

Removal Action Workplan

Henderson Middle School

13451 North Extension Road

Lodi, San Joaquin County, California

April 9, 2025 | Terracon Project No. NA227049 | DTSC Project Code: 104829

Prepared for:
Department of Toxic Substance Control
Northern California Schools Unit
Site Mitigation and Restoration Program
Sacramento, California
And
Lodi Unified School District
Lodi, California



Prepared by:
Terracon Consultants, Inc.
Lodi, California



Nationwide
Terracon.com

- Facilities
- Environmental
- Geotechnical
- Materials

April 9, 2025

Department of Toxic Substances Control
Northern California Schools Unit
Site Mitigation and Restoration Program
8000 Cal Center Drive
Sacramento, California 95826-3200

Attn: Ms. Elizabeth Tisdale
P: (916) 255-6666
E: Elizabeth.Tisdale@dtsc.ca.gov

Re: Removal Action Workplan
Henderson Middle School
13451 North Extension Road
Lodi, San Joaquin County, California
Terracon Project No. NA237049
DTSC Project Code: 104829

Dear Ms. Tisdale:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Removal Action Workplan (RAW) for the above referenced site. We appreciate your concurrence for the coincident development and removal actions for this site. If there are any questions regarding this report or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,
Terracon Consultants, Inc.

A handwritten signature in blue ink that reads 'Sadie Bodiford'.

Sadie Bodiford
Project Manager

A handwritten signature in black ink that reads 'Tony P. Mikacich'.

Tony P. Mikacich, P.G. 9918
Senior Geologist



Attachments: Removal Action Workplan

Table of Contents

EXECUTIVE SUMMARY	5
Conclusions	7
Recommendations.....	7
LIST OF ABBREVIATIONS AND ACRONYMS.....	8
1.0 INTRODUCTION	9
1.1 Removal Action Objectives.....	9
2.0 PROJECT BACKGROUND	10
2.1 Site Location and Description	10
2.1.1 Contact Person, Mailing Address, and Telephone Number.....	11
2.1.2 USEPA Identification Number and EnviroStor Database Number	11
USEPA Identification Number	11
EnviroStor Database Number	11
2.1.3 Assessor Information and Ownership	11
2.1.4 Township, Range, Section, and Meridian	11
2.1.5 Operational History and Status	12
2.2 Physical Settings	12
2.3 Land Uses, Sensitive Receptors, Ecosystems, and Cultural Resources	13
2.4 Meteorology	14
2.5 Previous Site Actions	14
2.5.1 Pre-Demolition Limited Asbestos & Lead Survey Report	14
2.5.2 Soil Sampling and Analysis	14
2.5.3 Phase I Environmental Site Assessment	14
2.5.4 Preliminary Endangerment Assessment	15
2.5.5 Pre-Disposal Soil Characterization	15
2.5.6 Supplemental Site Investigation – Northern Area of Former School Building	18
3.0 NATURE, SOURCE, AND EXTENT OF CONTAMINANTS	18
3.1 Type, Source, and Location of Contaminants	18
3.2 Extent and Volume of Contamination.....	18
3.3 Health Effects of Contaminants.....	19
3.4 Receptors Potentially Affected by the Site	19
4.0 Risk Evaluation	19
4.1 Human Health Screening Risk Evaluation	19
4.2 Exposure Pathways and Media of Concern	19
4.3 Exposure Concentrations and Chemicals	20

4.4	Human Health Screening Levels.....	20
4.5	Site Characterization	20
4.6	Ecological Screening Evaluation Results	21
4.7	Cleanup Goals	21
5.0	Engineering Evaluation/Cost Analysis (EE/CA)	21
5.1	Removal Action Scope.....	22
5.2	Evaluation of Removal Action Alternatives	22
5.2.1	EE/CA Alternative Evaluation Criteria.....	22
5.2.2	Description and Comparative Cost Analysis.....	23
5.3	Description of Selected Remedy.....	24
5.4	Estimated Costs of Selected Remedy	24
6.0	Applicable or Relevant and Appropriate Requirements.....	25
6.1	Chemical-Specific ARARs	25
6.1.1	Risk Screening Levels	25
6.1.2	Air Quality Management	25
6.1.3	Environmental Health and Safety Plan (EHASP)	26
6.2	Action-Specific ARARs	26
6.2.1	Waste Management	27
6.2.2	California Environmental Quality Act (CEQA)	27
6.2.3	Stormwater Discharge.....	27
6.2.4	Quality Assurance Project Plan (QAPP)	28
6.3	Public Participation	28
6.3.1	Community Profile Report	29
6.3.2	Public Notice for RAW.....	29
6.3.3	Community Update.....	30
6.3.4	Work Notice	30
6.4	California Department of Public Health ARARs	30
6.5	Other ARARs	30
7.0	Removal Action Implementation	31
7.1	Field Documentation	31
7.1.1	Field Dailies.....	32
7.1.2	Chain-of-Custody Records.....	33
7.1.3	Photographs	33
7.2	Site Preparation and Security Measures	33
7.2.1	Delineation of Work Zones	34
7.2.2	Utility Clearance.....	34
7.2.3	Security Measures	35

7.2.4	Contaminant Control.....	35
7.2.5	Permits and Plans.....	36
7.2.6	Noise Control.....	36
7.3	Excavation36	
7.3.1	Confined Space Entry Requirements	37
7.3.2	Soil Staging, Storage, Load-Out Operations, and Truck Route.....	37
7.3.3	Decontamination Area	37
7.3.4	Excavation Plan.....	38
7.4	Air and Meteorological Monitoring	39
7.4.1	Air Monitoring	39
7.4.2	Air Monitoring Strategy and Methodologies	40
7.4.3	Meteorological Monitoring	40
7.5	Dust Control Plan	41
7.5.1	Other Environmental Monitoring	41
7.6	Confirmation Sampling	43
7.7	Transportation Plan for Off-Site Disposal.....	44
7.8	Site Restoration	45
7.9	Variance or Explanation of Significant Differences (ESD).....	45
7.10	Fundamental, Significant, or Minor Changes	45
7.10.1	ESD Process	45
7.11	Field Variances	46
8.0	Project Schedule and Report Completion.....	46
9.0	References	47

APPENDICES

APPENDIX A Exhibits

- Exhibit 1 – Topographic Map
- Exhibit 2 – Site Map
- Exhibit 3 – Lead Concentration Results
- Exhibit 4 – Proposed Removal Action Fieldwork
- Exhibit 5 – Proposed Truck Route

APPENDIX B Conceptual Site Model

APPENDIX C Environmental Health and Safety Plan (EHASP)

APPENDIX D Quality Assurance Project Plan (QAPP)

APPENDIX E DTSC Information Advisory on Clean Imported Fill Material



APPENDIX F	Previous Terracon Subsurface Investigation Data Tables
APPENDIX G	California Department of Public Health Forms
APPENDIX H	Removal Action Workplan Response to Comments

EXECUTIVE SUMMARY

This Removal Action Workplan (RAW) has been prepared by Terracon Consultants, Inc. (Terracon) on behalf of the Lodi Unified School District (LUSD) for Henderson Middle School located in Lodi, San Joaquin County, California (site). Terracon has prepared this RAW to address the removal of impacted soil at the site. This Removal Action Workplan (RAW) was prepared to address the DTSC's Comment Letters dated November 30, 2023 and October 17, 2024. The purpose of this revised RAW is to present final data in support of the proposed scope of the removal action for the project site.

Findings

A summary of the findings is provided below. It should be recognized that details were not included or fully developed in this section, and the Workplan must be read in its entirety for a comprehensive understanding of the items contained herein.

Site Description and Use

The project site is located within the Henderson Middle School Campus located at 13451 Extension Road in Lodi, San Joaquin County, California. The site encompasses 0.28-acre area located on the northeastern portion of Assessor Parcel Number (APN) 058-05-005, which total approximately 6.37-acre (further referred to as the "parent parcel").

Previous Site Activities

Terracon was engaged by the LUSD to prepare a Limited Pre-Demolition Hazardous Materials Survey, dated March 13, 2019 (Terracon 2019). The survey identified lead-based paint (LBP) in the exterior wall paint samples collected from the former site building. In response to the results of the Limited Pre-Demolition Hazardous Materials Survey, Terracon prepared a Summary Soil Sampling and Analysis letter, dated March 13, 2020 (Terracon 2020a).

On March 6, 2020, Terracon collected 20 soil samples along the perimeter walls of the classroom and shed buildings and a distance of approximately six feet from the perimeter walls. Discrete and composite soil samples were collected from the surface (approximately 1-inch bgs) and 0.5 feet bgs and were submitted for laboratory analysis for lead by EPA Method 6010. Lead concentrations were reported ranging from 113 to 7,820 milligrams per kilogram (mg/Kg).

In preparation for the site redevelopment, LUSD requested Terracon to complete a Phase I Environmental Site Assessment (ESA) of the site. The Phase I ESA for the site was completed and submitted to the LUSD in July 2020 (Terracon, 2020b). The Phase I ESA identified the following recognized environmental condition (REC); On-site lead concentrations in soil. Additionally, while not a REC, potential termiticide application was also identified.

Additional soil sampling was conducted for the PEA to further assess the extent and magnitude of lead in soils and assess for the potential presence of OCPs in soils. Terracon advanced borings along the perimeter of both the former school building and the shed structure. A total of 44 soil samples were analyzed for lead and OCP. Lead concentrations in soil samples collected in the March 2020 and October 2021 sampling events were reported ranging 0.523 mg/Kg to 7,820 mg/Kg.

The soil samples reported with lead exceedances were primarily drip samples. Two step-out composite samples collected at depths of 0.5 to 2 feet bgs, SS-S-D and SS-E-S, were reported with lead concentrations of 365 mg/Kg and 320 mg/Kg, respectively. The majority of soil samples collected deeper than 2.5 feet bgs and analyzed for lead were reported with lead concentrations below the residential SL of 80 mg/Kg. All reported OCP concentrations were below respective DTSC residential SLs.

Based on the findings of the PEA, Terracon recommended the preparation and implementation of this RAW to remediate the lead-impacted soils present on the exterior portions of the former site building in concentrations above residential SLs.

Based on discussions with LUSD and DTSC on March 2, 2023, a pre-disposal soil characterization assessment was recommended to profile soils for disposal prior to implementation of the RAW. Soils generated as part of the removal action fieldwork have the potential to be classified as a non-hazardous waste, a California-hazardous waste, or a Federal-hazardous waste.

Terracon mobilized to the Site on April 3, 2023, and advanced two 3-foot soil borings, W1 and W2, by hand auger on the western and southern exterior portions of the former school building structure and within the boundary of the proposed excavation. Four soil samples were collected from each boring and composited by depth. Based on the results of the lead TTLC, WET, STLC and TCLP concentrations reported did not exceed the regulatory screening criteria and therefore, soils planned for excavation and disposal from the site will be classified as a non-hazardous waste.

At the request of DTSC, as presented in the Removal Action Workplan – Comment Letter dated November 30, 2023, Terracon prepared a Supplemental Site Investigation Workplan (SSI WP) to further delineate the shallow lead impacts in the northern area of the former School building.

On July 2, 2024, Terracon performed the SSI soil sampling in the northern area of the former School building. A total of 27 samples were collected during the event. Fifteen samples were analyzed by the laboratory for lead. All of the samples collected from 0 to 0.5 feet bgs and 0.5 to 1.0 foot bgs were reported below the SL of 80 mg/Kg. Based on the supplemental investigation in the northern area of the site, the data supports that additionally soil excavation in this area of the site is not warranted.

Conclusions

Concentration of lead in shallow soil (0 to 2.5 feet bgs) have been reported above the State screening level for human health and safety based on the intended use of the property as a school site.

Recommendations

Based on the soil data collected at the site with concentrations of lead reported in shallow soil in excess of the SL, cleanup action is warranted. Under the direction and regulatory oversight of DTSC, Terracon recommends the implementation of the removal action for the lead-impacted soil at the site. This Removal Action Workplan details the implementation of the proposed soil removal.

LIST OF ABBREVIATIONS AND ACRONYMS

APN – Assessor Parcel Number
BERs - business environmental risks
bgs – below ground surface
CCR - California Code of Regulations
CG – cleanup goal
COC – chemicals of concern
CDPH – California Department of Public Health
CSM – Conceptional Site Model
DTSC – Department of Toxic Substances Control
DQO – Data Quality Objective
EE/CA - Engineering Evaluation/Cost Analysis
EHASP – Environmental Health and Safety Plan
ESA – Environmental Site Assessment
ESDs – Explanation of Significant Differences
H&SC – Health and Safety Code
HERO - Human and Ecological Risk Office
HHSE - human health screening evaluation
IPaC - Information for Planning and Conservation
ID – Identification Number
LUSD – Lodi Unified School District
LBP – Lead-based Paint
mg/kg - milligrams per kilogram
NFA – No Further Action
NOE - Notice of Exemption
OCPs - organochlorine pesticides
PEA – Preliminary Endangerment Assessment
QAPP – Quality Assurance Project Plan
RAW – Removal Action Workplan
RCRA – Resource Conservation and Recovery Act
RACR - Removal Action Completion Report
RAOs – Removal Action Objectives
RECs - recognized environmental conditions
SGMA – Sustainable Groundwater Management Act
SSI WP – Supplemental Site Investigation Workplan
T&E - Threatened and Endangered
UCL – upper confidence level
USEPA – United States Environmental Protection Agency
USFWS - United States Fish and Wildlife Service

REMOVAL ACTION WORKPLAN

HENDERSON MIDDLE SCHOOL

13451 NORTH EXTENSION ROAD

LODI, SAN JOAQUIN COUNTY, CALIFORNIA

TERRACON PROJECT No. NA227049
APRIL 9, 2025

1.0 INTRODUCTION

This Removal Action Workplan (RAW) has been prepared by Terracon Consultants, Inc. (Terracon) on behalf of the Lodi Unified School District (LUSD) for Henderson Middle School located in Lodi, San Joaquin County, California (site). Terracon has prepared this RAW to address the removal of impacted soil at the site. The site location is shown on Exhibit 1 – Site Location Map in Appendix A. This RAW contains a detailed engineering plan for conducting the removal action, a description of the on-site contamination, and the goals to be achieved by the removal action, as required by the California Health and Safety Code (H&SC) Section 25323.1. The RAW also includes the elements required by H&SC Section 25356.1(h) for sites having an estimated removal-action cost of less than two million dollars.

Exhibits depicting the site and proposed future work are included as Appendix A. A Conceptual Site Model (CSM) is included as Appendix B. An Environmental Health and Safety Plan (EHASP) and Quality Assurance Project Plan (QAPP) are included as Appendix C and D. The Department of Toxic Substances Control (DTSC) Information Advisory on Clean Imported Fill Material is included as Appendix E. Data tables from previous site investigations including the Preliminary Endangerment Assessment (PEA) (Terracon Project No. NA227039, dated April 12, 2021) are included in Appendix F. California Department of Public Health (CDPH) Health Forms are included as Appendix G.

1.1 Removal Action Objectives

The objective of the proposed Removal Action Work Plan for the site is to describe procedures for removal and disposal of soils impacted with lead to reduce the threat to human health and to provide a permanent solution that reduces the toxicity, mobility, and volume of impacted soil. The proposed action is the preferred removal action remedy in terms of the three technology evaluation criteria: effectiveness, implementability, and cost.

Removal action objectives (RAOs) have been established that are protective of human health and the environment and reduce the potential for exposure to shallow soil encountered at the site. These RAOs are presented below:

- Minimize exposure of humans to lead in shallow soil through inhalation, dermal absorption, and ingestion.
- Remove soils that exceed the human health risk criteria to prevent exposure to excessive concentrations of lead.
- Minimize potential for migration of lead from the soil to other media.
- Obtain a “No Further Action (NFA)” decision by Department of Toxic Substances Control (DTSC) for the site, after completion of the removal action.

The remedial goals developed and adopted for impacted media at the site are responsive to these RAOs. The primary remedial goal for the site is performance-based and focuses on restoring the soils to acceptable conditions regarding lead detected in shallow soil. The goal of this removal action is for soil containing unacceptable lead concentrations to be excavated, removed from the site, and disposed off-site. As part of the NFA decision, DTSC will certify that necessary response actions have been completed in accordance with the approved RAW and that site conditions do not pose an unacceptable risk to students, staff and faculty at the site.

2.0 PROJECT BACKGROUND

2.1 Site Location and Description

The project site is located within the Henderson Middle School Campus located at 13451 Extension Road in Lodi, San Joaquin County, California. The site encompasses approximately 0.28-acre area located on the northeastern portion of Assessor Parcel Number (APN) 058-05-005, which total approximately 6.37-acre (further referred to as the “parent parcel”). Exhibits 1 and 2 depict the site on a Topographic Map and the San Joaquin County Assessor’s Parcel Map. Exhibit 2 Site Map depicts the full APN owned by LUSD. Exhibit 3 Lead Concentration Results, depicts the northern adjoining property to the site consists of a Henderson Middle School classroom building and an asphalt-paved area associated with the parent parcel.

The parent parcel adjoins the site on all sides and is occupied with the Henderson Middle School and the Valley Robotics Academy. The site is adjoined with a classroom building to the north, asphalt pavement to the east, and portable classrooms to the south and west.

2.1.1 Contact Person, Mailing Address, and Telephone Number

The contact person for LUSD is:

Mr. Neil Young
Superintendent
Lodi Unified School District
1305 East Vine Street
Lodi, California 95240
P: (209) 331-7000

2.1.2 USEPA Identification Number and EnviroStor Database Number

USEPA Identification Number

Based on the results of the pre-disposal soil characterization work, discussed further in Section 2.5.5, soils planned for excavation and disposal can be profiled as a Resource Conservation and Recovery Act (RCRA) non-hazardous waste. Therefore, a United States Environmental Protection Agency (USEPA) Identification Number (ID) number is not required for disposal.

EnviroStor Database Number

Terracon reviewed the DTSC's EnviroStor website and the site has been assigned EnviroStor ID 60003025 as a part of DTSC's school-site review process.

2.1.3 Assessor Information and Ownership

The San Joaquin County Assessor's office identifies the site as a portion of APN 058-05-005 and owned by the Lodi Unified School District.

2.1.4 Township, Range, Section, and Meridian

According to Earth Point¹, a tool to be used with Google Earth®, the site is located Township 3 North, Range 6 East, Section 22, Quarter NW ¼ of North West ¼, Meridian Mount Diablo, State California (T3N, R6E, S22, Q NW ¼ of NW ¼, Meridian Mount Diablo, State, California).

¹ <https://www.earthpoint.us/>

2.1.5 Operational History and Status

As summarized in Terracon's Phase I Environment Site Assessment (ESA) of the site (Terracon Project No. NA207039 dated July 10, 2020), the site consisted of undeveloped land from at least the mid-1890s through 1910, and was developed with a school building from the mid-1930s through May 2020, when the building was demolished with the concrete pad, stairs, and utilities were left in place. As of 2020, the site is enclosed with construction fencing and geofabric material was placed over the exposed soils to reduce the potential for dust generation. The site has remained relatively unchanged from 2020 through the present.

2.2 Physical Settings

Physical Setting Information		Source
Topography		
Site Elevation	Approximately 30 feet above mean sea level.	USGS Topographic Map, Lodi South, California, 1976 (Appendix A)
Topographic Gradient	Relatively flat area with general gradient towards the southwest.	
Closest Surface Water	South Main Canal, located approximately 1.25 miles east of the site.	
Soil Characteristics		
Soil Type and Description	In general, Terracon encountered silts, sandy silts, and poorly graded sands with silts in the upper 5 feet below ground surface (bgs). Odors or staining were not observed during sampling activities. Groundwater was not encountered during sampling activities.	Preliminary Endangerment Assessment Report, 13451 North Extension Road, Lodi, California, prepared by Terracon Consultants, Inc., dated December 23, 2022.
	<u>Acampo sandy loam</u> These soils, located throughout the site, are moderately well drained with 0 to 2 percent slopes. Parent material consists of alluvium derived from granite. Typical soil profile consists of sandy loam down to 47 inches bgs underlain by cemented sedimentary soil to a total depth of 60 inches bgs.	San Joaquin County, California USDA-NRCS Web Soil Survey issued September 16, 2019

Physical Setting Information		Source
Geology / Hydrogeology		
Formation	Quaternary deposits (Q)	California Department of Conservation, Geologic Map of California, 2010
Description	Alluvium, lake playa, and terrace deposits; unconsolidated and semi-consolidated.	
Estimated Depth to First Occurrence of Groundwater	Approximately 40 to 50 feet bgs.	Department of Water Resources, Spring 2018 Sustainable Groundwater Management Act (SGMA) Data Viewer
*Hydrogeologic Gradient	East, southeast.	

* The groundwater flow direction and the depth to shallow, unconfined groundwater, if present, would likely vary depending upon seasonal variations in rainfall and other hydrogeological features. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

2.3 Land Uses, Sensitive Receptors, Ecosystems, and Cultural Resources

The parent parcel is used as a school campus, occupied by the Henderson Middle School and Valley Robotics Academy. The site is currently gated and enclosed from access by the remaining portions of the parent parcel.

The closest surface water, according to the topographic map, is an unlabeled pond located approximately 2,300 feet northeast of the site. Additionally, no wetlands, streams, springs, ponds, or other water sources are mapped on the National Wetlands Inventory².

Additionally, Terracon reviewed the United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) database for potential threatened and endangered (T&E) species that may be present at the site. Various T&E species were identified in the area of Lodi in which the site is located; however, since the site was developed in the mid-1930s, the presence of T&E species is not likely to be present.

A limited literature and agency file review was conducted to identify the potential occurrence of cultural resources on the site. Cultural resources are comprised of historic properties and archaeological artifacts. Terracon reviewed the National Register of Historic Places for the parent tract address. Cultural resources or structures of historical significance were not documented for the parent tract or site on the National Register of Historic Places.

² <https://www.fws.gov/wetlands/data/mapper.html>

2.4 Meteorology

In San Joaquin, the summers are sweltering, arid, and clear and the winters are cold and partly cloudy. Over the course of the year, the temperature typically varies from 39 degrees Fahrenheit (°F) to 98 °F. The average annual rainfall is about 19 inches of rain per year with the rainy season occurring from November through April. Prevailing winds are typically from the west and less than 9 miles per hour.

2.5 Previous Site Actions

2.5.1 Pre-Demolition Limited Asbestos & Lead Survey Report

Terracon was engaged by the LUSD to prepare a Limited Pre-Demolition Hazardous Materials Survey, dated March 13, 2019 (Terracon 2019). The survey identified lead-based paint (LBP) in the exterior wall paint samples collected from the former site building. In response to the results of the Limited Pre-Demolition Hazardous Materials Survey, Terracon prepared a Summary Soil Sampling and Analysis letter, dated March 13, 2020 (Terracon 2020a).

2.5.2 Soil Sampling and Analysis

On March 6, 2020, Terracon collected 20 soil samples along the perimeter walls of the classroom and shed buildings and a distance of approximately six feet from the perimeter walls. Discrete and composite soil samples were collected from the surface (approximately 1-inch bgs) and 0.5 feet bgs and were submitted for laboratory analysis for lead by EPA Method 6010. Lead concentrations were reported ranging from 113 to 7,820 milligrams per kilogram (mg/Kg).

2.5.3 Phase I Environmental Site Assessment

In preparation for the site redevelopment, LUSD requested Terracon to complete a Phase I ESA of the site. The Phase I ESA for the site was completed and submitted to the LUSD in July 2020 (Terracon, 2020b). The Phase I ESA identified the following recognized environmental conditions (RECs):

- On-site lead concentrations in soil: The detected lead concentrations in soil above the Department of Toxic Substance Control (DTSC) Human and Ecological Risk Office (HERO) Note 3 screening levels represent a REC to the site.

While not identified as RECs, the following business environmental risks (BERs) were identified in connection with the site:

- **Potential Termiticide Application:** Organochlorine pesticides (OCPs) were commonly used as insecticides for termite control around structures. The buildings footprint may be impacted with OCPs as a result of termiticide application.

2.5.4 Preliminary Endangerment Assessment

Additional soil sampling was conducted for the PEA to further assess the extent and magnitude of lead in soils and assess for the potential presence of OCPs in soils. Terracon advanced borings along the perimeter of both the former school building and the shed structure. A total of 44 soil samples were analyzed for lead by EPA Method 6010. A total of 20 soil samples were collected and submitted to the laboratory for analysis of OCPs by EPA Method 8081.

Of the 44 soil samples analyzed for lead, 30 were reported with concentrations exceeding the DTSC residential Screening Level (SL) of 80 mg/Kg. Lead concentrations in soil samples collected in the March 2020 and October 2021 sampling events were reported ranging 0.523 J mg/Kg to 7,820 mg/Kg.

The soil samples reported with lead exceedances were primarily drip samples. The six step-out samples collected in the upper 0.5 feet bgs were reported with lead concentrations exceeding the residential SL of 80 mg/Kg and ranged from 120 mg/Kg to 641 mg/Kg. Two step-out composite samples collected at depths of 0.5 to 2 feet bgs, SS-S-D and SS-E-S, were reported with lead concentrations of 365 mg/Kg and 320 mg/Kg, respectively. The majority of soil samples collected deeper than 2.5 feet bgs and analyzed for lead were reported with lead concentrations ranging 0.523 J mg/Kg to 35.0 mg/Kg, which are below the DTSC residential SL of 80 mg/Kg. Only one soil sample collected deeper than 2 feet bgs exceeded the residential SL: drip sample SS-S-D2-3 at 2.5 to 3 feet bgs was reported with 128 mg/Kg of lead. All reported OCP concentrations were below respective DTSC residential SLs.

Based on the findings of the PEA, Terracon recommended the preparation and implementation of this RAW to remediate the lead-impacted soils present on the exterior portions of the former site building in concentrations above residential SLs.

