CITY OF BERKELEY

DEPARTMENT OF PARKS, RECREATION & WATERFRONT
CAPITAL PROJECTS

PROJECT MANUAL

Santa Fe Trackbed to Park Conversion Remediation, Demolition and Perimeter Fencing

SPECIFICATION NO. 26-11756-C

October 2025

ADVERTISEMENT DATE: October 31, 2025

PRE-BID SITE VISIT AND CONFERENCE: November 13, 2025

BID OPENING DATE: Thursday, November 20, 2025

Approved by:

Scott Ferris
Director of Parks, Recreation & Waterfront

2180 MILVIA STREET, 3RD Floor, BERKELEY, CALIFORNIA 94704 (510) 981-6700

Document 00 0101

CITY OF BERKELEY

DEPARTMENT OF PARKS, RECREATION & WATERFRONT

PROJECT MANUAL

Santa Fe Trackbed to Park Conversion
Remediation, Demolition and Perimeter Fencing

at

0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St.
Berkeley, CA 94702

SPECIFICATION NO. 26-11756-C
October 2025

Prepared By:

Stacey Rutherford, Associate Civil Engineer

Reviewed By:

Evelyn Chan, Supervising Civil Engineer

DEPT. OF PARKS, RECREATION & WATERFRONT
CAPITAL PROJECTS DIVISION
1947 CENTER STREET, 5TH FLOOR
BERKELEY, CALIFORNIA 94704

Project Manager
Stacey Rutherford, Associate Civil Engineer
Phone: (510) 981-6738
Email: SRutherford@berkeleyca.gov

DOCUMENT 00 0110

TABLE OF CONTENTS

Division	Section	Title
INTRODUCTORY INFORMATION		
	00 0101	Title Page
	00 0110	Table of Contents
	00 0115	Drawing List
BIDDING REQUIREMENTS		
	00 1113	Notice Inviting Bids
	00 2113	Instructions to Bidders
	00 3132	Geotechnical Data and Existing Conditions
BID FORMS AND BID SUBMITTALS		
	00 4113	Bid Form
	00 4313	Bond Accompanying Bid
	00 4314	Bidder Registration and Experience Form
	00 4330	Subcontractors List
	00 4513	Statement of Qualifications
	00 4519	Non-Collusion Affidavit
	00 4546	Bidder Certifications
CONTRACT FORMS		
	00 5100	Notice of Intent to Award for Construction
	00 5200	Agreement
	00 5500	Notice to Proceed
	00 6113.13	Construction Performance Bond
	00 6113.16	Construction Labor and Material Payment Bond
	00 6290	Escrow Agreement for Security Deposits in Lieu of Retention
	00 6325	Substitution Request Form
	00 6530	Release of Claims
	00 6536	Guaranty
	00 6580	City of Berkeley Contracting Polices
CONDITIONS OF THE CONTRACT		
	00 7200	General Conditions
	00 7201	Supplemental General Conditions
	00 7316	Supplementary Conditions – Insurance
	00 7317	Supplementary Conditions – City of Berkeley Contracting Policies
	00 7319	Supplementary Conditions – Health and Safety Requirements; Hazardous Materials
	00 7380	Apprenticeship Program
	00 9113	Addenda

Division Section Title

GENERAL REQUIREMENTS

01 1100	Summary of the Work
01 2000	Measurement and Payment
01 2600	Modification Procedures
01 3119	Project Meetings
01 3230	Progress Schedules and Submittals
01 3300	Submittals
01 4100	Regulatory Requirements
01 4200	References and Definitions
01 4500	Testing and Inspection
01 5200	Temporary Facilities
01 5526	Traffic Control
01 5700	Temporary Controls
01 7329	Cut-Patch
01 7413	Project Cleaning
01 7419	Construction Waste Management
01 7700	Contract Closeout
01 7800	Closeout Submittals

TECHNICAL SPECIFICATIONS

03 4119	Demolition
03 3000	Cast-In-Place Concrete
06 2013	Exterior Finish Carpentry – Wood Fences
31 2000	Earthwork
32 3113	Chain Link Fence and Gates

APPENDICES

Appendix A	City of Berkeley Community Workforce Agreement (CWA)
Appendix B	Pre-Demolition Survey Report for 1410 Parker Street
Appendix C	Final Removal Action Workplan | Santa Fe Trackbed to Park | Berkeley, CA
Appendix D	Tentative Schedule

END OF DOCUMENT

DOCUMENT 00 0115

LIST OF DRAWINGS

DRAWINGS

Sheet Number	Description
G0.00	COVER SHEET
G1.01	SURVEY – BLAKE TO PARKER
G1.02	SURVEY – PARKER TO CARLETON
G1.03	SURVEY – CARLETON TO DERBY
G1.04	SURVEY – DERBY TO WARD
G2.01	DEMOLITION PLAN – BLAKE TO PARKER
G2.02	DEMOLITION PLAN – PARKER TO CARLETON
G2.03	DEMOLITION PLAN – CARLETON TO DERBY
G2.04	DEMOLITION PLAN – DERBY TO WARD
G3.01	POLLUTION PREVENTION PLAN
L1.00	LANDSCAPE PLAN – WHOLE SITE
L1.01	MATERIALS PLAN – BLAKE TO PARKER
L1.02	MATERIALS PLAN – PARKER TO CARLETON
L1.03	MATERIALS PLAN – CARLETON TO DERBY
L1.04	MATERIALS PLAN – DERBY TO WARD
L4.01	DETAILS – WOOD FENCE
L4.02	DETAILS – CHAIN LINK FENCE AND GATES

END OF DOCUMENT

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 1113

NOTICE INVITING BIDS

ARTICLE 1 - INVITATION TO BID

1.01 Notice Inviting Bids: City of Berkeley ("City") will receive sealed Bids at City of Berkeley, Purchasing Manager's Office, located at the Martin Luther King Jr. Civic Center, 2180 Milvia Street, Third Floor, Berkeley, CA 94704, Telephone (510) 981-7320, until **Thursday, November 20, 2025** at **2:00 PM** for the following public work:

SPECIFICATION NO. 26-11756-C
CITY OF BERKELEY
Santa Fe Trackbed to Park Conversion
Remediation, Demolition and Perimeter Fencing
0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St.

