REMOVAL ACTION WORKPLAN

Sherman Oaks Center for Enriched Studies (SOCES)
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Tarzana, California 91335

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LIST OF ABBREVIATIONS/ACRONYMS

AIN - Assessor's ID Number

amsl - above mean sea level

APN – Assessor's parcel number

ARAR – Applicable or Relevant and Appropriate Requirements

bgs - below ground surface

BMPs – Best Management Practices

Cal/EPA - California Environmental Protection Agency

CCR – California Code of Regulations

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act

CEQA – California Environmental Quality Act

CFR – Code of Federal Regulations

CHHSL – California Human Health Screening Level

COC – Chemical of concern

COPC - Chemical of potential concern

CSM – Conceptual Site Model

District - Los Angeles Unified School District

DTSC - Department of Toxic Substances Control

EPA – Environmental Protection Agency

ESA - Environmental Site Assessment

HASP - Site-specific health and safety plan

IC – Institutional Control

LAUSD - Los Angeles Unified School District

LBP - lead-based paint

NA – not analyzed

NEPA – National Environmental Policy Act

NOE – Notice of Exemption

OCPs - Organochlorine Pesticides

OEHS - Office of Environmental Health and Safety

PCBs - Polychlorinated Biphenyls

PEA-E - Preliminary Environmental Assessment Equivalent Document

PPE - Personal protective equipment

QAPP – Quality Assurance Project Plan

RAO – Remedial Action Objective

RAW – Remedial Action Workplan

RCRA – Resource Conservation and Recovery Act

SCAQMD – South Coast Air Quality Management District

SSCG – Site-specific cleanup goal

STLC – soluble threshold limit concentration

REC - Recognized environmental condition

T&D – Transportation and Disposal

TCLP – Toxicity Characteristic Leaching Procedure

TPH – Total petroleum hydrocarbons

TTLC – Total Threshold Limit Concentration

VOCs – Volatile Organic Compounds

EXECUTIVE SUMMARY

This document presents a Removal Action Workplan (RAW) for the removal of impacted soil located within the common and playground areas at the Sherman Oaks Center for Enriched Studies (SOCES), (the Site). The school Site is located at 18605 Erwin Street in the community of Reseda in Los Angeles, California 91335. The Site location is shown on Figures 1 and 2. The Site is owned and operated by the Los Angeles Unified School District (LAUSD). Site assessment was conducted at the Site as part of a redevelopment project and site renovation.

The School property was formerly used as an animal pasture in the 1920s and was periodically used for agricultural use in the 1930s and 1940s. The school Site was constructed in 1954 and operated as Sequoia Junior High School between 1954 and 1981. It has been in use as the Sherman Oaks Center for Enriched Studies (SOCES) since 1981. The majority of the School property is paved and currently developed with various school buildings, modular buildings, and playground areas. The area surrounding the School property is mainly residential.

A Phase I ESA was completed for the School property on July 21, 2016 by Eco & Associates, Inc. Recognized environmental conditions were not identified, however, potential concerns were identified that included lead-based paint, pesticides, arsenic-based herbicides, transformers, and concerns associated with the flammable materials storage room, incinerator, and former spray booth. Site assessment activities were conducted by sampling the shallow soil in these areas between October 29, 2016 and March 19, 2017. The results of that assessment are included in CES Group's PEA Equivalent Report dated May 17, 2017. The results of the assessment indicated elevated arsenic concentrations in two areas (S51-0.5' and S64-0.5'). Step out samples from these areas indicated further arsenic impact in 22 step out samples. Elevated concentrations were only detected in the shallow samples at a depth of six inches.

The primary objectives of this RAW are to outline the procedures for selecting and implementing the remedial action. Based on results of soil samples collected between October 29, 2016 and March 19, 2017, elevated concentrations of arsenic were detected at the Site in the playground area and near the portables. 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). Arsenic was detected at concentrations up to 77.9 mg/kg. The soluble threshold limit concentration (STLC) for arsenic at this location was 4.31 mg/L.

Lead was detected one location (S9) at a concentration of 80.3 mg/kg. The screening level for lead at the Site was 80 mg/kg, which is based on the residential California Human Health Screening Level (CHHSL). The STLC for lead was 0.537 mg/L. Based on these results, the soil is classified as non-hazardous waste.

Three alternatives were identified and developed for the proposed removal action at the Site. Alternative 1 was identified as no further action. Alternative 2 included excavation and offsite disposal of the entire playground area. Alternative 3 included limited

excavation and offsite disposal with institutional controls. Each alternative was evaluated for its effectiveness, implementability, and cost. Alternative 3 (Limited Excavation and Offsite Disposal with Institutional Controls (ICs)) was selected as the preferred alternative because it is easily implemented, effective, and provides long-term assurances that future occupants of the Site will not face significant health risks due to elevated levels of COCs in soil. It is the most cost-effective of the active remedial options considered (i.e., Alternatives 2 and 3). In order to implement Alternative 3, a HASP, QAAP, and Transportation Plan will be required.

1.0 INTRODUCTION

This document presents a Removal Action Workplan (RAW) for the removal of impacted soil located within the playground area at the Sherman Oaks Center for Enriched Studies (SOCES), (the Site). The school Site is located at 18605 Erwin Street in the community of Reseda in Los Angeles, California 91335. The Site location is shown on Figures 1 and 2. The Site is owned and operated by the Los Angeles Unified School District (LAUSD). Site assessment was conducted at the Site as part of a redevelopment project and site renovation.

Based on results of soil samples collected between October 29, 2016 and March 19, 2017, elevated concentrations of arsenic were detected at the playground area and near the portables. 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). Arsenic was detected at concentrations up to 77.9 mg/kg. The STLC for arsenic at this location was 0.56 mg/L.

Lead was detected at one location (S9) at a concentration of 80.3 mg/kg. The screening level for lead at the Site was 80 mg/kg, which is based on the residential California Human Health Screening Level (CHHSL). The STLC for lead was 0.537 mg/L. These results indicate that the soil is classified as non-hazardous.

1.1 Site Description

The Site is known as the Sherman Oaks Center for Enriched Studies and is located at 18605 Erwin Street in the community of Reseda in Los Angeles. The Site is bound by Victory Boulevard on its northern side, Erwin Street on its southern side, Yolanda Avenue on its western side, and an alley shared with commercial and residential properties on its eastern side. It is comprised of assessor parcel number (APN) 2127-012-900 and is 21.5 acres.

At the time of the assessment, classroom buildings for this school were located throughout the Site's southern portion. Other buildings within this portion of the Site were being utilized as administrative offices, counseling, nursing, a library, a cafeteria, an auditorium, equipment storage, and a gym. A relatively small transportation office building was also located in the Site's northwestern corner.

The on-site buildings were typically adjoined by concrete-paved sidewalks with arcades. The areas between the buildings and sidewalks were generally paved with

asphalt. Well established trees were located locally throughout these paved areas.

Grass lawns were located along the Site's southern edge, in a large sports field in the Site's north-central portion, and within an area adjoining a circular stage at the center of the campus. Paved ball courts occupied large areas within the Site's northeastern and northwestern portions. Asphalt-paved parking lots are located in the Site's western edge and southeastern portions.

1.2 Background

Based on data collected during this assessment, the Site was in use as an animal pasture in the 1920s. It was periodically in agricultural use (as part of a large field) in the 1930s and 1940s. Between 1947 and 1952, one dwelling was constructed in the Site's northwestern corner (existing transportation office). Four single-family dwellings were constructed in the Site's southern portion during this period. These four southern dwellings were removed in between 1953 and 1954. All the on-site buildings, apart from the portable classrooms and preexisting northwestern building were constructed in 1954. The sidewalks, canopies, pavement between the buildings, and paved ball courts in the Site's northeastern and northwestern portions were also constructed in 1954. The school operated as Sequoia Junior High School between 1954 and 1981. It has been in use as SOCES since 1981. Apart from modular buildings in the Site's eastern portion, the onsite buildings have been in a similar state since 1954.

1.3 Regional Geology and Hydrogeology

According to the Phase I Assessment, the Site is located between 735 and 740 feet above mean sea level. The Site and vicinity slope very gently to the north-northwest (USGS 2012). The Site is located within the south-central portion of the San Fernando Valley, which is a relatively level area north of the Santa Monica Mountains. Soils underlying the Site are comprised of Quaternary-age alluvium (river) deposits. These soils are noted to be comprised of mixtures and layers of clay, silt, sand, and gravel (CDWR 1961). No known active faults pass through the Site (Jennings 1994). The closest known active fault to the Site is the San Fernando Fault, which is located approximately 11 miles northeast of the Site.

Based on data collected during this assessment, groundwater beneath the Site is located at a depth of approximately 25 feet. This depth is based on measurements made in three wells within the property located immediately east of the Site's northern portion (McDonalds, formerly ExxonMobil station). In October 2008, groundwater was reported in these wells at depths between 25.3 and 25.8 feet (ERI 2008). The groundwater flow direction beneath this property, which is assumed to be similar for the Site vicinity, is toward the southeast, contrary to the topographic gradient.

1.4 Environmental Setting

A Phase I ESA was completed for the School property on July 21, 2016 by Eco &

Associates, Inc. The purpose of the Phase I ESA is to identify recognized environmental conditions (RECs) to assist in the evaluation of historical land use, assess potential environmental impacts on- and off-Site, and determine if any potential environmental impacts may pose a threat to on-Site occupants, off-Site individuals and the environment. No other environmental investigations for the School property were located during the Phase I ESA. Information pertaining to the Site as determined by the Phase I ESA is summarized below.

1.4.1 School Property

During the Phase I and Site Assessment activities, the Site was occupied by the Sherman Oaks Center for Enriched Studies (SOCES). Classroom buildings for this school were located throughout the Site's southern portion. Other buildings within this portion of the Site were being utilized as administrative offices, counseling, nursing, a library, a cafeteria, an auditorium, equipment storage, and a gym. A relatively small transportation office building was also located in the Site's northwestern corner.

The on-site buildings were typically adjoined by concrete-paved sidewalks with arcades. The areas between the buildings and sidewalks were generally paved with asphalt. Well-established trees were located locally throughout these paved areas.