2.5.5 Pre-Disposal Soil Characterization

Based on discussions with LUSD and DTSC on March 2, 2023, a pre-disposal soil characterization assessment was recommended to profile soils for disposal prior to implementation of the RAW. Soils generated as part of the removal action fieldwork have the potential to be classified as a non-hazardous waste, a California-hazardous waste, or a Federal-hazardous waste. The following potential landfills were identified for disposal:

Waste Classification	Proposed Landfill
Non-Hazardous Waste	Potrero Hills Landfill 3675 Potrero Hills Lane Suisun City, California 94585
California Hazardous Waste	Kettleman Hills Landfill 35251 Old Skyline Road Kettleman City, California 93239
Federal Hazardous Waste	US Ecology Highway 95, 11 Miles South of Beatty, Nevada 89003

Terracon prepared the *Work Plan for Pre-Disposal Soil Characterization*, dated March 14, 2023, which outlined the sampling and analytical methodology for the pre-disposal assessment. The *Work Plan for Pre-Disposal Soil Characterization* was accepted by the DTSC on March 28, 2023 (Terracon, 2023).

Terracon mobilized to the Site on April 3, 2023, and advanced two 3-foot soil borings, W1 and W2, by hand auger on the western and southern exterior portions of the former school building structure and within the boundary of the proposed excavation. Four soil samples were collected from each boring and composited by depth into the following samples:

Sample Depth	Discrete Sample IDs	Composite Sample ID
0 to 0.5 ft bgs	W1-0.5 and W2-0.5	W-0.5
0.5 to 1.0 ft bgs	W1-1.0 and W2-1.0	W-1.0
1.5 to 2.0 ft bgs	W1-2.0 and W2-2.0	W-2.0
2.5 to 3.0 ft bgs	W1-3.0 and W2-3.0	W-3.0

In general accordance with Potrero Hills Landfill guidance, which had the most conservative screening requirements of the three proposed landfills, soil samples were analyzed using the following U.S. Environmental Protection Agency (EPA) test methods:

- Total Petroleum Hydrocarbons as Gasoline-Range Organics, Diesel-Range Organics, and Oil-Range Organics (TPH-GRO/DRO/ORO) by EPA Method 8015B;
- Volatile Organic Compounds (VOCs) by EPA Method 8260B; and,
- California Administrative Manual (CAM) 17 Metals by EPA Methods 6010B/7471.

Per requirements from Potrero Hills Landfill, analytical results were compared to the California Characteristics of Toxicity in Title 22 of the California Code of Regulations

(CCR) § 66261.24 that establishes total and soluble toxicity criteria for the analytes of concern.

Terracon evaluated the analytical results on the “rule of thumb screening criteria” using the California Regional Water Quality Control Board Central Valley Region Designated Level Methodology for Waste Classification³, as described below.

- If the total result equals or exceeds 10 times the Soluble Threshold Limit Concentration (STLC) value for a specific analyte, then a Waste Extraction Test (WET) procedure and re-analysis will be performed and this result will be evaluated for characteristic of toxicity by comparison to the California STLC value⁴;
- Additionally, if the total result equals or exceeds 20 times the EPA regulatory level for Toxicity limit for a specific analyte, then a Toxicity Characteristic Leaching Procedure (TCLP) extraction will be performed and the result will be evaluated for characteristic of toxicity by comparison to the Table 1 Regulatory Level.

Low concentrations of TPH-DRO and TPH-ORO were noted in the composite samples collected at 0.5 feet bgs and 1.0 feet bgs and below DTSC SL. Various metals were noted in the four samples analyzed and all VOCs were non-detect.

Of the metals analyzed, lead was reported exceeding the STLC screening value of 50 mg/Kg in samples W-0.5 at 550 mg/Kg and W-1.0 at 130 mg/Kg. Terracon requested the laboratory re-extract samples W-0.5 and W-1.0 for STLC and TCLP and reanalyze for lead. The following STLC and TCLP results were reported:

Sample ID	Lead Concentration – Initial (mg/Kg)	Lead Concentration – STLC Extraction (mg/L)	Lead Concentration – TCLP Extraction (mg/L)	STLC & TCLP Screening Limit (mg/L)
W-0.5	550	1.4	0.79	5.0
W-1.0	130	<0.50	<0.10	5.0

Based on the results of the WET, the STLC and TCLP concentrations reported did not exceed the regulatory screening criteria of 5.0 milligrams per liter (mg/L) and therefore, soils planned for excavation and disposal from the site will be classified as a non-hazardous waste.

³ https://www.waterboards.ca.gov/laws_regulations/

⁴ [§ 66261.24. Characteristic of Toxicity.](#)

2.5.6 Supplemental Site Investigation – Northern Area of Former School Building

Based on the request by DTSC as presented in the Removal Action Workplan – Comment Letter dated November 30, 2023, Terracon prepared a Supplemental Site Investigation Workplan (SSI WP) to further delineate the shallow lead impacts in the northern area of the former School building. The SSI WP was submitted on February 22, 2024, to the DTSC. DTSC provided comments to the SSI WP on March 22, 2024, and Terracon submitted the revised SSI WP dated May 10, 2024, addressing the requested comments and changes.

On July 2, 2024, Terracon performed the SSI soil sampling in the northern area of the former School building. A total of 27 samples were collected during the event. Fifteen samples were analyzed by the laboratory for lead by EPA Method 6010B. The drip sample (i.e., soil samples collected from near the base of the structure perimeter where paint would be likely to fall and be incorporated into soil) results ranged from 6.6 mg/kg to 77 mg/kg of lead in samples SS-N-D4 and SS-N-D7, respectively, from a depth of 0 to 0.5 feet bgs. The drip sample results from a depth of 0.5 to 1.0 feet bgs ranged from 3.4 mg/kg to 6.3 mg/kg of lead. The step-out soil samples located from approximately 6 feet away from the base of the former structure had reported lead results ranging from 3.1 to 20 mg/kg from a depth of approximately 0 to 0.5 feet bgs. Step-out soil samples collected from a depth of 0.5 to 1.0 feet bgs had reported lead at concentrations of 3.4 to 8.9 mg/kg. Based on the supplemental investigation in the northern area of the site, the data supports that additional soil excavation in this area of the site is not warranted; therefore, Terracon does not propose to incorporate additional excavation to the original scope of work.

3.0 NATURE, SOURCE, AND EXTENT OF CONTAMINANTS

3.1 Type, Source, and Location of Contaminants

Based on the PEA analytical results, lead is the only chemical of concern (COC) that is addressed by this RAW. The source of the lead is likely due to historical use of lead-based paint on the former site structures. The lead was detected in paint on the former structures and in soils along the perimeter of the structures.

3.2 Extent and Volume of Contamination

Based on the findings of the PEA, concentrations of lead above the DTSC residential SL extend to approximately 2.5 feet bgs, with only one sample (southern sample SS-S-D2-3' with lead at 129 mg/kg) collected at 3 feet bgs exceeding the residential SL. Based on

the approximate area and depth of impacts noted, Terracon estimates approximately 275 to 300 cubic yards of soil shall be excavated, removed, and disposed of from the site. The proposed excavation area is included in Exhibit 4.

3.3 Health Effects of Contaminants

The following paragraphs give a brief description of the health hazards associated with lead. The primary sources of the information below is the US Department of Health and Human Services, Agency for Toxic Substances & Disease Registry Toxic Substances Portal (ATSDR, 2019) and ToxFAQs fact sheets (May 2019).

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead can be found in most parts of our environment. Much of it comes from human activities including burning fossil fuels, mining, and manufacturing. Lead has many different uses. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays. Because of health concerns, lead from gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years. Lead may enter the body via inhalation, ingestion, or dermal contact.

Exposure to lead is associated with toxicity to every organ system. Lead has been shown to cause damage to neurological, renal, cardiovascular, hematological, reproductive, and developmental systems.

3.4 Receptors Potentially Affected by the Site

A conceptual site model has been developed that identifies the receptors and exposure pathways through which they may encounter lead. The conceptual site model is provided in Appendix B.

4.0 Risk Evaluation

4.1 Human Health Screening Risk Evaluation

A human health screening evaluation (HHSE) presented below is based on the analytical results from the sampling and analysis performed as described in the PEA report.

4.2 Exposure Pathways and Media of Concern

The primary COC at the site is lead in soil, and ingestion and inhalation (aerosol) are the potential exposure pathways.

4.3 Exposure Concentrations and Chemicals

In March of 2020 and October of 2021, grab soil samples were collected from the shallow soil around the footprints associated with the Former School Building. Lead concentrations ranged from 0.523 mg/kg to 7,820 mg/kg in the soil. In general, soils exceeding the DTSC residential SL of 80 mg/kg were identified in the upper 2.5 feet bgs, with one drip sample, SS-S-D2-3, collected at 2.5 to 3 feet bgs was reported with 128 mg/kg.

4.4 Human Health Screening Levels

Site-specific risk-based screening levels (RBSLs) have not been evaluated for the site. Detectable concentrations of lead in soil were compared to the residential land use screening level of 80 mg/kg, established by Office of Environmental Health Hazard Assessment (OEHHA), and adopted by DTSC, and based on the Lead Spread Model. Detectable concentrations of VOCs were compared using DTSC-SL values, as applicable (DTSC, 2022).

4.5 Site Characterization

Based on a review of historical information, site consisted of undeveloped land from at least the mid-1890s through 1910, and was developed with a school building from the mid-1930s through May 2020, when the building was demolished with the concrete pad, stairs, and utilities were left in place. As of 2020, the site is enclosed with construction fencing and geofabric material was placed over the exposed soils to reduce the potential for dust generation. The site has remained relatively unchanged from 2020 through the present. According to the city directories and site reconnaissance conducted for the Phase I ESA, the site and parent tract have been occupied by Henderson Elementary School / Lodi Unified School District from at least 1981 through the present.

The parent parcel adjoins the site on all sides and is occupied with the Henderson Middle School and the Valley Robotics Academy. The site is adjoined with a classroom building to the north, asphalt pavement to the east, and portable classrooms to the south and west.

The site and its topographic environment are shown on the United States Geological Survey (USGS), Cotati, California 7.5 Minute Series Topographic Map dated 1980. No wetlands, streams, springs, ponds, or other water sources are mapped on the National Wetlands Inventory⁵. The closest surface water, according to the topographic map, is the South Main Canal, located approximately 1.25 miles east of the site.

⁵ <https://www.fws.gov/wetlands/data/mapper.html>

4.6 Ecological Screening Evaluation Results

An ecological risk assessment was performed as part of the PEA report to identify potential habitats that may be affected by Site COPCs. This evaluation is based on criterion outlined in DTSC's PEA Guidance Manual, dated January 1994 (revised October 2015). The Ecological Screening Evaluation was provided in the PEA report. Based on the findings of the ecological risk assessment, it is Terracon's opinion that the proposed removal action at the site would have no effect on federal or state listed species or suitable habitat.

4.7 Cleanup Goals

As discussed in Section 3.1, lead is the contaminant of concern (COC) for the site. Following the DTSC-SL guidance, a residential SL of 80 mg/kg for lead established by DTSC, which shall be the cleanup goal (CG) used for this school site.

The CG listed above are responsive to the RAO identified in Section 1.1. The CG will be considered achieved when confirmation soil samples collected from the excavation areas are reported with analytical data of lead at or below the respective CG. A 95 percent upper confidence limit (95% UCL) calculation of the arithmetic mean of the data set that includes the laboratory confirmation sample results in the impacted area and previous analytical results not included within the volume of impacted soils removed from a particular area during excavation may be used to determine whether the CG for lead has been achieved. If necessary, a 95% UCL calculation to determine whether the CG has been achieved will be completed in consultation with DTSC, and will be considered only when the excavation has been completed, confirmation sample results have been received, and "hot spots" have been effectively removed from the impacted area.

5.0 Engineering Evaluation / Cost Analysis (EE / CA)

An Engineering Evaluation/Cost Analysis (EE/CA) was conducted for the proposed removal action at the site in accordance with the US. Environmental Protection Agency (USEPA) guidance, titled "*Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA*" [USEPA, 1993]. It was prepared as part of the site RAW to aid in the evaluation of remediation alternatives for the mitigation of impacted soils at the site. The proposed removal action at the site is considered to be a non-time-critical removal, based on the risk evaluation and site considerations. Immediate redevelopment of the site is not planned, but has potential for future development with a shade structure or parking area.

This EE/CA will be used as the basis for the planned non-time-critical removal action. As the oversight agency for the removal action, DTSC has final authority of the selected alternative and of overall public participation activities.

5.1 Removal Action Scope

This RAW sets forth the remedy to address the near-surface impacts to soil by defined lead at the site. The estimated volume of soil proposed for the removal action is approximately 300 cubic yards of soil from the exterior of the former school and shed structures, based on the analytical data gathered during the previous site investigations. Refer to Exhibit 4 of Appendix A for the proposed excavation area and confirmation sampling.

The goals and objectives of the proposed RAW are presented in Section 1.1. The CG for lead is described in Section 4.7.

5.2 Evaluation of Removal Action Alternatives

This RAW proposes a removal action that aims to prevent, minimize, stabilize, mitigate, or eliminate the release or threat of release of a hazardous waste or substance at the site. In addition to the “No Action” alternative, three common alternatives were identified. A screening process based on EE/CA evaluation criteria (effectiveness, implementability, and relative cost) and DTSC’s project guidance (general scientific and engineering evaluation) was then used to evaluate the applicability of options to treat or otherwise remediate lead in soils at the site.

5.2.1 EE/CA Alternative Evaluation Criteria

The criteria listed below were used during this evaluation process in accordance with USEPA guidance (USEPA, 1993).

Effectiveness: Threshold and Balancing Factors

- Performance and reliability to eliminate or reduce the risk associated with the identified contamination (in terms of toxicity, mobility, or volume) at the site.
- Overall protection of public health and the environment (threshold factor).
- Compliance with applicable or relevant and appropriate requirements (ARARs) presented in Section 6.0 (threshold factor).
- Long- and short-term effectiveness (balancing factor).
- Reduction of toxicity, mobility, or volume through treatment (balancing factor).
- Ability to meet the RAOs presented in Section 1.1 (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.

Relative Cost: A Balancing Factor

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

5.2.2 Description and Comparative Cost Analysis

A screening evaluation was conducted to assess remedial technologies and process options for mitigating the impacted soil present at the site. Based on the RAOs presented in Section 1.1, the following three alternatives were identified and developed for the proposed removal action at the site. Screen-out decisions were made based on scientific consideration and engineering judgment that indicated the remedial action would either be ineffective in achieving RAOs, inappropriate for remediating lead, or were not cost-effective (especially with consideration of the relatively small volume of lead-impacted soil at the site).

5.2.2.1 No Action

The “No Action” alternative was evaluated as a baseline to which the relative benefits of the other alternatives could be compared. The “No Action” alternative does not meet the threshold criteria of effectiveness.

5.2.2.2 Treatment

Treatment is an option to mitigate in-situ metals in soils; however, the effectiveness of this method of treatment for the identified COC is deemed less effective with a higher relative cost than removal of the impacted soils.

5.2.2.3 Institutional Controls and On-site Containment (Capping)

The future proposed land use of the site is undetermined and may remain as vacant land for the foreseeable future. Future construction may take place. Based on this proposed use, capping of the impacted soils is not a feasible option for remediation based on long-term site use.

5.2.2.4 Excavation and Off-Site Disposal

Excavation and removal of impacted soils is deemed the most effective method of removing the lead hazard in soil. Soil will be directly loaded into 20-yard roll-off bins for immediate transport and disposal at a licensed receiving facility.

5.3 Description of Selected Remedy

The recommended removal action remedy combines excavation with off-site disposal of the impacted soil. The activities that would be conducted to implement this removal action are described below.

- Excavate approximately 300 cubic yards of impacted soil (or approximately 450 tons) from identified locations. See Exhibit 4 of Appendix A.
- Directly load soils into 20-yard roll-off bins for immediate transport and disposal at a licensed receiving facility.
- A total of approximately 30 truckloads of soil will be required to removal the 300 cubic yards (or approximately 450 tons) from the site. This estimate proposes that approximately 15 tons of soil can be loaded in each truck.
- Conduct confirmation sampling, compare confirmation data to the CG, and if necessary excavate additional volume until the CG is met.
- Import clean fill material and backfill the excavation areas up to level with the surrounding grade.

5.4 Estimated Costs of Selected Remedy

The budgetary estimate of probable costs to implement the selected remedy of excavation and off-site disposal is \$265,000. A rough cost breakdown for the proposed remedy is provided below:

Prepare RAW:	\$30,000
Field Excavation, Monitoring, and Confirmation Sampling/Analysis:	\$85,000
Transport and Off-Site Class II Disposal of Impacted Soils:	\$75,000
Site Restoration:	\$30,000
Preparation of the Removal Action Completion Report:	\$15,000
DTSC Oversight:	\$30,000

6.0 Applicable or Relevant and Appropriate Requirements

Applicable or relevant and appropriate requirements (ARARs) for this project shall include requirements protective of school children and the environment at Henderson Middle School. The previous PEA performed at the site identified the presence of lead in soil exceeding the site-specific CG as approved by DTSC. The proposed remedial action consists of excavation of impacted-soil and off-site disposal. The removal action objectives must be consistent with California Office of Environmental Health Hazard Assessment (OEHHA) as established by California Health and Safety Code Section 25249.12 and adopted by the DTSC in the HERO Note 3, published June 2020.

6.1 Chemical-Specific ARARs

Chemical-specific ARARs are discussed below.

6.1.1 Risk Screening Levels

DTSC has provided recommended screening levels derived using DTSC-modified exposure and toxicity factors in soil, tap water, and ambient air. These levels are presented in HHRA Note 3, dated May 2022. No RBSLs have been established for this site.

6.1.2 Air Quality Management

The California Air Resources Board (CARB) and the USEPA have adopted ambient (outdoor) air quality standards, which are legal limits on outdoor air pollution designed to protect the health and welfare of the public. Ambient air pollution in the region of the site is regulated by the San Joaquin Valley Air Quality Management District (SJVAQMD) and the California Ambient Air Quality Standard (CAAQS). The SJVAQMD Regulation 11,

Rule 1 and CAAQS requires that ground level lead concentrations in air not exceed 1.5 microgram per cubic meter ($\mu\text{g}/\text{m}^3$) averaged over a 30-day average.

Dust control measures and monitoring activities will be implemented at the site during each phase of the removal action, as set forth in Section 7.0. Measured total dust levels will be compared to site action levels. The site action level for total dust in the worker breathing zone will be the CAAQS for Particulate Matter (PM₁₀) on a 24-hour Time-Weighted Average exposure limit of $50 \mu\text{g}/\text{m}^3$.

The primary dust control measure to be used is application of potable water mists during earthwork activities in an amount that minimizes dust while not creating a runoff condition. Water use will be observed and controlled by the LUSD on-site representative during removal actions.

6.1.3 Environmental Health and Safety Plan (EHASP)

Contractors will be responsible for operating in accordance with the most current requirements of Title 8, California Code of Regulations, section 5192 (8 CCR 5192) and Title 29, Code of Federal Regulations, section 1910.120 (29 CFR 1910.120), Standards for Hazardous Waste Operations and Emergency Response (HAZWOPER). On-site personnel are responsible for operating in accordance with applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in 8 CCR General Industry and Construction Safety Orders and 29 CFR 1910 and 29 CFR 1926, Construction Industry Standards, as well as other applicable federal, state and local laws and regulations. Personnel shall operate in compliance with California OSHA requirements.

A site-specific EHASP has been prepared for the site in accordance with current health and safety standards as specified by the federal and California OSHA. The EHASP is included as Appendix C.

The provisions of the EHASP are mandatory for personnel of the LUSD and its contractors who are at the site. Subcontractors doing fieldwork in association with this RAW shall either adopt and abide by the EHASP or shall develop their own safety plans which, at a minimum, meet the requirements of the EHASP. On-site personnel shall read the EHASP and sign the "Personnel Acknowledgment" form (included in the EHASP) before starting on-site activities.

6.2 Action-Specific ARARs

Action-specific ARARs are discussed below.

6.2.1 Waste Management

As discussed in Section 2.5.5, pre-disposal waste characterization sampling and analysis has been completed for soils planned for excavation and disposal. The results of the waste characterization work indicates that soils generated from the site can be classified as a non-hazardous waste.

6.2.2 California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA), modeled after the 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. A CEQA report was not prepared for the site and associated work.

6.2.3 Stormwater Discharge

The State Water Resources Control Board (SWRCB), as part of the National Pollutant Discharge Elimination System (NPDES), has adopted a statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activity (General Permit) to address discharges of storm water runoff from construction projects that encompass one acre or more in total acreage of soil disturbance. Construction activities subject to the General Permit include demolition, clearing, grading, excavation, soil stockpiling, material storing, onsite staging, offsite staging, and other land disturbance activities. To obtain coverage under the General Permit, dischargers are required to electronically submit the Permit Registration Documents (PRDs), which includes a Notice of Intent, Storm Water Pollution Prevention Plan (SWPPP), and SWPPP Compliance Checklist and mail the appropriate permit fee to SWRCB. The SWPPP is required to specify Best Management Practices (BMPs) to prevent construction pollutants from contacting storm water and with the intent of keeping products of erosion from moving offsite into receiving waters. The discharger is required to obtain coverage under the General Permit prior to commencement of construction activities. When construction is complete, or ownership has been transferred, the discharger is required to file a Notice of Termination (NOT) with the applicable California Regional Water Quality Control Board agency certifying that State and local requirements have been met in accordance with the General Permit. The total acreage of the areas to be disturbed during the removal action is approximately 0.28-acre. Therefore, an NPDES General Permit is not required. Although a SWPPP is not required for this project, BMPs will be implemented to reduce or eliminate sediment and other pollutants from entering existing storm water drains located in adjoining street drainage systems. Depending on weather conditions at the

time of removal action activities, the following BMPs will be implemented, as appropriate:

- Control of runoff from stored soil by covering each roll-off bin with water impermeable lid and locking while not in use;
- Temporary perimeter controls with silt fencing and/or filter roll barriers;
- Protection of storm drain inlets with filter fabric and sand/gravel bag barriers;
- Stabilized construction entrance/exit with truck tracking controls; and
- Post construction erosion control measures (e.g., vegetative ground cover).

6.2.4 Quality Assurance Project Plan (QAPP)

This project will include the collection and analysis of soils samples during removal action. Field analyses will be conducted using a hand-held x-ray fluorescence (XRF) meter that will provide relative quantitative measurements for lead concentrations in soils. Quality assurance/quality control measures that will be used during project execution are documented in the Quality Assurance Project Plan (QAPP), which is provided in Appendix D. Adherence to the QAPP will enhance the likelihood that field and analytical data collected meet project Data Quality Objectives (DQOs) and RAOs to support decisions for redevelopment of the site.

6.3 Public Participation

DTSC has developed a public participation strategy to evaluate the level of public interest and ensure that the local community is informed of the proposed removal action, as detailed in the subsections below. Based on expressed community interest, DTSC may hold a public comment period and, if appropriate, a public meeting (during the public comment period) before approving the RAW.

Previous public participation activities conducted during the PEA comprised the following:

- Notices of the proposed field work were posted within line-of-site of Henderson Middle School on September 20, 2021. This provided local public notice more than the required five-day notice prior to field activities, which commenced on October 5, 2021.
- LUSD made the PEA Report available for public review and comment from April 18, 2022 to May 18, 2022, at the LUSD main office, the Lodi Library, and at the DTSC Office in Sacramento. A public hearing was held on May 10, 2022. Notice of the public review period and public hearing was published in the Lodi News-Sentinel, a weekly newspaper of general circulation, on April 19, 2022.

6.3.1 Community Profile Report

DTSC will prepare a community profile report for the site. The community profile report will be made available under separate cover for public review at the following Information Repositories:

Information Repositories	Hours of Operations
LUSD District Office 1305 East Vine Street, Lodi, California 95240 P: 209-331-700	Monday – Friday: 8AM – 5PM Saturday – Sunday: Closed
Lodi Library 201 West Locust Street, Lodi, California 95240 P: 209-333-5566	Monday: 10AM – 6M Tuesday: 10AM – 6M Wednesday: 10AM – 6M Thursday: 12PM – 8PM Friday: Closed Saturday: 10AM – 5PM Sunday: 10AM – 2PM
DTSC Office 8800 Cal Center Drive, Sacramento, California 95826 P: 916-324-1826	Monday – Friday: 8AM – 5PM Saturday – Sunday: Closed

The community profile report is based on information from a variety of sources, including file review, site visits, demographic data, the community survey described in Section 6.1.1, interviews, and discussions with representatives of the local elected officials. The community profile report will be updated as necessary.

6.3.2 Public Notice for RAW

A public notice will be published in a local newspaper informing the community of this proposed soil cleanup removal action and of the availability of the administrative record file for public inspection at three established Information Repositories, listed in the above section.

Copies of the PEA, this RAW, and the community profile report will be placed in the Information Repositories for access by community members. Project documents may also be found on the DTSC EnviroStor database public access website (<http://www.envirostor.dtsc.ca.gov/public/>).

6.3.3 Community Update

A Community Update will be circulated to residences and businesses within approximately $\frac{1}{4}$ mile of the site, to state and local officials, the DTSC priority mailing list, and to other interested stakeholders. The Community Update will provide a brief site background and site history, summary of investigation findings, a summary of the RAW, information regarding compliance with the California Environmental Quality Act (CEQA) for the site, steps to be taken during the cleanup, and contact information. The Community Update will also be made available under separate cover for public review in the Information Repositories.

6.3.4 Work Notice

If the response action is not implemented within the time frame specified in the Community Update, then a separate Work Notice will be circulated to residences and businesses within line-of-sight of the site, and to other interested parties, at least five days prior to the start of removal-action field activities. The Work Notice will provide details on the planned dates and hours of operation for the field activities.

6.4 California Department of Public Health ARARs

In general accordance with California Code of Regulations, Title 17, *Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards*, the removal action will be conducted under the oversight of a Certified Lead Inspector/Assessor; soil sampling activities for the removal action will be conducted by a Certified Lead Sampling Technician; and, the excavation and off-haul of the lead-impacted soils will be conducted by a Certified Lead Supervisor and Certified Lead Worker.

Within five days of the start of removal activities, Terracon will prepare and submit CDPH Form No. 8551, Abatement of Lead Hazards Notification. In conjunction with the submittal timeline of the Removal Action Report (RAR), Terracon will prepare and submit CDPH Lead Hazard Evaluation Report Forms No. 8551 and 8552. Forms No. 8551 and 8552 will be prepared by the Certified Lead Inspector/Assessor.

A copy of applicable CDPH forms 8551 and 8552 and lead certifications for the selected removal contractor are included in Appendix G.