(Former Santa Fe Railroad Right-of-Way, four vacant parcels between Blake Street and Ward Street in Berkeley, CA 94702. Area bounded by Blake Street to the north, Sacramento Street to the east, Derby Street to the south, and Mabel Street to the west. See plans for area of work.)

1.02 Project Description: Removal of contaminated soil left behind by the site's historic railroad use, demolition of existing encroaching structures, demolition and clearing of the site, import and installation of clean soil fill, construction of new fences along the property lines, including ancillary work in accordance with the terms and conditions of the Contract Documents. Work shall be completed within **140 Calendar Days** from the date when Contract Time commences to run.

1.03 Procurement of Bidding Documents:
Bidding Documents contain the full description of the Work. Bidders may obtain Bidding Documents by October 31, 2025 from City of Berkeley's website under Current Construction Project Bid Opportunities:

https://berkeleyca.gov/doing-business/working-city/bid-proposal-opportunities

For information pertaining to the Bidding Documents, please contact the Project Manager, Stacey Rutherford, 1947 Center Street, 5th Floor, Berkeley, CA 94704, by Email at SRutherford@berkeleyca.gov or by Telephone at (510) 981-6738.

1.04 Planholders List:

Bidders are responsible for notifying Stacey Rutherford, via email at SRutherford@berkeleyca.gov to be included on the Planholders List. Please include the following in the email subject header: "Planholders list for Specification No. 26-11756-C for Santa Fe Trackbed to Park Conversion
Remediation, Demolition and Perimeter Fencing". In the body of the email, please state the Name of the Company Representative, Company Name, Address, Telephone Number, Fax Number, and Email Address.

1.05 Instructions: Bidders shall refer to Document 00 2113 (Instructions to Bidders) for required documents and items to be submitted in a sealed envelope for deposit into the Bid Box, located at **City of Berkeley, Purchasing Manager's Office, Martin Luther King Jr. Civic Center, 2180 Milvia Street, Third Floor, Berkeley, CA 94704, Telephone (510) 981-7320** no later than the time and date set forth in Paragraph 1.01 above.

1.06 Non-Mandatory Pre-Bid Site Visit: City **will** conduct a Non-Mandatory Pre-Bid Conference and Site Visit at the project site. The location of work is fenced, locked, and not open to the public during normal business or daylight hours, limiting access to review the site independently. It is highly recommended that potential bidders visit the site to review site conditions prior to bid. City will conduct a Pre-Bid Conference and Site Visit on November 13, 2025 at 1:00 pm. Potential bidders shall meet at the southernmost block at 0 Ward Street at Sojourner Truth Court, between Acton Street and Sacramento Street at 1:00 pm.

1.07 Bid Preparation Cost: Bidders are solely responsible for the cost of preparing their Bids.

1.08 Reservation of Rights: City specifically reserves the right, in its sole discretion, to reject any or all Bids, to re-bid, or to waive inconsequential defects in bidding not involving time, price or quality of the work. City may reject any and all Bids and waive any minor irregularities in the Bids.

ARTICLE 2 - LEGAL REQUIREMENTS

2.01 Required Contractor's License(s): A California **"A"** contractor's license is required to bid this contract. Joint ventures must secure a joint venture license prior to award of this Contract. Specialty work may require a specialty contractor's license, held by Bidder or a listed subcontractor.

2.02 Bid Alternates: Bid alternates are identified in Document 00 4113 (Bid Form). The determination of lowest bid shall be based upon: Base contract bid price only.

2.03 Substitution of Securities: City will permit the successful bidder to substitute securities for any retention monies withheld to ensure performance of the contract, as set forth in Document 00 6290 Escrow Agreement For Security Deposits In Lieu Of Retention and incorporated herein in full by this reference, in accordance with Section 22300 of the California Public Contract Code.

2.04 Prevailing Wage Laws: The successful Bidder must comply with all prevailing wage laws applicable to the Project, and related requirements contained in the Contract Documents. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are on file at **http://www.dir.ca.gov/oprl/pwd/** and are deemed included in the Bidding Documents. The successful Bidder shall post the applicable prevailing wage rates at the Site.

2.05 Community Workforce Agreement: This contract **WILL** be subject to the Community Workforce Agreement approved by the Berkeley City Council on June 23, 2015 (See Document 00 6580 – City of Berkeley Contracting Policies). The successful bidder and all subcontractors, at any tier, **WILL** be required to sign an Agreement to be Bound as a condition precedent to entering into any contract for this project.

2.06 First Source Construction Agreement: This contract **WILL NOT** be subject to the First Source Construction Agreement (See Document 00 6580 – City of Berkeley Contracting Policies).

2.07 This contract **WILL NOT** be subject to Supplementary Conditions for Federal Funding. Section 00 7201.

END OF SECTION

DOCUMENT 00 2113

INSTRUCTIONS TO BIDDERS

Bids are requested by City of Berkeley ("City"), for a general construction contract, or work described in general, as set forth in Document 00 1113 (Notice Inviting Bids), and the following additional terms.

ARTICLE 1 - PROCEDURES FOR SUBMISSION OF BIDS

1.01 Required Pre-Bid Conference and Site Visit

A. City **will** conduct a Non-Mandatory Pre-Bid Conference and Site Visit at the project site. The location of work is fenced, locked, and not open to the public during normal business or daylight hours, limiting access to review the site independently. It is highly recommended that potential bidders visit the site to review site conditions prior to bid. City will conduct a Pre-Bid Conference and Site Visit on November 13, 2025 at 1:00 pm. Potential bidders shall meet at the southernmost block at 0 Ward Street at Sojourner Truth Court, between Acton Street and Sacramento Street at 1:00 pm.

B. Questions regarding the site and the Bid Documents may be sent to the City's Representative to clarify such matters as Bidders may request. The Site Visit may be the Bidders' only opportunity to investigate conditions at the Site. Other Pre-Bid Site Visits may be scheduled at City's sole discretion, depending on staff availability.