Grass lawns were located along the Site's southern side, in a relatively large sports field in the Site's north-central portion, and in an area adjoining a circular stage at the center of the campus. Paved ball courts occupied relatively large areas within the Site's northeastern and northwestern portions. Asphalt-paved parking lots were located in the Site's northwestern and southeastern portions.

1.4.2 Site

LAUSD is proposing the following on approximately 4 acres within the School (which are the subject of the Assessment):

- Remove the existing gymnasium, lunch shelter, 12 relocatable classrooms, the Music Building, Industrial Arts Building #2, and Classroom Buildings B&C
- Construct a new gymnasium, lunch shelter and 28 classrooms and support spaces in permanent buildings
- Complete site-wide infrastructure upgrades.

The purpose of the Assessment was to identify if any environmental issues will need to be mitigated either prior to or during the above construction effort.

1.5 Previous Project Area Investigations

A Phase I ESA was completed for the School property on July 21, 2016 by Eco & Associates, Inc. Recognized environmental conditions were not identified, however, potential concerns were identified that included lead-based paint, pesticides, arsenic-based herbicides, transformers, and concerns associated with the flammable materials storage room, incinerator, and former spray booth. The Phase I recommended sampling in each of the suspect areas in order to identify if there were any potential

threats to human health.

Site Assessment activities were conducted by CES Group between October 29, 2016 and March 19, 2017. The results of that assessment are included in CES Group's PEA Equivalent Report dated May 17, 2017. The results of the assessment indicated the following:

- Soil samples were collected from a total of 70 locations during the initial soil sampling. Three areas were identified as having elevated concentrations based on the initial screening results. Sample S9-0.5' showed lead concentrations at 80.3 mg/kg. Sample S51-0.5' showed an arsenic concentration of 47.3 mg/kg and S64-0.5' showed an arsenic concentration of 15.4 mg/kg. The deeper sample in each of these locations was below screening levels. Step out borings from the areas surrounding borings S9, S51 and S64 were collected based on the initial screening results. A total of 17 additional borings were advanced.
    - Lead was detected at concentrations below the EPA Region 9 Regional Screening Level (RSL) of 400 mg/kg (RSL for soil considering residential land use) (EPA, 2015) and below the DTSC-modified screening level of 80 mg/kg (screening level for use in human health risk assessments) (DTSC, 2016) in all soil samples analyzed except S9-0.5'. The STLC for this sample was 0.537 mg/L, which is below California-hazardous levels.
    - Arsenic exceeded the DTSC-adopted background arsenic concentration of 12 mg/kg (DTSC, 2008) in two initial samples (S51-0.5' and S64-0.5') and 22 of the step out samples. Elevated concentrations were only detected in the shallow samples at a depth of six inches. The maximum arsenic concentration was 77.9 mg/L. The STLC result from this sample indicated non-hazardous results at 4.31 mg/L.

1.6 Removal Action Objective

The PEA Equivalent results indicate that soil is impacted with arsenic, lead, at distinct locations of the SOCES Site. The primary objective of the removal action described in this RAW is to mitigate the arsenic-impacted soil identified within the Project Area to minimize exposure of humans to the chemicals of concern (COCs) in shallow soil through inhalation, dermal absorption, and ingestion. To achieve this removal action objective (RAO), soil with COC concentrations above the Site-specific cleanup goals of 12 mg/kg for arsenic will be excavated and lawfully disposed of offsite.

2.0 NATURE, SOURCE, AND EXTENT OF SOIL IMPACTS

Based on the findings of the 2017 PEA Equivalent Assessment and Report, arsenic and lead were determined to be the COCs within the Project Area. Summaries of the nature, source, and extent of COCs are presented below.

2.1 Type, Source, and Location of Soil Impacts

The source of the arsenic-impacted soil may be the historical use of arsenical-based herbicides for weed control in playfield areas. Historically, arsenic was widely used as a pesticide and herbicide and was commonly used at industrial sites as a soil sterilizer. Presently, about 90 percent of all arsenic produced is used as a preservative for wood to make it resistant to rotting and decay.

The source of the lead-impacted soil may be the historical use of lead-based paint (LBP) in previously demolished and existing buildings. In response to the potential harmful effects from lead, the U.S. Consumer Product Safety Commission banned the application of paint containing more than 600 mg/kg of lead on residential structures in 1978. Weathering, scraping, chipping, and abrasion can cause lead to be released to, and accumulated in, soil around old structures constructed before 1978.

Specific locations where impacted soil was identified and delineated within the Project Area of the Site are summarized in the PEA Equivalent Report tables and figures.

2.2 Extent and Volume of Soil Impacts

The estimated lateral extent of elevated arsenic is shown on Figure 3. Based on the STLC analytical data for arsenic and lead, CES Group assumes that the impacted soils would be classified as non-hazardous waste

2.3 Health Effects of Soil Impacts

Potential exposures to the COCs could result from dermal contact and direct ingestion of the affected soil, as well as inhalation of airborne dust particulates. Inhalation of high levels of arsenic can cause a sore throat or irritated lungs. Ingesting very high levels can result in death. Exposure to lower levels of arsenic can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of “pins and needles” in hands and feet. Low level exposures can also cause a darkening of the skin and the appearance of small corns or warts on the palms, soles, and torso. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the lungs, bladder, liver, kidney, and prostate; inhalation can increase the risk of lung cancer.

Lead is a bio-accumulative substance and a reproductive and developmental toxin. Lead poisoning is one of the most commonly reported occupational diseases among adults due to inhalation of dust or fumes. Lead can impair the nervous system, affecting hearing, vision, and muscle control. It is toxic to lungs, kidneys, blood, and heart. Possible exposure pathways include ingestion and inhalation. Symptoms develop more quickly through inhalation exposure than ingestion since absorption takes place through the respiratory tract rather quickly. Acute lead poisoning is most common in children with history of pica; symptoms include anorexia, vomiting, malaise, and convulsions due to increased intracranial pressure, which may lead to permanent brain damage. Exposure in children can cause irreversible learning

deficits, mental retardation, weight loss, weakness, anemia, cognitive dysfunction, and delayed neurological and

2.4 Targets Potentially Affected by the Site

A conceptual site model (CSM) was developed for the Site using the data collected during site assessment activities. The CSM describes potential chemical sources, release mechanisms, transport media, routs 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 in shallow soil, the potentially complete exposure pathways include dermal contact, dust inhalation, and incidental ingestion.

3.0 CLEANUP GOALS

LAUSD-OEHS elected to use soil-screening values as the Site-specific cleanup goals (SSCGs) for this project. In accordance with DTSC protocol, the school receptors were considered to be in a residential exposure scenario.

3.1 Arsenic

SSCG: 12 mg/kg

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

3.2 Lead

SSCG: 80 mg/kg

The California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) developed a source-specific benchmark incremental change of blood lead concentration of 1µg/dL for school children and fetuses. This benchmark estimates the incremental increase in children's blood level would reduce their IQ by up to 1 point. Based on this approach, Cal-EPA established a preliminary remediation goal (action level) of 80 mg/kg for lead in soil (Cal/EPA, 2009). This standard represents the concentration of lead in soil that will result in a 90^{th} percentile estimate of a 1 µg/dL increase in blood lead in the most sensitive receptor (i.e., child or fetus). The Cal/EPA action level has been adopted by DTSC. The DTSC Human Health Risk Assessment Note 3 – DTSC-modified Screening Level (DTSC-SL), dated June 2016, for Residential Soil, establishes a threshold of 80 mg/kg.

4.0 ENGINEERING EVALUATION/ COST ANALYSIS

This Engineering Evaluation/ Cost Analysis (EE/CA) was conducted for the proposed removal action at the Site. It was prepared as part of the RAW developed for the Site, to aid in the evaluation of remedial alternatives for the mitigation of impacted soils at the Site.

The proposed removal action at the Site has been determined to be a non-time-critical removal because the release or threat of release of arsenic- and lead-impacted soil is not time-critical, based on the risk evaluation and Site considerations. The proposed removal action will be conducted in accordance with protocols of the Comprehensive Environmental Response, Compensation, and Liability Act (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 removal action.

This EE/CA will be used as the basis for the planned non-time-critical removal action.

4.1 Removal Action Scope

The RAW outlines the remedy of arsenic- and lead-impacted soil within the playground area of the Site. The estimated volume of soil proposed for the removal action was calculated based on the soil sample analytical data gathered during the PEA equivalent investigation. The estimated limits of the proposed soil removals are shown on Figure 2. The estimate of minimum soil to be removed from the entire playground area is 3,467 cubic yards and the estimate of minimum soil to be removed from the bottom 1/3 of the playground area is 1,189 cubic yards.

4.2 Evaluation of Removal Action Alternatives

A screening evaluation was conducted to assess remedial technologies and process options for mitigating the arsenic- and lead-impacted soil present at the Site. Based on the Remedial Action Objective (RAO) presented in Section 2.6, the following three alternatives were identified and developed for the proposed removal action at the Site.

- Alternative 1 – No Further Action
- Alternative 2 – Excavation and offsite disposal of entire playground area
- Alternative 3 – Limited excavation and offsite disposal with institutional controls

A description and evaluation of each of the three removal action alternatives is discussed in the following sections.

The criteria listed below were used during this evaluation process.

Effectiveness:

- Performance and reliability to eliminate or reduce the risk associated with the identified COCs (in terms of toxicity, mobility, or volume) at the Site

- Overall protection of public health and the environment (threshold factor)
- Compliance with the Applicable or Relevant and Appropriate Requirements (ARARs) presented in Section 4 (threshold factor)
- Long- and short-term effectiveness (balancing factor)
- Reduction of toxicity, mobility, or volume through treatment (balancing factor)
- Ability to meet the RAO presented in Section 1.4 (threshold factor).

Implementability: a balancing factor

- Capability of the alternate with respect to administrative and technical feasibility to Site conditions, e.g., space limitations, equipment availability, resource availability, utility requirements, monitoring concerns, and operation and maintenance.
- Ability of the alternate to meet applicable federal, state, and local regulations and permitting requirements.
- Ability of the alternate to meet the project schedule and facility operations requirements.

Cost: a balancing factor

- Assess the relative cost of each alternate based on estimated capital cost for construction or initial implementation and ongoing operation and maintenance (O&M) costs.