6.5 Other ARARs

Necessary permits and approvals identified in this RAW will be obtained prior to removal activities. Upon approval from DTSC, removal activities will be performed by a California-licensed general engineering contractor with a hazardous substance removal

certification (Class A-HAZ) with oversight from a California-registered geologist or professional civil engineer.

In general accordance with California Education Code section 17213.2 (e), if a previously unidentified environmental concern is discovered during the school construction process, LUSD will cease construction activities in the area of concern, notify DTSC, and take necessary response actions as required by DTSC.

7.0 Removal Action Implementation

Data from the investigation of the site indicates that lead is present in soil at concentrations exceeding the respective CG. The CG for this removal action are presented in Section 4.7. An Engineering Evaluation/Cost Analysis (EE/CA) for the removal is included in Section 5.0. The most effective remedial action has been determined to be removal consisting of soil excavation and off-site disposal. Exhibit 4 illustrates the planned excavation areas. Various aspects of the removal action implementation are discussed in the subsections below.

The project proponent for this voluntary removal is LUSD. Upon receipt of DTSC's approval, removal activities will be performed by a California-licensed general engineering contractor with oversight of a California-registered geologist or professional Civil Engineer, hired by LUSD.

Removal, transportation and disposal will be performed in general accordance with applicable federal, state, and local laws, regulations, and ordinances. Field operations shall follow the suggested operational guidelines to prevent cross-media transfer of contaminants, as specified in "Best Management Practices (BMP) for Soils Treatment Technologies" (USEPA, 1997).

The removal action will be performed in the following sequence:

- Impacted soil at the site will be excavated and directly loaded into 20-yard roll-off bins for transport to a licensed receiving facility.
- Confirmation soil samples will be collected from the bottoms and sidewalls of the excavation areas to assess whether the CGs have been met in the excavation areas.

7.1 Field Documentation

Terracon will be responsible for maintaining a field logbook during the removal action activities. The field logbook will serve to document observations, personnel on-site, equipment arrival and departure times, and other vital project information.

7.1.1 Field Dailies

Field dailies will document where, when, how, and from whom vital project information was obtained. Daily entries will be complete and accurate enough to permit reconstruction of field activities. Dailies will be bound with consecutively numbered pages. Each page will be dated and the time of entry noted in 24-hour notation. Entries will be legible, written in black or blue 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, corrections will be made by crossing a line through the error and entering the correct information. Corrections will be dated and initialed. No entries will be obliterated or rendered unreadable. Entries in the field dailies will include at a minimum the following for each fieldwork date:

- Site name and address;
- Recorder's name;
- Team members and their responsibilities;
- Time of site arrival/entry on site and time of site departure;
- Other personnel on-site;
- A summary of on-site meetings;
- Quantity of impacted soils excavated;
- Quantity of impacted soils (in terms of RCRA hazardous wastes, non-RCRA hazardous wastes, and non-hazardous wastes) temporarily stored on-site;
- Quantity of excavated soils in truckloads (in terms of RCRA hazardous wastes, non-RCRA hazardous wastes, and non-hazardous wastes) transported off-site;
- Names of waste transporters and proposed disposal facilities;
- Copies of manifests or other shipping documents (such as bills of lading) for waste shipments;
- Quantity of import fill material in truckloads;
- Deviations from this RAW or the site HASP;
- Changes in personnel and responsibilities as well as reasons for the changes;
- Levels of safety protection; and
- Equipment model, serial number, and calibration readings for equipment used.

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

- Sample identification number
- Sample location and description
- Site sketch showing sample location and measured distances
- Sampler's name(s)
- Date and time of sample collection
- Designation of sample as composite or grab

- Type of sample (i.e., matrix)
- Type of preservation
- Type of sampling equipment used
- Field observations and details important to analysis or integrity of samples (e.g., heavy rains, odors, colors, etc.)
- Instrument readings (e.g., X-ray fluorescence analyzer [XRF] or photoionization detector [PID], etc.)
- Transport arrangements (courier delivery, lab pickup, etc.)
- Recipient laboratory(ies)

7.1.2 Chain-of-Custody Records

Chain-of-custody records are used to document sample collection and shipment for laboratory analysis. Sample shipments for analyses will be accompanied by a chain-of-custody record. Form(s) will be completed and sent with the samples for each laboratory and each shipment. The chain-of-custody record will identify the contents of each shipment and maintain the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is 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. Chain-of-custody procedures are further discussed in the QAPP (Appendix D).

7.1.3 Photographs

Photographs will be taken at excavation areas, sample locations, and other areas of interest on-site, as necessary to verify information entered in the field daily. When a photograph is taken, the following information will be written in the field daily or will be recorded in a separate field photography log:

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

7.2 Site Preparation and Security Measures

Prior to equipment mobilization for the proposed removal action, site preparation activities may include site inspections, surveying, boundary staking, sampling, demarcation of hot spots, improvement of access roads, utility connections or disconnections, and installation of appropriate fences or barriers, as necessary.

7.2.1 Delineation of Work Zones

Field activities will be divided into three work zones: 1) exclusion zone(s), 2) decontamination zone(s), and 3) support zone(s)/staging area(s). These three types of zones are described in the subsections below.

7.2.1.1 Exclusion Zone(s)

The exclusion zone(s) will include the areas of impacted soil to be excavated, soil stockpiling areas, and soil loading areas for hauling off-site. The exclusion zone(s) will be clearly identified in the field with a combination of caution tape, temporary fenceings and/or barricades. Only authorized personnel will be allowed to enter the exclusion zone(s).

The lateral limits of excavations will be marked in the field by Terracon with stakes and/or high visibility paint before commencement of removal activities.

7.2.1.2 Decontamination Zone(s)

The decontamination zone(s) will be where soil, debris, and dust will be removed from equipment, transportation vehicles, and personnel leaving the exclusion zone(s). Decontamination of equipment and vehicles may consist of brushing and/or high pressure washing depending on weather conditions during the removal action. Decontamination of personnel may include the removal and disposal of personnel protection equipment (i.e. Tyvek suites, rubber gloves, etc.).

7.2.1.3 Support Zone(s)/Staging Area(s)

The support zone(s)/staging area(s) will be established to provide for administrative and support functions (command post, first aid station, rest area, portable toilet and wash station, etc.) necessary to keep the field activities operating smoothly. The general contractor shall provide potable water and wash facilities for the field personnel in this location.

7.2.2 Utility Clearance

Clearance of remaining utilities and other hazardous underground obstacles will be performed prior to initiating soil intrusion or subsurface investigation activities. Such possible obstacles may include water, electrical, gas, oil, communication cable, phone cable, TV cable, and sewer lines. At a minimum, the utility clearance will include notification of "Underground Services Alert (USA) 811 North" at least 72-hours prior to soil excavation activities. If possible, on-site utilities will be isolated and de-energized prior to the start of excavation.

In addition to calling the USA notification, a geophysical survey shall be conducted prior to the start of excavation activities. The survey shall utilize ground-penetrating radar (GPR) and magnetometer survey methods. The purpose of the survey is to attempt to determine the location of possible subsurface utilities in the area of proposed boring locations.

7.2.3 Security Measures

Security fencing will be installed around the proposed response action and support areas throughout the duration of the response action. To minimize the risk of trespassers or unauthorized personnel entering work areas, security measures may include, but are not limited to:

- 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. Visitors shall not be permitted to enter the site without first receiving site-specific health and safety training from the site safety coordinator.
- Installing appropriate barriers, as necessary, prior to beginning the excavation process to restrict access to sensitive areas such as exclusion zones. These barriers will typically consist of materials such as orange, plastic temporary construction fencing (approximately 4-feet high) held in place with metal or wood stakes at approximately 10-foot intervals.
- Providing adequate site security, as necessary, to ensure unauthorized personnel have no access to work areas and/or impacted materials.
- Before leaving the site, personnel must sign out in the visitor's log.
- Maintaining a safe and secure work area, including areas where equipment is stored or placed, at the close of each workday, as necessary.

Those requesting site access will be required to demonstrate a valid purpose and provide appropriate documentation to demonstrate they have received proper training required by the site-specific EHASP (see Appendix C).

7.2.4 Contaminant Control

Prior to beginning the overall excavation process, nearby residents will be notified of the upcoming work, as described in Section 6.3.2. Dust-generating work will be performed only between the hours of 7:30 a.m. and 6 p.m. from Monday to Friday and weekends or holidays from 9:00 a.m. to 5:00 p.m. Earth-moving activities (i.e. grading, excavation, and backfill) shall be limited to weekdays and to the hours between 7:30 a.m. and 5:30 p.m. As described below in Section 7.5, water will be applied as necessary for dust

suppression. As described below in Section 7.4, air monitoring at the property line of the site will be performed during excavation activities to assess whether substantial off-site migration of lead in airborne dust is occurring. Excavation work will be stopped if the air-monitoring action levels are exceeded.

7.2.5 Permits and Plans

Permits are not needed for the proposed scope of work.

7.2.6 Noise Control

Dust-generating work will be performed only between the hours of 7:30 a.m. and 6 p.m. from Monday to Friday and weekends or holidays from 9:00 a.m. to 5:00 p.m. Earth-moving activities (i.e. grading, excavation, and backfill) shall be limited to weekdays and to the hours between 7:30 a.m. and 5:30 p.m. LUSD shall not allow the use of earth moving construction equipment during established testing periods (e.g., finals week). Construction equipment will be properly maintained and equipped with noise reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations.

Equipment engine shrouds will be closed during equipment operation. When not in use, motorized construction equipment will not be left idling.

7.3 Excavation

To enable systematic review of the excavation areas recommended for soil cleanup, the removal of impacted soil will be conducted in "lifts" of no more than 1-foot in depth to the desired depth (i.e., 1 to 3.0 feet) at each identified excavation area (approximately 1 foot deep around the former shed area, and approximately 3.0 feet deep around the west, south and east side of the former school building), using a backhoe, bulldozer, excavator, shovel, or other type of earth-moving equipment. Based on results of confirmation sampling, additional excavation may be conducted.

Properly trained and equipped hazardous waste workers will complete fieldwork. Excavation areas will be controlled to avoid dust generation and off-site drift with soil wetting and air monitoring (at property perimeter and work area). The site will be controlled, and no excavation will be conducted in times of high wind conditions (i.e., wind speed in excess of 20 miles per hour) (refer to EHASP Section 5, Air Monitoring).

7.3.1 Confined Space Entry Requirements

For the proposed removal action, confined-space entry procedures do not apply. If such procedures become necessary, the site-specific EHASP (Appendix C) will be updated. The planned depths of excavation range from 1 to 3.0 feet bgs for this response action. Trenches of less than 5 feet deep will be shored or sloped as necessary to maintain stability. If over-excavation to depths of 5 feet or deeper becomes necessary, the trenches will be shored or sloped. No entry is planned for trenches of 5 feet deep or deeper - bottom confirmation samples will be collected using the excavator bucket, or using a disposable container attached to an extendable pole.

7.3.2 Soil Staging, Storage, Load-Out Operations, and Truck Route

As soil is excavated, it will be directly loaded into 20-yard roll-off bin trucks lined with polyethylene sheeting with water impermeable and lockable lids. The bins will be immediately transported to a licensed receiving facility. Trucks that are used for transporting excavated soil for off-site disposal will not require substantial decontamination because they will not be allowed access to the impacted areas. Prior to leaving the site, each truck load will be inspected for the following items:

- Exterior of truck cleaned of excess soil or debris
- Load fully covered
- Documentation verified

The loaded trucks will follow the route presented in Exhibit 5 – Proposed Truck Route. The proposed truck route is as follows;

- Exit the site and turn left (north) onto North Extension Road.
- At the stop turn left (west) onto West Harney Lane.
- Continue on West Harney Lane to North Devries Road and turn right (north).
- At West Highway 12 turn left (west) and continue to the junction of Interstate 5.
- Continue westbound on West Highway 12 for Potrero Hills Landfill, Suisun City, California.
- Turn onto Interstate 5 southbound for Kettleman Hills Landfill, Kettleman City, California, or US Ecology Landfill, Beatty, Nevada.

7.3.3 Decontamination Area

Entry to the impacted areas will be limited to authorized personnel and equipment only to avoid unnecessary exposure and related transfer of contaminants. Equipment will be decontaminated in a designated decontamination area before leaving the site as follows:

Decontamination Procedures

Equipment or trucks that come into contact with potentially impacted soil or water will be decontaminated to assure the quality of samples collected and/or to avoid cross contamination. Disposable equipment intended for one-time use will not be decontaminated but will be packaged for appropriate disposal. Decontamination will occur prior to and after each designated use of a piece of equipment or truck. Non-disposable sampling equipment used will be decontaminated using the following procedures:

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

Following excavation, portions of excavating equipment exposed to contact with potentially impacted soil or water will be dry-decontaminated with brooms, brushes and/or towels on top of plastic sheeting.

Clean bulky equipment will be stored on plastic sheeting in unimpacted areas. Cleaned small equipment will be stored in plastic bags. Materials to be stored more than a few hours will also be covered.

Water used for decontamination will be collected in drums, analyzed, and shipped off-site to an appropriate recycling or disposal facility. Soil removed from equipment will be added to the soil storage bins for off-site disposal.

7.3.4 Excavation Plan

The excavation will include the identified areas discussed in Section 3.2 and shown on Exhibit 4. The excavation will produce an estimated 300 cubic yards of waste material. An estimated 30 truckloads will be required to remove and transport the approximately 450 tons of excavated soil (i.e., approximately 300 cubic yards). To the extent feasible, the excavating equipment will stay out of the excavation areas or will only enter the excavation areas after the area has been excavated to the full planned excavation depth. This will help to limit cross contamination and track-out of impacted soil. Tentative work zones for the removal action are presented on Exhibit 4.

7.3.4.1 Potential Over Excavation

Over excavation may be necessary depending on the results of confirmation soil sampling as discussed in Section 7.6.2. Generally, if the lead concentration in a sidewall confirmation sample exceeds the CG, over excavation will be performed to move the sidewall outward by 3 to 5 feet, or further if warranted by XRF meter readings. Sidewall

over excavation will extend from the elevated confirmation sample location to the nearest non-elevated confirmation sample location in each direction or will extend the entire length of the sidewall where data is limited or in cases of short lengths. Generally, if lead concentrations in a bottom confirmation sample exceeds the CG, over excavation will be performed to move the bottom downward by 0.5 to 1.0 foot, or further if warranted by XRF meter readings. Bottom over excavation will be bound by the nearest non-elevated confirmation sample in each direction, or the entire area of the excavation. If over excavation is needed, it will be followed by additional confirmation sampling at the frequency set forth in Section 7.6.

7.4 Air and Meteorological Monitoring

Air and meteorological monitoring will be conducted during the soil removal action to achieve the following goals (refer to HASP Section 7, Air Monitoring and Site Action Levels):

- Identify and measure the air contaminants generated during the soil removal and decontamination activities to assign the appropriate personal protective equipment (PPE) and safety systems specified for those activities.
- Provide feedback to site operations personnel regarding potential hazards from exposure to hazardous air contaminants generated through site activities.
- Identify and measure air contaminants at points outside the soil removal and decontamination exclusion zones. Air monitoring will be conducted during work activities to measure potential exposure of sensitive receptors to site chemical constituents, as a result of removal activities.

7.4.1 Air Monitoring

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

- Monitoring dust concentrations 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 concentrations that exceed the site or community action levels (see Environmental Health and Safety Plan in Appendix C). No specific regulatory wind velocity restrictions for soil excavation in the subject area were found to exist.
- Earth moving operations will be suspended when wind speeds are large enough to result in visible dust emissions from the point-of-origin or crossing the site boundary, despite the application of dust mitigation measures.

- Assure that real-time aerosol monitors are properly calibrated and in good working condition. Real-time, data-logging aerosol monitors (Thermo Scientific PDR-1500 or equivalent) will be used, when required, to measure dust concentrations. Real-time information will be posted daily and discussed with site workers. As discussed below, measuring dust concentrations will provide adequate protection at this site, based on the concentrations of lead found in soil samples.
- Coordinate general site safety activities including daily hazard communication, safety practices and procedure briefings.
- Oversight of personal decontamination practices.
- General site safety leadership, support and recordkeeping activities.

7.4.2 Air Monitoring Strategy and Methodologies

Terracon will monitor dust concentrations in the following general locations (refer to HASP Section 5, Air Monitoring):

- Upwind (off-site property if possible)
- Proximate to the exclusion zone
- Up to three property-line / downwind locations
- As deemed necessary to determine employee exposure (i.e., in the worker breathing zone, to be determined Terracon)

Air monitoring will be conducted during removal action activities in which impacted soils are being handled or disturbed. The air-monitoring professional will record readings at least once every 15 minutes during dust-generating operations. In consultation with DTSC, this frequency may be changed based on-site conditions and newly available data. Each time the aerosol monitors are checked, the difference between the average upwind dust concentration and the average downwind dust concentration will be compared to the California Ambient Air Quality Standard (CAAQS) for Particulate Matter (PM₁₀) on a 24-hour Time-Weighted Average exposure limit for total dust of 50 µg/m³. This action level is below the Cal/OSHA permissible exposure limit (PEL) for employee exposure of 5 mg/m³.

The action level for lead will be <2.0 µg/m³ and is based on the CAAQS for a 30-day average exposure and assume the concentration of lead in dust is proportional to the 95% upper confidence limit (UCL) of the mean for lead in site soils.

7.4.3 Meteorological Monitoring

On-site wind direction will be monitored using a streamer attached to a pole (e.g. overhead utility pole) at a height of approximately 8 feet above ground surface. Locations of aerosol monitors will be adjusted as necessary based on wind direction.

7.5 Dust Control Plan

LUSD's general engineering contractor will implement appropriate procedures to control the generation of airborne dusts by soil removal activities. Such procedures will include but will not be limited to the following:

- The site air-monitoring professional will monitor dust levels in the locations outlined in Section 5.4. The site air monitoring professional will have the authority to stop-work in the event of that on-site activities generate dust levels in excess of $50 \mu\text{g}/\text{m}^3$ action levels. Liberation of dust during the investigation activities will be minimized as necessary with the use of water as a dust suppressant. The water will be available site utilities. LUSD's general engineering contractor will control dust generation by spraying water prior to daily work activities, during removal/loading activities, and at truck staging locations. Watering equipment will be continuously available to provide proper dust control. Generation of dust clouds with opacity greater than 20-percent will be avoided at times in accordance with SJVAQMD Regulation 6, Rule 1.
- The air monitoring professional will monitor to identify wind conditions that require cessation of work. Earth moving operations will be suspended when wind speeds are large enough to result in visible dust emissions from the point-of-origin or crossing the site boundary, despite the application of dust mitigation measures.
- Measurement of airborne dust levels at locations outlined in Section 7.4 using real-time, data-logging aerosol monitors (e.g., MIE Personal DataRam or PDM-3 MiniRam). At a minimum, an aerosol monitor will be placed upwind to monitor background and a second device will be placed on the excavation-equipment operator to provide "worker breathing zone" dust concentrations on the site.

These instruments will be calibrated daily and monitoring information posted daily and discussed with site workers. The monitors will be set to log dust levels as an average of readings every second over 5-minute periods and will be visually read at least once per hour during dust-generating operations. In consultation with DTSC, the frequency may be changed based on-site conditions and newly available data. Dust masks will be worn by site workers in the event particulate concentrations exceed $50 \mu\text{g}/\text{m}^3$ (see Appendix C – Environmental Health and Safety Plan).

7.5.1 Other Environmental Monitoring

Planned cultural and biological resource monitoring are described below.

7.5.1.1 Cultural Resources Monitoring

Prior to project ground disturbance, construction contractor(s) responsible for overseeing and operating ground-disturbing mechanical equipment (e.g., on-site

construction managers and backhoe operators) shall be alerted to the sensitivity of the project site for buried archaeological deposits. A qualified archaeologist shall be retained by the LUSD to conduct a “tailgate presentation” to alert relevant construction personnel of the appropriate procedures that should be undertaken if archaeological deposits or human remains are encountered during construction.

Should an archaeological deposit be encountered during project subsurface construction activities, ground-disturbing activities within 25 feet shall be redirected. A qualified archaeologist meeting the Secretary of the Interior’s Professional Qualifications Standards for Archeology shall be contacted to assess the situation, determine if the deposit qualifies as a historical resource, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. If the deposit is found to be significant (i.e., eligible for listing in the California Register of Historical Resources), LUSD shall be responsible for funding and implementing appropriate mitigation measures. Mitigation measures may include recordation of the archaeological deposit, data recovery and analysis, and public outreach regarding the scientific and cultural importance of the discovery. A report documenting methods, findings, and recommendations shall be prepared and submitted to LUSD for review. The final report shall be submitted to the Northwest Information Center at Sonoma State University. Significant archaeological materials shall be submitted to an appropriate local curation facility and used for future research and public interpretive displays, as appropriate. The District shall inform its contractor(s) of the sensitivity of the project area for archaeological deposits and shall verify that the directives discussed above will be included in the appropriate contract documents.

7.5.1.2 Biological Resources Monitoring

Adequate measures shall be taken to avoid inadvertent capture of raptor nests and other nesting birds protected under the Migratory Bird Treaty Act when in active use. The following steps will be used as a guideline for the adequate measures:

- If construction is proposed during the nesting season (February through August), a focused survey for nesting raptors and other migratory birds shall be conducted by a qualified biologist. The survey will be conducted no earlier than 14 days prior to the onset of tree removal or construction. The survey will identify active nests on the project site and vicinity of proposed construction.
- Construction may proceed with no restrictions if planned for the non-nesting season and/or no active nests are identified during the survey period.
- If bird nests are found, an adequate setback shall be established around the nest. The SAP location and construction activities restricted within this no-disturbance zone until the qualified biologist has confirmed that young birds have fledged and are able to function outside the nest location. Required setback distances for the no-disturbance zone shall be based on input received from the California

Department of Fish and Wildlife (CDFW) and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone shall be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the construction area.

- A report of findings shall be prepared by the qualified biologist and submitted to LUSD for review and approval prior to initiation of construction within the no-disturbance zone during the nesting season. The report either shall confirm absence of active nests or shall confirm that young within a designated no-disturbance zone have fledged and construction can proceed.

7.6 Confirmation Sampling

Once the impacted areas are excavated to the planned dimensions, confirmation soil samples will be collected from the bottom and each sidewall of each excavation area to verify contaminant removal.

Sampling of the excavation bottom will be conducted at a frequency of one sample per 100 square feet (10x10 SF area), or a minimum of one sample for every excavation area. Bottom confirmation samples will be collected from 0 to 6 inches below the bottom of the excavation.

Confirmation sampling of the sidewalls will be conducted at the following frequency of one sample per 10 linear feet, or a minimum of one sample for every directional change in sidewall less than 10 feet in length. Sidewall confirmation samples will be collected from 0 to 6 inches below the existing ground surface. Some of the excavation areas are bordered on one side by the foundation of an existing building. It will not be possible to sample the sidewall of an excavation where it extends completely up to an existing foundation.

Planned confirmation soil samples and associated analyses are listed depicted on Exhibit 4 of Appendix A. Based on the anticipated dimensions of the proposed excavation area, the following number of confirmation samples are anticipated:

Confirmation Sample Type	Estimate Number of Samples
Excavation Base Sample	28
Excavation Sidewall Sample	64

Samples will be collected at the surface to approximately 0.5 feet into the excavation bottom and side walls. The exact sample locations will be determined in the field.

Additional confirmation sampling will be implemented if visually impacted soil is encountered at excavation depth.

Confirmation samples will be collected directly into laboratory-provided sampling jars. The samples will be stored in an insulated container chilled with ice or blue ice until delivery to a California-certified laboratory. Samples will be delivered to the laboratory no later than the day following collection. The samples will be secured under proper chain of custody documentation and shipped via courier service to the laboratory. Confirmation soil samples will be analyzed using USEPA method 6010B for lead. Analytical results for confirmation soil samples will be compared to the CG. Exceedance of the CG in one or more confirmation samples will not necessarily result in additional excavation. If one or more samples have concentrations that exceed a CG, then additional statistical analysis may be used to assess whether additional excavation is warranted. Such statistical analyses may include techniques such as calculating the 95-percent upper-confidence-level-of-the-mean (95%-UCL) concentration for the remaining in-place concentrations.

If over excavation is warranted, then the excavation will be deepened and/or widened with DTSC concurrence. Further confirmation sampling will be conducted if over excavation is warranted. For over excavated areas, confirmation soil sampling will be conducted at a frequency of one sample for every 100 SF of bottom, and one sample for every 10 linear feet of sidewall (generally starting directly opposite the original confirmation sample that had an elevated COC concentration). This will continue as necessary until CGs are met to the satisfaction of DTSC.

7.7 Transportation Plan for Off-Site Disposal

LUSD will hire qualified transporters (Contractor) for hauling the excavated soil off-site. The selected transporter shall be fully licensed and insured to transport the excavated soils. The Contractor shall be responsible for providing all the materials required for the packaging, labeling, marking, placarding and transportation of hazardous wastes and hazardous materials in conformance with Department of Transportation standards, IATA DGR and EP 415-1-266.

Prior to the transportation of the waste soil, a contingency plan prepared by the Contractor will be provided. The contingency plan will include an operations plan for emergency situations including, but not limited to, vehicle breakdowns, accidents, spills, leaks, fires, and explosions.

Soils will be excavated using backhoe equipment, or similar, and directly loaded into dump trucks. The dump trucks will be lined and equipped with locking lids that will be secured prior to exiting the site. A flag person shall be located at the gate entrance to the Exclusion Zone to assist the truck driver in safely entering and existing the Exclusion

Zone. Traffic will be coordinated in such a manner that at any given time, no more than one hauling truck will be within the Exclusion Zone. While on-site, all vehicles will maintain slow speeds (less than 5 miles per hour) for safety purposes and dust control measures.

Soils will be transported to Potrero Hills Landfill in Suisun City, California for disposal.

7.8 Site Restoration

After completion of removal action activities, the excavation areas will be backfilled in compacted lifts using clean imported fill material. Prior to bringing fill material onto the site, it will be tested in accordance with DTSC's Information Advisory on Clean Imported Fill Material (Appendix E).

7.9 Variance or Explanation of Significant Differences (ESD)

After the RAW is approved and finalized, new information may be received or generated that could affect the implementation of the remedy selected in this RAW (as specified in Section 5.3) or could prompt the reassessment of that remedy. Appropriate action will be taken to address the newly developed information (which deviates from or is not covered by the approved RAW). New information may include:

- Change in scope, performance or cost of the selected remedy; or
- Advances in remediation science and technology which may impact the remedy selection.

