbestos-containing materials and LBP.

Preliminary Environmental Assessment (PEA) Report

Ninyo & Moore conducted a PEA in January 2016, with subsequent step-out sampling conducted in March, May and June 2016 (Ninyo & Moore, 2016). The primary objectives were to determine if soil was impacted by arsenic and lead, which were identified as chemicals of potential concern based on prior investigations at the Site, delineate any arsenic- and lead-impacted soils, evaluate risk to human health and/or the environment, and determine the construction contractor's soil disposal requirements and potential soil reuse options for the Project Area.

The following summarizes the 2016 PEA investigation findings (Ninyo & Moore, 2016):

- OCPs were not detected above the laboratory reporting limits in the eight composite samples collected at approximately 0.5 feet below ground surface (bgs).

- Concentrations of lead in the soil samples by x-ray fluorescence analysis ranged from 1 to 91 milligrams per kilogram (mg/kg). Reported concentrations of lead from the fixed laboratory analysis ranged from 6.1 to 69 mg/kg, below the California Human Health Screening Levels (CHHSL) value of 80 mg/kg for residential land use.

- Soil sampling performed during the PEA, in the Seismic Modernization Project (SMP) area reported various boring locations which contained elevated concentrations of arsenic at a maximum concentration of 100 mg/kg, exceeding the DTSC's established upper limit threshold of 12 mg/kg for Southern California soils. Following the completion of the PEA field activities, lateral and vertical delineation of arsenic impacted soil was completed on the northwestern boundary of the SMP at 1.5 feet bgs, and at 2.5, and 4.0 feet bgs, on the northeastern portion of the SMP boundaries.

- Arsenic impacted soil is non-hazardous, under asphalt and concrete pavement, and poses no risk to the students, faculty and staff at the school.

- Currently, there are no complete exposure pathways for the arsenic in soil to come into contact with students, faculty or staff.

- Arsenic and lead concentrations in soil did not exceed the Soluble Threshold Limit Concentration (STLC) and Toxic Characteristic Leaching Procedure (TCLP) thresholds for California and federal waste characterization.

1.3. Purpose and Objective

This Transportation Plan will be included as an appendix to the Removal Action Work Plan (RAW) that has been prepared to address the excavation and off-site disposal of the impacted material described above. Classification, transportation, and removal of material will be conducted in accordance with the federal, state, and local regulations, as applicable.

2. WASTE CHARACTERIZATION

The following sections describe the waste characterization for soil to be removed at the site, and the characterization of the imported backfill material.

2.1. Waste Profile

During the PEA investigation, soil samples reported non-detect concentrations of OCPs. Reported concentrations of lead from the fixed laboratory analysis ranged from 6.1 to 69 mg/kg, below the CHHSL value of 80 mg/kg for residential land use. Various samples reported elevated concentrations of arsenic at a maximum concentration of 100 mg/kg, concentrations above the DTSC's established upper limit threshold of 12 mg/kg for Southern California soils. Based on the analytical results for waste characterization, the impacted soils would be classified as non-hazardous for offsite disposal purposes.

Tables 1 and 2 of the RAW provide the lead, arsenic and OCP concentrations that were previously reported in the PEA. The soil type is mainly silty sand, and silty clay. The areas to be excavated are shown on Figure 3 of the RAW. The volume of soil to be transported is expected to be approximately 71.70 cubic yards (100.38 tons). The estimated volume calculations are included in Table 3 of the RAW. The hazards associated with arsenic are included in the Site-Specific Health & Safety Plan. A discussion on the hazard evaluation of arsenic is included in Section 5 of the RAW. The contaminated soil will be transported under local and Department of Transportation (DOT) regulations. No special procedures are required for handling the contaminated soil other than those described in the RAW.

During excavation activities, soil will be directly loaded onto the trucks, and no stockpiling will be conducted.

2.1.1. Waste Quantity

As mentioned above, approximately 72 cubic yards (100 tons) of arsenic impacted soil will be removed from the site. Based on these volumes, approximately 6 end-dump trucks or roll-off bins can be utilized, assuming 1 cubic yard weighs approximately 1.4 tons and each truck can haul approximately 20 tons. However, confirmation sampling and field conditions may affect the actual volume of soil to be excavated.

2.1.2. Special Disposal Requirements

Special disposal requirements are outlined in Section 5 of this transportation plan.

2.2. Import Fill Material

Due to the volume of soil and the relatively small areas in which it will be removed, the use of backfill material is anticipated. The backfill materials will be clean soil and pre-approved by Ninyo & Moore and the geotechnical consultant. Additionally, based on site conditions, excavations will be sloped if a safety hazard exists.

3. SOIL LOADING AND STAGING OPERATIONS

The following sections describe the soil loading and staging operations for the site.