C. City will issue Minutes of the Pre-Bid Conference, which shall constitute the sole and exclusive record and statement of the results of the Pre-Bid Conference. The Minutes issued by City are not Contract Documents.

1.02 Required Pre-Bid Investigations

A. Prior to submission of Bid, Bidder must conduct a careful examination of Bidding Documents and understand the nature, extent, and location of Work to be performed. Refer to Document 00 7200 (General Conditions) on required pre-bid investigations.

B. Bidders may examine any available existing conditions information (e.g., record documents, specifications, studies, drawings of previous work), as well as applicable environmental assessment information (if any) regarding the Project, which will be posted on the website location indicated in Document 00 1113 (Notice Inviting Bids), paragraph 1.03.

1.03 Bidder Questions and Answers

A. Bidders must direct all questions about the meaning or intent of Bidding Documents to City's Project Manager in writing as indicated in Document 00 1113 (Notice Inviting Bids), paragraph 1.03. Interpretations or clarifications considered necessary by City in response to such questions will be issued by written Addenda posted to the City's website.

B. Questions received less than ten (10) calendar days prior to the date for opening Bids may not be answered.

C. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect, and Bidders shall not rely on oral statements.

1.04 Addenda

A. Addenda may also be issued to modify the Bidding Documents as deemed advisable by City. Addenda shall be acknowledged by number in Document 00 4113 (Bid Form) and shall be part of the Contract Documents. A complete listing of Addenda may be secured from City on the website as indicated in Document 00 1113 (Notice Inviting Bid), paragraph 1.03.

1. It is the Contractor's responsibility to check the City's website for Addenda prior to submitting their bid.

ARTICLE 2 - RECEIPT OF BIDS

2.01 Date and Time

A. Sealed Bids will be received by the City until the date and time indicated in Document 00 1113 (Notice Inviting Bids). All Bid envelopes will be time-stamped to reflect their submittal time. City shall reject all Bids received after the specified time and will return such Bids to Bidders unopened. Bidders must submit Bids in accordance with this Document 00 2113.

2.02 Two Envelope Bid Submission:

A. City will receive Bids in opaque sealed 10 inch x 13 inch envelopes, containing the required items described herein.

B. Bidders must submit Bids in two envelopes: "Envelope A – Bid Submittals" and "Envelope B – Statement of Qualifications."

C. Bidders should mark their Bid envelopes using the name, address, identifying information and specification number, indicated in Document 00 1113 (Notice Inviting Bids).

2.03 Required Contents of "Envelope A – Bid Submittals"

A. Document 00 4113 (Bid Form). Bidders must submit Bids on Document 00 4113 (Bid Form) in accordance with the provisions of Document 00 4113. Bidders must complete all Bid items and supply all information required by Bid documents and specifications.

B. Document 00 4313 (Bond Accompanying Bid). Bidders must submit Document 00 4313 (Bond Accompanying Bid) accompanied by a cashier's check, certified check (certified without qualification and drawn on a solvent bank of the State of California or a National Bank doing business in the State of California) or completed form of Document 00 4313 of not less than 10% of the base Bid, payable to City and completed in accordance with the provisions of Document 00 4313.

C. Document 00 4314 (Bidder Registration and Experience Form). Bidders must submit Document 00 4314 (Bidder Registration and Experience Form), completed in accordance with the provisions of Document 00 4314.

D. Document 00 4330 (Subcontractor List). Bidders must submit Document 00 4330 (Subcontractors List) completed in accordance with the provisions of Document 00 4330. The Subcontractors List must include the names of all subcontractors for those subcontractors who will perform any portion of work, including labor, rendering of service, or specially fabricating and installing a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of the total Bid amount. Any violation of this requirement may result in a Bid being deemed non-responsive and not being considered.

E. Document 00 4519 (Non-Collusion Affidavit). Bidders must submit Document 00 4519 (Non-Collusion Affidavit) completed in accordance with the provisions of Document 00 4519.

F. Document 00 4546 (Bidder Certifications). Bidders must submit Document 00 4546 (Bidder Certification) completed in accordance with the provisions of Document 00 4546.

2.04 Required Contents of "Envelope B – Statement of Qualifications"

A. Document 00 4513 (Statement of Qualifications for Construction Work). Bidder must submit Document 00 4513 (Statement of Qualifications for Construction Work) in accordance with the provisions of Document 00 4513.

ARTICLE 3 - BID OPENING AND EVALUATION

3.01 Determination of Apparent Low Bidder

A. City will open each Bidders' Envelope A at the time and place indicated in Document 00 1113 (Notice Inviting Bids), initially evaluate them for responsiveness, and determine an Apparent Low Bidder as specified herein.

B. Apparent Low Bid will be determined solely on the total amount of all Bid items based on terms contained in Document 00 1113 (Notice Inviting Bids) and Document 00 4113 (Bid Form). All Bidders are required to submit Bids on all Bid items (including any alternates).

C. For the purposes of award, the apparent low Bidder will be the conforming responsible Bidder offering the lowest total amount for the Total Base Bid shown in the Bid Form. Once the low bidder is determined as herein described, the City reserves the right to award any combination of Additive Bid alternates, or not award any Additive Bid alternates, as it deems to be in the best interest of the City, regardless of whether the total bid of the particular combination selected is higher or lower than any other bidder for that same combination.

D. For the Apparent Low Bidder only, City will open Envelope B and evaluate the Apparent Low Bidder for responsiveness to the requirements of Document 00 4513 and for Responsibility.

E. If Apparent Low Bidder is determined to be non-responsive or non-responsible, then City may proceed to the next Apparent Low Bidder's Bid pursuant to any procedures determined in its reasonable discretion, and proceed for all purposes as if this Apparent Low Bidder were the original Apparent Low Bidder.

3.02 Evaluation of Bids

A. Bids must be full, complete, clearly written and using the required forms. Bidders shall make any change in the Bid by crossing out the original entry, entering and initialing the new entry. Bidder's failure to submit all required documents strictly as required entitles City to reject the Bid as non-responsive. All Bidders must submit Bids containing each of the fully executed documents supplied in this Project Manual.