Within 24 hours after discovering the new information the responsible party will:

- Notify DTSC by telephone call and/or electronic mail; and
- In consultation with DTSC, take an appropriate action.

7.10 Fundamental, Significant, or Minor Changes

Based on an evaluation and depending on the extent or scope of modification being considered, one of the following three types of change may be classified, determined, and followed: fundamental changes, significant changes, or minor changes.

7.10.1 ESD Process

When an ESD is necessary, LUSD will prepare and file a Notice of Exemption (NOE) or other applicable CEQA documents for the planned ESD with the Office of Planning and Research as part of its approval process for the ESD. Protective measures considered in the RAW and in the CEQA documents will apply to the removal action.

7.11 Field Variances

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 for LUSD's environmental consultant when deviations from this RAW are necessary. DTSC will be notified of the modification immediately, and a verbal or written approval will be obtained from DTSC before implementing the modifications, as appropriate. Modifications to the approved RAW will be documented in the field logbook and in the Report of Completion for this RAW.

8.0 Project Schedule and Report Completion

LUSD is prepared to proceed with removal activities upon receiving approval of this RAW. The removal action will include excavation, confirmation sampling, and off-site disposal.

The following chart indicates the anticipated schedule of implementation and subsequent reporting for this project. A Removal Action Completion Report (RACR), documenting the activities conducted pursuant to this RAW and stating the opinion that the activities have been conducted consistent with this RAW, will be prepared expeditiously upon completion of the removal action and submitted to DTSC for review and approval.

Task	Weeks to Complete
Site Preparation – Completed March 2020	–
Structural Demolition – Completed March 2020	–
Pre-Disposal Soil Characterization – Completed March 2023	-
Supplemental Site Investigation (SSI) – Completed July 2024	-
RAW Review and Comment Period	8
Finalization of RAW	2
Soil Excavation, Off-haul, and Disposal	2
Confirmation Soil Sampling and Waste Characterization	2
Prepare RACR	4
DTSC Site Certification	6

9.0 References

California Environmental Protection Agency, Department of Toxic Substances Control, Preliminary Endangerment Assessment Guidance Manual, January 1994 (Revised October 2015).

California Environmental Protection Agency, Department of Toxic Substances Control, HERO HHRA Note 3, DTSC-modified Screening Levels (DTSC-SLs), May 2022.

Terracon Consultants, Inc., Limited Pre-Demolition Hazardous Materials Survey, Henderson Middle School, March 13, 2019.

Terracon Consultants, Inc., Summary Soil Sampling and Analysis, Henderson Middle School, March 13, 2020.

Terracon Consultants, Inc., Phase I Environmental Site Assessment, Henderson Middle School, July 10, 2020.

Terracon Consultants, Inc., Preliminary Endangerment Assessment Work Plan, Henderson Middle School, April 12, 2021.

Terracon Consultants, Inc., Preliminary Endangerment Assessment Report, Henderson Middle School, December 23, 2022.

Terracon Consultants, Inc., Work Plan for Pre-Disposal Soil Characterization, Henderson Middle School, March 14, 2023.

United States Environmental Protection Agency, Office of Emergency and Remedial Response, Guidance on Conducting Non-Time Critical Removal Actions Under CERCLA, dated August 1993.

APPENDIX A – Exhibits

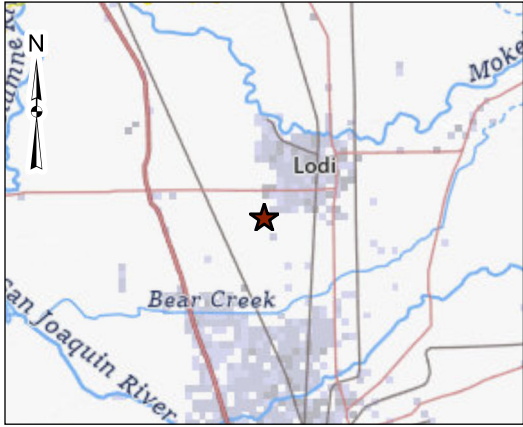
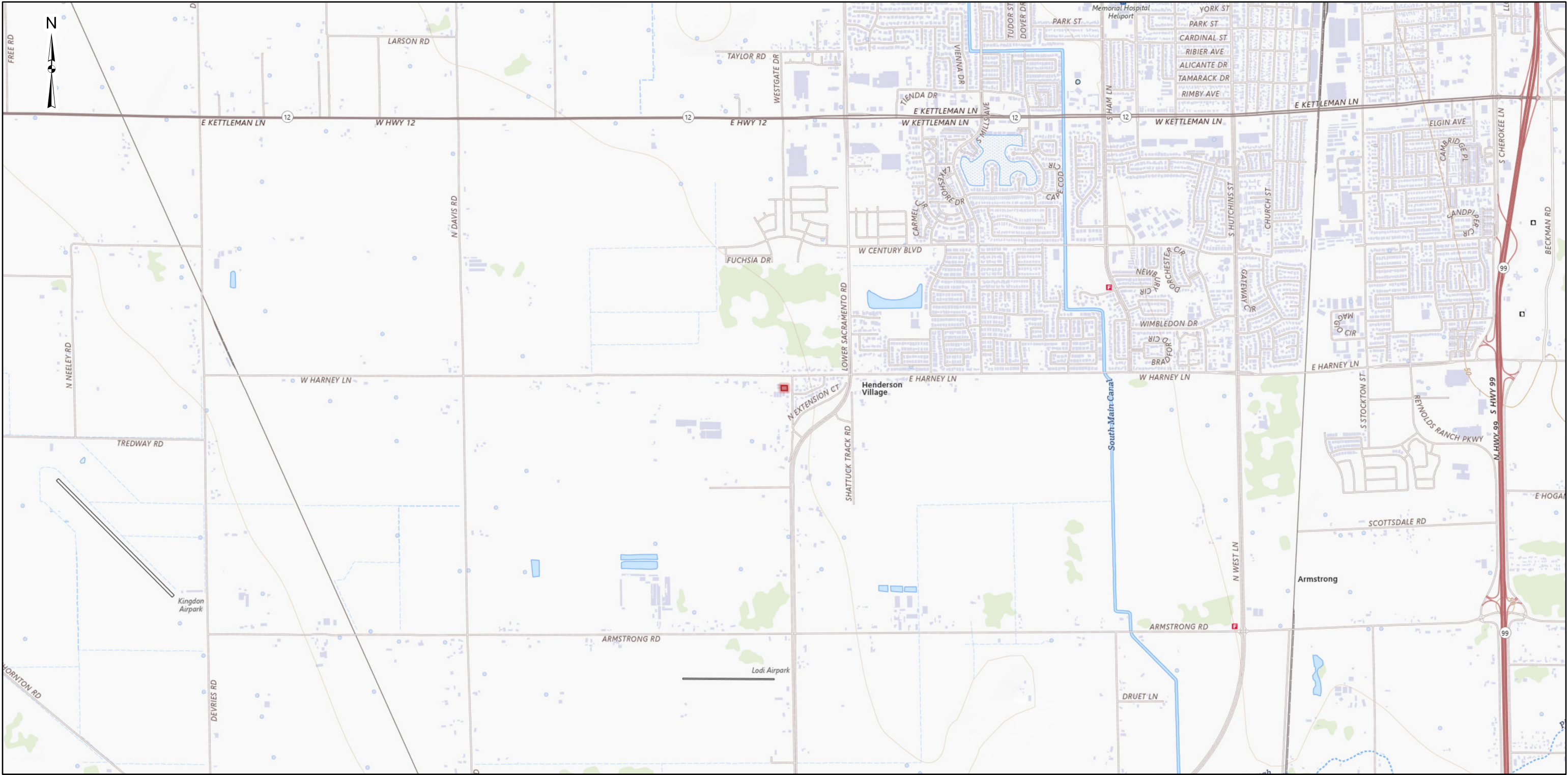
Exhibit 1 – Topographic Map

Exhibit 2 – Site Map

Exhibit 3 – Lead Concentration Results

Exhibit 4 – Proposed Removal Action Fieldwork

Exhibit 5 - Proposed Truck Route



 Approximate Site Boundary

1:24,000  Feet
0 1,000 2,000 4,000

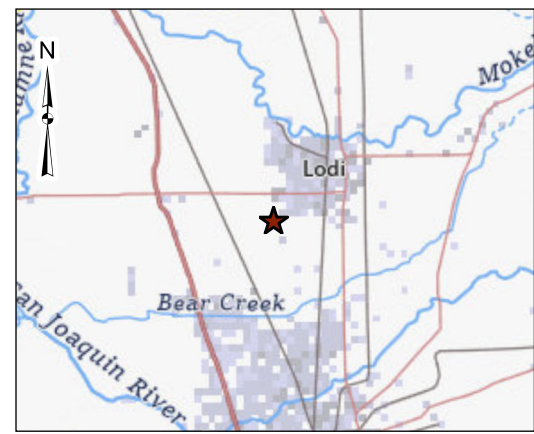
Project No.:
NA227049
Date:
04/26/2023
Drawn By:
SMB
Reviewed By:
TM



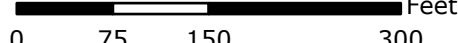
902 Industrial Way Lodi, California 95240
P: (209) 367-3701 terracon.com

Topographic Map
Henderson Middle School - Original Classroom Building 13451 North Extension Road Lodi, San Joaquin County, California

Exhibit
1



-  Approximate Site Boundary
-  San Joaquin County Parcel Boundaries and Parcel Numbers

1:1,800  Feet
0 75 150 300

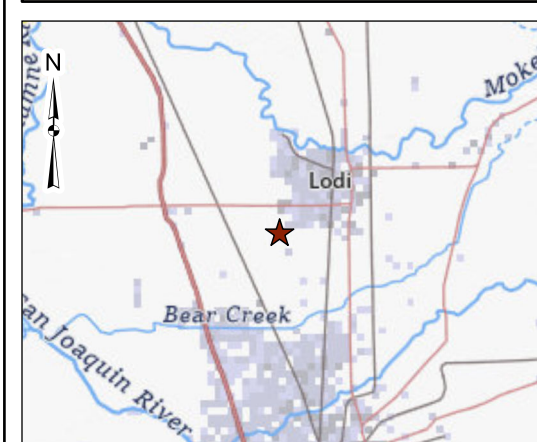
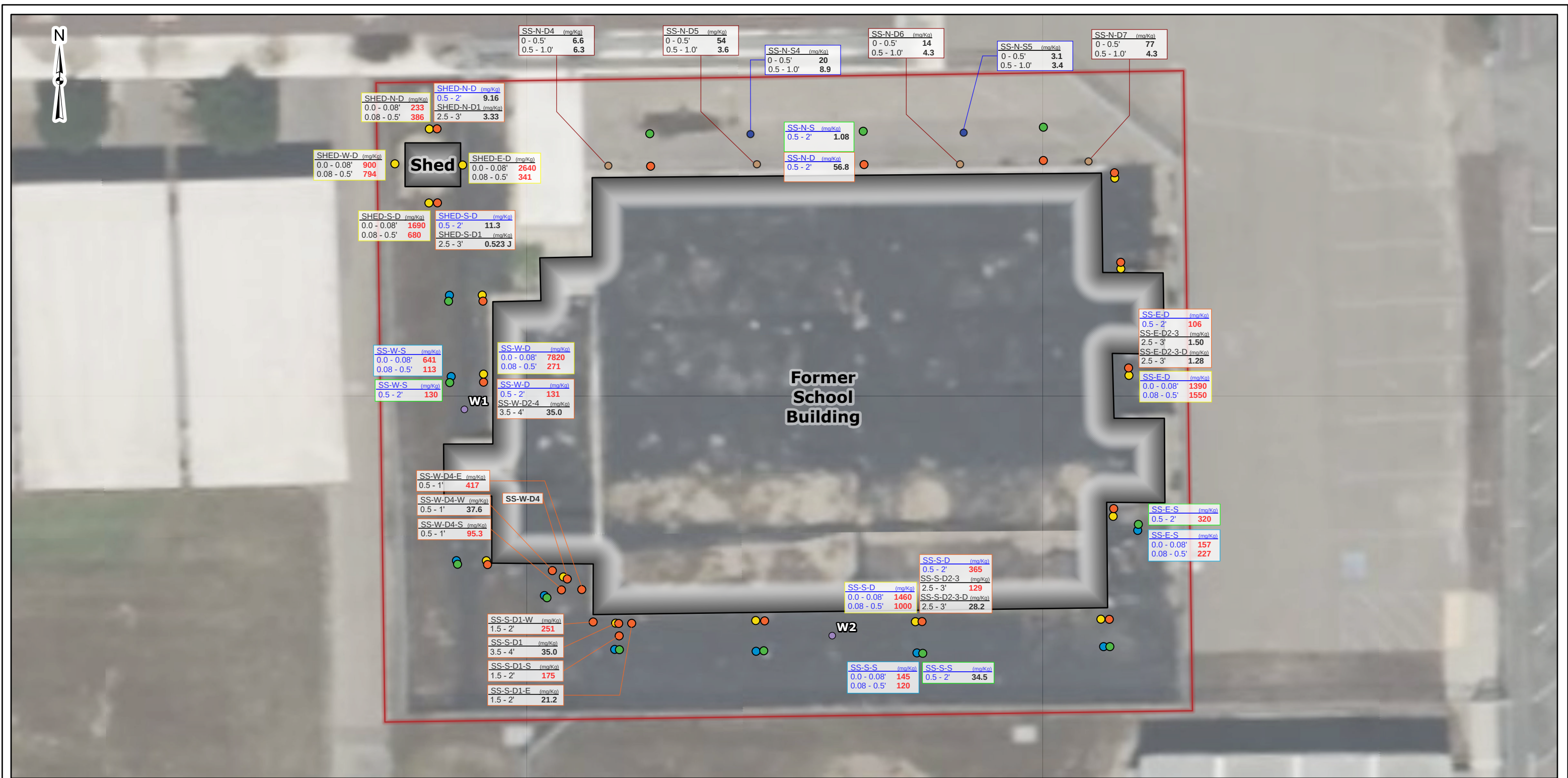
Project No.:
NA227049
Date:
04/26/2023
Drawn By:
SMB
Reviewed By:
TM



902 Industrial Way Lodi, California 95240
P: (209) 367-3701 terracon.com

Site Map
Henderson Middle School - Original Classroom Building 13451 North Extension Road Lodi, San Joaquin County, California

Exhibit
2



Sample Locations, Terracon October 2021

- Drip Line Sample
- Six-foot Step Out Sample

Sample Location, Terracon March 2020

- Drip Line Sample
- Six-foot Step Out Sample

Sample Location, Terracon April 2023

- Pre-Disposal Soil Characterization Boring

Sample Location, Terracon July 2024

- Drip Line Sample
- Six-foot Step Out Sample
- Former Building Footprint
- Approximate Site Boundary

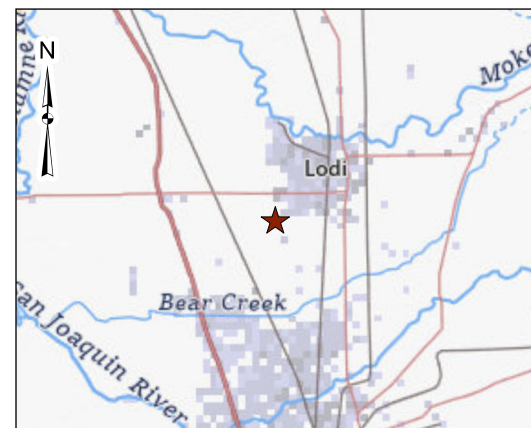
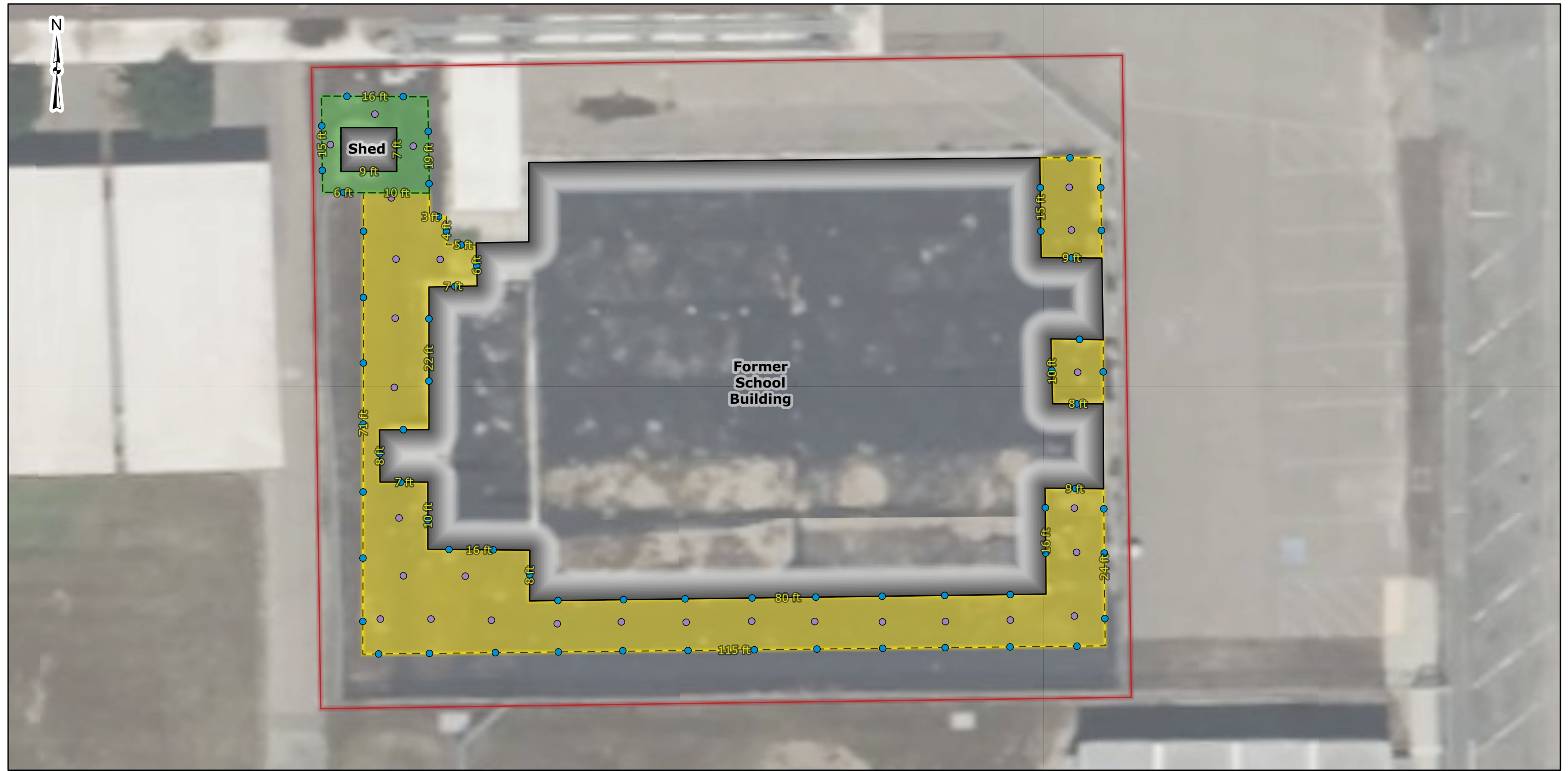
Note: Drip Sample Location refer to soil samples collected from near the base of the structure perimeter where paint would be likely fall and be incorporated into soil.

Project No.:
NA227049
Date:
04/26/2023
Drawn By:
SMB
Reviewed By:
TM

Terracon
902 Industrial Way Lodi, California 95240
P: (209) 367-3701 terracon.com

Lead Concentration Results
Henderson Middle School
- Original Classroom Building
13451 North Extension Road
Lodi, San Joaquin County, California

Exhibit
3



Confirmation Sample Location

- Excavation Floor Sample (28)
- Excavation Sidewall Sample (64)
- Proposed 1-foot Excavation
- Proposed 3-foot Excavation
- Approximate Site Boundary and Exclusion Zone Fencing
- Former Building Footprint

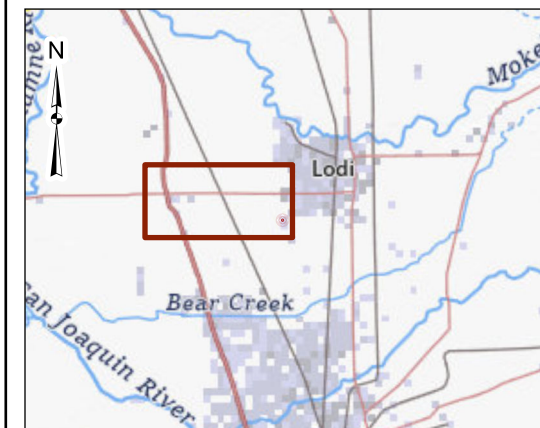
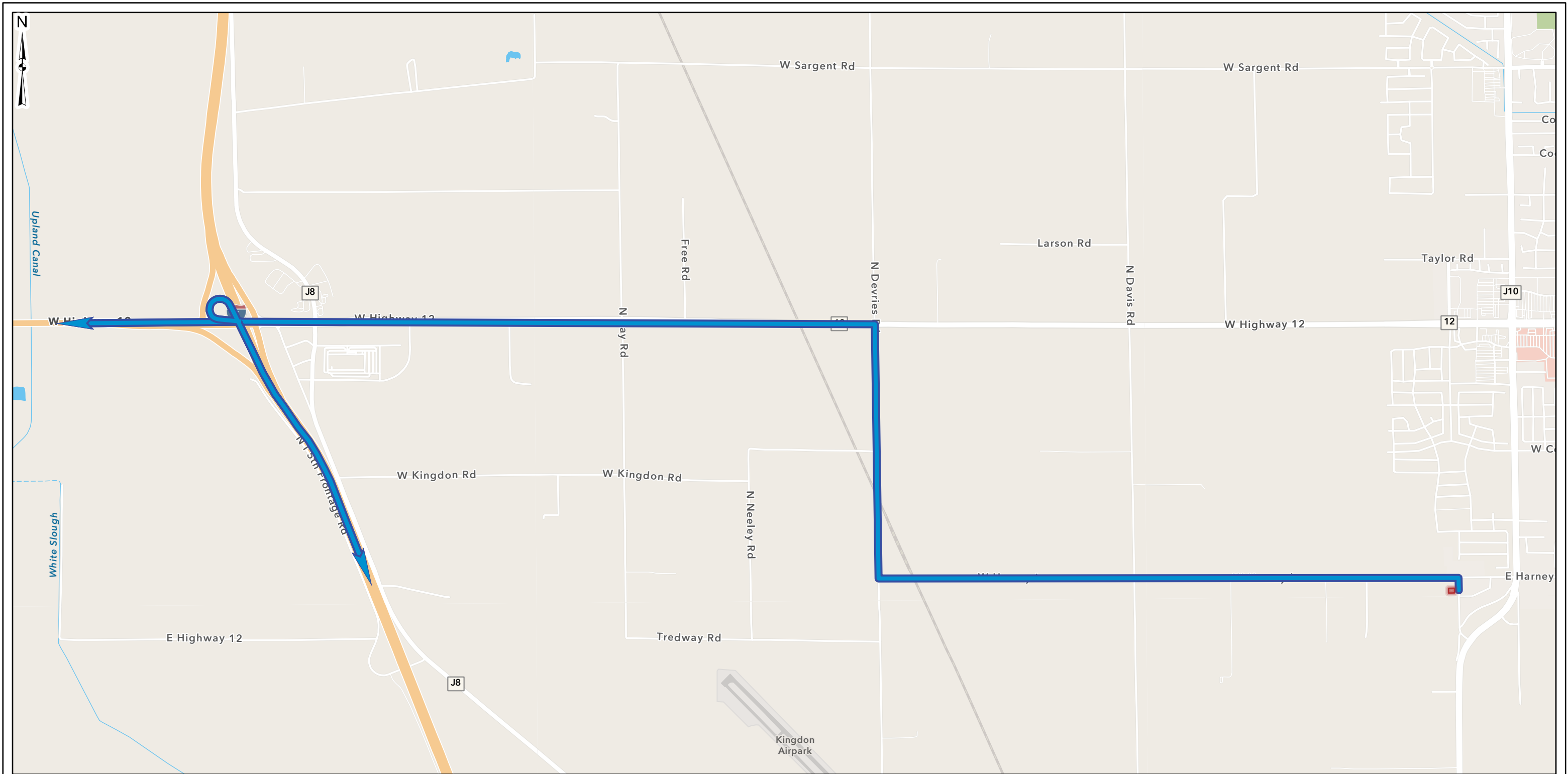
1:180 0 7.5 15 30 Feet

Project No.:
NA227049
Date:
05/10/2023
Drawn By:
SMB
Reviewed By:
TM

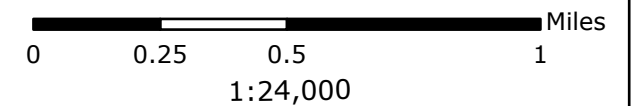
Terracon
902 Industrial Way Lodi, California 95240
P: (209) 367-3701 terracon.com

Proposed Removal Action Fieldwork
Henderson Middle School
- Original Classroom Building
13451 North Extension Road
Lodi, San Joaquin County, California