4.3 Description of Removal Action Alternatives

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

- Short-term effectiveness — This criterion evaluates the effects of the removal alternative during the construction and implementation phase until remedial objectives are met. It accounts for the protection of workers and the community during remedial activities and environmental impacts from implementing the action.
- Long-term effectiveness and permanence — This criterion addresses issues related to the management of residual risk remaining on the Site after an RA has been performed and has met its objectives. The primary focus is on the controls that may be required to manage risk posed by treatment residuals and/or untreated wastes.

- Reduction of toxicity, mobility, or volume — This criterion evaluates whether the remedial technology employed results in significant reduction in toxicity, mobility, or volume of the hazardous substance.
- Implementability — This criterion evaluates the administrative and technical feasibility of the alternatives, as well as the availability of the necessary goods and services. This includes the ability to construct and operate an alternative, ability to obtain services and equipment, ability to monitor the performance and effectiveness of technologies, and the ability to obtain necessary approvals from agencies.
- Overall protection of human health and the environment — This criterion evaluates whether the removal alternative provides adequate protection to human health and the environment.
- Cost — This criterion involves capital and operation and maintenance costs, and is based on a variety of factors. The actual costs will depend on true labor and material cost, competitive market conditions, final project scope, and implementation schedule.
- Community Acceptance — This criterion involves consideration of the likelihood of community acceptance or concerns regarding implementation of a particular removal alternative.

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

4.3.1 Alternative 1 – No Further Action

Consideration of the "No Action" alternative is required by CERCLA and the NCP as a baseline by which all other remedial alternatives can be compared. This alternative involves taking no action toward a remedy, implying no active management or expectation that Site RAO would be achieved over time.

The following presents an evaluation of this alternative with respect to the feasibility criteria:

- Overall Protection of Human Health and the Environment – Alternative 1 would not result in any reduction in the potential risk associated with the elevated COCs detected in soil at the Site and the RAO would not be met.
- Compliance with ARARs – Alternative 1 fails to meet ARARs, because contamination would be left in place that could potentially endanger public health and the environment. Therefore, Alternative 1 does not meet this NCP threshold criterion.
- Long-Term Effectiveness – Alternative 1 would not address the impacts due to elevated concentrations of COCs in soil. Consequently, there would be no reduction in the potential health risks and hazards at the Site and the RAO would not be satisfied. Without a reduction in the potential health risks and hazards, the COCs would continue to pose a threat to future occupants of the Site.

- Reduction in Toxicity, Mobility, or Volume – Alternative 1 would not result in a reduction in the toxicity, mobility, or volume of elevated levels of COCs present in soil at the Site and the RAO would not be satisfied.
- Short-Term Effectiveness – Alternative 1 would not result in activities that would disturb the impacted soil, nor would it address the risk posed to persons that may access the Project Area. If the Site were not developed and access were restricted, there would be no short-term risks associated with implementation of this alternative. However, under the present use of the Site as a school, there would be potentially significant short-term exposures of onsite workers to residual COCs, particularly those in near surface soil, during renovation activities. These same activities could also increase the short-term risks to the surrounding community through the potential release of impacted soil to the atmosphere during construction.
- Implementability – Alternative 1 is implementable at the Site because the Project Area is not under agency oversight.
- Cost – Alternative 1 has no associated cost.
- Community Acceptance – Alternative 1 is unlikely to garner community acceptance due to the use of the Site as a school. Parents would be reluctant, if not unwilling, to send their children to a school where potential exposures to hazardous substances could occur.
- State Acceptance – The Project Area is not under state oversight.

In summary, Alternative 1 (No Action) does not meet RAO or ARARs, nor does it result in a reduction of the toxicity, mobility, or volume of impacted soil present at the Site. Because the impacted soil would remain in place without monitoring, it would pose a short-term risk to Site workers and possibly the surrounding community if it were disturbed during school renovation activities. Thereafter, the long-term health risk and hazard would remain a threat to future occupants of the Site. As a result, acceptance by the State and the community for this alternative would not be obtainable.

4.3.2 Alternative 2 – Excavation and Offsite Disposal of Project Area

Alternative 2 involves the excavation and offsite disposal of impacted soil from the Project Area of the Site. An estimated 3,467 cubic yards of impacted soil would be excavated to a depth of one foot bgs. Excavation and offsite disposal would be an effective means of removing impacted soil and would allow the Site RAO to be met.

The following presents an evaluation of this alternative with respect to the feasibility criteria:

- Overall Protection of Human Health and the Environment – Alternative 2 would meet the RAO and is overall protective of human health and the environment.
- Compliance with ARARs – Alternative 2 could be conducted in accordance with all Federal and State ARARs and would not need a waiver under

CERCLA.

- Long-Term Effectiveness – Alternative 2 would reduce the concentrations of COCs in Site soil to levels that no longer present a threat to human health or the environment, thereby eliminating the long-term risk of exposure.
- Reduction in Toxicity, Mobility, or Volume – Although removed from the Site, excavation and offsite land disposal do not result in the reduction of toxicity or volume of the COCs from an offsite perspective, because the COCs are merely moved from one location to another. However, by placing the impacted soil in an engineered landfill suitable for receiving the concentrations of COCs detected, the mobility of the COCs will be reduced.
- Short-Term Effectiveness – Potential short-term risks to onsite workers, public health, and the environment could result from dust or particulates that may be generated during soil excavation and handling. These risks could be mitigated using personal protective equipment (PPE) for onsite workers and engineering controls, such as dust suppression and additional traffic and equipment operating safety procedures, for protection of the surrounding community. The short-term risks are viewed as low to moderate.
- Implementability – Alternative 2 is technologically feasible and easily implemented. This alternative relies on proven technology, uses readily available equipment, and requires minimal permitting.
- Cost – Alternative 2 costs are driven primarily by the costs associated with soil excavation, transport, and offsite disposal. These costs depend on the method of excavation, the excavated volume, and the waste classification of the excavated soil, which in turn determines the costs of transportation and disposal.
- Community Acceptance – Alternative 2 is likely to be perceived by the community as acceptable because it would mitigate the identified hazards and risks associated with the COCs in soil and render the Site safe for renovation and future school use.
- State Acceptance – Alternative 2 would be viewed favorably by regulatory agencies, because it is protective of human health and the environment. Alternative 2 would not limit future development of the Site or require restriction on land use.

In summary, Alternative 2 (Soil Excavation and Offsite Disposal of Project Area) 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 uncomplicated and readily available. Based on the past success related to the excavation and offsite disposal of shallow soil contamination at this Site and other LAUSD school sites, it is anticipated that this approach would be acceptable to the community. As previously discussed, regulatory approval is not necessary for the Project Area.

4.3.3 Alternative 3 – Limited Excavation and Offsite Disposal with Institutional Controls

Alternative 3 involves the excavation of the bottom 1/3 of the playground area where the majority of the arsenic concentrations were located. This method involves excavating the impacted area to a depth of approximately one foot. The remaining area was not identified as having impacted soil. Soil within the playground area was found to be impacted by arsenic only. In addition, as shown in Table 1, all soil within the playground area was classified as non-hazardous waste. Arsenic was detected at concentrations up to 77.9 mg/kg. The STLC for arsenic at this location was 4.31 mg/L. With soil removal to one feet bgs within the playground area, no exposure pathways exist for Site occupants as well as construction or future maintenance workers on the field.

This remedy would require that the areas where soil is not removed be inspected and sampled during future construction activities to confirm that arsenic concentrations are within acceptable limits in this area.

The following presents an evaluation of this alternative with respect to the feasibility criteria:

- Overall Protection of Human Health and the Environment – If properly instituted, Alternative 3 would be protective of human health and the environment.
- Compliance with ARARs – Alternative 3 could be conducted in accordance with most Federal and State ARARs and would not need a waiver under CERCLA.
- Long-Term Effectiveness – Alternative 3 would be effective as long as the future sampling indicates that the remaining areas are free of impact. If additional sampling indicates that the remaining soil is above arsenic limits, additional action may be required.
- Reduction in Toxicity, Mobility, or Volume – Alternative 3 would reduce the toxicity, mobility, or volume of COCs in Site soil. However, a portion of impacted soil could potentially remain onsite. The COCs could still be mobilized via water infiltration and represent a potential threat to groundwater if present.
- Short-Term Effectiveness – Alternative 3 would generally be effective as a short-term solution. Workers excavating impacted soil would come into contact with impacted soil. However, because Alternative 3 requires removal of less soil from the Site, it would reduce impacts for Site occupants and neighbors as a result of traffic and emissions associated with soil removal.
- Implementability – Alternative 3 is technologically feasible and easily implemented. This alternative relies on proven technology, uses readily available equipment, and requires minimal permitting. Compared to Alternative 2, this Alternative 3 will require less time to complete due to the smaller soil volume.

- Cost – Based on the proposed continued future use of the playground area for building placement, the playground area may require grading regardless of the soil removal operations. Alternative 3 would be lower in cost compared with Alternative 2 because of the reduced amount of soil proposed for removal.
- Community Acceptance – Alternative 3 is likely to be perceived by the community as acceptable, because it would mitigate the identified hazards and risks associated with the COCs in soil and render the Site safe for renovation and future school use.
- State Acceptance – Alternative 3 would be viewed favorably by regulatory agencies because it is protective of human health and the environment.

In summary, Alternative 3 is similar to Alternative 2 and 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 uncomplicated and readily available. It is anticipated that this approach would be acceptable to the community because there is no exposure pathway to residual COC left onsite. This alternative is also less expensive to implement, provides cost savings to LAUSD for other uses and through a shorter schedule, limits the impacts to school operations.

4.4 Description of Selected Remedy

Alternative 1 (No Action was eliminated from further consideration because it does not meet the RAO. Alternative 2 (Soil Excavation and Offsite Disposal of Project Area) was eliminated because the incremental costs exceed the incremental environmental protection, economic efficiency, and ecological necessity benefits. Alternative 3 (Limited Excavation and Offsite Disposal with Institutional Controls (ICs)) is selected as the preferred alternative because it is easily implemented, effective, and provides long-term assurances that future occupants of the Site will not face significant health risks due to elevated levels of COCs in soil. It is the most cost-effective of the active remedial options considered (i.e., Alternatives 2 and 3).