B. In evaluating Bids, City will consider Bidders' qualifications, whether or not the Bids comply with the prescribed requirements, unit prices, and other data, as may be requested in Document 00 4113 (Bid Form) or prior to the Notice of Award.

C. City may conduct reasonable investigations and reference checks of Bidder and other persons and organizations as City deems necessary to assist in the evaluation of any Bid and to establish Bidder's responsibility, qualifications, financial ability and ability to perform the Work in accordance with the Contract Documents to City's satisfaction within the prescribed time. Submission of a Bid constitutes Bidder's consent to the foregoing.

D. City shall have the right to consider information provided by sources other than Bidder. City shall also have the right to communicate directly with Bidder's surety regarding Bidder's bonds.

E. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between written words and figures will be resolved in favor of the words.

F. Bids shall be deemed to include the written responses of the Bidder to any questions or requests for information of City made as part of Bid evaluation process after submission of Bid.

3.03 Reservation of Rights

A. City reserves the right to reject any or all nonconforming, non-responsive, unbalanced, or conditional Bids, and to reject the Bid of any Bidder as non-responsive as a result of any error or omission in the Bid, or if City believes that it would not be in the best interest of Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by City. For purposes of this paragraph, an "unbalanced Bid" is one having nominal prices for some Bid items and enhanced prices for other Bid items.

B. City may retain Bid securities and Bid bonds of other than the Apparent Low Bidder for a period of 90 Days after award or full execution of the Contract, whichever first occurs.

C. City may reject any or all Bids and waive any informalities or minor irregularities in the Bids. City also reserves the right, in its discretion, to reject any or all Bids and to re-Bid the Project.

ARTICLE 4 - MANDATORY BID PROTEST PROCEDURES

4.01 Submission of Written Bid Protest

A. Any Bid protest in connection with the construction contract or work described in general in Document 00 1113 (Notice Inviting Bids) must be submitted in writing to the Project Manager as indicated in Document 00 1113, paragraph 1.03 before 3:30 p.m. of the fifth Business Day following opening of the Bidders' envelopes.

B. The initial protest document must contain a complete statement of the basis for the protest.

C. The protest must refer to the specific portion of the document that forms the basis for the protest.

D. The protest must include the name, address, and telephone number of the person representing the protesting party.

E. Only Bidders who the City otherwise determines are responsive and responsible are eligible to protest a Bid; protests from any other Bidder will not be considered. In order to determine whether a protesting Bidder is responsive and responsible, City may evaluate all information contained in any protesting Bidder's Bid, and conduct the same investigation and evaluation as City is entitled to take regarding an Apparent Low Bidder.

F. The party filing the protest must concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

4.02 Exclusive Remedy

A. The procedure and time limits set forth in this paragraph are mandatory and are Bidder's sole and exclusive remedy in the event of Bid protest. Bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue the Bid protest, including filing a Government Code Claim or legal proceedings. A Bidder may not rely on a protest submitted by another Bidder, but must timely pursue its own protest.

ARTICLE 5 - AWARD AND EXECUTION OF CONTRACT

5.01 Notice of Intent to Award and Submittal of Executed Contract Documents

A. If Contract is to be awarded, it will be awarded to the lowest responsible responsive Bidder. City will issue Document 00 5100 Notice of Intent to Award. Such Award, if made, will be made within sixty (60) calendar days after the opening of the Bid Proposals.

B. Successful Bidder must execute and submit to City the "Required Contract Documents and Proof of Insurance" set forth below, by 5:00 p.m. of the 10th calendar Day following the Notice of Intent to Award.

5.02 Required Contract Documents and Proof of Insurance

A. Document 00 5200 (Agreement), fully executed by successful Bidder. Submit **two** originals and an emailed PDF, each bearing an original signature (in blue ink) and initials on each page.

B. Document 00 6113.13 (Construction Performance Bond), fully executed by successful Bidder and surety, in the amount set forth in Document 00 6113.13. Submit **two** originals and an emailed PDF.

C. Document 00 6113.16 (Construction Labor and Material Payment Bond), fully executed by successful Bidder and surety, in the amount set forth in Document 00 6113.16. Submit **two** originals and an emailed PDF.

D. Document 00 6536 (Guaranty), fully executed by successful Bidder. Submit **two** originals and an emailed PDF.

E. Insurance certificates and endorsements required by Document 00 7316 (Supplementary Conditions — Insurance and Indemnification): Submit **one** original set and an emailed PDF.

F. Document 006580 (City Contracting Policies), fully executed by successful bidder. Submit **one** original set and an emailed PDF.

5.03 Failure to Execute and Deliver Documents:

A. If Bidder to whom Contract is awarded, within the period described in this Document 00 2113, fails or neglects to execute and deliver all required Contract Documents and file all required bonds, insurance certificates, and other documents, City may, in its sole discretion, rescind the award, recover on Bidder's surety bond, or deposit Bidder's cashier's check or certified check for collection, and retain the proceeds thereof as liquidated damages for Bidder's failure to enter into the Contract Documents. Bidder agrees that calculating the damages City may suffer as a result of Bidder's failure to execute and deliver all required Contract Documents would be extremely difficult and impractical and that the amount of Bidder's required Bid security shall be the agreed and presumed amount of City's damages.

B. Upon such failure to timely deliver all required Contract Documents as set forth herein, City may determine the next Apparent Low Bidder and proceed accordingly. Such Award, if made, will be made within sixty (60) calendar days after the opening of the Bid Proposals.

ARTICLE 6 - GENERAL CONDITIONS AND REQUIREMENTS

6.01 Modification of Commencement of Work:

A. City expressly reserves the right to modify the date for the Commencement of Work under the Contract and to independently perform and complete work related to Project. City accepts no responsibility to Contractor for any delays attributed to its need to complete independent work at the Site.

B. City shall have the right to communicate directly with Apparent Low Bidder's proposed performance bond surety, to confirm the performance bond. City may elect to extend the time to receive faithful performance and labor and material payment bonds.