Exhibit
4



-  Proposed Truck Route
-  School Site



Project No.:
NA227049
Date:
04/26/2023
Drawn By:
SMB
Reviewed By:
TM



902 Industrial Way Lodi, California 95240
P: (209) 367-3701 terracon.com

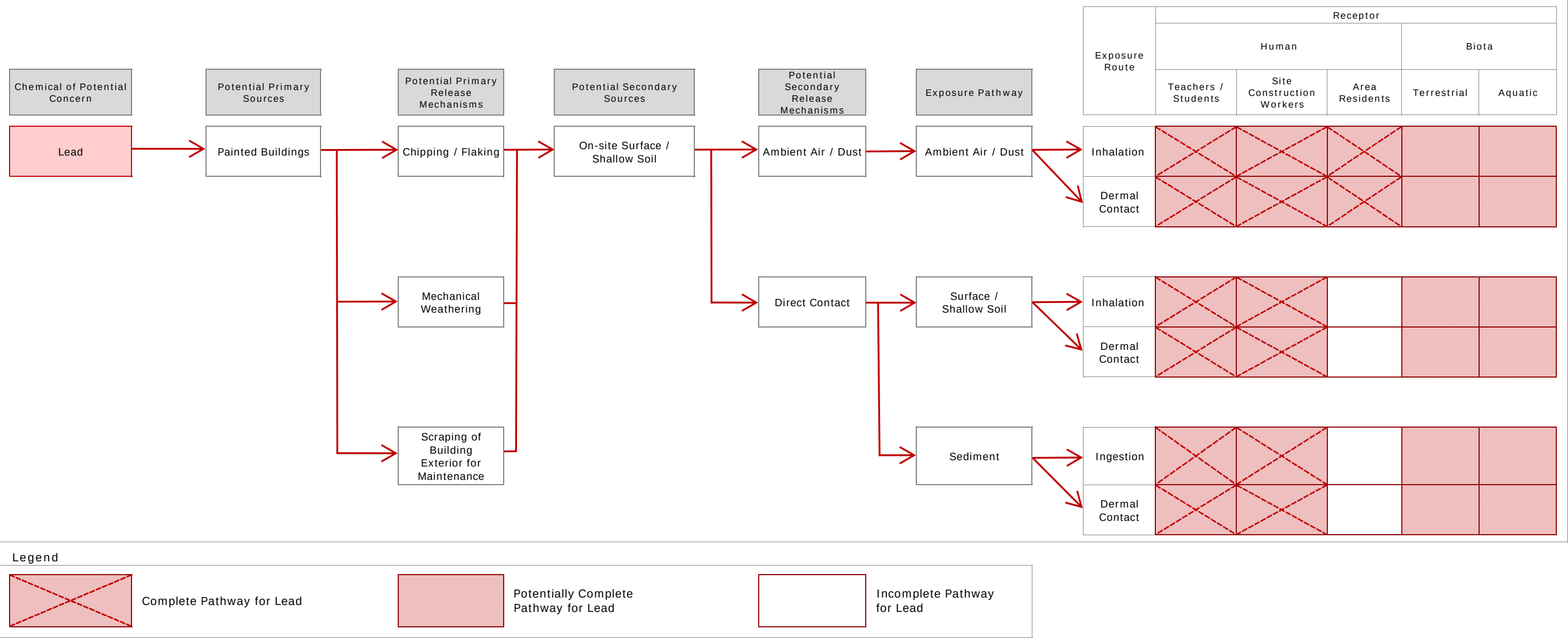
Proposed Truck Route
Henderson Middle School - Original Classroom Building 13451 North Extension Road Lodi, San Joaquin County, California

Exhibit
5

APPENDIX B

Conceptual Site Model

Conceptual Site Model Exposure Pathway:



Henderson Middle School - 13451 North Extension Road, Lodi, CA

APPENDIX C

Environmental Health and Safety Plan (EHASP)

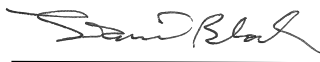
Site-Specific Environmental Health and Safety Plan (EHASP)

Henderson Middle School

13451 North Extension Road
Lodi, San Joaquin County, CA 95242

March 21, 2025 | Report Number: NA227049

Prepared by:

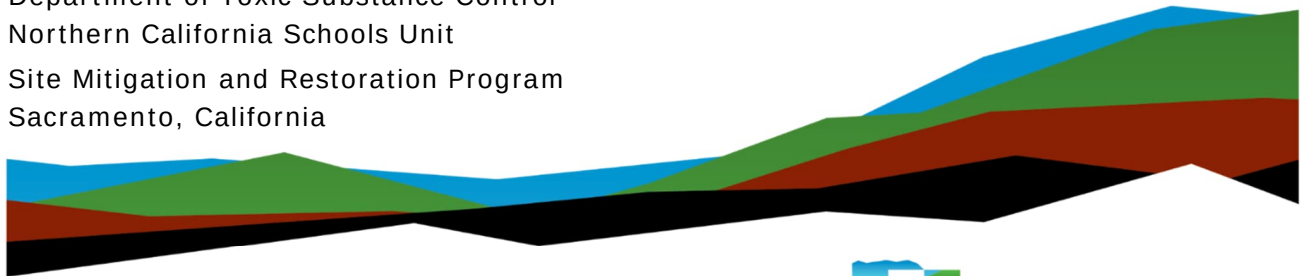


Reviewed by:



Prepared for:

Department of Toxic Substance Control
Northern California Schools Unit
Site Mitigation and Restoration Program
Sacramento, California



Nationwide
[Terracon.com](https://www.terracon.com)

■ Facilities
■ Environmental
■ Geotechnical
■ Materials

Table of Contents

1.0	General.....	1
1.1	Introduction	1
1.2	Background	1
1.3	Purpose	2
1.4	Objective	2
1.5	Amendments	3
1.6	Medical Monitoring Program.....	3
1.7	Employee Training.....	3
1.8	Safety Meetings	3
2.0	Project Personnel	3
2.1	Background	3
2.2	Contact Summary	4
2.3	Remediation Project Manager –.....	4
2.4	EH & S Director –TBD	5
2.5	Site Safety Manager (Site Foreman) – TBD.....	6
2.6	Technical Advisor/Health & Safety Consultants – David Block, Ph.D. / Jeremy Mott, CIH	7
2.7	Environmental Project Manager – Terracon; Sadie Bodiford	8
2.8	Other Field Personnel.....	8
3.0	Site Characterization/Analysis & Protective Measures.....	9
3.1	Site Description	9
3.2	Site History/Background	9
3.3	Project Tasks	9
3.4	Hazardous Chemicals.....	10
3.5	Hazard Determination	12
3.6	Other Hazards/Procedures for Reducing Hazards	12
3.7	Required Personal Protective Equipment for Site Operations	14
3.7.1	Base Level of Protection (No contaminated soil contact).....	14
3.7.2	Level of Protection if contaminated soil is disturbed.....	14
3.7.3	Additional upgrades:	14

3.8	Levels of Protection	15
3.9	Site Action Levels	17
4.0	Engineering Controls and Work Practices	18
4.1	Engineering Controls	18
4.2	Work Practices	18
4.3	Work Zones	20
4.3.1	Exclusion Zone	20
4.3.2	Contaminant Reduction Zone (CRZ)	21
4.3.3	Support Zone	21
4.3.4	Mobile Work Zone	21
4.3.5	Considerations When Establishing Work Zones	21
5.0	AIR MONITORING	22
5.1	Air Monitoring Procedures	22
5.1.1	Personal Sampling for OCPs, Lead, Silica, and Dust	22
5.1.2	Perimeter Monitoring for Total Dust	23
6.0	DECONTAMINATION	24
6.1	Personal Decontamination	24
6.2	Equipment Decontamination	25
7.0	EMERGENCY RESPONSE/CONTINGENCY PLAN	25
7.1	Lines of Authority/Communication	25
7.2	Emergency Telephone Numbers	26
7.3	Usual Procedure for Injury	26
7.4	Emergency Treatment	27
7.5	Evacuation Procedures	27
7.6	First Aid Equipment	28
7.7	Heat Stress and Stroke Monitoring	28
7.8	Cold Stress Prevention	31
7.9	Spill Contingency Planning	32



8.0	SITE ACCESS.....	32
9.0	OTHER.....	32
9.1	Confined Space Entry	32
9.2	Sanitation	32
9.3	Illumination	33
9.4	Electrical Equipment Safety	33
9.5	Fire Prevention	33
9.6	General Health.....	34
9.7	Sunburn Prevention	34
9.8	Noise	34
10.0	WASTE MANAGEMENT.....	35
10.1	Management of Soil.....	35
11.0	REFERENCES	35
Appendix A	Agreement and Acknowledgement Statement	A-1
Appendix B	Site-Specific Environmental Health and Safety Plan Amendment Sheet.....	B-1
Appendix C	Explanation of Hazard Evaluation Guidelines.....	C-1
Appendix D	Site Maps.....	D-1

1.0 General

1.1 Introduction

This document addresses the site safety issues associated with the excavation of contaminated soil around the perimeter of a former school building at Henderson Middle School located at 13451 North Extension Road in Lodi, California (Site).

This site-specific Environmental Health & Safety Plan (EHASP) has been prepared by Terracon for the use of contractors performing excavation and handling of lead-contaminated soil at the site, as specified in the Removal Action Workplan (RAW), dated September 26, 2024, prepared by Terracon.

This plan has been developed to provide: (1) health and safety guidelines for those who will be in direct contact with contaminated soil during site excavation and earthwork as part of the project; (2) provide protection to the public and surrounding community during site remediation; and (3) contingency procedures to be implemented by contractors to protect worker health and safety.

1.2 Background

The project site is located within the Henderson Middle School Campus located at 13451 Extension Road in Lodi, San Joaquin County, California. The site encompasses an approximately 0.28-acre area located on the northeastern portion of Assessor Parcel Number (APN) 058-05-005, which totals approximately 6.37-acres (further referred to as the “parent parcel”). The parent parcel adjoins the site on all sides and is occupied with the Henderson Middle School and the Valley Robotics Academy. The site is adjoined with a classroom building to the north, asphalt pavement to the east, and portable classrooms to the south and west.

In addition to the procedures and requirements described in this EHASp, all onsite personnel shall follow applicable procedures and requirements specified by applicable Federal, State, and local authorities. Accordingly, this site-specific EHASp meets the Federal requirements of 29 CFR 1910.120. As such, this EHASp addresses the activities associated with field operations to be conducted at the site as per the scope of work defined in the RAW. Any modifications made to this EHASp because of encountered field conditions must be approved by the site-safety officer (SSO) and/or project manager (PM). All above and/or below grade remediation work where contact with lead-contaminated soil is expected is included in this specification and subject to the requirements of HAZWOPER standard. HAZWOPER provisions do not apply to above-grade work where contact with existing soil is not expected.

This plan addresses the hazardous constituents identified at the site in accordance with the hazardous material regulations found in California Occupational Health and Safety Administration (Cal/OSHA) Construction Safety Orders within Title 8 of the California Code of Regulations (CCR *General Industry Safety Orders §5192*). Additional work tasks and/or activities performed at other locations of the site may involve compliance with other hazardous materials/safety regulations and thus, this plan may not include appropriate information or protective measures for those activities.

This plan is not intended to meet or satisfy applicable regulatory standards associated with construction safety (i.e., trenching/shoring, electrical safety, welding/cutting, etc.). Furthermore, the construction activities to be conducted at the site are not applicable to those requirements outlined in the HAZWOPER standard.

Compliance with this plan is required of all personnel, contractors, subcontractors, etc. associated with the earthwork activities mentioned above. Other construction activities not currently expected nor specifically identified herein, but where contact with affected soil may occur, shall also comply with this plan.

A copy of this EHASP will be available at the Site during all construction activities where the environmental conditions described herein might be encountered. At this time, it is expected these activities consist of: concrete slab/asphalt demolition and removal, soil excavation, soil handling/loading, and soil disposal.

1.3 Purpose

The primary purpose of this plan is to provide appropriate personnel with an understanding of the potential chemical and general physical hazards that exist or may arise while the applicable tasks of this project are being performed. Additionally, the information contained herein will define the safety precautions necessary to respond to such hazards should they occur.

1.4 Objective

The primary objective is to ensure the well-being of all field personnel and the community surrounding this site. In order to accomplish this, project staff and approved subcontractors shall acknowledge and adhere to the policies and procedures established herein. Accordingly, all personnel and subcontractors assigned to this project and visitors to the site shall read this plan and sign the Agreement and Acknowledgment Statement (Appendix A) to certify that they have read, understood, and agreed to abide by its provisions.

1.5 Amendments

Any changes in the scope of this project and/or site conditions must be amended in writing on the EH&S Plan Amendment Sheet (Appendix B) and approved by the Health and Safety Representative or applicable individual.

1.6 Medical Monitoring Program

All personnel engaged in work that will disturb contaminated soil for this project will be required to be medically qualified, trained in the use of respiratory protection, and fit-tested (within the last year) prior to donning a respirator should respiratory protection become necessary. If site conditions vary drastically from those anticipated in the plan, other medical surveillance procedures may become necessary, as appropriate or required.

1.7 Employee Training

The environmental conditions of the property shall be disclosed to all workers and subcontractors who will be engaged in earthwork activities including soil excavation, dewatering (if any), and other subsurface activities where contact with lead-contaminated soil is possible. It is the individual contractor's/subcontractor's responsibility to provide additional site-specific construction safety training. The contractor should also be aware that the possibility exists that hazardous materials and/or conditions may differ from those expected and described herein. These conditions could necessitate compliance with additional regulatory requirements and should be brought to the attention of the SSO or HSC immediately.

1.8 Safety Meetings

For remediation activities, additional safety meetings must be held at least once every 5 working days and may include a discussion of site work plans, personal protective equipment, site rules, site hazards, trenching/shoring, and the requirements of this Safety Plan. Meetings should be held more frequently as site conditions and work activities change.

2.0 Project Personnel

2.1 Background

All contractors and subcontractors will act in accordance with applicable federal, State, regional, and local regulations during all phases of the project. The following management structure will be instituted for the purpose of successfully and safely completing this project.

2.2 Contact Summary

The primary contact for this project will be Mr. Neil Young with Lodi Unified School District (property owner). Contact information for Mr. Young and other parties involved in the project are provided below:

Project Responsibility	Company Name	Name	Phone #
Owner/ Developer	Lodi Unified School District (LUSD)	Neil Young	Cell: (209) 331-7010
Remediation Contractor (Site Superintendent)	TBD		Cell:
Remediation Project Manager	TBD		Cell:
Remediation Site Foreman	TBD		Cell:
Waste Transport	TBD		Cell:
EH & S Director	TBD		Cell:
Site Safety Manager	TBD		Cell:
Environmental Project Manager	Terracon	Sadie Bodiford Tony Mikacich, PG	Cell: (916) 246-5080 Cell: (916) 709-6450
Health & Safety Consultant	Terracon	David Block, Ph.D. Jeremy Mott, CIH	Cell: (925) 382-9760 Cell: (408) 591-1537

2.3 Remediation Project Manager – NAME TBD (Company TBD)

The Project Managers will be responsible for implementing the project and obtaining any necessary personnel or resources for the completion of the project.

Other specific duties of the Remediation Project Manager will include:

- Coordinating the activities of all subcontractors and subcontractors ensuring that their employees have signed and will comply with this plan by signing the plan Acknowledgment Statement (see Appendix A).
- Selecting a Site Safety Officer and field personnel for the work that is to be undertaken on site.
- Ensuring that the tasks assigned are being completed as planned and are kept on schedule, to the extent practicable.

- Providing authority and resources to ensure that the Site Safety Officer is able to implement and manage safety procedures.
- Preparing reports and recommendations about the project to clients and potentially affected personnel or subcontractors.
- Ensuring that all persons allowed to enter the site (i.e. employees, subcontractors, clients, client representatives, DTSC, EPA, regulators, state officials, visitors etc.) are made aware of the potential hazards associated with the substances known or suspected to be on site (petroleum hydrocarbons and lead) and are knowledgeable as to the location of the on-site copy of the site-specific H&S Plan.
- Being aware of all the provisions of this plan and instructing personnel about the safety practices and emergency procedures defined in the plan.
- Monitoring site safety and designating a Field Team Leader to assist with the responsibility when necessary.

2.4 EH & S Director – NAME TBD (Company TBD)

The Health & Safety Manager shall be responsible for the overall coordination and oversight of the EHASP. Specific duties will include:

- Approving the selection of and providing the types of personal protective equipment (PPE) to be used on site for specific tasks and monitoring the compliance of field personnel for the routine and proper use of the PPE that has been designated for each task.
- Monitoring the compliance activities and the documentation processes undertaken by the Site Safety Officer.
- Ensuring compliance with Cal/OSHA Construction Safety Orders in Title 8 CCR and the Hazardous Waste Operations & Emergency Response Standard Title 8 CCR 5192.
- Evaluating weather and chemical hazard information and making recommendations to the Project Manager about any modifications to work plans or personal protection levels in order to maintain personnel safety.
- Coordinate upgrading or downgrading PPE with Site Safety Officer, as necessary, due to changes in exposure levels, monitoring results, weather, or other site conditions.
- Approving all field personnel conducting earthwork activities, taking into consideration their level of safety training, their physical capacity, and their eligibility to wear the protective equipment necessary for their assigned tasks; (i.e., respirator fit testing results).

- Stopping work or changing work assignments or procedures if any operation threatens the health and safety of workers or the public.
- Stopping work on the site or changing work assignments or procedures if unidentified hazards are encountered and reporting those hazards immediately to the Environmental Project Manager and/or Site Health & Safety Representative/Consultant.
- Dismissing field personnel from the site if their actions or negligence endangers themselves, co-workers, or the public.
- Reporting any signs of fatigue, work-related stress, or chemical exposures immediately or as soon as possible.
- Reporting any accidents or violations of the plan immediately or as soon as possible.
- Knowing emergency procedures, evacuation routes and the telephone numbers of the ambulance, local hospital, poison control center, fire, and police departments.
- Ensuring that all project-related earthwork personnel have signed the personnel agreement and acknowledgment form contained in this plan; and
- Ensuring that air monitoring will be conducted in accordance with Section 5.0 of this plan.

2.5 Site Safety Manager (Site Foreman) – NAME TBD (Company TBD)

The Site Safety Officer shall be responsible for the implementation of the EH&S Plan. Specific duties will include:

- Monitoring the compliance of field personnel for the routine and proper use of the PPE designated for each task.
- Routinely inspecting PPE and clothing to ensure that it is in good condition and is being stored and maintained properly.
- Stopping work on the site or changing work assignments or procedures if any operation threatens the health and safety of workers or the public.
- Monitoring personnel who enter and exit the site and all controlled access points within the soil work zones.
- Reporting any signs of fatigue, work-related stress, or chemical exposures to the Project Manager and/or Health and Safety Manager immediately or as soon as possible.

- Dismissing field personnel from the site if their actions or negligence endangers themselves, co-workers, or the public, and reporting the same to the Project Manager and/or Health and Safety Manager immediately or as soon as possible.
- Reporting any accidents or violations of the site safety plan to the Project Manager and/or Health and Safety Manager immediately or as soon as possible.
- Knowing emergency procedures, evacuation routes and the telephone numbers of the ambulance, local hospital, poison control center, fire, and police departments.
- Ensuring that all project-related personnel have signed the personnel agreement and acknowledgment form contained in this EH&S Plan.
- Coordinate upgrading and downgrading of PPE with the Health and Safety Manager, as necessary, due to changes in exposure levels, monitoring results, weather, and other site conditions.
- Ensure that air monitoring will be conducted in accordance with section 5.0 of this EHASP.

2.6 Technical Advisor/Health & Safety Consultants – David Block, Ph.D. / Jeremy Mott, CIH

The specific duties of the Advisors/Consultant include:

- Providing technical input into the design of the EHASP; preparation of the Site Specific EHASP.
- Advising worker exposure potential along with appropriate hazard reduction methods.
- Recommending a suitable medical monitoring program for the site workers.
- Provide all analytical results from the sampling/monitoring.
- Provide recommendations for the PPE level for work activities.
- Performing air monitoring in accordance with Section 5.0 of this plan, as appropriate.

Health & Safety Consultants:

David Block, Ph.D., CAC, CDPH IA/PM
Jeremy Mott, CIH

Terracon Consultants, Inc.
1220 Concord Avenue, Suite 450
Concord, CA 94520
(510) 899-7090

2.7 Environmental Project Manager – Terracon; Sadie Bodiford

The Environmental Project Manager will be responsible for implementing the project and obtaining any necessary personnel or resources for the completion of the project. Specific duties of the Environmental Project Manager with regard to health and safety issues will include:

- Coordinating the activities of employees and subcontractors, including their acknowledgement of this plan, and ensuring that all employees and subcontractors have signed the plan Acknowledgment Statement (see Appendix A);
- Selecting field personnel for the work that is to be undertaken on site;
- Ensuring that the tasks assigned are completed as planned and are kept on schedule;
- Performing air monitoring in accordance with Section 5.0 of this plan, as appropriate;
- Providing authority and resources to ensure that the Health & Safety representative is able to implement and manage safety procedures; and
- Ensuring All field personnel shall be responsible for acting in compliance with all safety procedures outlined in this EH&S Plan. Any hazardous work situations or procedures should be reported to the Site Safety Officer so that corrective steps can be taken. The Health and Safety Manager and/or Site Safety Officer have the authority to halt any operation that does not follow the provisions of this plan. that all persons allowed to enter the site (i.e., employees, subcontractors, client, client representatives, regulators, state officials, visitors) are made aware of the potential hazards associated with the substances known or suspected to be on site and are knowledgeable as to the location of the on-site copy of this plans.

2.8 Other Field Personnel

All field personnel shall be responsible for acting in compliance with all safety procedures outlined in this EHASP. Any hazardous work situations or procedures should be reported to the Site Safety Manager so that corrective steps can be taken. The EH & S Director and/or Site Safety Manager have the authority to halt any operation that does not follow the provisions of this EHASP.

3.0 Site Characterization / Analysis & Protective Measures

3.1 Site Description

- Site name: Henderson Middle School
- Location of site: 13451 North Extension Road, Lodi, California

Topography of area surrounding the site:

- | | | |
|---------------------------------|--|-----------------------------------|
| ☐ Hilly | ☒ Flat | ☐ Hummocky |
| ☐ Marshy | ☐ Mountainous | ☐ Other |

Area affected:

- | | | |
|-------------------------------------|---|---|
| ☐ Urban | ☒ Rural | ☒ Residential |
| ☐ Industrial | ☐ Commercial | ☐ Other |

Types of bodies of water bordering the site, if any:

- | | | |
|---------------------------------|--|--------------------------------|
| ☐ Stream | ☐ River | ☐ Pond |
| ☐ Lake | ☐ Bay | ☐ Ocean |
| ☐ Other | ☒ None | |

- Properties bordering the site:

East: North Extension Road/Residential
 South: Elderberry Ct/North Extension Road/Agricultural & Residential
 North: E. Harney Lane/Agricultural & Residential
 West: Agricultural & Residential

3.2 Site History/Background

The site is located in a primarily rural area and currently utilized as a public school by Lodi Unified School District. The site consisted of undeveloped land from at least the mid-1890s through 1910 and was developed with a building that was utilized as a school from the mid-1930s through May 2020, when the building was demolished with the concrete pad, stairs, and utilities left in place. As of 2020, the site is enclosed with construction fencing with geofabric material placed over the exposed soils to reduce the potential for dust generation. The site has remained relatively unchanged from 2020 through the present. The site and parent tract have been occupied by Henderson Elementary School / Lodi Unified School District from at least 1981 through the present.

3.3 Project Tasks

In general, all concrete demo, soil work including excavation and soil handling or contact (excavation, loading, stockpiling, backfilling etc.) will be included in this EHASP.

Saw Cutting and Concrete Demo Activities

Potential significant exposures to airborne silica generated during concrete saw cutting, demo, and loading will be present during these activities. Water application and personal protective equipment will be required to work in the area safely during all concrete activities. The potential for exposure to airborne silica will be evaluated using integrated industrial hygiene sampling pumps with respirable dust cyclones and pre-weight PVC cassettes (refer to Section 5.0 of this plan).

Excavation and Soil Handling Activities

Of primary concern will be ingestion and/or inhalation of airborne dusts as well as dermal contact with surface and subsurface soils at the hands and feet. Excavation may involve contact with soil and dust potentially containing lead and organochlorine pesticides (OCPs). As such, the potential for exposure to soil contaminants from the main excavation and stockpile exists. Additionally, exposure to lead and OCPs in soil may be present during all soil handling (e.g., excavation, loading, and stockpiling) activities. The potential for exposure will be evaluated using integrated industrial hygiene sampling pumps with appropriate sample collection media for lead and OCPs (refer to Section 5.0 of this plan).

The contractor will also need to make provisions to appropriately stockpile excavated materials (refer to Section 9). In addition, the contractor must make provisions for the collection and management of rainwater during this phase of the project if encountered (Section 9.2).

3.4 Hazardous Chemicals

Potential effects of any exposure are dependent on several factors such as: toxicity of substance, time frame of exposure, concentration of substance producing the exposure, general health of person exposed, and individual use of hazard reduction methods.

Based on previous soil sampling results, the primary classification of contaminants include: the OCPs chlordane, DDE, and DDT, and the heavy metal lead. This plan concentrates on hazards and measures necessary to prevent unnecessary exposure to these potential contaminants, as summarized in Table 1.

Table 1. List of Potential Contaminants	
Chlordane	Maximum Reported Soil Concentration – 0.967 mg/kg
DDE	Maximum Reported Soil Concentration – 0.13mg/kg
DDT	Maximum Reported Soil Concentration – 0.292 mg/kg
Lead	Maximum Reported Soil Concentration – 7,820 mg/kg

*Additional information has been provided for these chemicals; refer to Table 2.