Potential short-term risks during implementation of Alternative 3 include exposure of onsite workers to health and safety hazards during soil excavation activities. These short-term risks can be readily mitigated by the proper use of PPE, adherence to health and safety procedures, and engineering controls (e.g., application of water spray) to suppress fugitive dust emissions during the excavation and handling of impacted soil.

Soil excavation would involve the use of conventional excavation equipment, such as backhoes, loaders, and dozers to remove the estimated 1,189 cubic yards of impacted soil from the Project Area. 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. Excavation is planned to one foot in depth, therefore sloping and shoring will not be required.

All of the soils removed from the excavations would be transported offsite to an appropriate, licensed facility for disposal. After completion of the soil removal

actions at each location, confirmation soil sampling would be conducted along the excavation sidewalls and bottoms to verify that the site-specific cleanup goals (SSCGs) had been met. Imported soil that had been tested and certified to be clean, or soil from onsite borrow areas not affected by the COCs, would be used to backfill the excavations in preparation for site construction activities.

5.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The proposed removal action must comply with ARARs. In this section the most relevant ARARs for the proposed removal action are presented.

5.1 Public Participation

A public notice will be published in local newspapers informing the community of this proposed soil removal action and of the availability of the administrative record file 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
- Sherman Oaks Center for Enriched Studies located at 18605 Erwin Street, Tarzana, California 91335
- A local library

Copies of this RAW will be placed in the Information Repositories for access by community members. A 30-day public comment period will be held to accept public comments on the proposed removal action. At the close of the public comment period, LAUSD will evaluate the comments and make appropriate revisions to the RAW.

Prior to beginning fieldwork for the proposed removal action, the LAUSD will distribute a RAW Work Notice to SOCES students and staff 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. The notice will be prepared in English and Spanish. It will provide a general description of the fieldwork that will occur, along with the telephone number of the LAUSD Project Manager for further information.

5.2 California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA), modeled after the Federal National Environmental Policy Act (NEPA) of 1969, was enacted in 1970 as a system of checks and balances for land-use development and management decisions in California. It is an administrative procedure to ensure comprehensive environmental review of cumulative impacts prior to project approval. It has no agency enforcement tool, but allows challenge in courts.

CEQA applies all discretionary activities proposed to be carried out or approved by California public agencies, unless an exemption applies.

The proposed soil removal project will not have a significant effect on public health or the environment because of the relatively small volume, short project duration, and the controlled manner in which contaminated soils will be excavated, loaded onto trucks, and taken offsite for disposal/treatment. The Site is not on the Hazardous Waste and Substances Sites List or in a sensitive cultural or biological resource area. As a result, the soil removal action is eligible for a Class 30 exemption under CEQA, which is defined under Title 14 of the California Code of Regulations (CCR), Chapter 3, Article 19, Section 15330 to be a minor cleanup action (i.e., costing less than $1 million) taken to prevent, minimize, stabilize, mitigate, or eliminate the release or threat of release of a hazardous waste or substance.

In compliance with CEQA requirements, LAUSD will prepare a Notice of Exemption (NOE) that will be filed with the Los Angeles County Clerk's office prior to the start of work.

5.3 Hazardous Waste Management

The Site is located in jurisdiction of the South Coast Air Quality Control District (SCAQMD). The SCAQMD has two rules that address excavation (Rules 1150 and 1166), and one that addresses fugitive dust (Rule 403). Rule 1150 applies to the excavation of sanitary landfills, and does not apply to this project. Rule 1166 is not expected to apply to this project, because it governs the excavation of soils containing significant concentrations of volatile organic compounds (VOCs), which were not detected during Site investigations.

Several elements of Rule 403, such as protocols for mitigation of potential fugitive dust emissions, have been incorporated into this RAW. Specifically, air monitoring will be conducted during the excavation, loading, and transport of impacted soils, and mitigation measures will be implemented to minimize the generation of fugitive dust. Access to the Site will be controlled and excavation will not be conducted during times of high wind conditions (e.g., wind speed in excess of 15 miles per hour). Notification of the SCAQMD is required for medium or large excavation/grading operations that disturb more than 100 acres or move more than 5,000 or 10,000 cubic yards per day, respectively. This project does not qualify as a medium or large operation; therefore, agency notification or the filing of a Fugitive Dust Emission Control Plan is not required.

5.4 Health and Safety Plan

A site-specific Health and Safety Plan (HSP) will be prepared for the Site under the and will outline current safety standards as defined by the USEPA, the Occupational Safety and Health Administration (OSHA), and the National Institute of Occupational Safety and Health (NIOSH). Additionally, the HSP will be prepared in accordance with guidelines set forth in Title 8 of CCR Section 5192.

Prior to the commencement of each day's activities, a tailgate health and safety meeting will be held. Everyone working at the Site will be required to sign the site-specific HSP to demonstrate that they are familiar with the HSP and that they participated in, or were briefed on, the daily tailgate meeting. The removal action

contractor's Site manager will maintain this signature sheet.

5.5 Quality Assurance Project Plan (QAPP)

Quality assurance/quality control measures that will be used during project execution are documented in the QAPP included as Appendix C. The QAPP will assure that Site field and analytical data collected meet project Data Quality Objectives (DQOs) and the RAO to support decisions for use of the Site as a school.

5.6 Stormwater Discharge Management Plan

State Water Resources Control Board Order No. 99-08-DWQ, National Pollutant Discharge Elimination System General Permit No. CAS000002, Waste Discharge Requirements for Discharges of Stormwater Runoff associated with Construction Activity, describes the implementation of a stormwater pollution prevention plan for a construction project. Because the area of soil disturbance is less than one acre, a stormwater discharge permit is not required for the remediation contractor. However, the remediation contractor must follow the general contractor's stormwater pollution prevention plan for the overall redevelopment project and LAUSD's construction Best Management Practices (BMPs).

5.7 South Coast Air Quality Management District (SCAQMD)

The Site is located in jurisdiction of the South Coast Air Quality Control District (SCAQMD). The SCAQMD has two rules that address excavation (Rules 1150 and 1166), and one that addresses fugitive dust (Rule 403). Rule 1150 applies to the excavation of sanitary landfills and does not apply to this project. Rule 1166 is not expected to apply to this project because it governs the excavation of soils containing significant concentrations of volatile organic compounds (VOCs) which were not detected during Site investigations. Several elements of Rule 403, such as protocols for mitigation of potential fugitive dust emissions, have been incorporated into this RAW. Specifically, air monitoring will be conducted during the excavation, loading, and transport of impacted soils, and mitigation measures will be implemented to minimize the generation of fugitive dust. Access to the Site will be controlled and excavation will not be conducted during times of high wind conditions (e.g., wind speed in excess of 15 miles per hour). Notification of the SCAQMD is required for medium or large excavation/grading operations that disturb more than 100 acres or move more than 5,000 or 10,000 cubic yards per day, respectively. This project does not qualify as a medium or large operation; therefore, agency notification or the filing of a Fugitive Dust Emission Control Plan is not required.

5.8 Others

All necessary permits and approvals identified in this RAW will be obtained prior to any removal activities. Removal activities will be performed by a California-certified contractor with oversight from a California Professional Engineer (PE) or Professional Geologist (PG).

6.0 REMOVAL ACTION IMPLEMENTATION

The field procedures and methods that will be used to implement the removal action are described in this section.

6.1 Site Preparation and Security Measures

Prior to equipment mobilization for the proposed removal action, Site preparation activities may include Site inspections, surveying, marking excavation limits, and improvement of access gates/roads as necessary.

6.1.1 Delineation of Excavation Areas

The lateral and vertical extent of impacted soil was estimated based on the PEA Equivalent sample analytical data, which is summarized in Appendix A. The estimated limits of impacted soil are shown on Figure 2. In general, the limits of excavation are approximately the bottom 1/3 of the playground area.

6.1.2 Utility Clearance

A geophysical survey, using a magnetometer, will be conducted in the proposed excavation areas to help identify subsurface lines and other features/obstructions. Necessary precautions will be taken during the excavation activities to ensure that lines identified during the geophysical survey are not damaged or impacted.

Prior to commencing with excavation activities, Underground Service Alert (USA) will be contacted at least 48 hours in advance to identify the location of utilities that enter the Site. The proposed excavation areas will be clearly marked with white paint as required by USA. USA will contact all utility owners of record within the Site vicinity and notify them of our intent to excavate. All utility owners of record will be expected to clearly mark the position of their utilities on the ground surface at they enter the Site.

6.1.3 Security Measures

The school is secured by interior and perimeter fencing. In addition, the Project Area will be segregated by temporary fencing with wind screen. Barricades, such as delineators with caution tape, will be placed around the perimeters of the excavation areas at the end of each day to reduce the potential for unauthorized personnel to enter the excavations.

6.1.4 Contaminant Control

Dust suppression will be performed by lightly spraying or misting the work areas with water. Water mist may also be used on soil placed in temporary stockpiles or in 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. Additionally, all trucks will be cleaned to remove any soil present on the trucks or their tires.

If precipitation occurs or groundwater seeps into the excavation prior to confirmation soil sampling, water collected in the bottom of the excavation will be pumped from the hole and transferred to an aboveground storage tank and sampled for profiling

purposes. Impacted water will be disposed of in accordance with federal, state, and local regulations.

While on the property, all vehicles will maintain slow speeds (i.e., less than 5 miles per hour) for safety purposes and for dust control measures. Efforts will also be made to minimize the soil drop height from the excavator's bucket into the transport trucks.

6.1.5 Permits and Plans

All necessary permits or approvals will be obtained prior to the planned soil removal activities. It is anticipated that a grading permit would be required due to the planned construction of a Gym in this area.

6.2 Field Documentation

During the excavation activities, a field engineer or geologist under supervision of a California Professional Engineer will document field observations. The field notes will contain pertinent observations about excavation dimensions, equipment operation, unusual conditions encountered during excavation, date and time of arrival, general Site conditions, and other field observations relating to the Site. Field documentation will also include photographs and written logs as described below.

6.2.1 Field Logbooks

Logs will be maintained daily and will include:

- Records of all personnel at the Site
- Work conducted
- Equipment used
- Dust monitor readings from field monitoring, and
- A record of all formal Site meetings such as health and safety meetings, daily tailgate meetings, and agency meetings.