6.02 Conformed Project Manual:

A. Following Award of Contract, City may prepare a conformed Project Manual reflecting Addenda issued during bidding, which will, failing objection, constitute the approved Project Manual.

6.03 Payment Bond:

A. If the Project described in Document 00 1113 (Notice Inviting Bids) involves an expenditure in excess of twenty-five thousand dollars ($25,000), the successful Bidder must file a payment bond with and approved by City prior to entering upon the performance of the Work, in accordance with Civil Code § 3247.

6.04 Wage Rates:

A. The successful Bidder must comply with all prevailing wage laws applicable to the Project, and related requirements contained in the Contract Documents. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are on file at **http://www.dir.ca.gov/oprl/pwd/** and are deemed included in the Bidding Documents. The successful Bidder shall post the applicable prevailing wage rates at the Site.

6.05 Withdrawal of Bids:

A. Bidders may withdraw their Bids at any time prior to the Bid opening time fixed in this Document 00 2113, only by written request for the withdrawal of Bid filed with City's Purchasing Department, at 2180 Milvia Street, 3rd Floor, Berkeley, CA 94704. Bidder or its duly authorized representative shall execute request to withdraw Bid.

6.06 Ineligible Contractors and Subcontractors:

A. No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].

B. City shall not accept a Bid from a Bidder who is ineligible to bid or work on, or be awarded, a public works project pursuant to California Labor Code section 1777.1 or 1777.7. Bidders and the Contractor who is awarded the project contract shall not utilize, or allow work by, any subcontractor who is ineligible to bid or work on, or be awarded, a public works project pursuant to California Labor Code Section 1777.1 or 1777.7. (See California Public Contract Code Section 6109.) The California Division of Labor Standards Enforcement publishes a list of debarred contractors and subcontractors on the Internet at www.dir.ca.gov/DLSE/debar.html.

6.07 Substitutions:

A. Bidders must base their Bids on products and systems specified in Contract Documents or listed by name in Addenda. City will consider substitution requests only for “or equal items.” Bidders wanting to use “or equal” item(s) may submit Document 00 6325 (Substitution Request Form) no later than 35 calendar days after Notice of Award. As a limitation on Bidder's privilege to request substitution of “or equal” items, City has found that certain items are designated as City standards and certain items are designated to match existing items in use on a particular public improvement either completed or in the course of completion or are available from one source. As to such items, City will not permit substitution. Such items are described in the Bidding Documents.

6.08 Definitions:

A. All abbreviations and definitions of terms used in this Document 00 2113 are set forth in Document 00 7200 (General Conditions) and Section 01 4200 (References and Definitions).

END OF SECTION

DOCUMENT 00 3132

GEOTECHNICAL DATA AND EXISTING CONDITIONS

ARTICLE 1 - REPORTS AND INFORMATION ON EXISTING CONDITIONS

1.01 Inspection of Reports:

A. City, its consultants, and prior contractors may have collected documents providing a general description of the Site and conditions of the Work. These documents may consist of geotechnical reports for and around the Site, contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding Underground Facilities (collectively, “Existing Conditions Data”.)

B. Bidders may inspect Geotechnical and Existing Conditions Data. These documents are listed in Section 01 1100 (Summary) and are available for review at the address identified therein. Copies may be obtained for the cost of reproduction and handling upon Bidder’s payment for the costs.

C. Existing Conditions Data is for information only and does not describe labor, materials or equipment furnished by Contractor, but rather, information regarding conditions of the work. Such Existing Conditions Data is not a Contract Document.

ARTICLE 2 - USE OF EXISTING CONDITIONS DATA

2.01 Above-Ground Existing Conditions:

A. City makes no warranty or representation of existing aboveground conditions, as-built conditions, or other aboveground actual conditions verifiable by reasonable independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder must perform prior to bidding and Bidder must not rely on the information supplied by City regarding existing conditions.

B. Bidder represents and agrees that in submitting its Bid, it is not relying on any information regarding above-ground existing conditions supplied by City.

2.02 Underground Facilities:

A. Information supplied regarding existing Underground Facilities at or contiguous to the Site is based on information furnished to City by others (e.g., the builders of such Underground Facilities or others).

B. City assumes responsibility for only the general accuracy, completeness or thoroughness of information regarding Underground Facilities that are owned by City. This express assumption of responsibility applies only if Bidder has conducted the independent investigation required of it under Document 00 7200 (General Conditions) and discrepancies were not apparent. Bidder is solely responsible for any interpretation or conclusion drawn from this information.

C. City is not responsible for information regarding Underground Facilities owned by others.

2.03 Hazardous Materials Surveys:

A. Bidders may rely on this data and information for general accuracy regarding the locations of potentially hazardous materials subject of the Work. City does not warrant and makes no representation regarding the completeness or thoroughness of any data or information regarding existing conditions or hazardous materials, including, but not limited to, quantities, characteristics, volumes, or associated structural features. Bidder represents and agrees that in submitting a Bid it is not relying on any such data, information or deductions.

B. Data and information regarding the locations of hazardous materials are not part of Contract Documents.

2.04 Geotechnical Data:

A. Bidder may rely upon the general accuracy of the “technical data” contained in the geotechnical

reports and drawings identified above, but only insofar as it relates to subsurface conditions, provided Bidder has conducted the independent investigation required of it and discrepancies were not apparent.

B. The term “technical data” shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment, or structures that were encountered during subsurface exploration. The term “technical data” does not include, and Bidder may not rely upon, any other data, interpretations, opinions or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures. The term “technical data” shall not include the location of Underground Facilities.

C. Bidder may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidder is solely responsible for any interpretation or conclusion drawn from any “technical data” or any other data, interpretations, opinions, or information contained in supplied geotechnical data.

D. Except as expressly set forth in this Document 00 3132, City does not warrant, and makes no representation regarding, the accuracy or thoroughness of any geotechnical data.

E. Bidder represents and agrees that in submitting its Bid, it is not relying on any geotechnical data supplied by City, except as specifically set forth herein.

ARTICLE 3 - INVESTIGATIONS

3.01 Required Investigations:

A. Before submitting a Bid, each Bidder shall be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise, which may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of Contract Documents.