Table 2. Chemical Hazard Descriptions and Properties			
Chemical Name	Chlordane	Lead	DDE/DDT
Physical Description	Amber-colored, viscous liquid with a pungent chlorine-like odor.	Bluish-white, silvery, gray, very soft metal.	Colorless crystals of off-white powder with slight aromatic odor
Chemical/Physical Properties			
flash point	225°F (open cup) 132°F (closed cup)	none	171°F (closed cup)
vapor density	14	8.6	11
Relative dens.	1.6	11.34	1.6
LEL-UEL	none	none	none
vapor pressure	1E-5 mm Hg @ 77°F	1.77mm Hg @ 1832 °F	1E-7 mm Hg @ 68°F
Toxicological Effects	Inhalation and dermal contact with chlordane can cause gastrointestinal distress, including cramping, diarrhea, and nausea, as well as neurological effects, including ataxia, headache, dizziness, tremors, and convulsions following acute (short-term exposure). Immunological, reproductive, and respiratory effects can occur from chronic inhalation exposure.	Lead is normally absorbed through ingestion. Inorganic lead is not commonly absorbed through skin contact. Symptoms of lead intoxication are commonly gastro-intestinal disorders. However, the early symptoms of lead poisoning are non-specific and, except by laboratory testing, are difficult to distinguish from the symptoms of minor seasonal illness. These include: aching muscles and joints, headache, constipation, & abdominal pain. These symptoms are reversible and complete recovery is probable.	Ingestion of DDT and DDE can cause neurological effects, including perspiration, headache, nausea, convulsions, and tremors following acute (short-term) exposure. Immunological, reproductive, developmental effects and cancer may occur from chronic exposure.
Exposure Limits			
Cal/OSHA (PEL)	0.5 mg/m ³	0.01 mg/m ³	1 mg/m ³
ACGIH (TLV)	0.5 mg/m ³	0.05 mg/m ³	1 mg/m ³
NIOSH (REL)	0.5 mg/m ³	<0.1 mg/m ³	0.5 mg/m ³

3.5 Hazard Determination

Serious _____ Moderate _____ Low X Unknown _____

Non-chemical hazards:

- | | | |
|---|---|---|
| ☐ Confined space | ☐ Drill rig | ☐ Traffic |
| ☒ Underground utilities | ☐ Overhead lines | ☒ Backhoe |
| ☒ Poisonous animals | ☐ Dangerous animals | ☒ Ticks |
| ☐ High crime area | ☒ Slip/fall hazards | ☒ Welding/cutting |
| ☒ Heat/cold stress | ☐ Excavation >4 ft. | ☐ Trench >4 ft. |
| ☐ Leaking containers | ☒ Electrical | ☒ Hot surface |
| ☐ Low light conditions | ☒ Lifting hazard | ☒ Noise |
| ☒ Other construction equipment | | ☒ Poisonous insects |
| ☒ Other – large construction equipment (backhoe, large dump trucks, etc.) | | |

If confined space entry was checked above, of what type is the confined space?

- | | | |
|-------------------------------------|---|--|
| ☐ Shed | ☐ Subsurface vault | ☐ Manhole |
| ☐ Crawlspace | ☐ Trench | ☐ Excavated pit |
| ☐ Other | | |

- Chemicals utilized to perform on-site tasks (include chemicals used to maintain equipment):

Diesel for construction equipment, lubricating oils, grease, utility pipe glues, spray paints for marking, etc.

As indicated above, the potential hazards to personnel working at the site have been principally identified as: chemical exposures and physical hazards. Physical hazards include those associated with working in the vicinity of: (1) excavators; (2) other heavy equipment (such as trucks); and (3) open excavations of varying sizes.

3.6 Other Hazards/Procedures for Reducing Hazards

The potential for unknown hazards cannot be eliminated. Hazards can exist for all exposure routes such as inhalation, dermal contact, ingestion, and eye contact.

The following are potential site hazards and the corresponding procedures for hazard reduction:

3.7 Required Personal Protective Equipment for Site Operations

Basic requirements while working on a construction site include the following:

- Long Sleeves
- ANSI approved hard hat, safety glasses, gloves, and long pants
- Steel Toe Boots
- Reflective traffic/safety vest (Class 2)

3.7.1 Base Level of Protection (No contaminated soil contact)

For work activities being performed above grade the Level of protection will consist of Level D. Such activities will only consist of those job tasks not involving contaminated soils such as support tasks, excavation, movement, and loading of non-contaminated material to be utilized elsewhere or recycled.

Level D Requirements include:

- Coveralls (normal work uniform)
- Leather/cotton – standard work gloves
- ANSI approved hard hat and safety glasses
- Steel toe boots
- Reflective traffic/safety vest (Class 2)

3.7.2 Level of Protection if contaminated soil is disturbed

Modified Level D is the minimum acceptable level of required PPE IF contaminated soil is disturbed while performing the tasks. Respiratory protection is optional unless air-monitoring data indicates otherwise. Upgrades in this minimum level of protection may be necessary if contaminated soils are disturbed.

Modified Level D Requirements include:

- Tyvek suits during soil contact, etc.
- Butyl or nitrile gloves
- Chemical resistant (PVC or neoprene) boots or disposable boot covers that can be worn over leather work boots
- ANSI approved safety glasses or goggles
- ANSI approved hard hat
- Reflective traffic/safety vest (class 2)

3.7.3 Additional upgrades:

1. Protocols for upgrading:

Upgraded equipment will be required until it is demonstrated through air monitoring that the levels are acceptable. Once air monitoring data are complete and results are

tabulated on the initial site entry, the Health & Safety representative will determine if changes in PPE are needed.

2. Upgraded equipment:

a. Respirators

- Half-Face APR with HEPA (magenta), Acid gas (White), and/or VOC (black) combination cartridges as applicable. Acid Gas/Organic Vapor/HEPA combo cartridges are available and are color coded Yellow & Magenta.

Note: Respirator cartridges shall be replaced when the cartridges begin to restrict breathing, the filter becomes dirty, or visible damage is noted.

3.8 Levels of Protection

LEVEL A (not anticipated)

Level A personal protection is required in the area where the highest levels of contamination exist and is designated as the area where maximum respiratory, skin, and eye protection are required. See Section 3.9 for contaminant concentration thresholds that trigger increased levels of PPE.

LEVEL B (not anticipated)

Level B personal protection is required in the area where maximum respiratory protection is required, however, there is a low probability of dermal toxicity. See Section 3.9 for contaminant concentration thresholds that trigger increased levels of PPE.

- Monitored levels of air contamination exceed the protection factors afforded by Air-Purifying Respirators (APR).
- Air contaminants have poor warning properties.
- Contaminants are not known to be absorbed through, or toxic to, skin surface.

Level B Requirements include:

- NIOSH approved positive pressure (pressure-demand), self-contained breathing apparatus, or positive pressure supplied air respirator with escape SCBA.
- Tyvek suits.
- Inner and outer chemical resistant gloves.
- Chemical resistant (PVC or neoprene) boots with steel toe and shank.

- ANSI approved safety glasses or goggles.
- ANSI approved hard hat.
- Reflective traffic/safety vest (class 2).

LEVEL C

Level C personal protection is required in the area where respiratory protection of a lesser degree than the criteria established for Levels A or B is required, and the probability of skin contamination by dermal toxic materials is unlikely. An area may be designated as Level C when:

- Monitored levels of air contamination do not exceed the protection factors afforded by Air-Purifying Respirators (APR).
- Air contaminants have good warning properties.
- Contaminants are not known to be absorbed through, or toxic to, skin surface.
- A reliable history of prior site entries exists without indications of acute or chronic health effects.

Level C Requirements include:

- NIOSH approved half-mask or full-face, air purifying respirator.
- Tyvek suits.
- Inner and outer chemical resistant gloves.
- Chemical resistant (PVC or neoprene) boots with steel toe and shank.
- ANSI approved safety glasses or goggles.
- ANSI approved hard hat.
- Reflective traffic vest (class 2).

LEVEL D

Level D personal protection is required in those areas where respiratory protection is not a requirement. An area may be designated as Level D when:

- No hazardous airborne contaminants are known to be present, and the potential for a release of such hazards is low.
- Work operations preclude the splashing of hazardous/toxic materials on body surfaces.
- There are no Level A zones within the same exclusion area.

3.9 Site Action Levels

SITE ACTION LEVEL * = (see table below)

AREA OF WORK SHALL BE EVACUATED IF <19.5 % or > 23.5 % O₂

AREA OF WORK SHALL BE EVACUATED IF LEL > 10 %

Air Monitoring Equipment and Levels of Personal Protection				
Air Monitoring Instruments	Level D	Level C	Level B	Level A
Airborne Dust (PM ₁₀) ¹ (Personal)	<1.0 mg/m ³	1-10 mg/m ³	Not Anticipated	Not Anticipated
Airborne Dust (PM ₁₀) (Perimeter)	50 µg/m ³ at site perimeter for offsite migration	N/A	N/A	N/A
Silica ² (as Quartz)	<0.025 mg/m ³	0.025 – 0.5 mg/m ³ (½ face respirator) 0.5 – 2.5 mg/m ³ (full-face respirator)	Not Anticipated	Not Anticipated
Lead Air Monitoring ²	<2.0 µg/m ³	2 – 100 µg/m ³ (½ face respirator) 100 – 500 µg/m ³ (full-face respirator)	Not Anticipated	Not Anticipated
Chlordane Air Monitoring ²	<0.5 mg/m ³	0.5 – 5 mg/m ³ (½ face respirator) 5 – 25 mg/m ³ (full-face respirator)	Not Anticipated	Not Anticipated
DDE/DDT Air Monitoring ²	<1 mg/m ³	1 – 10 mg/m ³ (½ face respirator) 10 – 50 mg/m ³ (full-face respirator)	Not Anticipated	Not Anticipated

1 - Site action level is based on sustained airborne concentrations above background, detected in the breathing zone of the worker (refer to Section 5.0 "Air Monitoring").

2 - Lead, Chlordane, DDE/DDT, and respirable Silica monitoring requires the collection of air samples and laboratory analysis; direct-reading instrumentation is not available.

If conditions require Level B personal protective measures and the appropriate Level B equipment is unavailable, site personnel shall evacuate immediately. See Section 3.8 for personal protective equipment (PPE) level guidance.

4.0 Engineering Controls and Work Practices

4.1 Engineering Controls

Depending on soil conditions, during earthwork activities there is a potential to generate a nuisance dust condition. The best (most reasonable) available control measures will be used to minimize dust emissions. These control measures will include, but are not limited to, the following:

- Dust monitoring (refer to Section 5.0);
- Watering of active construction areas to prevent visible dust plumes from migrating outside of the site limits, as applicable;
- Misting or spraying while loading transportation vehicles, as applicable;
- Minimizing drop heights while loading transportation vehicles;
- Using tarpaulins or other effective covers for trucks carrying soils that travel on public roads; and
- Using sufficient water during slab coring/cutting operations. If flammable atmospheres are detected below the slab, ventilating or inerting that area may be necessary prior to cutting or using other potential ignition sources.

Earthwork activities shall immediately cease should airborne dust exceed the PM10 criteria specified by the California Air Resources Board (CARB) and shall not recommence until the area is adequately moistened such that no visible dust will be generated. Additional information regarding dust management is provided in Section 5.0 below, and in the Dust Control Plan section included in the site RAW.

4.2 Work Practices

Workers are expected to adhere to established safe work practices for their respective specialties (i.e., excavation, drilling, laboratory analysis, construction). The need to exercise caution in the performance of specific work tasks while wearing PPE is made more acute due to (1) weather conditions; (2) restricted mobility and reduced peripheral vision caused by the protective gear itself; (3) the need to maintain the integrity of the protective gear; and (4) the increased difficulty in communicating caused by respirators. Work at the site will be

conducted according to established protocol and guidelines for the safety and health of all involved.

Among the most important of these principles for working at a hazardous waste site are the following:

- In any unknown situation, always assume the worst conditions and plan responses accordingly.
- Because no PPE is 100% effective, all personnel must minimize contact with contaminated materials. Plan work areas, decontamination areas, and procedures accordingly. Do not place equipment on drums or the ground. Do not sit on drums or other materials. Do not sit or kneel on the ground in the Hot or Warm Zones. Avoid standing in or walking through puddles or stained soils.
- Smoking, eating, or drinking in potentially contaminated work areas will not be allowed. Prior to doing such activities (outside of potentially contaminated areas), individual shall wash his/her hands and face prior to such. Oral ingestion of contaminants is a major route of entry for introducing toxic substances into the body. Personal hygiene stations will be established in both the decon area and the hot zone rest/shade area. Washing the hands and face before eating, drinking, smoking will be strictly enforced on the site due to the potential for ingestion of Lead via contaminated hands & skin.
- Avoid heat and other work stresses related to wearing protective gear. Work breaks should be planned to prevent stress-related accidents and fatigue. Refer to Section 7.7.
- Personnel must be observant of not only their own immediate surroundings, but also those of others. Everyone will be working under constraints; therefore, a team effort is needed to notice and warn of impending dangerous situations. Extra precautions are necessary when working near heavy equipment and while utilizing PPE because vision, hearing, and communication may be impaired.
- Personnel with any facial hair that interferes with the proper fit of the respirator will not be allowed to work on sites requiring Level C, B, or A protection.
- Rigorous contingency planning and dissemination of plans to all personnel minimizes the impact of rapidly changing safety protocols in response to changing site conditions.
- Personnel must be aware that chemical contaminants may mimic or enhance symptoms of other illnesses or intoxication. Drinking of alcohol while working on-site is prohibited during field investigation or soil removal assignments.

4.3 Work Zones

Field project managers working under health and safety plans for hazardous waste operations are required to establish work zones to prevent or reduce the spread of site contaminants to non-contaminated areas on or off site. The work zones (exclusion zone, contaminant reduction zone (CRZ), support zone, and mobile work zone) are described in more detail in the following subsections. Movement between zones should be restricted to those that need access to a specific area, and entry and exit between zones should be through designated access control points.

The actual locations of the zones will be determined prior to set up. The staging area will be used for communications and will be a contaminant-free zone. The CRZ will lie between the staging area and the exclusion zone and will be determined by the SSO. The exclusion zone may be delineated with red tape and cones or barricades. Personnel not immediately involved in the field activity at hand will not be allowed within the exclusion zone.

4.3.1 Exclusion Zone

The exclusion zone should include any area where contamination is known or suspected. Areas of air, water, or soil that are contaminated with hazardous materials (biohazards, radioactive materials, chemicals) should be included in the exclusion zone. The zone should be well known to site workers. On smaller projects, this can be a verbal identification to site workers, such as “A 20-foot radius around the drill rig.” On larger projects, or in areas that may be encountered by observers or the general public, the zone may need to be defined with red tape, traffic cones or in some instances, fencing and barriers. The need will be job specific, and the method should be identified by the site HSO. Some work practices that should be followed in the exclusion zone include:

- Employees in the exclusion zone must wear the PPE designated in this site health and safety plan for tasks executed within the zone;
- No eating, drinking, chewing gum or tobacco, smoking, application of cosmetics, including application of lip balm, sunscreen, or insect repellent is allowed in the exclusion zone;
- Sitting or kneeling in areas of high concentrations of contaminants should be avoided;
- If any PPE becomes defective, the employee should leave the work area via the designated egress area, decontaminate as needed, and replace the defective PPE before returning to work in the exclusion zone;
- The use of illegal drugs or consumption of alcohol is prohibited on all projects; and
- When leaving the exclusion zone, employees should exit via the designated access/egress point(s) and follow decontamination procedures as described by the HSO and this EHASP.

4.3.2 Contaminant Reduction Zone (CRZ)

A CRZ is established to provide a transition between the exclusion zone and the support zone. The CRZ is set up at the access control points of the exclusion zone and will vary in size depending on the complexity of activities that need to occur within the zone. For small site investigations, the CRZ may simply be a designated area near containers set up to collect used disposable PPE and some soap and water. For larger projects, the CRZ may include specific decontamination points and be staffed by personnel specifically designated to participate in the decontamination of personnel and equipment exiting the exclusion zone. Depending on the site contaminants, level of contamination, and decontamination procedures, personnel in the CRZ may be required to wear protective clothing, gloves, or respirators. The specific requirements will be outlined by the HSO. The CRZ should be placed in an area that is not contaminated at the boundary of the exclusion zone.

4.3.3 Support Zone

The support zone is established near the entrance to the site and is far enough from the exclusion zone and CRZ that specialized protective clothing or respirators are not used. The use of normal field PPE such as hard hats, safety glasses, and safety work boots is expected except for areas such as office trailers, break and lunch areas, or other designated areas. Operational support activities and equipment storage and maintenance areas are located in the support zone. No equipment or personnel should go from the exclusion zone to the support zone without passing through the CRZ and being decontaminated in accordance with the requirement set forth by the SSO.

4.3.4 Mobile Work Zone

For those projects that involve brief periods of work in multiple locations, a specific area may be designated as the exclusion zone for the duration of the work performed in that area. The exclusion zone can be terminated (provided there are no ongoing hazards or potential exposures to contaminants) and moved to the next area of work. For example, during soil borings or well installation, the exclusion zone can be defined as, “1.5 times the mast height” of the drill rig, or a 20-foot radius, whichever is greater. Once the boring has been closed, or well installed and secured, and all drill cuttings have been secured, the area can be opened up and a new exclusion zone established around the next boring location.

4.3.5 Considerations When Establishing Work Zones

Work zones should be large enough to perform tasks within the zone safely, with no exposure to hazards to personnel outside the zone, but they should also be small enough to be able to secure and control access. Some considerations in establishing work zones include:

- Physical and topographical features of the site;
- Dimensions of the contaminated area;
- Weather;

- Physical, chemical, and toxicological characteristics of contaminants and chemicals used in the zone;
- Potential for exposure to site contaminants;
- Known and estimated concentrations of contaminants;
- Air dispersion of contaminants;
- Fire and explosion potential;
- Planned operations and space needed to perform the work safely;
- Surrounding areas;
- Decontamination procedures; and
- History of job site.

5.0 AIR MONITORING

In accordance with 29 CFR 1910.120 (h), exposure air monitoring will be used to identify and quantify airborne levels of hazardous substances and health hazards to determine the appropriate level of employee protection needed on-site.

To the extent feasible, the presence of airborne contaminants will be evaluated through the use of sampling equipment. Information gathered will be used to ensure the adequacy of the levels of protection being employed at the site and may be used as the basis for upgrading or downgrading levels of personal protection, at the discretion of the Health & Safety Representative and/or Construction Project Manager.

The following air sampling equipment may be utilized for site monitoring:

- Industrial Hygiene personal sampling pumps and appropriate sample media – dust, Chlordane, DDE, DDE, Lead, and Silica (as Quartz)
- Dust Monitor (DustTrak or SidePak AM520 or equivalent)

5.1 Air Monitoring Procedures

Air monitoring will be performed by the on-site industrial hygienist, and under direction of the project CIH if warranted. Monitoring may be conducted to properly characterize the potential for exposure to site personnel and to monitor the potential for the migration of contaminants off-site during initial operations. Continuous monitoring should be performed during operations that have not been characterized. After initial site screening and if warranted, monitoring shall be conducted periodically and when site conditions might be altered (i.e., weather, drilling, new area of excavation, etc.).

5.1.1 Personal Sampling for OCPs, Lead, Silica, and Dust

Personal sampling for Chlordane, DDE, DDE, Lead, Silica, and dust (Total and Respirable) will be required during this project to properly characterize site activities and potential personal

exposures. Personal sampling for Silica and dust will be conducted during the first two to three days of slab saw cutting/demo and for Chlordane, DDE, DDT, Lead, and dust during the first 2 to 3 days of soil excavation. If the results approach or exceed the site action limit additional periodic monitoring may be warranted. The monitoring is necessary to document the adequacy of personal protective equipment, as well as compliance with 8-CCR, Sections 1529, 1532.1 and 5214.

Sampling and analysis procedures for Total Dust, Chlordane, DDE, DDT, and Lead will follow those described in Methods 0500, 5605, and 7300 of the National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods. The sampling and analysis procedures for Respirable Dust and Silica will follow those described in Methods 0600 and 7500/mod. OSHA ID-142; Grav./XRD of the National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods. Daily air samples will be shipped to an AIHA Accredited laboratory under chain of custody protocols. Verbal results will be reported to the site safety officer (SSR), within 24 hours.

Where exposure to airborne Lead exceeds the action level (AL), employees will be given medical surveillance and a full air monitoring program.

5.1.2 Perimeter Monitoring for Total Dust

A SidePak Aerosol Monitor (or equivalent) may be used to measure real-time dust levels. Perimeter monitoring will be conducted upwind and downwind of the work area. If dust levels exceed the PM 10 standard for 10 minutes or more, then work should be stopped, and mitigation measures undertaken before work resumes.

During activities covered by the RAW and this EHASP, the dust standard will be based on the PM 10 ambient air quality standards adopted by the CARB, which specifies a ceiling level of no more than 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) difference between upwind and downwind sampling locations. If this level is exceeded for 10 minutes or more, additional dust suppression activities such as water application for dust suppression will be conducted during work activities. The ceiling level of 50 micrograms per cubic meter represents the CARB standard for 24-hour 10 μm diameter (PM10 – 24-hour) particulate matter. Note that dust monitoring criteria related to PPE selection are provided in Section 3.9.

Results of monitoring information shall be recorded, and will include time, date, location operations, and any other conditions that may contribute to potential exposures. All maintenance and calibration information shall be maintained and made available upon request. The monitoring equipment will be calibrated in accordance with the manufacturer's specifications, and the records of such maintained with the project health and safety plan.

6.0 DECONTAMINATION

All personnel and/or equipment leaving a potentially contaminated area are subject to decontamination procedures. If applicable, general decontamination procedures for personnel and equipment are outlined below. All contaminated articles and waste decontamination materials shall be containerized, labeled, and properly disposed.

6.1 Personal Decontamination

All personnel leaving areas where existing soil has been exposed must follow decontamination procedures.

At a minimum, individuals involved in this project should wash their face and hands prior to eating, smoking, and/or applying cosmetics. If water is not readily available on-site, the use of sanitary wipes or similar materials may be used. If gloves and boot covers are worn, they should be properly disposed.

Although not anticipated, if a level of protection greater than Level D is necessary, no personnel will be allowed to leave a crawlspace work area prior to decontamination. Generalized procedures for removal of protective clothing are as follows:

- Drop tools, equipment, samples, and trash at designated drop stations (i.e., plastic containers or drop sheets).
- Wash down boots with clear water in the designated wash pit area. If non-disposable clothing is utilized, wash down outer protective garments.
- Remove tape from boots and gloves.
- Remove boots or boot covers and discard in container.
- Remove gloves and place in container.
- Remove outer garment and discard in container.
- Remove respiratory equipment, place in designated area.
- If the site requires use of a decontamination trailer, all personnel must wash hands and face prior to leaving the site.
- Wash face and hands prior to eating, smoking, and/or applying cosmetics.

NOTE: Disposable items (i.e., Tyvek coveralls, respirator cartridges, gloves, and latex over boots) will be changed daily unless there is reason to change sooner.

Pressurized sprayers or other designated equipment may be available in the decontamination area for wash down and cleaning of personnel and equipment.

Respirators will be decontaminated daily. The masks will be disassembled, the cartridges replaced, and all other parts placed in a cleaning solution (typically warm soapy water). Prior to re-use of the respirator, employees will inspect their mask to ensure there are no apparent defects, tears, etc.

6.2 Equipment Decontamination

Equipment utilized on the site (radios, instruments, samples, tools, heavy construction equipment) will be decontaminated prior to leaving the earthwork areas.

Soil residue on excavator tracks or tires, truck tires, etc. will be removed using dry and/or wet methods. Dry brushing or shoveling will be used to remove a majority of the soil/contamination. Material that cannot be cleaned by dry methods will be pressure washed in the designated decontamination area. Water collected from the decon wash pit can be removed using a sump pump and that water used again for dust control within the Hot Zone. Other accumulated water and/or mud may need to be sampled and handled accordingly upon termination of the project/use of the wash pit.

Smaller equipment can be protected from contamination by draping, masking, or otherwise covering the instruments with plastic (to the extent feasible) without hindering operation of the unit.

The contaminated equipment will be taken from the drop area and the protective coverings removed and disposed of in appropriate containers. Any dirt or obvious contamination will be brushed or wiped off with a disposable paper wipe. The units can then be placed inside in a clean plastic tub, wiped off with damp disposable wipes, and dried. The units will be checked, standardized, and recharged as necessary for the next day's operation, and then prepared with new protective coverings.

All contaminated articles and waste decontamination materials shall be properly containerized, labeled, and disposed of properly.

7.0 EMERGENCY RESPONSE/CONTINGENCY PLAN

This contingency plan, as developed under the requirements of 29 CFR 1910.120, applies to "on-site emergency responses" only. Much of the information for this section is covered elsewhere within this H&S Plan, therefore, only the items not previously addressed will be included.

7.1 Lines of Authority/Communication

The Site Safety Officer is the primary authority for directing site operations under emergency conditions. All emergency communications both on and off-site will be directed through the Construction Project Manager, Health and Safety Manager, or designee.

7.2 Emergency Telephone Numbers

In the event of an accident or emergency situation, immediate action must be taken by the first person to recognize the event. First aid equipment is located on-site, within the trucks of each subcontractor foreman, and/or the office/trailer. Notify (1) the Site Safety Officer and (2) the Construction Project Manager and/or Health and Safety Manager about the situation immediately after emergency procedures are implemented. Contact information for the Construction Project Manager and Health & Safety Representative is presented in Section 3.2.

Emergency Services Contacts	
<u>Emergency Telephone</u>	
Police, Fire, Ambulance	911
Poison Control Center	1-800-222-1222
<u>Medical</u>	
Nearest Hospital:	Adventist Health Lodi Memorial Hospital
Telephone #:	(209) 334-3411
Directions:	975 S Fairmont Avenue, Lodi, CA (see Appendix D)
<u>Environmental Emergency</u>	
State OES	(800) 852-7550
Regional EPA Office	(415) 744-2000
National Response Center	(800) 424-8802 (EPA 24-Hotline)

7.3 Usual Procedure for Injury

- Call for ambulance/medical assistance, if necessary. Notify the receiving hospital of the nature of physical injury or chemical overexposure.
- If time allows, send/take pertinent information (i.e., Material Safety Data Sheet-MSDS) to medical facility.
- If the injury is minor, proceed to administer first aid and then immediately notify the Site Safety Officer.
- Construction Project Manager and Health and Safety Manager must be notified of situation.
- Ideally, at least one person on-site should have a current certificate in providing first aid/CPR.

7.4 Emergency Treatment

When transporting an injured person to a hospital, bring this plan to assist medical personnel with diagnosis and treatment. In all cases of chemical overexposure, follow standard procedures as outlined below for poison management, first aid, and, if applicable, cardiopulmonary resuscitation. Four different routes of exposure and their respective first aid/poison management procedures are outlined below:

1. Ingestion:

Refer to Table 1 or the applicable MSDS (if available) for specific recommendation and/or CALL THE POISON CONTROL CENTER AT: 1-800-222-1222 FOR INSTRUCTIONS.

2. Inhalation:

Move the person from the contaminated environment. Initiate CPR if necessary. Call, or have someone call, for medical assistance. Refer to Table 1 or the applicable MSDS (if available) for additional specific information. If necessary, transport the victim to the nearest hospital as soon as possible.

DO NOT ENTER CONFINED SPACE UNLESS PROPERLY TRAINED, EQUIPPED, AND A STANDBY PERSON IS PROVIDED.

3. Skin Contact:

Wash off skin with a large amount of water immediately. Remove any contaminated clothing and rewash skin using soap, if available. Transport person to a medical facility if necessary.