3.1. Vehicle Loading Operations

The site will be cleared of existing features (chain-linked and steel fences, concrete walls, and others) which would impede excavation and/or hauling equipment prior to the start of excavation activities. The trucks will use the existing parking lot in the western portion of the site, on the side of Walgrove Avenue as a staging area to enter and egress the site (Figure D1). Contractor personnel vehicles and personnel vehicles will also use the western entrance to the site (off of Walgrove Avenue).

Once on the site, the trucks or bins will be loaded by a front end loader. Each truck or bin will haul approximately 20 tons of material. Based on these volumes, approximately 6 end-dump trucks or roll-off bins may be utilized. Depending on field activities the amount of trucks utilized is expected to vary daily. The selected contractor will determine the actual number of trucks to be used each day. However, for the purpose of this plan and it is estimated that a maximum of approximately 2 truckloads of material will be transported from the site each day, due to the limited size of the staging area. Water will be sprayed on the material as specified in the Dust Control Plan, Appendix E of the RAW, to limit dust emissions during the loading process. Once loaded, the truck will proceed to the decontamination area where the load will be covered with a tarp, and material will be removed from the tires and flat surfaces of the trailer prior to leaving the site. Each load will be issued a uniquely identified manifest or bill of lading for transportation. The area outside the access gate will be swept as necessary to remove any residual material.

3.2. Soil Staging Operations

Soil will be directly loaded onto the trucks. If for any reason, stockpiling is necessary, the stockpile areas will have the upper surface wheel-rolled prior to use and perimeter berms will be constructed to provide run-on and run-off control. If the stockpiles in this area are to remain onsite for an extended period of time or if odors are sufficient to cause a nuisance, the material will be covered with plastic sheeting, or another appropriate vapor suppression technique will be used, as described in the Dust Control Plan (Appendix E of the RAW).Alternatively, the soil may be loaded into 50 cubic yard roll-off bins and covered.

The materials will be transported offsite to an approved non-hazardous waste landfill or recycling facility for management in accordance.

3.3. Working Hours and Duration

Trucks will operate during days when school is not in session, which can include weekends. Restoration activities (loading, backfilling, compaction, landscaping, and irrigation repair), if necessary, will be conducted immediately after clean up goals are obtained during confirmation sampling activities.

4. TRANSPORTATION CONTROL

The following sections describe the dust control, decontamination, traffic control procedures, and haul routes for the site during soil removal activities.

4.1. Dust Control

Soil for off-site disposal will be transported in tarped end-dump trailers/trucks or roll-off bins to an approved land disposal facility. All waste hauler vehicles will be decontaminated prior to leaving the work area. Clean fill materials, if necessary, will be transported in tarped trailers/trucks to the site. Street sweeping procedures, as discussed in the Dust Control Plan in the RAW (Appendix D), will be utilized when necessary to reduce the potential for fugitive dust and migration of contamination.

4.2. Decontamination

As each truck leaves the site it will be properly decontaminated to minimize soil from leaving the site. A stabilized construction entrance/exit, or equivalent best management practice, will be utilized to control track out. In the event that track out cannot be controlled, manual sweeping or a street sweeper will be used.

Trucks will be inspected prior to leaving the site for the following criteria:

- Proper loading of material
- Proper covering/sealing
- Proper decontamination
- Proper use of placards
- Proper completion of manifests

All inspections will be documented in the daily field log books.

4.3. Traffic Control Procedures

Truck Staging Area: Haul vehicles shall only be loaded in designated areas. The designated staging area is the existing parking lot located in the northwest portion of the site. Haul trucks may be loaded utilizing a front-end loader, or similar contractor approved equipment, from temporary stockpiles. Haul vehicles will be loaded in staging areas to avoid traveling over exposed contaminated soils to reduce the potential of cross contamination. Haul vehicles shall be loaded in accordance with manufacturer weight limitations. Loads shall be struck level with the waterline of the body of the vehicle to prevent spillage during transport.

Site Access Control: A flag person will be positioned at the entrance/exit to assist the truck drivers entering and exiting the site. Waste hauling vehicles will not be allowed to cross soil removal or staging areas.

On-Site Traffic Flow: The trucks will be dispatched on a staggered schedule to limit the number of trucks that are staged for loading at any one time. Trucks will be staged out of traffic lanes to the extent possible.

Speed Limit: While on-site, trucks will be required to maintain slow speeds, less than 5 miles per hour for safety and dust control. While on streets and freeways, all transporters will follow the speed limit requirements and defensive driving techniques for traffic safety.

Rush Hours: Trucks will operate from Monday through Friday between 9:00 a.m. and 4:00 p.m. in an effort to avoid rush hour traffic, if possible. Work will be conducted when school is not in session, which could include weekends.

4.4. Transportation Routes

Transportation routes to the following locations are specified below. Alternative appropriate facilities may be used depending on their acceptance criteria and with the approval of the District and DTSC.