Additionally, the contractor will maintain a detailed log of each truck loaded at the Site, and will include truck identification and driver name, destination, excavated materials and estimated size of load, and a field copy of the shipping manifest.

6.2.2 Chain-of-Custody Records

Detailed chain-of-custody records will be maintained for all confirmation samples.

6.2.3 Photographs

The Site will be documented visually with photographs before, during, and after excavation activities.

6.3 Excavation

To mitigate the impacted soils for the protection of human health, approximately 1189 cubic yards (in place) of soil will be excavated and removed from the Site. Based on the analytical results from the PEA Equivalent sampling, the impacted

excavated soil will be handled, transported, and disposed of as either RCRA hazardous, non-RCRA hazardous, or non-hazardous waste and. It is anticipated that additional profiling will be conducted as required by the disposal facility. The remediation contractor will obtain approval from the disposal facilities prior to the start of excavation activities.

6.3.1 Excavation Procedures

Conventional construction equipment, such as a backhoe or excavator with bladed buckets, will be used to excavate the soil. Dust and vapor suppression procedures are discussed above, and monitoring is discussed below.

For the areas where concrete/asphalt exists above the proposed removal area, the existing concrete/asphalt will be saw-cut and broken out with a pneumatic concrete breaker or equivalent. The concrete/asphalt debris will be segregated and stockpiled nearby for offsite disposal when the remaining concrete is removed during non-remedial school redevelopment activities.

Excavations greater than five feet bgs are not anticipated, therefore sloping and shoring will not be required.

Once the excavations are completed, confirmation sampling will be conducted. Excavation will proceed in lateral and vertical directions up to the Project Area boundaries until the SSCGs are demonstrated to have been met, as determined from confirmation soil sampling results.

It is anticipated that the impacted excavated soil will be direct loaded into trucks for immediate transport to an appropriate offsite disposal facility, to the extent possible. Temporary stockpiling may be necessary based on truck availability and/or other logistics. If conducted, the stockpiles will be placed on plastic sheeting and covered with plastic sheeting at the end of the day. The stockpiles will remain covered until load-out.

6.3.2 Waste Segregation Operations

The soil excavated from individual excavation areas will be managed as non-hazardous or non-RCRA hazardous based on waste characterization sampling and analysis conducted during the PEA Equivalent investigation. The results of the investigation indicate that the arsenic-impacted soil is below hazardous waste screening levels in all areas of the playground. The approach used to characterize the soil as hazardous or non-hazardous waste is discussed below. It is anticipated that the soil will be non-hazardous. The Remediation Contractor and Environmental Consultant will oversee truck loading operations to ensure that a properly completed waste manifest accompanies the truck and that it is directed to the appropriate disposal facility, based on its waste classification.

If impacted soil is temporarily stockpiled onsite, the plastic covering will be marked with large letters, applied with spray paint, to indicate the source of the soil and its waste classification. Labels that indicate the waste generator, waste type, accumulation start date, and contact information will be applied to the outside of any drums or roll-off bins used to temporarily store impacted soil. Strict segregation of soil based on waste type will be maintained to avoid any mixture of hazardous and

non-hazardous soils. This segregation will minimize the amount of hazardous soils generated and their associated disposal cost.

During the PEA Equivalent investigation, selected soil samples were analyzed for soluble arsenic and lead concentrations using the STLC and/or TCLP tests to determine if the associated soil would be considered hazardous for waste disposal purposes. Analytical results for the test samples are summarized below:

Arsenic STLC Results

Sample ID	Arsenic concentration (mg/kg)	STLC Concentration (mg/L)
S51-0.5’	47.3	NA
S64-0.5’	15.4	NA
S51-5S-0.5’	41.4	NA
S51-11S-0.5’	77.9	4.31
S64-5N-0.5’	27.6	NA
S64-5E-0.5’	51.5	3.86
S64-5S-0.5’	22.3	NA
S64-5W-0.5’	28.0	NA
S64-10E-0.5’	22.8	NA
S64-10W-0.5’	18.3	NA
S63A-0.5’	14.5	NA
S63A-5N-0.5’	19.7	NA
S64A-0.5’	12.7	NA
S64A-5N-0.5’	28.3	NA
S64B-0.5’	23.8	NA
S64B-5N-0.5’	13.0	NA
S64B-5S-0.5’	16.5	NA
S64B-10S-0.5’	12.4	NA
S64S-5N-0.5’	14.5	NA
S71-0.5’	13.4	NA
S71-5E-0.5’	19.7	NA
S71-10E-0.5’	35.0	NA
S71-5W-0.5’	22.4	NA
S71-10W-0.5’	52.7	0.560

Lead STLC Results

Sample ID	Lead concentration (mg/kg)	STLC Concentration (mg/L)
S9-0.5’	80.3	0.537
S9-1.5’	5.58	NA
S9-5N-0.5’	42.1	NA
S9-5N-0.5’ Dup	38.6	NA
S9-5E-0.5’	0.86	NA
S9-5S-0.5’	10.2	NA
S9-4W-0.5’	31.6	NA

The total threshold limit concentration (TTLC) and STLC concentrations for arsenic that define a waste as non-RCRA hazardous are 500 mg/kg and 5 mg/L, respectively. The TTLC and STLC concentrations for lead that define a waste as non-RCRA hazardous are 1,000 mg/kg and 5 mg/L, respectively. As can be seen in the preceding table, none of the arsenic TTLC and STLC concentrations exceeded these standards and, therefore, the associated soils will be considered non-RCRA hazardous for waste management purposes. The TCLP concentration for arsenic and lead that defines a waste as RCRA hazardous is 5 mg/L. None of the samples were analyzed for TCLP values because their STLC values did not exceed the RCRA limit. All of the soil will be managed as non-hazardous waste.

6.3.3 Decontamination Procedures

In addition to the decontamination procedures outlined in the HSP, additional protocols may be carried out to prevent soil contamination from the use of construction equipment and implementation of other activities as a part of the removal action. The following decontamination procedures may be used:

- Equipment used for excavation will be dry decontaminated prior to moving to other areas of the Site.
- Prior to exiting the Site, the transport truck drivers will be required to stop and inspect the tires and sides of their trucks for loose soil debris. Extra soil will be removed using a wire brush or broom as deemed appropriate. This cleanup/decontamination area will be setup as close to the loading area as possible so as to minimize spreading the impacted soil.
- Street sweeping procedures will be implemented as necessary to reduce the potential for fugitive dust and migration of contamination.

6.4 Air and Meteorological Monitoring

Airborne dust monitoring will be conducted using a portable hand-held dust monitor to verify and document dust suppression efforts. Fugitive dust control measures will

be implemented at the Site to mitigate offsite dust migration onto neighboring properties through light watering of the active excavation areas throughout the removal action. Air monitoring for dust will be performed during the excavation activities in the worker's breathing zone, in the general work area, and at the perimeters of the excavation areas utilizing an upwind/downwind sampling approach. Dust monitoring will be conducted approximately every 30 minutes, or more often if visible dust is observed, using a hand-held dust meter. The National Ambient Air Quality Standard (NAAQS) for dust is 50 micrograms per cubic meter (µg/m3), based on dust particles measuring 10 micrometers or less (PM10). The NAAQS dust standard (50 µg/m3), steady for 5 minutes, has been selected as the action level for dust monitoring activities at the perimeter of the work area (difference between upwind and downwind readings). The action level for dust for the equipment operators and workers will initially be set at 1 milligram per cubic meter (mg/m3) steady for 5 minutes. This action level will trigger continuous monitoring and increased dust suppression activities to mitigate dust levels below 1 mg/m3. If dust levels exceed 2.5 mg/m^3 for greater than 5 minutes, operations will be shut down and additional dust suppression activities will be applied to reduce dust levels below 2.5 mg/m3.

6.5 Confirmation Sampling

The confirmation sampling program for the proposed removal action will consist of collecting soil confirmation samples from the bottom and sidewalls of the excavation.

Confirmation sampling will be conducted at an approximate frequency of one sample per 20 linear feet of sidewall and one per 500 square feet of excavation bottom. The sidewall samples will be collected at a depth halfway between the top and bottom of the sidewall. Bottom and sidewall confirmation samples are shown on Figure 3 and listed below. Duplicate samples will be collected and analyzed at a rate of approximately 10 percent of the primary samples.

The confirmation soil samples will be collected from locations along excavation sidewalls and bottoms by scooping the soil directly into laboratory-supplied, new glass sample jars from either the soil face for shallow excavations or the excavator bucket for deeper excavations; thus, there will be no need for the decontamination of sampling equipment or the collection of equipment blanks. The soil samples will be labeled with the following information: identification (ID) number, project number, Site name, date and time of collection, requested analysis, and the sampler's initials. Chain-of-custody documentation will be maintained for the soil samples and will be delivered with the samples to the laboratory.

Confirmation soil samples will generally be analyzed for arsenic by EPA Method 6020 for arsenic and EPA method 6010 for lead. A limited data validation, comparable to a Tier II review, will be performed on the soil sampling analytical data. The data for the field duplicates will be reviewed as part of the data validation, along with laboratory quality control results.

Following confirmation sampling and analysis and evaluation of the quality of the remaining soil, the quantity of soil removed from the excavations will be reconciled

by comparing the volumes excavated to the quantities reported on the waste manifests. The volumes of the excavation areas will be estimated based on the final excavation dimensions. The estimated volumes and reported weights should reconcile to a conversion factor between 1.2 and 1.5 tons per cubic yard. Copies of the waste manifests, showing appropriate signatures from the receiving facility, will be included in the Removal Action Completion Report (RACR).

6.6 Import Soil Sampling

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), which includes provisions for LAUSD-OEHS review and approval prior to soil import.

6.7 Transportation Plan for Offsite Disposal

It is anticipated that approximately 78 transport truckloads will be needed to haul the impacted soil from the Site. This estimate is based on each truckload weighing up to 23 tons and assumes 1.5 tons per cubic yard of soil to be removed from the Site.