B. Bidders shall advise City in writing during the Bid period of any questions, suppositions, inferences or deductions Bidders may have for City’s review and response.

C. City has provided time in the period prior to bidding for Bidder to perform these investigations.

3.02 Access to Site for Investigations:

A. During the Pre-Bid Site Visit(s), City will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a Bid. The Bidder may request alternate dates and times to access the site. Such request must be made in writing at least ten (10) calendar days prior to bid. Bidders must fill all holes and clean up and restore the Site to its former conditions upon completion of such explorations, investigations, tests, and studies. Such investigations may be performed only under the provisions of Document 00 2113 (Instructions to Bidders) and Document 00 7200 (General Conditions) including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such investigation work. Each Bidder shall supply all equipment required to perform any investigations as each Bidder deems necessary. City has the right to limit the number of pieces of machinery operating at one time due to safety concerns.

END OF SECTION

DOCUMENT 00 4113

BID FORM

TO **CITY OF BERKELEY**

THIS BID IS SUBMITTED BY:

_____

(Firm/Company Name)

Re: Santa Fe Trackbed to Park Conversion – Remediation, Demolition and Perimeter Fencing at 0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St., Specification No. 26-11756-C

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with City of Berkeley in the form included in the Contract Documents, Document 00 5200 (Agreement), to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Sum and within the Contract Time indicated in this Bid and in accordance with all other terms and conditions of the Contract Documents.

2. Bidder accepts all of the terms and conditions of the Contract Documents, Document 00 1113 (Notice Inviting Bids), and Document 00 2113 (Instructions to Bidders), including, without limitation, those dealing with the disposition of Bid Security. This Bid will remain subject to acceptance for 60 calendar days after the day of Bid opening, unless there is a bid protest, then 90 calendar days after the day of bid opening. Bidder will sign and submit Document 00 5200 (Agreement) and other documents required by Document 002113, paragraph 5.02 (Required Contract Documents and Proof of Insurance) within 20 calendar days after receipt of City's Notice of Intent to Award.

3. In submitting this Bid, Bidder represents that Bidder has examined all of the Contract Documents, performed all necessary Pre-Bid investigations as set forth in Document 00 5200 (Agreement) Article 6 (Contractor's Representation), received the Pre-Bid conference minutes (if any), and received the following Addenda:

Addendum Number	ADDENDUM DATE	Signature of Bidder

4. Based on the foregoing, Bidder proposes and agrees to fully perform the Work within the time stated and in strict accordance with the Contract Documents for the following sums of money listed in the following Schedule of Bid Prices:

SCHEDULE OF BID PRICES

All Bid items, including lump sums and unit prices, must be filled in completely. Bid items are described in Section 01 1100 (Summary of Work). Bid items shall include all labor, materials, services, and equipment necessary for the completion of the Work, including connections to existing systems. Quote in figures only, unless words are specifically requested.

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	ITEM TOTAL
1.00	**General Conditions**				
1.01	Mobilization	1	LS		
1.02	Prepare and Implement SWPPP (Risk Level 2)	1	LS		
1.03	Traffic Control	1	LS		
1.04	Dust Control	1	LS		
1.05	Demobilization	1	LS		
2.00	**Demolition and Construction Staking**				
2.01	Demolition of 1410 Parker encroachments, including Construction Waste Management	1	LS		
2.02	Demolition and Clearing of Site, including Tree Protection & Removal	1	LS		
2.03	Construction Staking	1	LS		
3.00	**Soil Excavation**				
3.01	Shoring	1	LS		
3.02	Excavate Soil (bank cubic yards)	4,640	BCY		
3.03	Load and Transport Soil for Off-Site Disposal (non-RCRA California Hazardous)	4,640	BCY		
3.04	Equipment and Vehicle Decontamination	1	LS		
3.05	Decontamination Wash Water Disposal (non-hazardous)	1	LS		
4.00	**Post-Excavation and Perimeter Fencing**				
4.01	Import and Place Soil, Soil Compaction	4,053	BCY		
4.02	6-ft Chain Link Fence and Gates	337	LF		
4.03	6-ft Wood Fence	394	LF		
4.04	6-ft Wood Fence atop Vertical Curb	1465	LF		
4.05	5-ft Chain Link Fence and Gates	542	LF		
Total Bid Price: (Bid Items 1.01 through 4.05)					

Total Bid Price: Bid Items 1.01 Through 4.05)

_____
(Words)

Add Alternates: N/A

ITEM	DESCRIPTION	PRICE ($)

5. Subcontractors for work included in all Bid items are listed on Document 00 4330 (Subcontractors List) submitted herewith.

6. The undersigned Bidder understands that City reserves the right to reject this Bid, but that this Bid shall remain open and shall not be withdrawn for a period of sixty (60) calendar days from the date prescribed for its opening.

7. If written notice of the acceptance of this Bid, hereinafter referred to as Notice of Intent to Award, is mailed or delivered to the undersigned Bidder within the time described in Paragraph 2 of this Document 00 4113 or at any other time thereafter before it is withdrawn, the undersigned Bidder will execute and deliver the documents required by Document 00 2113 (Instructions to Bidders) within the times specified therein.

8. Notice of Award or request for additional information may be addressed to the undersigned Bidder at the address set forth below.

9. The undersigned Bidder herewith encloses cash, a cashier's check, or certified check of or on a responsible bank in the United States, or a corporate surety bond furnished by a surety authorized to do a surety business in the State of California, in form specified in Document 00 2113 (Instructions to Bidders), in the amount of ten percent (10%) of the Total Bid Price and made payable to City of Berkeley.

10. The undersigned Bidder agrees to commence Work under the Contract Documents on the date established in Document 00 7200 (General Conditions) and to complete all Work within the time specified in Document 00 5200 (Agreement).

11. The undersigned Bidder agrees that, in accordance with Document 00 7200 (General Conditions), liquidated damages for failure to complete all Work in the Contract within the time specified in Document 00 5200 (Agreement) shall be as set forth in Document 00 5200.