The transportation routes for the Chiquita Canyon Sanitary Landfill located at 29201 Henry Mayo Drive, Castaic, California is as follows:

- The primary route to Chiquita Canyon Sanitary Landfill will be west on Walgrove Avenue, northeast on Venice Boulevard, northwest on South Centinela Avenue, east onto Interstate 10 (I-10), north on Interstate 405 (I-405), north on Interstate 5 (I-5), and west on California Highway 126 (CA-126) The route is through urban and rural areas in Los Angeles County.

- The alternate route primary route to Chiquita Canyon Sanitary Landfill will be west on Walgrove Avenue, northeast on Venice Boulevard, northwest on South Centinela Avenue, east onto I-10, north on north on I-405, south on US-101, north on CA-170, north on I-5, and thereafter as described in the primary route. The route is through urban and rural areas in Los Angeles County.

- The distance and travel time from the primary route is approximately 39 miles for about 46 minutes. The distance and travel time from the alternate route is approximately 47 miles for about 57 minutes. It is expected to take approximately 1 to 2 hours to drive from the site to the landfill depending on traffic conditions. A map of the transportation routes is presented as Figure D2. The landfill operates from 7 a.m. to 5:00 p.m. Monday through Friday, and 6 a.m. to 2 p.m. on Saturdays.

The transportation route for the Simi Valley Landfill located at 2801 North Madera Road, Simi Valley, California is as follows:

- The primary route to the Simi Valley Landfill will be west on Walgrove Avenue, northeast on Venice Boulevard, northwest on South Centinela Avenue, east onto I-10, north on I-405, west on CA-118, and north on Madera Road. The route is through urban areas in Los Angeles and Ventura Counties.

- There is no alternate route.

- The landfill is approximately 40 miles from the site. It is expected to take approximately 1 to 2 hours to drive from the site to the landfill depending on traffic conditions. A map of the transportation routes is presented as Figure D3. The landfill operates from 7 a.m. to 4 p.m. Monday through Saturday, extended hours and Sundays available upon request.

The transportation routes for the Buttonwillow Landfill located at 2500 Lokern Road, Buttonwillow, California is as follows:

- The primary route to the Buttonwillow Landfill will be west on Walgrove Avenue, northeast on Venice Boulevard, northwest on South Centinela Avenue, east onto I-10, north on I-405, north on I-5, west on CA-58, and northwest onto Lokern Road. The route is through urban and rural areas of Los Angeles and Kern Counties.

- The landfill is approximately 135 miles from the site. It is expected to take approximately 2 to 5 hours to drive from the site to the landfill depending on traffic conditions. A map of the transportation routes is presented as Figure D5. The landfill operates from 9 a.m. to 5 p.m. Monday through Friday.

Based on the location of the site, it is not possible to avoid residential areas. Soil transportation will occur during normal daylight hours. The travel times include delays due to peak traffic conditions and inclement weather conditions. The proposed routes are on major thoroughfares in California. Restrictions from the California Highway Patrol and other ordinances are expected. Road maintenance activities cannot be anticipated at this time.

The locations of weigh stations, emergency response resources and repair facilities along the route will be provided by the contractor prior to start of transportation. A hazardous materials response company will be available on an on-call basis for response to any accidents involving the trucks utilized to transport site wastes.

A "work notice" will be given to the street maintenance authority with a copy of the transportation route map at least three days prior to the implementation of the proposed RAW. All street surfaces along the transportation route will be routinely inspected and, if necessary, maintained or repaired by the contractor, during implementation of the tasks. The Contractor is responsible for cleaning streets from spilled soils and the final cleanup after completion of field activities. The number of daily truckloads during the implementation of the RAW is not expected to cause damage to surface streets.

5. OFF-SITE DISPOSAL FACILITIES

Based on the analytical results of the PEA (Ninyo & Moore, 2016), excavated soil will be classified as non-hazardous. Samples with concentrations of total arsenic that exceeded 10 times the STLC of 5 milligrams per liter (mg/l) were analyzed for the STLC by the WET method. Samples (W-B1-5W-0.5, W-B1-8W-0.5, W-B1-5E-0.5, and DUP 3 that contained arsenic concentrations of 91, 55, 100, and 60 mg/kg, respectively), exceeded ten times the STLC of 5 mg/l or 50 mg/kg. Soluble arsenic concentrations for these soil samples ranged from 1.0 to 3.1 mg/l, and were below the STLC limit of 5 mg/l. One sample (W-B1-5E-0.5 with a reported arsenic concentration of 100 mg/kg) with a concentration of total arsenic which was equal to 20 times the TCLP of 5 mg/l or 100 mg/kg was analyzed for leachable arsenic by the TCLP method. The TCLP result for this sample was below 5 mg/l.