If additional soil needs to be excavated based on confirmation sampling results, the number of truckloads will increase. The excavated soil will be segregated and managed as non-hazardous or non-RCRA hazardous as explained in Section 5.3.3. The soil is anticipated to be non-hazardous. Non-hazardous soils will be transported to an approved Class 3 landfill for disposal or use as daily cover. Non-RCRA and RCRA hazardous soils will be transported to a licensed and properly permitted Class 1 disposal facility or an out-of-state facility permitted to accept hazardous waste. The Class 1 disposal facility that accepts the RCRA hazardous soil may require that the soil be treated prior to disposal pursuant to the land ban restrictions found at Title 40, CCR, Part 376. The final determination as to which facilities are used is subject to approval by the LAUSD-OEHS prior to beginning soil removal activities.

It should be noted that because soil classified as RCRA or non-RCRA hazardous waste may travel longer distances to the disposal facility, they should be excavated in the morning hours while non-hazardous soil can be excavated during the remainder of the day.

6.8 Backfill and Site Restoration

If required,backfilling of the excavations will be conducted in approximately 12-inch lifts with compaction (using a sheepsfoot roller or by wheel rolling with a rubber-tired loader) between each successive lift. In-situ density tests will be conducted as requested by LAUSD's geotechnical engineer to achieve the project standards. Compaction may be coordinated with construction activities to limit doubling efforts.

The excavation areas will be backfilled with clean imported soil tested in accordance with LAUSD's specification for Environmental Import/Export Materials Testing (Section 01 4524).

6.9 Variance

As conditions in the field may vary, it may become necessary to implement minor modifications to soil removal activities as presented in this RAW. Field personnel will notify the project manager when deviations from this RAW are necessary. Modifications to the RAW will be documented in the field logbook and in the RACR.

7.0 PROJECT SCHEDULE

The following provides an anticipated schedule for RAW approval and implementation.

Task	Calendar Days to Complete	Tentative Start Date
Field Preparation	5	April 2019
Soil Removal and Confirmation Sampling	30	May 2019
Data Compilation and Preparation of Draft Remedial Action Completion Report (RACR)	90	August 2019

8.0 REPORT OF COMPLETION

Following completion of the removal action, a Remedial Action Completion Report (RACR) will be prepared and submitted to the LAUSD for review and approval. The report will include a summary of the removal action activities, deviations from the RAW (if any), confirmation sampling results, figures showing the excavation limits and sampling locations, appropriate tables, laboratory reports, air monitoring results, copies of the waste manifests, and other applicable information and data.

9.0 LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. Opinions, conclusions, and recommendations contained in this report apply to conditions existing when the services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. Where subsurface exploratory work, monitoring, and/or testing was performed, our professional opinions and conclusions are based in part on interpretation of data from discrete sampling or measurement locations that may not represent actual conditions at un-sampled or un-measured locations. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of the services. We assume no responsibility for conditions we were not authorized to evaluate,

or conditions not generally recognized as predictable when the services were performed. We do not warranty the accuracy of information supplied by others, or the use of segregated portions of this report.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. CES Group should be contacted if the reader requires any additional information, or has questions regarding content, interpretations presented, or completeness of this document.

CES Group's professional opinions and recommendations regarding environmental conditions, as presented in this report, are based on limited subsurface assessment and chemical analyses data. Further assessment of potential adverse environmental impacts from past on-Site and/or nearby use of hazardous materials may be accomplished by a more comprehensive assessment. The samples collected and used for testing, and the observations made, are believed to be representative of the area(s) evaluated; however, conditions can vary significantly between and beyond the sampling locations. Variations in soil conditions likely exist beyond the points explored in this assessment and related excavation.

10.0 REFERENCES

CalEPA, DTSC, LARWQCB, SFRWQCB, 2012, *Advisory Active Soil Gas Investigations*, April 2012.

CES Group, 2017, *PEA Equivalent Report*, May 2017.

Eco & Associates, 2016, *Phase I Environmental Site Assessment Report*, July 2016.

LAUSD, 2011, Section 01 4524 Environmental Import/Export Materials Testing, October 2011

USEPA, 2016, Regional Screening Level Summary Table, May 2016.

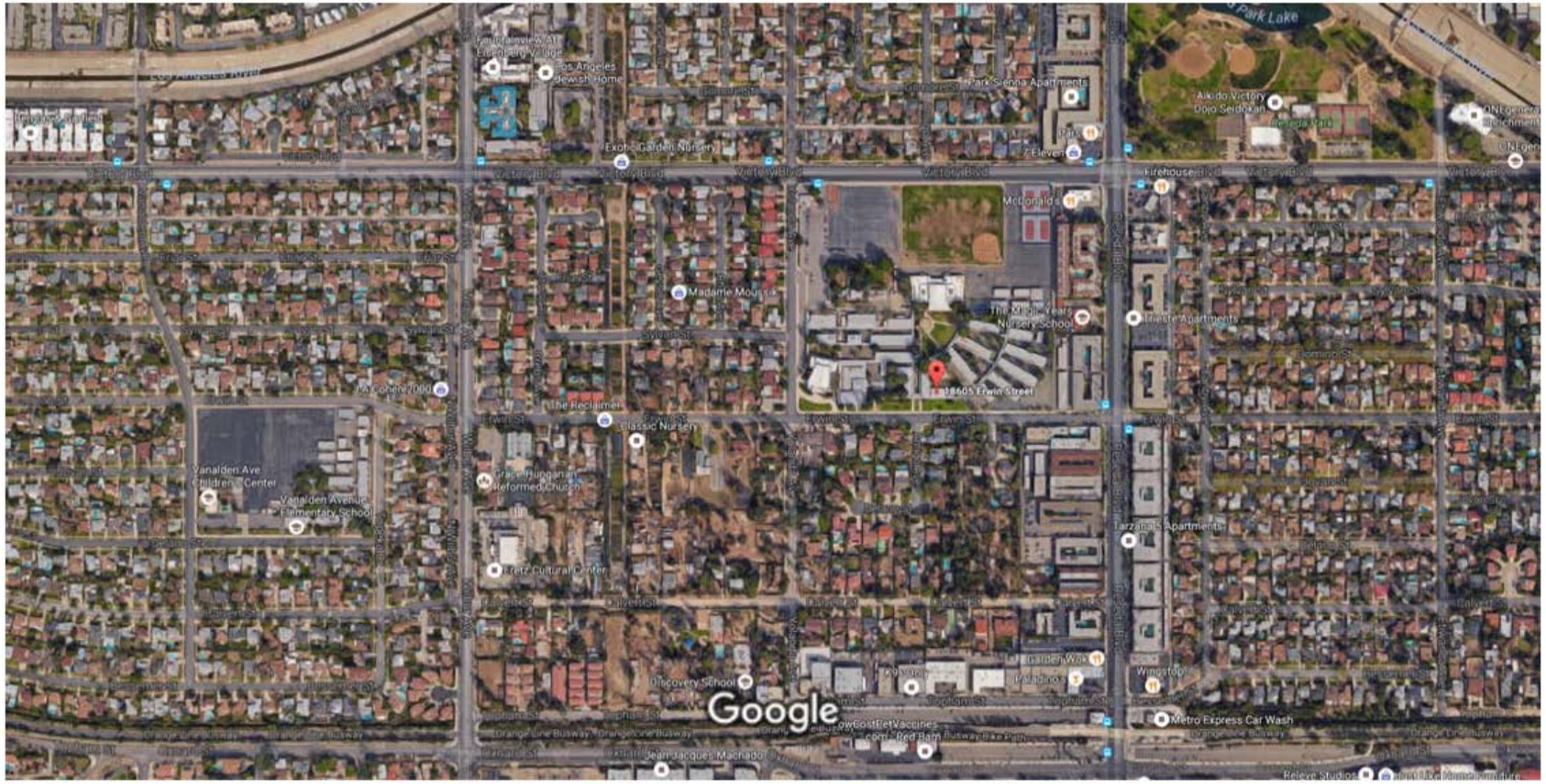
Table 1
Soil Analytical Results - Lead and Arsenic
Sherman Oaks Center for Enriched Studies