12. The names of all persons interested in the foregoing Bid as principals are:

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, give the legal name of corporation, state where incorporated, and names of president and secretary thereof; if a partnership, give name of the firm and names of all individual co-partners composing the firm; if Bidder or other interested person is an individual, give first and last names in full.

NAME OF BIDDER: _____

licensed in accordance with an act for the registration of Contractors, and with license number:_____ Expiration: _____.

_____ _____
(Place of Incorporation, if Applicable) (Principal)

_____
(Principal)

_____
(Principal)

I certify (or declare) under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____
(Signature of Bidder)

NOTE: If Bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If Bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Business Address: _____

_____

_____

Contractor's Representative(s): _____
(Name/Title)

_____
(Name/Title)

_____
(Name/Title)

Officers Authorized to Sign Contracts _____
(Name/Title)

_____
(Name/Title)

_____
(Name/Title)

Telephone Number(s): _____
(Area Code) (Number)

_____
(Area Code) (Number)

Fax Number(s): _____
(Area Code) (Number)

_____
(Area Code) (Number)

Date of Bid: _____

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 4313

BOND ACCOMPANYING BID

KNOW ALL BY THESE PRESENTS:

That the undersigned

_____

,

(Name of Contractor)

as Principal and the undersigned as Surety are held and firmly bound unto City of Berkeley, as obligee, in the penal sum of _____

(Dollar Amount in Words)

Dollars **($_____)** lawful money of the United States of America being at least ten percent (10%) of the aggregate amount of said Principal _____'s base Bid, for the payment of which, well and truly to be made, we bind ourselves, our successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal is submitting a Bid for

Specification No. 26-11756-C
Santa Fe Trackbed to Park Conversion –
Remediation, Demolition and Perimeter Fencing
at 0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St.**.**

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Bid submitted by the said Principal be accepted and the Contract be awarded to said Principal and said Principal shall within the required periods enter into the Contract so awarded and provide the required Construction Performance Bond, Construction Labor and Material Payment Bond, insurance certificates, Guarantee, and all other endorsements, forms, and documents required under Document 00 2113 (Instructions to Bidders), then this obligation shall be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument this _____ day of _____, 20___**.**
(Month)

(Corporate Seal) By _____
Principal

By _____
Surety

(Corporate Seal) By _____
Attorney in Fact

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 4314

BIDDER REGISTRATION FORM

INSTRUCTIONS

In order to register to undertake work for City of Berkeley, Bidder **must**:

1) Fill out this registration form completely; do not leave blanks.
2) Provide certificates of insurance or a letter evidencing coverage complying with Document 00 4513 (Statement of Qualifications).

INDEPENDENT CONTRACTOR REGISTRATION

Contractor's License # _____

Date: _____ Fed I.D. # _____

Full Corporate Name of Company: _____

Street Address: _____

_____

Mailing Address: _____

_____

Phone: _____ Fax: _____

Name of Principal Contact: _____

Type of Business: _____ Sole Proprietor _____ Partnership
_____ Non-Profit 501(c)(3) _____ Corporation
_____ other (please explain:_____)

INSURANCE

Workers' Compensation:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

General Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: $ _____

A.M. Best Rating: _____

Automobile Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: $ _____

A.M. Best Rating: _____

All-risk Course of Construction (if applicable, as required by Document 00 7316 [Supplementary Conditions – Insurance]):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: $ _____

A.M. Best Rating: _____

Professional Liability (if applicable, as required by Document 00 7316 [Supplementary Conditions – Insurance]):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: $ _____

A.M. Best Rating: _____

Pollution Legal Liability Insurance (if applicable, as required by Document 00 7316 [Supplementary Conditions – Insurance]):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: $ _____

A.M. Best Rating: _____

BIDDER CERTIFIES, UNDER PENALTY OF PERJURY, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND AUTHORIZES OWNER, AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

_____
SIGNATURE

_____
DATE

SAFETY EXPERIENCE

The following statements as to the Bidder's safety experience are submitted with the Bid, as part thereof, and the Bidder guarantees the truthfulness and accuracy of all information.

1. List Bidder's interstate Experience Modification Rate for the last three years.

   [20__] _____ **[20__]** _____ **[20__]** _____

2. Use Bidder's last year's Cal/OSHA 300 log to fill in the following number of injuries and illnesses:

   a. Number of lost workday cases _____

   b. Number of medical treatment cases _____

   c. Number of fatalities _____

3. Employee hours worked last year _____

4. State the name of Bidder's safety engineer/manager:

Attach a resume or outline of this individual's safety and health qualifications and experience.

I CERTIFY, UNDER PENALTY OF PERJURY, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND I AUTHORIZE OWNER, AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

BIDDER:

By: _____
Signature

Its: _____
Title

Date_____

END OF SECTION

DOCUMENT 00 4330

SUBCONTRACTORS LIST

Bidder submits the following information as to the subcontractors Bidder intends to employ if awarded the Contract.

Full Name of Subcontractor (Sub.) and Address of Mill or Shop	Sub.'s License No.	Description of Work: Reference to Bid Items	Sub.'s Bid Amount	Sub.'s Depart. Of Industrial Relations No.

(Bidder to attach additional sheets if necessary)

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 4513

STATEMENT OF QUALIFICATIONS FOR CONSTRUCTION PROJECTS

ARTICLE 1 – GENERAL INFORMATION

1.01 Minimum Bidder Qualifications.

A. Bidders must be duly licensed in accordance with the California Business & Professions Code and have a history of work performance sufficient to meet the requirements of a responsible bidder in the California Public Contract Code Section 1104.

B. Bidders must have three (3) years experience as a continuously operating entity engaged in the performance of similar work.

C. Bidders must demonstrate successful experience with type of work of this Project, to include, within the past three (3) years, completed three (3) projects of a similar nature and complexity with a contract dollar amount of (i.) at least 75% of the amount of Bidder's Bid or (ii.) 125% of such amount in the aggregate.

1.02 Measurement.

A. Bidder's compliance with the minimum qualification requirements will be measured by Bidder's experience as an operating entity and also by the experience of the supervisory personnel who will have responsible charge of the various major components of the Work.