Waste materials will be transported to one of the appropriately licensed facilities, as discussed in Section 4.4:

- **Non-hazardous waste**

  Waste Connections, Inc.
  Chiquita Canyon Sanitary Landfill
  29201 Henry Mayo Drive
  Castaic, California 91384

  Waste Management
  Simi Valley Landfill & Recycling Center
  2801 North Madera Road
  Simi Valley, California 93065

  Clean Harbors
  Buttonwillow Landfill
  2500 Lokern Road
  Buttonwillow California 93206

The actual disposal sites will be determined prior to the RAW implementation based on cost and schedule constraints, with the District's input.

Before leaving the site, truck drivers will be instructed to notify the District contractor's site Manager. The truck drivers will be provided with the cellular phone number for the District contractor's site manager. It will be the responsibility of the truck drivers to contact the District contractor's site manager if problems arise after leaving the site. It will be the responsibility of the District contractor's site manager to notify the District of any unforeseen incidents.

6. SHIPPING DOCUMENTATION

The Uniform Non-hazardous Waste Manifest shall be utilized to track the movement of contaminated soils from the point of generation to the point of ultimate disposal. A copy of the waste manifest with instructions is included as Attachment A. Prior to transporting the excavated soil offsite, an authorized representative of the District will sign each waste manifest. The waste hauler will then sign the manifest and distribute one signed copy to the remedial action contractor's site manager. The remedial action contractor's site manager will maintain a copy of the waste manifest for each truckload onsite until completion of the remedial action.

7. REQUIREMENTS OF FILL MATERIALS

As mentioned previously, it is anticipated that imported fill materials will be required at the site during the implementation of the RAW. The source and fill materials will pre-approved by Ninyo & Moore and the geotechnical consultant.

8. REQUIREMENTS OF TRANSPORTERS

8.1. License and Insurance

The District will utilize transporters that are qualified for hauling impacted soil off-site. The applicable licensing and insurance will be required by each transporter prior to the initiation of site activities. In addition, the transporters are required to be registered with the DTSC to operate as a hazardous waste hauler in California.

8.2. Contingency Plan

Each contractor responsible for transporting material off-site is required to have a company provided contingency plan. The Contingency Plan must be accessible during the transportation of excavated materials from the site to the disposal facility in the event of an emergency (e.g. waste spill, accident, vehicle breakdown, etc.). In addition, a spill response company will be available on an on-call basis for response to any accidents involving the trucks utilized to transport site wastes, as discussed in Section 4.4.

The Contingency Plan will address the following conditions:

- In the event emergency situations occur during transportation of excavated soils from the site to the designated disposal facility or during transportation of fill materials to the site;
- In the event volumes of excavated soil change; or
- In the event waste characteristics change.

The Contingency Plan, at a minimum, will include contaminant descriptions, a hazard analysis, and possible methods for the containment and cleanup of an accidental release. The Contingency Plan will contain sufficient information for the emergency service organizations to determine if evacuation is necessary. In addition, all drivers will be adequately trained to implement the Contingency Plan and will be given a copy of the Transportation Plan.

9. RECORD KEEPING

The remedial action's contractor will be responsible for maintaining a field logbook during the remedial action 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 shall 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 shall be factual, objective, and free of personal opinions or other terminology that might prove inappropriate. If an error is made, corrections shall be made by crossing a line through the error and entering the correct information. Corrections will be dated and initialed.

Air monitoring conducted during remedial activities will be documented and the information/data will be included in the Remedial Action Completion Report.

Potential transportation documents may include: bill of lading, analytical results, non-hazardous waste manifests, and maps. In addition, copies of the specific transportation documents, specifically those required by law (e.g. bill of lading and/or manifests) will be carried with the load by the waste hauler.

The Uniform Non-hazardous Waste Manifest will be used to track the movement of soil sent offsite as nonhazardous waste from the point of generation to the point of ultimate disposal. The waste manifests will include information such as:

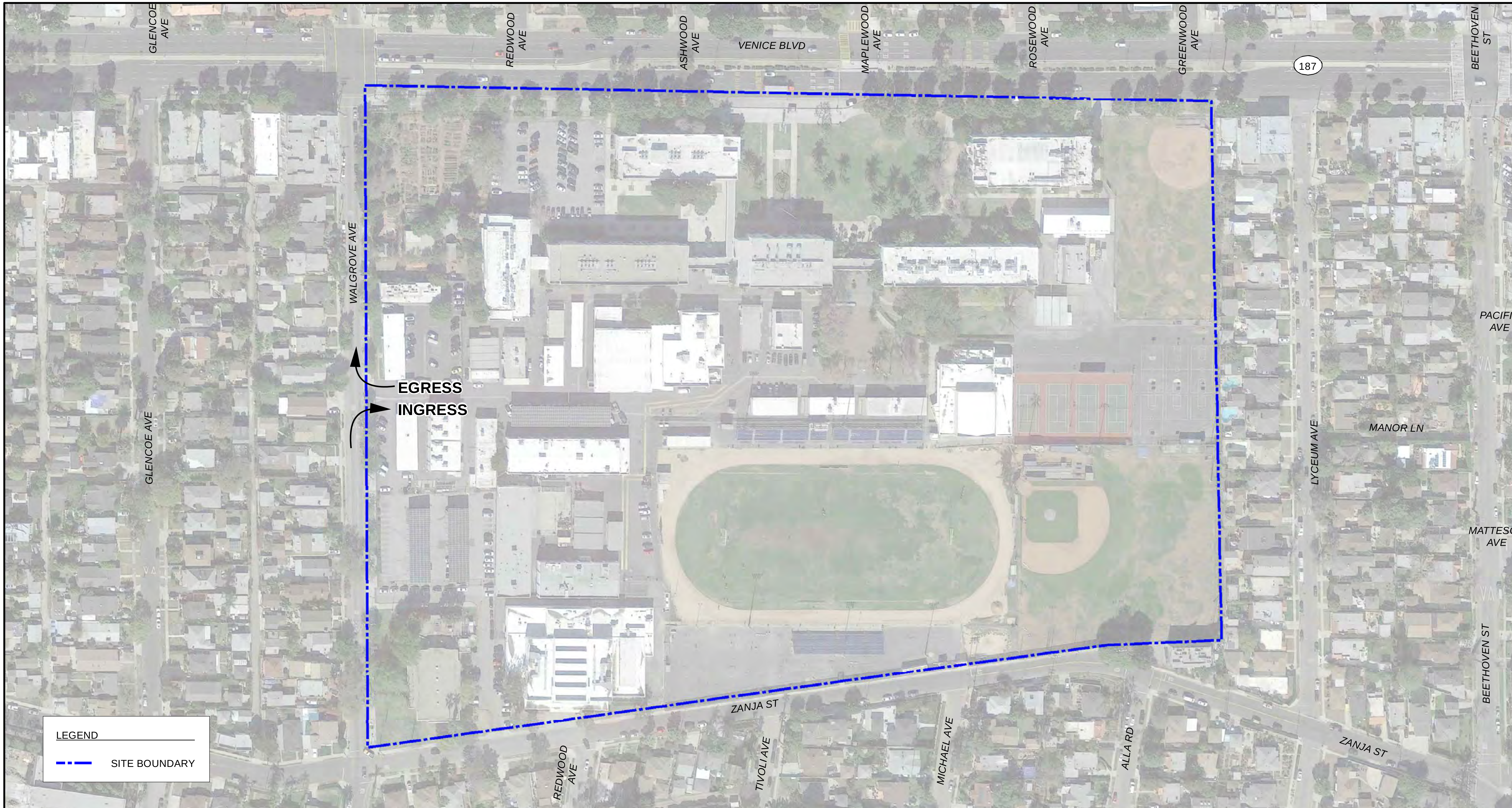
- Name and address of the generator, transporter, and the destination facility.

- United States 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.
- The District's EPA Hazardous Waste Generator Number.
- Other information required either by EPA and DTSC.

Before transporting the excavated soil offsite, an authorized representative of the District will sign each waste manifest. The remedial action 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 Remedial Action Completion Report.

10. SITE HEALTH AND SAFETY

A Site Health and Safety Plan (SHSP) can be found in Appendix C of the RAW. The SHSP includes key personnel responsibilities, site contact information, an evaluation of the site hazards, an emergency contingency plan, required personal protective equipment, and a summary of the safety standard operating procedures. All field personnel will be familiar with the contents of the SHSP. In case of a site emergency, all personnel will meet on the football field in the center of the site (Figure D5).