SAMPLE LOCATION AND DEPTH	Date	6010B Lead (mg/kg)	6010B Lead STLC (mg/L)	SAMPLE LOCATION AND DEPTH	Date	6020 As (mg/kg)	6020 As STLC (mg/L)	SAMPLE LOCATION AND DEPTH	Date	6020 As (mg/kg)	6020 As STLC (mg/L)	SAMPLE LOCATION AND DEPTH	Date	6020 As (mg/kg)	6020 As STLC (mg/L)
S1-0.5'	10/30/2016	46.5	NA	S18-0.5'	10/30/2016	4.21	NA	S34-0.5'	10/29/2016	4.02	NA	S50-0.5' DUP	10/29/2016	5.26	NA
S2-0.5'	10/30/2016	15.4	NA	S19-0.5'	10/30/2016	5.02	NA	S35-0.5'	10/29/2016	3.54	NA	S51-0.5'	10/29/2016	47.3	NA
S3-0.5'	10/30/2016	40.3	NA	S20-0.5'	10/30/2016	7.74	NA	S36-0.5'	10/29/2016	4.09	NA	S51-1.5'	10/30/2016	6.13	NA
S4-0.5'	10/30/2016	5.67	NA	S20-0.5' DUP	10/30/2016	6.12	NA	S37-0.5'	10/29/2016	5.85	NA	S52-0.5'	10/30/2016	6.08	NA
S5-0.5'	10/30/2016	7.03	NA	S21-0.5'	10/30/2016	4.66	NA	S38-0.5'	10/29/2016	4.33	NA	S53-0.5'	10/30/2016	9.14	NA
S6-0.5'	11/5/2016	22.6	NA	S22-0.5'	10/30/2016	3.47	NA	S39-0.5'	10/29/2016	4.70	NA	S54-0.5'	10/30/2016	5.03	NA
S7-0.5'	11/5/2016	4.55	NA	S23-0.5'	10/30/2016	4.54	NA	S40-0.5'	10/29/2016	3.48	NA	S55-0.5'	10/29/2016	4.68	NA
S7-0.5' Dup	11/5/2016	5.08	NA	S24-0.5'	10/30/2016	4.71	NA	S40-0.5' Dup	10/29/2016	3.65	NA	S56-0.5'	10/30/2016	4.10	NA
S8-0.5'	11/5/2016	43.9	NA	S25-0.5'	10/30/2016	4.11	NA	S41-0.5'	10/29/2016	4.35	NA	S57-0.5'	10/30/2016	4.20	NA
S9-0.5'	11/5/2016	80.3	0.537	S26-0.5'	10/30/2016	5.75	NA	S42-0.5'	10/29/2016	4.88	NA	S58-0.5'	10/30/2016	3.42	NA
S9-1.5'	11/5/2016	5.58	NA	S27-0.5'	10/30/2016	2.84J	NA	S43-0.5'	10/29/2016	4.48	NA	S59-0.5'	10/29/2016	7.93	NA
S10-0.5'	10/30/2016	6.34	NA	S28-0.5'	10/30/2016	5.39	NA	S44-0.5'	10/29/2016	4.93	NA	S60-0.5'	10/29/2016	5.77	NA
S11-0.5'	10/30/2016	22.5	NA	S29-0.5'	10/30/2016	6.68	NA	S45-0.5'	10/29/2016	5.12	NA	S60-0.5' Dup	10/29/2016	6.07	NA
S12-0.5'	10/30/2016	47.1	NA	S30-0.5'	10/30/2016	4.19	NA	S46-0.5'	10/29/2016	5.45	NA	S61-0.5'	10/29/2016	6.88	NA
S12-0.5' DUP	10/30/2016	39.0	NA	S30-0.5' DUP	10/30/2016	4.03	NA	S47-0.5'	10/29/2016	5.13	NA	S62-0.5'	10/29/2016	6.83	NA
S13-0.5'	10/30/2016	5.37	NA	S31-0.5'	10/30/2016	4.57	NA	S48-0.5'	10/29/2016	5.50	NA	S63-0.5'	10/29/2016	8.57	NA
S14-0.5'	10/30/2016	4.55	NA	S32-0.5'	10/30/2016	4.93	NA	S49-0.5'	10/29/2016	4.57	NA	S64-0.5'	10/29/2016	15.4	NA
S15-0.5'	10/30/2016	15.3	NA	S33-0.5'	10/29/2016	5.20	NA	S50-0.5'	10/29/2016	5.38	NA	S64-1.5'	10/29/2016	4.63J	NA
S16-0.5'	10/30/2016	7.79	NA												
S17-0.5'	11/5/2016	12.6	NA												
Step Out Borings (17)															
S9-5N-0.5'	12/3/2016	42.1	NA	S51-5NE-0.5'	12/3/2016	3.45	NA	S64-5N-0.5'	12/3/2016	27.6	NA	S64-5W-0.5'	12/3/2016	28.0	NA
S9-5N-0.5' Dup	12/3/2016	38.6	NA	S51-5E-0.5'	12/3/2016	6.55	NA	S64-5N-0.5' Dup	12/3/2016	39.5	NA	S64-5W-1.5'	12/3/2016	3.94	NA
S9-5E-0.5'	12/3/2016	0.86	NA	S51-5S-0.5'	12/3/2016	41.4	NA	S64-5N-1.5'	12/3/2016	4.27	NA	S64-10N-0.5'	12/3/2016	11.1	NA
S9-5S-0.5'	12/3/2016	10.2	NA	S51-5S-1.5'	12/3/2016	5.22	NA	S64-5E-0.5'	12/3/2016	51.5	3.86	S64-10E-0.5'	12/3/2016	22.8	NA

Table 1
Soil Analytical Results - Lead and Arsenic
Sherman Oaks Center for Enriched Studies

SAMPLE LOCATION AND DEPTH	Date	6010B Lead (mg/kg)	6010B Lead STLC (mg/L)	SAMPLE LOCATION AND DEPTH	Date	6020 As (mg/kg)	6020 As STLC (mg/L)	SAMPLE LOCATION AND DEPTH	Date	6020 As (mg/kg)	6020 As STLC (mg/L)	SAMPLE LOCATION AND DEPTH	Date	6020 As (mg/kg)	6020 As STLC (mg/L)
S9-4W-0.5'	12/3/2016	31.6	NA	S51-5W-0.5'	12/3/2016	5.77	NA	S64-5E-1.5'	12/3/2016	4.23	NA	S64-10E-1.5'	12/3/2016	4.37	NA
				S51-11S-0.5'	12/3/2016	77.9	4.31	S64-5S-0.5'	12/3/2016	22.3	NA	S64-10S-0.5'	12/3/2016	7.36	NA
				S51-11S-1.5'	12/3/2016	7.40	NA	S64-5S-1.5'	12/3/2016	4.40	NA	S64-10W-0.5'	12/3/2016	18.3	NA
												S64-10W-1.5'	12/3/2016	4.34	NA
Additional Step Out Borings (8)															
				S63A-0.5'	1/16/2017	14.5	NA	S63A-5S-0.5'	1/16/2017	9.70	NA	S64A-5N-0.5'	1/16/2017	28.3	NA
				S63A-1.5'	1/16/2017	5.22	NA	S63A-10N-0.5'	1/16/2017	9.09	NA	S64A-5N-1.5'	1/16/2017	4.59	NA
				S63A-5N-0.5'	1/16/2017	19.7	NA	S64A-0.5'	1/16/2017	12.7	NA	S64-5S-0.5'	1/16/2017	11.7	NA
				S63A-5N-1.5'	1/16/2017	5.28	NA	S64A-1.5'	1/16/2017	4.34	NA	S64A-10N-0.5'	1/16/2017	7.35	NA
Additional Step Out Borings 2/11/17 (9), 3/4/17 (3), and 3/19/17 (4)															
				S64B-0.5'	2/11/2017	23.8	NA	S64B-10S-1.5'	2/11/2017	4.91	NA	S72-0.5'	3/4/2017	10.2	NA
				S64B-1.5'	2/11/2017	4.31	NA	S64C-0.5'	2/11/2017	4.88	NA	S73-0.5'	3/4/2017	8.08	NA
				S64B-5N-0.5'	2/11/2017	13.0	NA	S64C-5N-0.5'	2/11/2017	14.5	NA	S72D-0.5'	3/4/2017	8.85	NA
				S64B-5N-1.5'	2/11/2017	4.79	NA	S64C-5N-1.5'	2/11/2017	4.14	NA	S71-5E-0.5'	3/19/2017	19.7	NA
				S64B-10N-0.5'	2/11/2017	8.74	NA	S64C-10N-0.5'	2/11/2017	5.61	NA	S71-10E-0.5'	3/19/2017	35.0	NA
				S64B-5S-0.5'	2/11/2017	16.5	NA	S64C-5S-0.5'	2/11/2017	8.97	NA	S71-5W-0.5'	3/19/2017	22.4	NA
				S64B-5S-1.5'	2/11/2017	4.27	NA	S71-0.5'	3/4/2017	13.4	NA	S71-10W-0.5'	3/19/2017	52.7	0.560
				S64B-10S-0.5'	2/11/2017	12.4	NA	S71-1.5'	3/4/2017	4.35	NA				
TTLC Hazardous Levels			1,000	--	--		500	--	--		500	--	--		500
Trigger Value (10xSTLC)			50	--	--		50	--	--		50	--	--		50
CHHSLs Residential Soil			150	--	--		0.07	--	--		0.07	--	--		0.07
CHHSLs Industrial Soil			3,500	--	--		0.24	--	--		0.24	--	--		0.24

Notes:
As = arsenic
mg/kg = milligrams per kilogram
CHHSLs = California Human Health Screening Levels
NA = not analyzed
STLC = soluble threshold limit concentration
J = Reported value is estimated



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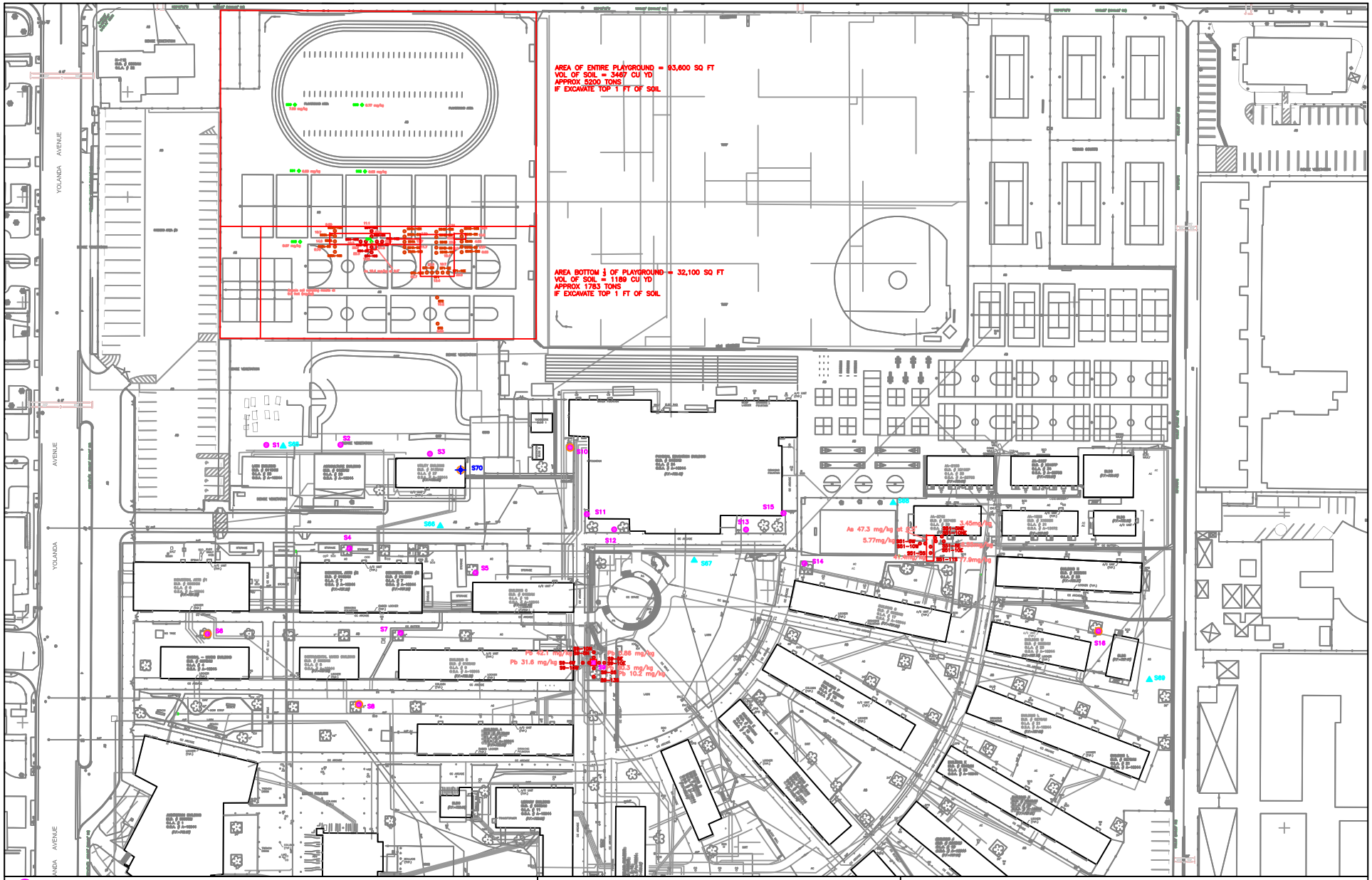
Imagery ©2016 Google, Map data ©2016 Google 200 ft