4. Eyes:

Hold eyelids open and rinse the eyes immediately with copious amounts of water for 15 minutes. If possible, have the person remove his/her contact lenses (if worn). Never permit the eyes to be rubbed. Transport person to a hospital as soon as possible.

7.5 Evacuation Procedures

Various emergencies may warrant a site evacuation. These may include: fire, explosion, chemical release, or personal injury.

Personnel encountering a hazardous situation shall instruct others on site to evacuate the vicinity IMMEDIATELY and call: (1) Health & Safety Representative and (2) Construction Project Manager for instructions.

The site must not be re-entered until the situation has been corrected.

In the event of an evacuation, the work party will move upwind. Wind direction can be noted by the use of a windsock located on the site or other indicators (i.e., flags, trees, waves, etc.). When conditions warrant moving away from the work site, the crew will relocate upwind a distance of approximately 100 feet or further, as indicated by the site monitoring instruments. If the decontamination area is upwind and far enough from the event, the work crew will quickly pass through the decontamination area to remove contaminated clothing.

When the Health & Safety Representative determines that conditions warrant evacuation of downwind residences and commercial operations, local agencies will be notified, and assistance requested. Designated on-site personnel will initiate evacuation of the immediate off-site area without delay.

The following signals will be utilized for site evacuation/emergencies:

1 long blast	Evacuate
1 short blast	Attention
2 blasts	Fire
(i.e., truck/car horn)	

7.6 First Aid Equipment

Vehicles used for site work will be equipped with first aid kit and safety equipment including:

- ABC fire extinguisher
- potable water
- portable eyewash
- First Aid Kit w/ emergency bandage materials
- Fluorescent vests
- Traffic cones
- Barricades
- Flashlight

7.7 Heat Stress and Stroke Monitoring

The following recommendations will help reduce heat stress. Their applicability is dependent on evaluating the conditions particular to a specific project. Cal/OSHA has established a heat illness prevention standard whereby shade, water, and training must be provided. For this project, the proposed areas of shade and water within the work area will aid in compliance with the proposed standard.

If the predicted temperature for the following day is to be greater than 85 °F, the employer should provide shade and water to accommodate 25% of the workforce. This shade/rest area must be no further than ¼ of a mile from the area of work.

Provide plenty of liquids to replace loss of body fluids. Appropriate liquids should consist of water, juices, and juice products. Employees should drink 3-4 glasses of water/liquid per hour.

Establish a work schedule that will provide sufficient rest periods for cooling down. As the temperature increases, more frequent and longer rest periods are required.

Heat stress may be of concern depending upon the ambient temperature and amount of solar load. Each contractor and subcontractor must have and follow a written Heat Illness Prevention program that complies with current Cal/OSHA standards.

Heat stress is the adverse stress to the body due to exposure to excess heat. It can greatly diminish the ability of the body to function properly. Therefore, all personnel involved in work activities will become acquainted with the symptoms of heat stress and the necessary response actions for treatment. Because the incidence of heat stress depends on a variety of factors, all workers will be monitored. Hazards associated with heat stress include the following:

- Heat Rash – may result from continuous exposure to heat or to humid air;
- Heat Cramps – caused by heavy sweating causing cold clammy skin. Usually associated with inadequate electrolyte replacement. Heat cramps can cause muscle spasms, pain in the hands, feet, and abdomen;
- Heat Exhaustion – occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Heat exhaustion can cause pale, cool, moist skin, heavy sweating, dizziness, and nausea and fainting; and
- Heat Stroke – the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels (usually above 106 degrees °F). Immediate action must be taken to prevent serious injury and death. Competent medical help must be obtained. Heat stroke can cause red, hot unusually dry skin. Symptoms include lack of or reduced perspiration nausea, dizziness, confusion, and strong rapid pulse and coma. Do not try to treat on-site, give liquids or other treatments.

During the day-to-day fieldwork, the SSO, PM, and workers must be alert for the signs and symptoms of heat related incidents. Heat related conditions are hazards that exist when individuals are required to work in warm temperatures while wearing protective equipment. The SSO will monitor the ambient air temperature and humidity utilizing local information sources.

Employees working in protective clothing will be observed for the following signs and symptoms of heat stress, dizziness and nausea, profuse sweating, skin color change, vision problems, delirium, fainting, weakness, fatigue, cramping, and hot red, dry skin.

Employees who exhibit heat-related symptoms will be monitored on-site by the SSO or other competent person. Monitoring heat related symptoms will consist of measuring the heart rate and body temperature to prevent the onset of heat stress illness. Heart rate will be measured by the radial pulse of the wrist for thirty seconds as early as possible in the resting period. Body core temperature can be measured by means of an “ear” thermometer.

The heart rate at the beginning of the rest period should not exceed 100 beats per minute. If the heart rate is in excess of the above guideline, the next work period will be shortened by one-third, while the length of the rest period stays the same. If the heart rate is in excess of 110 beats per minute at the beginning of the next rest period, the following work cycle will be further shortened by one-third. An employee with a body core temperature in excess of 99.5 degrees °F will not be allowed to return to work after the rest period until the core temperature returns to 99 degrees or below.

Breaks in a shaded area will be taken if any worker exhibits or believes necessary to mitigate the symptoms of heat stress such as excessive sweating, muscle spasms, thirst, dizziness, rapid/weak pulse, flushed skin, loss of consciousness, or convulsions. The breaks will last until symptoms are relieved and/or the pulse of the worker is less than 110 beats per minute. Workers experiencing heat stress will be required, if conscious, to consume two to four pints of electrolyte fluid or cool water every hour while resting in a shaded area.

The individual should not return to work until symptoms are no longer recognizable. If the symptoms appear critical, persist, or get worse, immediate medical attention will be sought. For severe heat stress, workers will be examined by a health-care professional as soon as possible.

Additionally, during periods of hot weather or other potentially heat stress conditions the following safe work practices must apply:

- Be on the alert to signs and symptoms of heat illness during periods of abnormally high heat;
- Know the symptoms of heat illness to watch for which includes excessive sweating, headache, poor concentration, muscle pain, headache, cramping, dizziness, irritability, loss of coordination, vomiting, blurry vision, confusion, lack of sweating, fainting, or seizures;
- Drink plenty of water throughout the day. Employees working in the heat need to drink 4 eight ounce glasses of water per hour, including at the start of the shift to replace the water lost to sweat;
- Dress for conditions: wear lightweight, light-colored loose clothing, a wide-brimmed hat, if possible, sunscreen, and sunglasses;
- Use cool compresses to stay cool;

- Take scheduled rest periods and spend them in the shade;
- Tell your supervisor immediately if you feel you may be getting sick from the heat;
- Know the locations of your closest drinking water supplies;
- Keep track of your co-workers; and
- Know how to contact emergency services in the event of heat illness and how to effectively report the work location to 911.

7.8 Cold Stress Prevention

Exposure to cold weather can lead to frost bite and/or hypothermia. The signs and symptoms of excessive exposure to cold are listed below:

When weather conditions are cold, wet, and windy, the following precautions will be instituted:

- Field personnel should wear layered clothing. Mittens, heavy socks, hats, jackets/vests, long underwear, glove liners or other suitable clothing should be worn when air temperatures fall below 40 °F. Chemical protective clothing will be worn over the warm garments when protective clothing is required by the field operations;
- At temperatures below 30 °F, temperature insulating suits and gloves should be considered;
- Protective outerwear should be used to prevent wetting of work shoes and feet, when appropriate;
- Additional clothing worn in layers allows gradual removal as work activities generate metabolic heat;
- At temperatures below 35 °F, raingear should be worn if an employee could become wet on the job;
- At temperatures below 35 °F, employees shall be provided with warm (65 °F or above) break areas. If appropriate, space heaters will be provided to warm hand and feet;
- Hot liquids such as soups and warm drinks should be consumed during break periods. Caffeine beverages should be limited due to attendant diuretic and circulatory effects;
- A buddy system shall be practiced at all times. An employee that is observed shivering or showing signs of frostbite shall leave the cold area immediately;
- Work should be arranged to avoid sitting or standing for long periods; and
- All employees, who work in cold areas should be trained in the following subjects:
 - Proper first aid treatment for cold stress;
 - Proper clothing practices;
 - Proper eating and drinking habits;

- Recognition of impending adverse health effects due to cold; and
- Safe work practices.

7.9 Spill Contingency Planning

This section applies to the potential migration of contaminated soils into the storm water system or the nearby stream. Standard Storm water prevention procedures will be implemented on the site.

8.0 SITE ACCESS

Site access shall be controlled and secured during construction activities. Breaches to locked gates/doors, should they occur, shall be repaired as soon as possible. In addition, signs should be posted indicating the presence of hazards on-site and that unauthorized individuals should keep out.

9.0 OTHER

9.1 Confined Space Entry

If entries into trenches, underground vaults, and structures deeper than 4 feet are required, additional health and safety measures for entry into a confined space is required.

All personnel shall not enter a confined space unless a Confined Space Assessment has been performed. The space must be tested for the absence of harmful contaminants and the presence of adequate oxygen levels.

Approval must be given by the Onsite Safety Coordinator prior to entry into a confined space. Employees must have completed a Confined Space Safety Training within the last year prior to entering a confined space.

Relevant Cal/OSHA requirements are specified in Title 8, California Code of Regulations, Article 108, and General Industry Safety Orders 5156-5159.

9.2 Sanitation

Provisions must be made for sanitation facilities for the site work force, unless it is a mobile crew and they have transport readily available, the requirements do not apply. At a minimum, the provision of toilet facilities must meet the requirements of Title 8 Section 1526 which include one facility for less than 20 employees; or one toilet and one urinal for every 40 employees, up to 200; then one of each for every 50 employees thereafter.

In addition, an adequate supply of potable water must be available at each jobsite for drinking and decontamination for those operations involving hazardous materials.

9.3 Illumination

Not anticipated as site operations will only be performed during daylight hours. Earthwork operations will not be permitted without adequate lighting. Therefore, unless provisions are made for artificial light, downrange operations must halt in time to permit personnel and equipment to exit the site and proceed through decontamination before dusk. Conversely, earthwork operations will not be permitted to begin until lighting is adequate.

9.4 Electrical Equipment Safety

All portable electrical hand tools and cords will be inspected daily or when used to ensure safe operation. Any equipment found defective is to be tagged and removed from service until repairs are completed.

All portable equipment will be run through a portable ground fault circuit interrupter (GFCI). Each GFCI will be tested daily using the test circuit built into the unit. Any unit failing the test will be tagged and removed from service until repairs can be completed.

All receptacles will be tested prior to use (using portable tester) to ensure that the receptacle has an adequate ground circuit and the wiring is proper. Units that fail the test will be tagged and put out of service until repairs can be made.

All electrical equipment and power cables used in and around wells or structures containing petrochemical contamination must be explosion-proof and/or intrinsically safe and equipped with a three-wire ground lead.

9.5 Fire Prevention

For cutting of metal structures parts etc. measures shall be taken to minimized sources of ignition. Where combustible or flammable materials are present cold cutting methods will be used to cut metallic components. If hot work is necessary, the area shall be cleared of flammable or combustible materials. All hot work will be conducted in accordance with hot work permit procedures.

Fire extinguishers (typically type ABC) shall be maintained in the immediate vicinity of site operations at all times.

If the potential for the accumulation of flammable vapors exist, periodic vapor-concentration measurements should be taken with an explosimeter or combustimeter. If at any time the vapor concentrations exceed 10% of LEL, then the Site Safety Officer, or designated field worker, should immediately shut down all operations.

Only approved safety cans will be used to transport and store flammable liquids.

All gasoline and diesel-driven engines requiring refueling must be shut down and allowed to cool before filling.

Smoking is not allowed during any site operations except at designated on-site area(s).

No open flame or spark is allowed in any area containing petroleum products, or other flammable liquids.

9.6 General Health

Medicine and alcohol can increase the effects of exposure to toxic chemicals. Unless specifically approved by a qualified physician, prescription drugs should not be taken by personnel assigned to operations where the potential for absorption, inhalation, or ingestion of toxic substances exists.

Drinking and driving is prohibited at any time. Driving at excessive speeds is always prohibited.

Skin abrasions must be thoroughly protected to prevent chemicals from penetrating the abrasion.

Contact lenses should not be worn by persons working on the site.

9.7 Sunburn Prevention

Sunburn is caused by overexposure to ultraviolet light (sunshine). The symptoms of exposure are not usually apparent until two to four hours after the exposure ceases. Depending upon the severity of the exposure, the symptoms can range from reddening of the skin, accompanied by mild discomfort, to painful deep burns and blisters. Although light-haired, fair-skinned, blue eyed personnel are at the greatest risk of sunburn, all complexion types can develop sunburn.

The physical hazard of sunburn can be controlled by: (1) providing a shady rest area; (2) wearing appropriate clothing (long pants and tee shirts, i.e., no tank tops); (3) wearing sunscreen with an appropriate protection factor, as appropriate; and (4) working in shifts.

This work will occur outdoors and sunburn hazards are anticipated.

9.8 Noise

Control of noise hazards shall be in accordance with 8 CCR 5096(b). Noise hazard areas (greater than the 8-hour Time Weighted Average of 85 dBA or 140 dB impact/pulse) must be appropriately marked and hearing protection for noise attenuation worn when in the area.

Noise monitoring may be appropriate for those areas of concern. Hearing protection may be required for those areas or operations that typically produce noise levels exceeding the PEL. Hearing protectors, medical surveillance, and training will be in accordance with the Hearing Conservation Program.

10.0 WASTE MANAGEMENT

10.1 Management of Soil

All soil excavation, management, handling, and stockpiling activities shall be conducted consistent with procedures specified in the RAW.

11.0 REFERENCES

OSHA Regulations in 29 CFR 1910.120 (Federal Register 45654, December 19, 1986;
Updated March 6, 1989.



Appendix A

Agreement and Acknowledgement Statement



APPENDIX A

Agreement and Acknowledgment Statement

Site-Specific Health and Safety Plan Agreement

All project personnel and subcontractors are required to sign the following agreement prior to conducting work at the site.

1. I have read and fully understand the EHASP and my individual responsibilities.
2. I agree to abide by the provisions of the EHASP.

Name	Company	Signature	Date

[illegible]



Appendix B

Site-Specific Environmental Health and Safety Plan Amendment Sheet



APPENDIX B

Site-Specific Health and Safety Plan Amendment Sheet			
Project Name			
Project Number			
Location			
Changes in field activities or hazards:			
Proposed Amendment:			
Proposed by		Date	
Approved by		Date	
Declined by		Date	
Amendment Number			
Amendment Effective Date			



Appendix C

Explanation of Hazard Evaluation Guidelines



APPENDIX C

Explanation of Hazard Evaluation Guidelines

Hazard: Airborne Contaminants

<u>Guideline</u>	<u>Explanation</u>
Threshold Limit Value Time-Weighted Average	The time-weighted average concentration for a (TLV-TWA) normal 8-hour workday and a 40-nearly all workers may be repeatedly exposed without adverse effect.
Permissible Exposure Limit (PEL)	Time-weighted average concentration similar to (and in many cases derived from) TLV values.
Immediately Dangerous to Life or Health (IDLH)	"IDLH" or "Immediately Dangerous to Life or Health" means any atmospheric condition which poses an immediate threat to life, or which is likely to result in acute or immediate severe health effects. This includes oxygen deficiency conditions.

Hazard: Explosion

<u>Guideline</u>	<u>Explanation</u>
Lower Explosive Limit (LEL)	The minimum concentration of vapor in air below which the propagation of a flame will not occur in the presence of an ignition source.
Upper Explosive Limit (UEL)	The maximum concentration of vapor in air above which propagation of a flame will not occur in the presence of an ignition source.

Hazard: Fire

<u>Guideline</u>	<u>Explanation</u>
Flash Point	The lowest temperature at which the vapor of a combustible liquid can be made to ignite momentarily in air.



Appendix D

Site Maps

Google Maps

13451 N Extension Rd, Lodi, CA 95242 to 975 S Fairmont Ave, Lodi, CA 95240

Drive 2.8 miles, 7 min

Map data ©2023

1000 ft

13451 N Extension Rd
Lodi, CA 95242

- ↑

1. Head north toward N Extension Rd

92 ft
- ↘

2. Turn right toward N Extension Rd

85 ft
- ↙

3. Turn left onto N Extension Rd

79 ft
- ↘

4. Turn right onto E Harney Ln

1.3 mi
- ↙

5. Turn left onto S Ham Ln

1.4 mi
- ↘

6. Turn right

312 ft
- ↙

7. Turn left

Destination will be on the right

105 ft

975 S Fairmont Ave
Lodi, CA 95240

APPENDIX D

Quality Assurance Project Plan (QAPP)

Laboratory Quality Assurance Program Plan

Henderson Middle School

13451 North Extension Road
Lodi, San Joaquin County, California

To obtain data on the precision, accuracy, and representativeness of the analytical results, the analytical laboratory will analyze the QC samples with suspected contamination as specified by the Project Coordinator. The control limits and corrective actions for each parameter are specified in each analytical method to be provided by the laboratory as a supplement to this Quality Assurance Program Plan (QAPP).

1.0 Laboratory Quality Assurance

Laboratory quality assurance (QA) will be used to further reduce uncertainty in the use of data collected during the subsurface investigation. In general, a QA evaluation considering precision, accuracy, representativeness, completeness, and comparability (PARCC) parameters will be performed relative to the project data quality objectives (DQOs).

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include:

- Equipment rinsate blanks
- Trip blanks, method blanks
- Laboratory control samples (LCSs)
- Surrogate spikes
- Matrix spike/matrix spike duplicate (MS/MSD)
- Laboratory duplicates

2.0 Precision

Precision is a measure of the agreement or reproducibility of analytical results under a given set of conditions. It is a quantity that cannot be measured directly but is calculated from percent recovery data. Precision is expressed as the relative percent difference (RPD):

$$RPD = (D1 - D2) / \{1/2(D1 + D2)\} \times 100$$

(Where D1 and D2 are the reported concentrations for sample and duplicate analyses).

Precision will be primarily assessed by calculating an RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of an MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. In some cases, samples from multiple sample delivery groups (SDGs)

were within one QC batch and therefore are associated with the same laboratory QC samples

For inorganic analysis, one primary sample will be analyzed and accompanied by an unspiked laboratory duplicate. The data reviewer will compare the reported results of the primary analysis and the laboratory duplicate and then calculate the RPD, which will be used to assess laboratory precision.

An RPD outside the numerical QC limit in either MS/MSD samples or LCS/LCSD indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a reported result. Thus, the actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate pairs, results may be reported in either the primary or duplicate samples at levels below the reporting limit or non-detected.

3.0 Sampling Containers and Preservation

Samples collected as part of the proposed investigation will be analyzed for lead. Sampling containers and preservation methods are as follows:

Sample Type	Soil
Containers	4-ounce glass jar
Quantity (per Sample)	1
Preservative	<4° C
Analytical Method	EPA Method 6010
Hold Time	180 days

4.0 Accuracy

Accuracy is a measure of the agreement of an experimental determination and the true value of the parameter being measured. Accuracy is used to identify bias in a given measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of MS, MSD, LCS, and samples containing surrogate spikes. Accuracy of inorganic analyses is assessed using the percent recoveries of MS and LCS analyses.



Percent recovery (% R) is calculated using the following equation: $\% R = (A-B)/C \times 100$

Where:

A = measured concentration in the spiked sample

B = measured concentration of the spike compound in the unspiked sample

C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples, LCS, and surrogate compounds added to environmental samples is evaluated with the acceptance criteria specified by the previously noted documents.

5.0 Representativeness

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population. It is evaluated by reviewing the QC results of blank samples and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks.

A method blank is a laboratory-grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples.

6.0 Method Holding Times

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times are specific for each method and matrix analyzed. Holding times will not be exceeded for the samples analyzed during this investigation. Holding times are shown in the table in Section 3.

7.0 Comparability

Comparability is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The samples will be collected under similar field conditions, sampling procedures, and laboratory methodologies and will therefore be comparable.



8.0 Completeness

Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to assess whether an acceptable amount of usable data was obtained so that a valid scientific site assessment can be completed. As specified in the project DQOs, the goal for completeness for target analytes in each analytical fraction is 90 percent.

$$\text{Percent completeness (\%C)} = (T - R) / T \times 100$$

Where :

%C = percent completeness

T = total number of sample results

R = total number of rejected sample results

Completeness is also evaluated by comparing the planned number of samples per method and matrix with the number determined above.

APPENDIX E

DTSC Information Advisory on Clean Imported Fill Material

Information Advisory

Clean Imported Fill Material



October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California



California
Environmental
Protection Agency



Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed.

It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.dtsc.ca.gov.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contami-

nation and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area

Sampling Requirements

2 acres or less

Minimum of 4 samples

2 to 4 acres

Minimum of 1 sample every 1/2 acre

4 to 10 acres

Minimum of 8 samples

Greater than 10 acres

Minimum of 8 locations with 4 subsamples per location

Volume of Borrow Area Stockpile

Samples per Volume

Up to 1,000 cubic yards

1 sample per 250 cubic yards

1,000 to 5,000 cubic yards

4 samples for first 1000 cubic yards +1 sample per each additional 500 cubic yards

Greater than 5,000 cubic yards

12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

terials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary

to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all com-

pounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Shahir Haddad, P.E. at (714) 484-5368.

APPENDIX F

Previous Terracon Subsurface Investigation Data Tables

Table 1 - Summary of Lead Analytical Results

Henderson Middle School
13451 North Extension Road
Lodi, San Joaquin County, California
Terracon Project No. NA207039

Shed Samples			Northern Exterior Wall						Eastern Exterior Wall		Southern Exterior Wall						Western Exterior Wall	
Sample Group			Drip															
Sample ID:	Units	DTSC Screening Levels for Residential Non-Cancer Endpoint ⁽¹⁾	SHED-N-D-1"	SHED-N-D-6"	SHED-N-D	SHED-N-D1-3	SHED-N-D1-4	SHED-N-D1-5	SHED-E-D-1"	SHED-E-D-6"	SHED-S-D-1"	SHED-S-D-6"	SHED-S-D	SHED-S-D1-3	SHED-S-D1-4	SHED-S-D1-5	SHED-W-D-1"	SHED-W-D-6"
Sample Depth (bgs)			0 to 1 inches	1 to 6 inches	Composite of 0.5 to 2 ft	2.5 to 3 ft	3.5 to 4 ft	4.5 to 5 ft	0 to 1 inches	1 to 6 inches	0 to 1 inches	1 to 6 inches	Composite of 0.5 to 2 ft	2.5 to 3 ft	3.5 to 4 ft	4.5 to 5 ft	0 to 1 inches	1 to 6 inches
Sample Date:			3/6/2020	3/6/2020	10/5/2021	10/5/2021	10/5/2021	10/5/2021	3/6/2020	3/6/2020	3/6/2020	3/6/2020	10/5/2021	10/5/2021	10/5/2021	10/5/2021	3/6/2020	3/6/2020
Metals by EPA Methods 6010B																		
Lead	mg/Kg	80	233	386	9.16	3.33	--	--	2,640	341	1,690	680	11.3	0.523 J	--	--	900	794

School Building Samples			Northern Exterior Wall		Eastern Exterior Wall									
Sample Group			Drip	Step-Out	Drip							Step-Out		
Sample ID:	Units	DTSC Screening Levels for Residential Non-Cancer Endpoint ⁽¹⁾	SS-N-D	SS-N-S	SS-E-D-1" COMP	SS-E-D-6" COMP	SS-E-D	SS-E-D2-3	SS-E-D2-3-D	SS-E-D2-4	SS-E-D2-5	SS-E-S-24-1"	SS-E-S-24-6"	SS-E-S
Sample Depth (bgs)			Composite of 0.5 to 2 ft	Composite of 0.5 to 2 ft	0 to 1 inches	1 to 6 inches	Composite of 0.5 to 2 ft	2.5 to 3 ft	2.5 to 3 ft	3.5 to 4 ft	4.5 to 5 ft	0 to 1 inches	1 to 6 inches	Composite of 0.5 to 2 ft
Sample Date:			10/6/2021	10/6/2021	3/6/2020	3/6/2020	10/6/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	3/6/2020	3/6/2020	10/5/2021
6010B														
Lead	mg/Kg	80	56.8	1.08	1,390	1,550	106	1.50	1.28	-	-	157	227	320

School Building Samples			Southern Exterior Wall																
Sample Group			Drip											Step-Out					
Sample ID:	Units	DTSC Screening Levels for Residential Non-Cancer Endpoint ⁽¹⁾	SS-S-D-1" COMP	SS-S-D-6"	SS-S-D	SS-S-D2-3	SS-S-D2-3-D	SS-S-D2-4	SS-S-D2-5	SS-S-D1	SS-S-D1-E	SS-S-D1-S	SS-S-D1-W	SS-S-S-1" COMP	SS-S-S-6" COMP	SS-S-S	SS-S-D2-3	SS-S-D2-4	SS-S-D2-5
Sample Depth (bgs)			0 to 1 inches	1 to 6 inches	Composite of 0.5 to 2 ft	2.5 to 3 ft	2.5 to 3 ft	3.5 to 4 ft	4.5 to 5 ft	3.5 to 4 ft	1.5 to 2 ft	1.5 to 2 ft	1.5 to 2 ft	0 to 1 inches	1 to 6 inches	Composite of 0.5 to 2 ft	2.5 to 3 ft	3.5 to 4 ft	4.5 to 5 ft
Sample Date:			3/6/2020	3/6/2020	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	3/6/2020	3/6/2020	10/5/2021	10/5/2021	10/5/2021
Metals by EPA Methods 6010B																			
Lead	mg/Kg	80	1,460	1,000	365	129	28.2	--	--	35.0	21.2	175	251	145	120	34.5	--	--	--

School Building Samples			Western Exterior Wall											
Sample Group			Drip									Step-Out		
Sample ID:	Units	DTSC Screening Levels for Residential Non-Cancer Endpoint ⁽¹⁾	SS-W-D-1" COMP	SS-W-D-6" COMP	SS-W-D	SS-W-D2-3	SS-W-D2-4	SS-W-D2-5	SS-W-D4-E-1	SS-W-D4-S-1	SS-W-D4-W-1	SS-W-S-1" COMP	SS-W-S-6" COMP	SS-W-S
Sample Depth (bgs)			0 to 1 inches	1 to 6 inches	Composite of 0.5 to 2 ft	2.5 to 3 ft	3.5 to 4 ft	4.5 to 5 ft	0.5 to 1 ft	0.5 to 1 ft	0.5 to 1 ft	0 to 1 inches	1 to 6 inches	Composite of 0.5 to 2 ft
Sample Date:			3/6/2020	3/6/2020	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	3/6/2020	3/6/2020	10/5/2021
Metals by EPA Methods 6010B														
Lead	mg/Kg	80	7,820	271	131	--	35.0	--	417	95.3	37.6	641	113	130

Notes:

⁽¹⁾ California Department of Toxic Substance Control (DTSC) Screening Levels, Human Health Risk Assessment (HhRA) Note Number 3, dated June 2020, Residential soil, non-cancer risk

mg/Kg = milligrams per kilogram

-- = Not analyzed

Bold value indicates a detection

<Value = Analyte not detected above the laboratory reporting limit (RL)

J = Detected but below the Standard RL; therefore, result is an estimated concentration.