SOURCE: GOOGLE EARTH, 2016

SCALE IN FEET

0 150 300

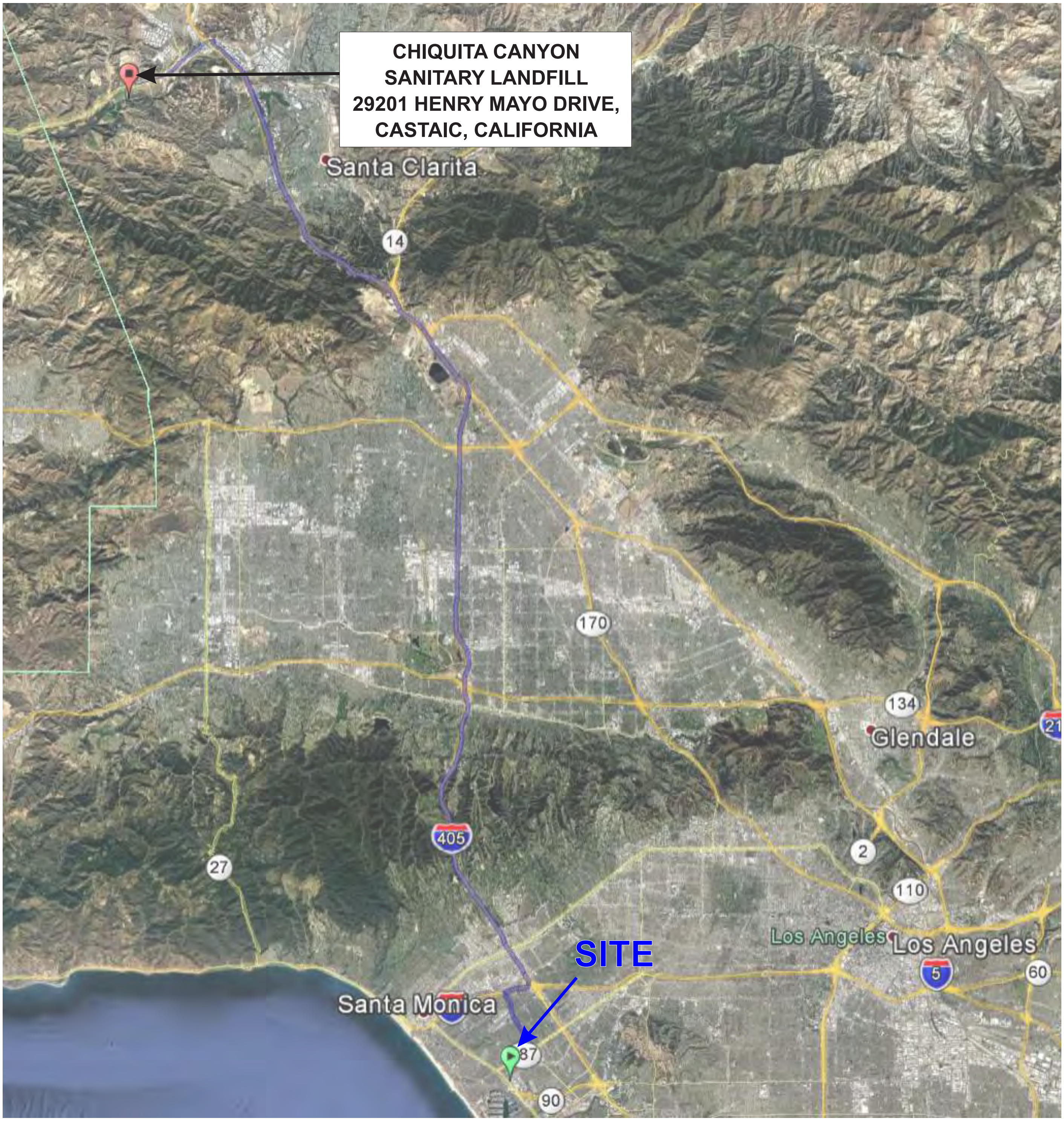
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