REV	DATE	DESCRIPTION

CES Civil-Environmental-Survey Group

SITE LOCATION MAP
SOCES
18605 Erwin St
Los Angeles, CA

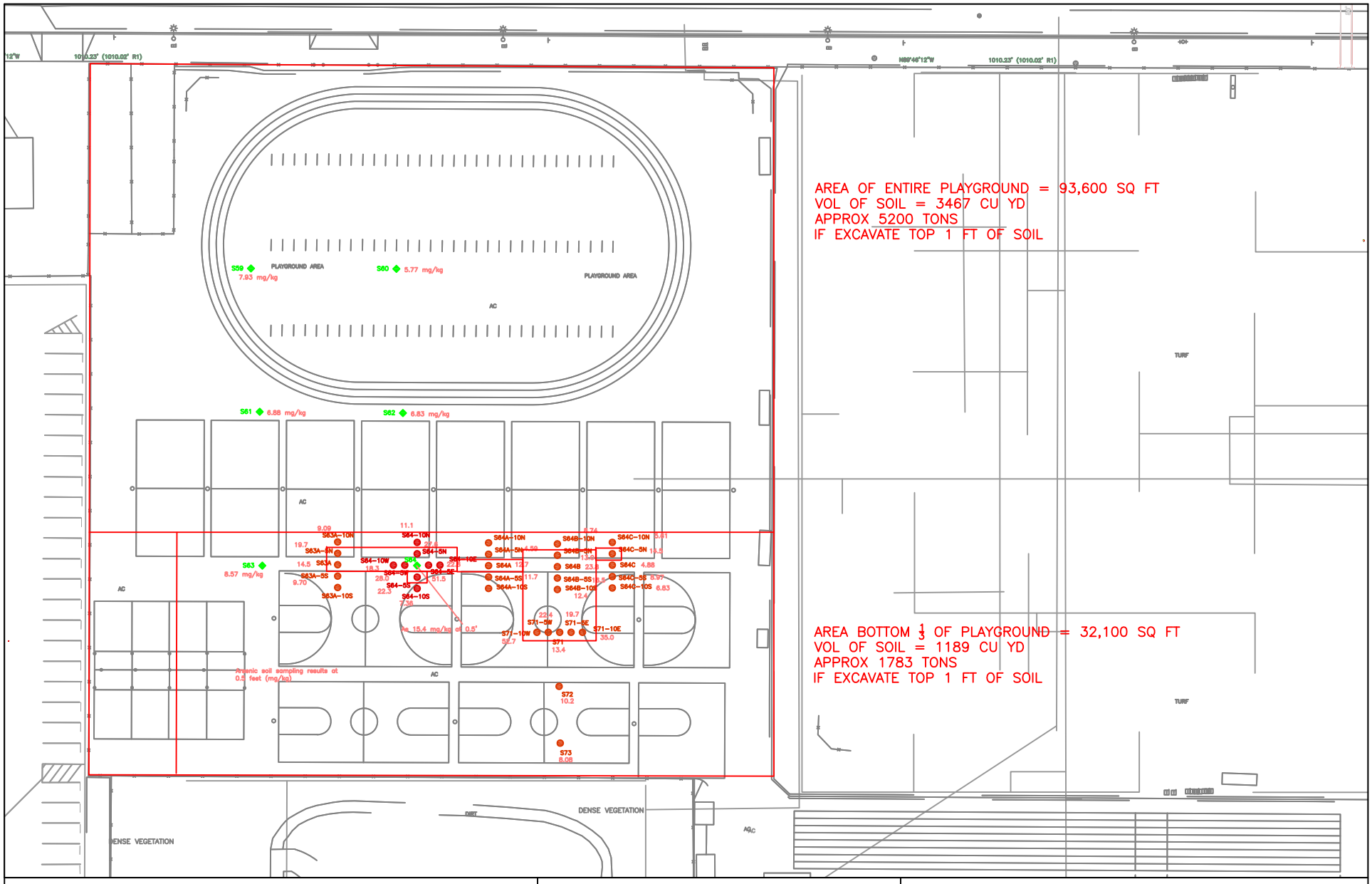
DRAWN BY:	CHECKED BY:	PROJECT NO:	
SMG		LAUSD	FIGURE 1
APPROVED BY:	DATE:	SCALE:	
	10/14/16	AS SHOWN	



CES
Civil-Environmental-Survey Group
PHONE: (951) 808-8585/(951) 848-9812 (FAX)

SITE MAP
SOCES
18605 Erwin Street
Los Angeles, CA

DRAWN BY: S. GREEN	CHECKED BY:	PROJECT NO:	FIGURE 2
APPROVED BY:	DATE: 7/20/17	SCALE: AS SHOWN	



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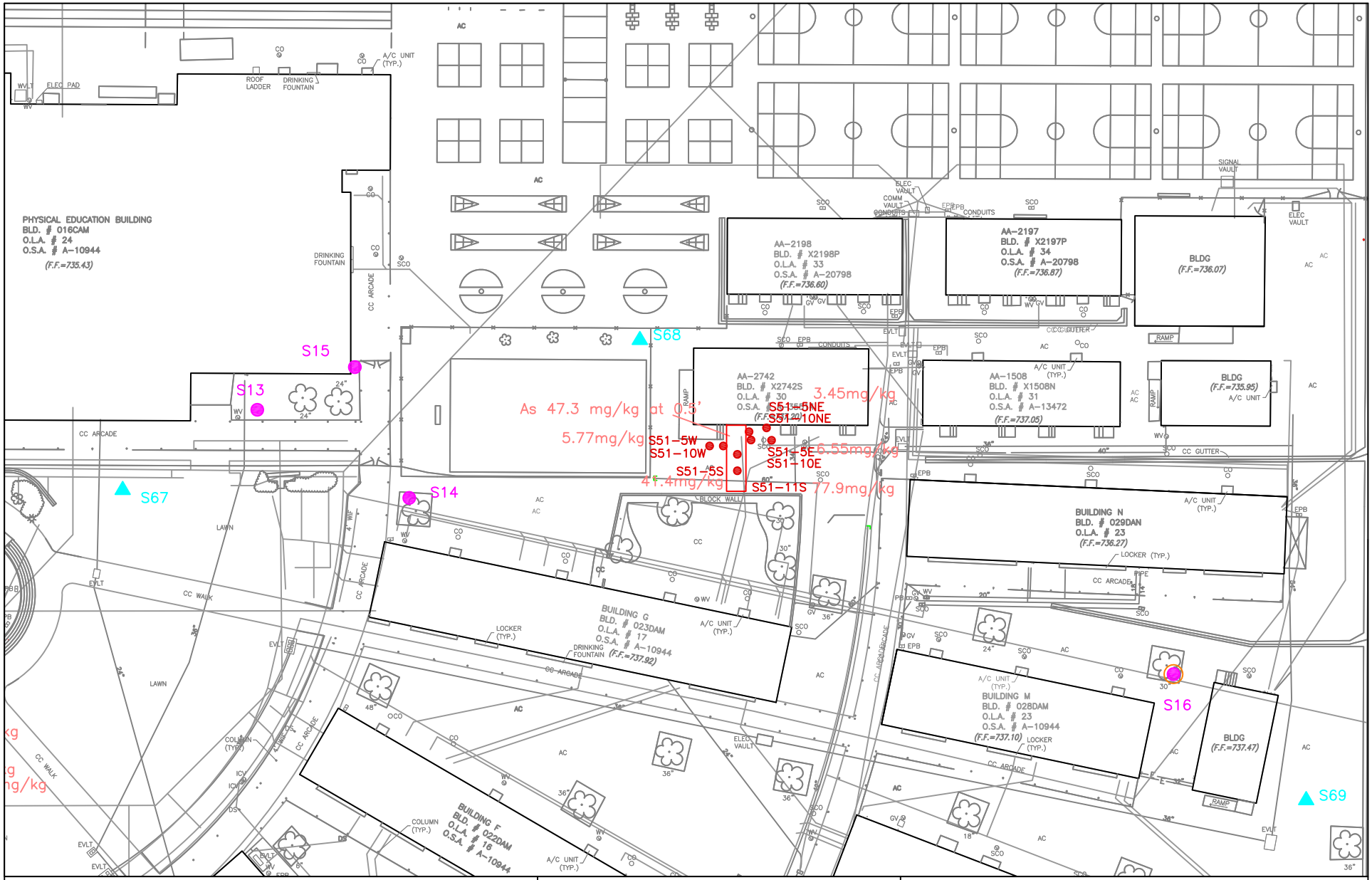
SOIL REMOVAL OPTIONS
SOCES
18605 Erwin Street
Los Angeles, CA

DRAWN BY:	CHECKED BY:	PROJECT NO:	
S. GREEN			FIGURE 3
APPROVED BY:	DATE: 10/3/17	SCALE: AS SHOWN	



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IMPACTED SOIL IN PORTABLE AREA
SOCES – MODULAR BUILDINGS
18605 Erwin Street
Los Angeles, CA

DRAWN BY: S. GREEN	CHECKED BY:	PROJECT NO:	FIGURE 4
APPROVED BY:	DATE: 7/20/17	SCALE: AS SHOWN	