Exceeds the DTSC Screening Level for residential land use for non-cancer endpoint, established June 2020.

Table 2 - Summary of Organochlorine Pesticide Analytical Results

Henderson Middle School
13451 North Extension Road
Lodi, San Joaquin County, California
Terracon Project No. NA207039

Sample ID:		DTSC Screening Levels ⁽¹⁾		EPA Regional Screening Levels ⁽²⁾		SHED-N-D1-1	SHED-S-D1-1	SS-N-D1-1	SS-N-D2-1	SS-N-D2-3	SS-N-D3-1	SS-N-S2-3	SS-N-S2-3-D	SS-W-D1-1	SS-W-D2-1
Sample Depth	Units	Residential Cancer Endpoint ⁽³⁾	Residential Non-Cancer Endpoint ⁽³⁾	Carcinogenic Target Risk ⁽⁴⁾	Non-Cancer Child Hazard Index ⁽⁵⁾	0.5 to 1	0.5 to 1	0.5 to 1	0.5 to 1	2.5 to 3	0.5 to 1	2.5 to 3	2.5 to 3	0.5 to 1	0.5 to 1
Sample Date:						10/5/2021	10/5/2021	10/6/2021	10/6/2021	10/6/2021	10/5/2021	10/6/2021	10/6/2021	10/5/2021	10/5/2021
Organochlorine Pesticides (OCPs) by EPA Method 8081															
4,4'-DDD	mg/Kg	2.3	1.9	2.3	1.9	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
4,4'-DDE	mg/Kg	1.8	23	2.0	23	0.0248	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	0.00448 J
4,4'-DDT	mg/Kg	1.9	37	1.9	37	0.199 P	0.0179 J	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	0.00704 J	0.037 P
Aldrin	mg/Kg	0.039	2.3	0.039	2.3	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Alpha-Bhc	mg/Kg	0.086	510	0.086	510	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Beta-Bhc	mg/Kg	0.3	NE	0.3	NE	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Chlordane	mg/Kg	1.7	35	1.7	35	<0.345	<0.363	<0.335	<0.332	<0.328	<0.319	<0.329	<0.325	<0.318	<0.320
Delta-Bhc	mg/Kg	NE	NE	NE	NE	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Dieldrin	mg/Kg	NE	NE	0.034	3.2	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Endosulfan I	mg/Kg	NE	450	NE	NE	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Endosulfan II	mg/Kg	NE	450	NE	NE	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Endosulfan Sulfate	mg/Kg	NE	380	NE	380	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Endrin	mg/Kg	NE	19	NE	19	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Endrin Aldehyde	mg/Kg	NE	NE	NE	NE	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Endrin Ketone	mg/Kg	NE	NE	NE	NE	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Gamma-Bhc (Lindane)	mg/Kg	0.57	21	0.57	0.7	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Heptachlor	mg/Kg	0.13	38	0.13	7.8	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Heptachlor Epoxide	mg/Kg	0.07	0.99	0.070	1.0	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Hexachlorobenzene	mg/Kg	0.19	49	0.021	0.78	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Methoxychlor	mg/Kg	NE	320	NE	320	<0.0230	<0.0242	<0.0223	<0.0221	<0.0218	<0.0213	<0.0219	<0.0217	<0.0212	<0.0213
Toxaphene	mg/Kg	0.45	5.7	0.49	5.7	<0.459	<0.484	<0.446	<0.443	<0.437	<0.425	<0.438	<0.433	<0.423	<0.427

Sample ID:		DTSC Screening Levels ⁽¹⁾		EPA Regional Screening Levels ⁽²⁾		SS-W-D3-1	SS-W-D4-1	SS-S-D1-1	SS-S-D2-1	SS-S-D3-1	SS-S-D4-1	SS-E-D1-1	SS-E-D2-1	SS-E-D3-1	SS-E-D4-1
Sample Depth	Units	Residential Cancer Endpoint ⁽³⁾	Residential Non-Cancer Endpoint ⁽³⁾	Carcinogenic Target Risk ⁽⁴⁾	Non-Cancer Child Hazard Index ⁽⁵⁾	0.5 to 1	0.5 to 1	0.5 to 1	0.5 to 1	0.5 to 1	0.5 to 1	0.5 to 1	0.5 to 1	0.5 to 1	0.5 to 1
Sample Date:						10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/5/2021	10/6/2021	10/5/2021	10/5/2021
Organochlorine Pesticides (OCPs) by EPA Method 8081															
4,4'-DDD	mg/Kg	2.3	1.9	2.3	1.9	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	0.00725 J	<0.0211
4,4'-DDE	mg/Kg	1.8	23	2.0	23	<0.0212	0.00824 J	0.0534	0.012 J	<0.0211	0.0131 J	0.0106 J	0.0512	0.13	<0.0211
4,4'-DDT	mg/Kg	1.9	37	1.9	37	0.0144 JP	0.0236	0.151 P	0.032	0.00749 JP	0.0403	0.0636	0.0396	0.292 P	0.00803 J
Aldrin	mg/Kg	0.039	2.3	0.039	2.3	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Alpha-Bhc	mg/Kg	0.086	510	0.086	510	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Beta-Bhc	mg/Kg	0.3	NE	0.3	NE	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Chlordane	mg/Kg	1.7	35	1.7	35	0.262 J	0.597	0.967	<0.316	<0.317	<0.311	<0.356	<0.327	<0.317	<0.317
Delta-Bhc	mg/Kg	NE	NE	NE	NE	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Dieldrin	mg/Kg	NE	NE	0.034	3.2	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Endosulfan I	mg/Kg	NE	450	NE	NE	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Endosulfan II	mg/Kg	NE	450	NE	NE	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Endosulfan Sulfate	mg/Kg	NE	380	NE	380	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Endrin	mg/Kg	NE	19	NE	19	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Endrin Aldehyde	mg/Kg	NE	NE	NE	NE	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Endrin Ketone	mg/Kg	NE	NE	NE	NE	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Gamma-Bhc (Lindane)	mg/Kg	0.57	21	0.57	0.7	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Heptachlor	mg/Kg	0.13	38	0.13	7.8	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Heptachlor Epoxide	mg/Kg	0.07	0.99	0.070	1.0	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Hexachlorobenzene	mg/Kg	0.19	49	0.021	0.78	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Methoxychlor	mg/Kg	NE	320	NE	320	<0.0212	<0.0211	<0.0212	<0.0211	<0.0211	<0.0207	<0.0237	<0.0218	<0.0211	<0.0211
Toxaphene	mg/Kg	0.45	5.7	0.49	5.7	<0.424	<0.421	<0.424	<0.421	<0.423	<0.415	<0.474	<0.436	<0.422	<0.423

Notes:

⁽¹⁾ California Department of Toxic Substance Control (DTSC), published June 2020

⁽²⁾ DTSC Screening level for Residential soil, cancer and non-cancer risks

⁽³⁾ Environmental Protection Agency (EPA) Regional Screening Levels (RSLs), published May 2002

⁽⁴⁾ Residential Carcinogenic Target Risk - value posted is the most conservative value established for either ingestion, dermal contact, inhalation, and carcinogenic scenarios.

⁽⁵⁾ Residential Non-Cancer Child Hazard Index - value posted is the most conservative value established for either ingestion, dermal contact, inhalation, and carcinogenic scenarios.

mg/Kg = milligrams per kilogram

NE = Not established

Bold value indicates a detection

<Value = Analyte not detected above the laboratory reporting limit (RL)

J = Detected but below the Standard RL; therefore, result is an estimated concentration.

P = Relative Percent Difference (RPD) between the primary and confirmatory analysis exceeded 40%.

Exceeds the DTSC Screening Level for residential land use for cancer endpoint, established June 2020

Exceeds the DTSC Screening Level for residential land use for non-cancer endpoint, established June 2020.

Exceeds the EPA RSL for carcinogenic target risk for residential land use

Exceeds the EPA RSL for non-cancer child hazard index for residential land use

APPENDIX G

California Department of Public Health
Forms and Certifications

ABATEMENT OF LEAD HAZARDS NOTIFICATION**POST AT ALL ENTRANCES TO WORK AREA AND STRUCTURE**

Work is being conducted to abate lead-based paint or lead hazards in or on this structure. For more information, please contact the individuals or agencies listed below.

Section 1 — Structure Where Abatement of Lead-Based Paint or Lead Hazards is Scheduled

Address [number, street, apartment (if applicable)]	City	County	Zip Code
13451 North Extension Road	Lodi	San Joaquin	95240

Type of structure (check one box only)

☐ Single family dwelling	☐ Multi-family building	☒ School, daycare, or other child-occupied facility
☐ Other (specify) _____		

Section 2 — Summary of Specific Work and Location(s) Where Lead-Based Paint or Lead Hazards Will Be Abated

Lead-impacted soils on perimeter of demolished school building and shed structure, formerly located on the eastern-central portion of the Henderson Middle School campus.

Description of work to be performed:	☐ Interior	☒ Exterior	☐ Both interior and exterior
Type of Abatement (check all that apply):	☒ Permanent (> 20 years)	☐ Temporary (< 20 years)	
Do any children reside on the premises?	☐ Yes	☒ No	☐ Don't know

Section 3

Projected starting date	Projected ending date
Tentative Q3 2025	Tentative Q4 2025

Section 4 — Restrictions on Entering Work Area

List specific times and/or dates residents are not allowed to enter work areas, if applicable.

N/A - Exclusion Zone will be established.

If you would like more information, please contact the following:

Section 5 — Property Owner or Manager

Name	Telephone number		
Lodi Unified School District	209-331-7000		
Address [number, street, apartment (if applicable)]	City	State	Zip Code
1305 East Vine Street	Lodi	CA	95240

Section 6 — Individual Conducting Abatement (Supervisor or Company and Supervisor)

Name and company (if applicable)	Telephone number	CDPH certification number (if applicable)	
Address [number, street, apartment (if applicable)]	City	State	Zip Code

Section 7 — Local Environmental Health Agency

Telephone number

()

This form shall be mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, 3rd Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656

Is this form a revision of a previously submitted abatement notification form?

☐ Yes (Date of other form: _____)
☐ No
☐ Canceled project

LEAD HAZARD EVALUATION REPORT**Section 1 — Date of Lead Hazard Evaluation****Section 2 — Type of Lead Hazard Evaluation (Check one box only)**

☐ Lead Inspection ☐ Risk assessment ☐ Clearance Inspection ☐ Other (specify) _____

Section 3 — Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]		City	County	Zip Code
Construction date (year) of structure	Type of structure		Children living in structure?	
	☐ Multi-unit building ☐ School or daycare		☐ Yes ☐ No	
	☐ Single family dwelling ☐ Other _____		☐ Don't Know	

Section 4 — Owner of Structure (if business/agency, list contact person)

Name		Telephone number	
Address [number, street, apartment (if applicable)]	City	State	Zip Code

Section 5 — Results of Lead Hazard Evaluation (check all that apply)

☐ No lead-based paint detected ☐ Intact lead-based paint detected ☐ Deteriorated lead-based paint detected
☐ No lead hazards detected ☐ Lead-contaminated dust found ☐ Lead-contaminated soil found ☐ Other _____

Section 6 — Individual Conducting Lead Hazard Evaluation

Name		Telephone number	
Address [number, street, apartment (if applicable)]	City	State	Zip Code
CDPH certification number	Signature		Date

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

Section 7 — Attachments

- A. A foundation diagram or sketch of the structure indicating the specific locations of each lead hazard or presence of lead-based paint;
- B. Each testing method, device, and sampling procedure used;
- C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector

Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:

California Department of Public Health
Childhood Lead Poisoning Prevention Branch Reports
850 Marina Bay Parkway, Building P, Third Floor
Richmond, CA 94804-6403
Fax: (510) 620-5656

APPENDIX H

Removal Action Workplan Response to Comments



Comment No.	Agency Comment	Original Workplan Section / Page / Paragraph	Narrative Revision / Response	New Workplan Section / Page / Paragraph
GENERAL COMMENTS				
1.	Please submit an electronic copy of the document (Adobe Acrobat PDF format), a redline/strikeout markup of the revised document (Microsoft Word Document, DOCX) and an electronic copy of the responses to comments (RTC) in table form within two weeks of receipt of this letter. The RTC table should restate each comment, provide the associated response, and specify the location of the associated changes in the revised document. The RTC table shall also be included in an appendix of the revised document.	NA	Comment acknowledged.	NA
2.	All documents shall be provided to DTSC without password protection, in a file size no more than 400-megabytes. A searchable form of Adobe Acrobat shall be used to facilitate review of the revised document and future PDF document submittals. Signature pages must be included and have either an original or electronic signature. An electronic copy of the revised/final document will be posted on the DTSC EnviroStor database public access web site.	NA	Comment acknowledged.	NA
3.	Please include an Executive Summary and List of Abbreviations and Acronyms at the beginning of the revised draft RAW.	Executive Summary, List of Abbreviations	Comment accepted. Terracon has revised the beginning of the text to include: Executive Summary and List of Abbreviations.	Executive Summary, List of Abbreviations
4.	Include a List of Tables and List of Figures in the revised Table of Contents.	Table of Contents	Comment accepted. Terracon has revised the Table of Contents to include the Appendices and list of Exhibits and Tables.	Table of Contents
5.	Include a description and map of the intended truck route from the school to the freeway, where appropriate, in the revised document.	See Exhibit 5, 7.3.2 Soil Staging, Storage, Load-out Operations, and Truck Route	Comment accepted. Terracon has revised the text to include the intended truck routes.	See Exhibit 5, 7.3.2 Soil Staging, Storage, Load-out Operations, and Truck Route
SPECIFIC COMMENTS				
1.	Page 2, Section 2.1 Site Location and Description, second sentence, typographical error: Change “AON” to “APN”.	Page 2, 2.1 Site Location and Description, second sentence.	Comment accepted. Terracon has revised the text and typographical error to change AON to APN.	Page 2, 2.1 Site Location and Description, second sentence.
2.	Page 15, Section 5.3 Description of Remedy and page 28, Section 7.3.4 Excavation Plan: Include the approximate number of truckloads that will be required to transport the 300 cubic yards of impacted soil.	Page 15, 5.3 Description of Selected Remedy, Bullet number 3. Page 29, 7.3.4 Excavation Plan, third sentence.	Comment accepted. Terracon has revised the text to include: A total of approximately 30 truckloads of soil will be required to removal the 300 cubic yards (or approximately 450 tons) from the site. This estimate proposes that approximately 15 tons of soil can be loaded in each truck. An estimated 30 truckloads will be required to remove and transport the estimated 450 tons of excavated soil (i.e., approximately 300 cubic yards).	Page 15, 5.3 Description of Selected Remedy, Bullet number 3. Page 29, 7.3.4 Excavation Plan, third sentence.



Comment No.	Agency Comment	Original Workplan Section / Page / Paragraph	Narrative Revision / Response	New Workplan Section / Page / Paragraph
GENERAL COMMENTS - HERO				
1.	No soil excavation north of the former School Building proposed: According to Exhibit 4, there will be no soil excavation north of the former School Building. Based on Appendix B, Table 1 of the previous Preliminary Environmental Assessment Report (PEA Report) dated December 23, 2022, it appears this decision was made based on lead soil concentrations in SS-N-D (56.8 mg/kg) and SS-N-S (1.08 mg/kg) below soil lead screening levels (SL, 80 mg/kg). However, both SS-N-D and SS-N-S represent soil from the 0.5-2 ft bgs depth range. Lead contamination in the surface (0-0.5 ft bgs) soil north of the former Site building is unknown and may be significantly above the 80 mg/kg SL. This was observed at several other locations (such as SHED-N-D, SHED-S-D and SS-S-S), where lead concentrations at 0.5-2 ft bgs were below 80 mg/kg but surface (<0.5 ft bgs) soil contained lead above 80 mg/kg (up to 680 mg/kg). Therefore, HERO recommends surface (<0.5 ft bgs) soil samples be collected north of the former School building to characterize surface soil lead contamination in this area and assess potential health risks to receptors (such as students) who would be mostly exposed to surface soils. This is important because the Workplan did not propose soil excavation north of the former Schol building. Otherwise, HERO recommends the Workplan be revised to also include soil excavation in the area north of the former School building. Similar to other excavation areas, sidewall and bottom confirmation soil samples should be collected after soil excavation and analyzed for lead.	Page 9, 2.5.6 Supplemental Site Investigation	Comment accepted. Terracon has revised the text to include Section 2.5.6, Supplemental Site Investigation summary and findings.	Page 9, 2.5.6 Supplemental Site Investigation
SPECIFIC COMMENTS - HERO				
1.	Sections 3.2 and 7.3 – Excavation depths for different areas not specified: In Section 7.3, it states the desired excavation depth is 1-2.5 ft bgs. However, the exact soil depths for areas at the Site were not specified in the Workplan. HERO recommends adding explanations in Sections 3.2 and 7.3 to specify the excavation depths for different areas.	Page 9, 3.2 Extent and Volume of Contamination, first sentence. 7.3 Excavation, first sentence. Exhibit 4 – Proposed Removal Action Fieldwork.	Comment accepted. Terracon has revised the text to include specific excavation depths for the different areas of the site. Additionally, Exhibit 4 has been updated to include proposed excavation depths for the site.	Page 9, 3.2 Extent and Volume of Contamination, first sentence. 7.3 Excavation, first sentence. Exhibit 4 – Proposed Removal Action Fieldwork.

NA = Not applicable



Comment No.	Agency Comment	Original Workplan Section	Narrative Revision / Response	Revised Workplan Section
GENERAL COMMENTS				
1.	HASP is required to be a stand-alone document. The minimum required information necessary to ensure the health and safety of personnel must be contained within the HASP. The HASP may refer to other documents for community safety and health information, such as an air monitoring plan, which is often located in the work plan. Please note the employer is also responsible for the implementation of an effective Injury and Illness Prevention Program (IILP) which is required by T8 CCR, sections 1509 and 3203. HSP did not review the IILP.	N/A	Comment acknowledged.	N/A
2.	A HASP must meet the requirements of Title 8, California Code of Regulations (T8 CCR), section 5192: "Health and Safety for Hazardous Waste Operations and Emergency Response"; and T8 CCR, subchapter 4 "Construction Safety Orders." The requirements of 40 CFR T22 CCR, the California Health and Safety Code, as well as DTSC Policies and Procedures may also be considered in the DTSC review. Some of the general areas of concern include field safety issues such as electrical hazards (including overhead and buried electrical lines); confined spaces; excavations; controlling hazards through engineering controls; administrative controls, work practice controls and personal protective equipment; slip trip and fall hazards; lighting issues; heavy equipment safety; heat and cold stress; noise; radiation; and chemical hazards.	N/A	Comment acknowledged.	N/A
3.	The HASP should apply to all contractors, sub-contractors, and regulatory personnel on-site. In the event the HASP does not cover a contractor or sub-contractor, they must submit their own HASP to DTSC for review. If the scope of work changes significantly, (an unanticipated chemical, physical, or biological hazard is discovered or introduced to the Site), then the new hazard must be addressed in an addendum to the HASP and submitted to the DTSC for review.	N/A	Comment acknowledged.	N/A
4.	DTSC's review of a HASP does not constitute a guarantee that all potential hazards have been anticipated, recognized, and addressed, or that the HASP will be properly and safely implemented. DTSC is unable to foresee every health and safety hazard in the workplace by reviewing the HASP. Effective implementation and regulatory compliance are the employer's responsibilities. Continuous surveillance of the Site and creation of an effective health and safety program by the employer will reduce workplace injuries and liability.	N/A	Comment acknowledged.	N/A
5.	An industrial hygienist from DTSC may perform a field audit to confirm the implementation of the provisions and specifications presented in a HASP. The DTSC review of the HASP and field audit does not guarantee the HASP will be properly implemented.	N/A	Comment acknowledged.	N/A
SPECIFIC COMMENTS - HSP				
1.	The Health and Safety Plan is not specific. For example, section 6.1 Chemical Hazards listed lead location and maximum concentration as "to be determined". Without Chemical of Concern (COC) information, risk assessment, air monitoring strategies or PPE selections cannot be achieved. The COCs concentrations seem to be available in the RAW.	Page 10 and 11, Section 3.4 Hazardous Chemicals, Table 1 and 2.	Comment acknowledged. Terracon has revised the HASP to address this comment.	Page 10 and 11, Section 3.4 Hazardous Chemicals, Table 1 and 2.



Comment No.	Agency Comment	Original Workplan Section	Narrative Revision / Response	Revised Workplan Section
2.	The site health and safety plan (HASP) is intended to be a functional stand-alone document. The plan is used to educate and familiarize the on-site workers with the site history, proposed work activities, known or potential health hazards, emergency action plans and the site safety information that is necessary to mitigate the risk from the identified hazards. In utilizing the site HASP, field staff must be able to obtain sufficient information to compile an accurate assessment of the site safety issues associated with every job function. The site-specific HASP, at a minimum, must include the following information:	See below.	Comment acknowledged.	See below.
2.1	Facility Background/Workplan.	Page 1 and 2, Sections 1.1 through 1.4.	Comment acknowledged. Section revised to include background and summary of work.	Page 1 and 2, Sections 1.1 through 1.4.
2.2	Key Personnel and Responsibilities.	Section 2.0 Project Personnel	Comment acknowledged. See section for key personnel and responsibilities.	Section 2.0 Project Personnel
2.3	A safety and health risk or hazard analysis for each site task and operation found in the workplan.	Section 3.0 Site Characterization/Analysis & Protective Measures	Comment acknowledged. See section for safety and health risk or hazard analysis for site tasks.	Section 3.0 Site Characterization/Analysis & Protective Measures
2.4	Employee training assignments to assure compliance with 8 CCR 5192(e) (Training).	Section 1.0 General.	Comment acknowledged. See section for employee training assignments to comply with 8CCR.	Section 1.0 General.
2.5	Personal protective equipment (PPE) to be used by employees for each of the tasks and operations being conducted as required by the PPE program found within CCR 5192(g).	Section 3.7 Required Personal Protective Equipment for Site Operations.	Comment acknowledged. See section for PPE for site operations.	Section 3.7 Required Personal Protective Equipment for Site Operations.
2.6	Medical surveillance requirements in accordance with the program found within 8 CCR 5192(f) (Medical Surveillance).	Section 1.6 Medical Monitoring Program.	Comment acknowledged. See section for medical monitoring program.	Section 1.6 Medical Monitoring Program.
2.7	Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment to be used.	Section 5.0 Air Monitoring.	Comment acknowledged. See section for air monitoring, personal monitoring, and perimeter monitoring.	Section 5.0 Air Monitoring.
2.8	Site control measures in accordance with the site control program required by 8 CCR 5192(d) (Site Control).	Section 4.0 Engineering Controls and Work Practices.	Comment acknowledged. See section for site control measures.	Section 4.0 Engineering Controls and Work Practices.
2.9	Decontamination procedures in accordance with 8 CCR 5192(k) (Decontamination).	Section 6.0 Decontamination.	Comment acknowledged. See section for decontamination procedures.	Section 6.0 Decontamination.
2.10	An emergency response plan meeting the requirements of 8 CCR 5192 (i) (Emergency Response by Employees at Uncontrolled Hazardous Waste Sites), for safe and effective responses to emergencies, including the necessary PPE and other equipment.	Section 7.0 Emergency Response/Contingency Plan.	Comment acknowledged. See section for emergency response/contingency plan.	Section 7.0 Emergency Response/Contingency Plan
2.11	Confined space entry procedures (8 CCR, Article 108, Confined Spaces).	Section 9.0 Other. Section 9.1 Confined Space Entry.	Comment acknowledged. See section for confined space entry.	Section 9.0 Other. Section 9.1 Confined Space Entry.



Comment No.	Agency Comment	Original Workplan Section	Narrative Revision / Response	Revised Workplan Section
2.12	A spill containment program in compliance with 8 CCR 5192(j) (Handling Drums and Containers).	Section 7.0 Emergency Response/Contingency Plan. Section 7.9 Spill Contingency Planning.	Comment acknowledged. See section for emergency response/contingency plan.	Section 7.0 Emergency Response/Contingency Plan. Section 7.9 Spill Contingency Planning.
2.13	Procedures for providing potable water and sanitary facilities to site personnel in accordance with 8 CCR 5192(n) (Sanitation at Temporary Workplaces).	Section 9.0 Other. Section 9.2 Sanitation.	Comment acknowledged. See section for procedures for potable water and sanitation facilities.	Section 9.0 Other. Section 9.2 Sanitation.
2.14	Safe drum and container handling procedures in accordance with 8 CCR 5192(j) (Handling Drums and Containers).	Section 10.0 Waste Management. Section 10.1 Management of Soil.	Comment acknowledged. See section for waste management and RAW for safe container handling.	Section 10.0 Waste Management. Section 10.1 Management of Soil.
2.15	Procedures to verify that adequate illumination is afforded site personnel in accordance with 8 CCR 5192(n).	Section 9.0 Other. Section 9.3 Illumination.	Comment acknowledged. See section for illumination.	Section 9.0 Other. Section 9.3 Illumination.
	In the event that a listed topic is not relevant to the project, a negative declaration must be included to establish that adequate consideration was given to the topic.	N/A	Comment acknowledged.	N/A
	The submitted HASP did not include the minimum required information listed above.	N/A	Comment acknowledged.	N/A

NA = Not applicable