SITE TRUCK ROUTE - INGRESS AND EGRESS

PROJECT NO.	DATE		FIGURE
208571013	8/16	VENICE HIGH SCHOOL 13000 VENICE BOULEVARD LOS ANGELES, CALIFORNIA	D1

208571013_TR.mxd 8/15/2016 JDL



SOURCE: GOOGLE EARTH, 2016

N

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

208571013_CHQ.cdr JDL

Ninyo & Moore

TRANSPORTATION ROUTE CHIQUITA CANYON LANDFILL

PROJECT NO.	DATE
208571013	8/16

VENICE HIGH SCHOOL
13000 VENICE BOULEVARD
LOS ANGELES, CALIFORNIA

FIGURE

D2

SOURCE: GOOGLE EARTH, 2016

N

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

TRANSPORTATION ROUTE
SIMI VALLEY LANDFILL

PROJECT NO.	DATE
208571013	8/16

VENICE HIGH SCHOOL
13000 VENICE BOULEVARD
LOS ANGELES, CALIFORNIA

FIGURE

D3

208571013_SIM.cdr JDL

SOURCE: GOOGLE EARTH, 2016

N

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

TRANSPORTATION ROUTE
BUTTON WILLOW LANDFILL

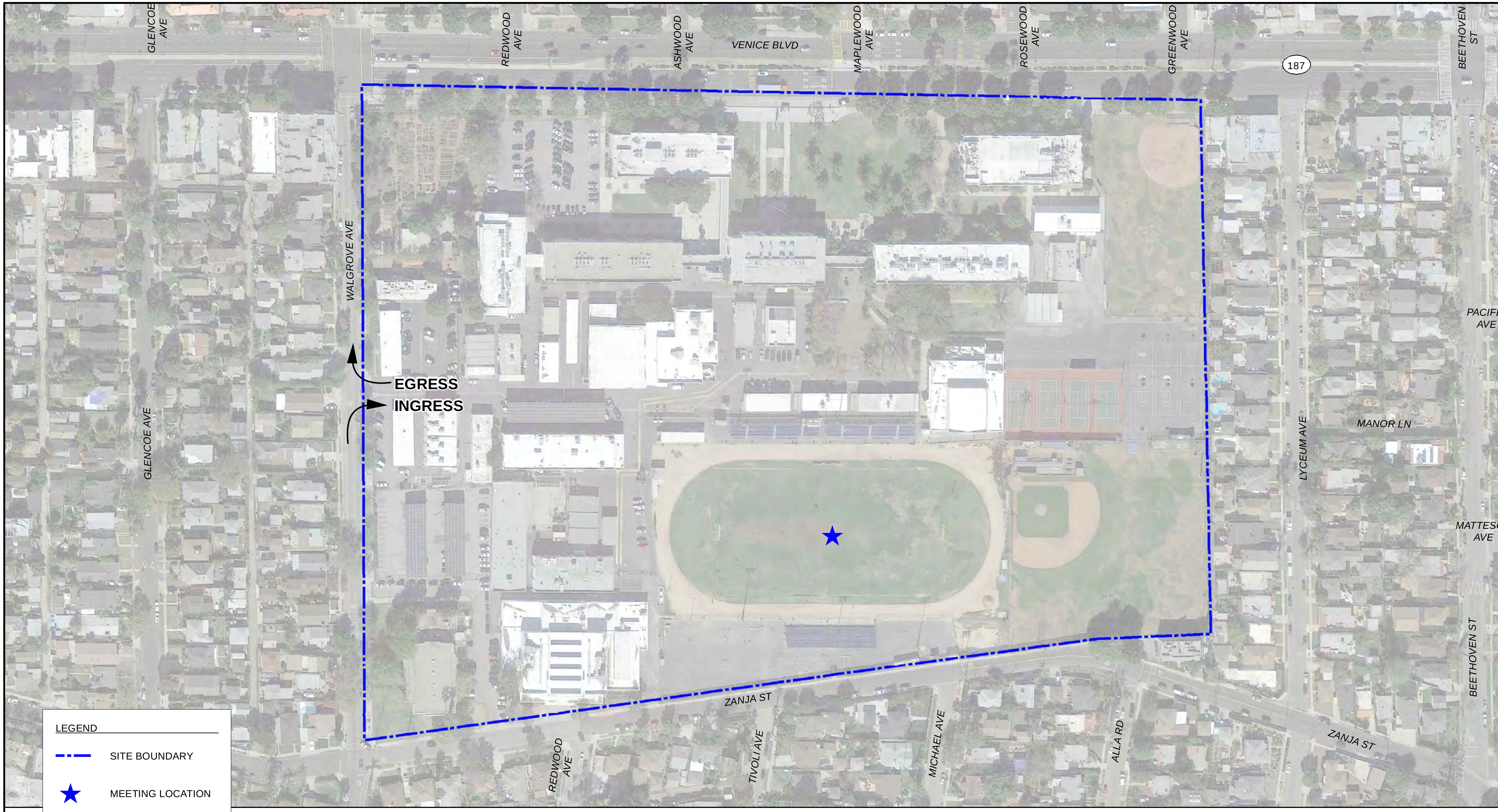
VENICE HIGH SCHOOL
13000 VENICE BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE
208571013	8/16

FIGURE

D4

208571013_BW.cdr JDL



SOURCE: GOOGLE EARTH, 2016

SCALE IN FEET

0 150 300

N

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		SITE EMERGENCY MEETING AREA	FIGURE
PROJECT NO.	DATE	VENICE HIGH SCHOOL 13000 VENICE BOULEVARD LOS ANGELES, CALIFORNIA	D5
208571013	8/16		

208571013_SE.mxd 8/15/2016 JDL

ATTACHMENT A

WASTE MANIFEST INFORMATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number 0309131

5. Generator's Name and Mailing Address — Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.				
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name — Signature — Month Day Year

GENERATOR

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month Day Year

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month Day Year

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APPENDIX E

DUST MONITORING AND CONTROL PLAN

Particulate dust monitoring will be performed in accordance with South Coast Air Quality Management District's Rule 403, which regulates the generation of fugitive dust particles with diameters of 10 microns or less, also known as PM_{10}. This monitoring will be conducted during soil excavation activities and will be designed to be protective of both worker health and the surrounding community. A total dust fence line action level of 50 micrograms per cubic meter ($\mu g/m^3$) above up-wind background, for particulate matter with an aerodynamic diameter smaller than or equal to 10 microns will be established in accordance with Rule 403. Measurement will be conducted by PM_{10} monitoring in accordance with State and Federal requirements and as described below.

For worker protection within the site exclusion zone, the Threshold Limit Value (TLV) for total Particulate Not Otherwise Specified (PNOS) will be utilized as the maximum allowable airborne dust limit for donning of respiratory protection. While the TLV for PNOS is adequate for worker protection, a much more conservative action level will be utilized to ensure off-site migration of fugitive dust is in compliance with Rule 403. A total dust action level of 0.5 milligrams per cubic meter (as measured with direct-reading instrumentation) will be utilized for engineering (dust) control actions at work operations. This level, easily detected with field instruments, will help to keep perimeter dust levels within the expected low range.

The dust-monitoring program will aid in minimizing off-site migration of impacted soil (as airborne dust) and protect both on-site workers and off-site public from exposure to high levels of dust. The dust-monitoring program will include meteorological monitoring, real-time monitoring of dust using portable aerosol monitors, and confirmation sampling using PM_{10} high-volume samplers.

Meteorological monitoring will begin at least three days prior to field activities to evaluate prevailing wind patterns, and will continue during field activities. One wind speed and direction monitor will be set up at the site to collect continuous wind data during the monitoring events. The wind speed and direction data are needed to support each upwind and downwind monitoring event and to locate sampler downwind locations. A wind system consists of a Climatronics monitoring system with Model F4450 wind sensors (or similar system), with threshold speeds of 0.5 miles per hour. The wind instrument must meet regulatory specifications. The wind data will be collected through a data acquisition system equipped with a back-up recording device.

Rule 403 requires PM_{10} sampling be performed for a minimum of five hours a day during field activities, during that time of day that has the most constant prevailing wind. Due to the variability of early morning winds, portable aerosol monitors, similar to the MIE Dataram 2000 Aerosol Monitor or the P-5 Digital Dust Indicator manufactured by MDA Scientific, may be used to monitor airborne dust concentrations until conditions are suitable for Rule 403 monitoring. Monitoring using the portable monitors should continue throughout the work day, even after startup of the PM_{10} samplers, to provide real-time coverage and provide information for the effectiveness of engineering controls. These monitors will be utilized in and near the work area. Additional monitors may be utilized upwind and downwind of the work area. Monitoring personnel in the work area will also have available a photoionization detector to monitor Volatile Organic Compound (VOC) concentrations which are not expected at this site. Should VOCs be encountered, work area perimeters will be monitored as well and engineering controls utilized to reduce perimeter levels of VOCs to background levels.

The particulate monitoring will be performed during the handling of waste or impacted soil, or when on-site activities may generate fugitive dust from exposed waste or impacted soil. Occasional perimeter monitoring with direct reading instruments will be performed when appropriate. If particulate levels downwind of the work area are detected in excess of 150 $\mu g/m^3$, the upwind background level must be measured immediately using the same portable monitor. If the working site particulate measurement is greater than 50 $\mu g/m^3$ above the upwind background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust, and corrective action must be taken to reduce the potential for contaminant migration.

Additional dust-suppression techniques may include the following:

- Applying water on haul roads or paths,
- Wetting equipment and excavation faces,
- Spraying water on excavation-equipment buckets during excavation and dumping,
- Covering excavated areas and material after excavation activities cease, and
- Increasing the frequency of misting roads and stockpiles from once to twice per hour.

Misting or wetting of soil should not be excessive to the point of creating puddles or runoff. If the dust suppression techniques do not lower particulates to acceptable levels (below 150 $\mu g/m^3$ and no visible suspended dust), work must be suspended until appropriate corrective measures are approved to remedy the situation or the wind velocity decreases so the downwind monitoring shows concentrations less than 150 $\mu g/m^3$.

High volume PM_{10} air samplers (Anderson/General Metal Works, Inc., Model G1200, High-Volume PM_{10} Samplers, or similar, equipped with Model 305-105 pressure transducer flow recorders) will be placed upwind and downwind of the work area, along the site perimeter. The samplers will be operated in accordance with Rule 403 requirements for a minimum of five hours per day, during periods of relatively constant wind directions and having the greatest velocity as documented by the meteorological survey. At the end of each workday, the filter samples will be replaced with clean samplers. The samples removed from the PM_{10} samplers will be shipped to a certified laboratory to be tested for total dust in accordance with Rule 403. In addition, and in accordance with previous Department of Toxic Substances Control rulings, the PM_{10} samples will be analyzed for total lead using United States Environmental Protection Agency Method 6010B.

Misting may also be used on soil placed in the transport trucks. Efforts will be made to minimize the soil drop height from the loader's bucket onto the soil pile or into the transport trucks. After the soil is loaded into the transport trucks, the soil will be covered to prevent soil from spilling out of the truck during transport to the disposal facility.

While on the site, all vehicles will maintain slow speeds (i.e., less than 10 miles per hour) for safety purposes and dust control measures. Prior to departure, transport and dump trucks will be cleaned of loose debris clinging to the sides and/or wheels to minimize off-site contaminants.