B. If Bidder subcontracts portions of the Work, City, in its determination of whether the minimum qualification requirements have been met, may consider the qualifications of the Subcontractor's supervisory personnel.

C. The qualifications of the Key Personnel are to be submitted with the Statement of Qualifications ("SOQ"), by providing the information described in this Document 00 4513.

ARTICLE 2 – Required Contents of SOQ Submission

2.01 Transmittal Letter

A. The Transmittal Letter shall name the proposed prime contractor, its legal structure (i.e., corporation, partnership, limited partnership, joint venture). If a joint venture or partnership is proposed, Bidder shall identify partner and/or member of the joint venture and their roles and responsibilities.

2.02 Submittals:

A. Completed Questionnaire. Bidder shall include a completed Statement of Qualification Questionnaire in the form attached to this Document 00 4513 as Attachment "A".

B. License: Evidence of a valid contractor's license and required licenses of all licensees of persons who are Key Personnel necessary to perform the Work.

C. Litigation History. Description of litigation history for the past three years, including names of involved parties, nature of dispute, and disposition.

2.03 Additional Submittals:

After bid opening, Contractor maybe required to supply the City with the following submittals upon request.

A. Resumes of Proposed Key Personnel. Bidder shall provide a resume for each named Key Personnel of Bidder, to include as necessary: Years of experience; Education - degrees, schools and years obtained; Professional Registrations; Fluency in English (Yes/No); At least two client references, including contact names, addresses and telephone numbers, and description of projects of a similar nature worked on in the past five years.

B. Audited or Reviewed Financial Statements. Include audited or reviewed financial statements for the three most recently completed fiscal years for Bidder and each member of any proposed consorting or joint venture. Also include audited or reviewed financial statements for the three most recently completed fiscal years for any parent companies) of Bidder and each member of any proposed consortium oriole venture.

C. Surety Letter re: Capability to Provide Required Performance and Payment Bonds. Bidder shall include a letter from a surety duly licensed to do business in the State of California, having a financial rating from A.M. Best Company of A-, VIII or better, that the surety has agreed to provide Bidder with the required performance and payment bonds in accordance with the requirements set forth in Documents 00 6113.13 (Construction Performance Bond) and 00 6113.16 (Construction Labor and material Payment bold), each in the penal sum of the Contractor's bid when submitted. Owner shall have the right to verify with the surety that the surety, based upon the Bid prices, will issue the required bonds under the conditions stated.

D. Insurer Letter re: Capability to Provide the Required Insurance. Bidder shall provide a letter from an insurance underwriter, having a financial rating reasonably acceptable to City, confirming that the insurer will provide Bidder the required coverages and amounts specified in the Contract Documents.

E. Description of Human and Physical Resources. Bidder shall identify, describe, and quantify for itself, the following technical information for the construction work: Description and location of manufacturing facilities, naming products and quantifying production capacity and current demand; Description of field organization(s), naming skills and equipment; Description of safety program quality control procedures, and safety experience.

2.04 Format.

A. The SOQ shall be clear and concise to enable management-oriented personnel to make a thorough evaluation and arrive at a sound determination as to whether the SOQ meet City's requirement. To this end, the SOQ should be so specific, detailed and complete as to demonstrate clearly and fully that the Bidder has a thorough understanding of and has demonstrated knowledge of the requirements to perform the Work (or applicable portion thereof).

B. Any explanation requested by a Bidder regarding the meaning or interpretation of this Document 00 4513 must be requested in writing and with sufficient time allowed for a reply to reach Bidder before the submission of its SOQ. Oral explanations or instructions will not be binding. Any information provided to any prospective Bidder concerning this Document 00 4513 will be furnished to all prospective Bidders as an Addendum to the Bidding Documents.

STATEMENT OF QUALIFICATION QUESTIONNAIRE FOLLOWS ON NEXT PAGE

ATTACHMENT "A" – STATEMENT OF QUALIFICATION QUESTIONNAIRE

Bidders shall complete the entire Statement of Qualification Questionnaire and submit it in accordance with Document 00 2113 (Instructions to Bidders) and Document 00 4513 (Statement of Qualifications). Failure to complete the questionnaire or inclusion of any false statement(s) shall be ground for immediate disqualification.

CONTACT INFORMATION

Company Name: _____

Owner of Company: _____

Contact Person: _____

Address: _____

Phone: _____ Fax: _____

PART A: GENERAL INFORMATION

1. Does Bidder possess a valid and current California Contractor's license for the work proposed? Yes ___ No ___

2. Does Bidder have a minimum of **$2,000,000** liability insurance coverage? Yes ___ No ___

3. Has Bidder's License been revoked at any time in the last five years? Yes ___ No ___

4. Has Bidder been "default terminated" by an Owner (other than for convenience), or has a Surety completed a contract for Bidder within the last five years? Yes ___ No ___

5. Has Bidder been convicted more than twice for failure to pay prevailing wages in the last three years? Yes ___ No ___

6. Will Bidder provide copies of its reviewed or audited financial statements and accompanying notes for the last three years, if requested? Yes ___ No ___

Bidder may be disqualified if any answer to questions 1, 2, or 6 is No.
Bidder may be disqualified if any answer to questions 3, 4, or 5 is Yes.

PART B: SAFETY, PREVAILING WAGE, DISPUTES AND BONDS

(SAFETY)

1. Has Cal/OHSA, Federal OSHA, the EPA or any Air Quality Management Owner cited Bidder in the past five years?
   Yes ___ No ___ If yes, attach description of each citation.

2. How often does Bidder require documented safety meetings be held for:

Field Supervisor	Weekly _____	Bi-Weekly _____	Monthly _____	Less Than Monthly _____
Employees	Weekly _____	Bi-Weekly _____	Monthly _____	Less Than Monthly _____
New Hires	Weekly _____	Bi-Weekly _____	Monthly _____	Less Than Monthly _____
Subcontractors	Weekly _____	Bi-Weekly _____	Monthly _____	Less Than Monthly _____

3. How often does Bidder conduct documented safety inspections?
   Quarterly _____ Semi-annually _____ Annually _____ Other _____

4. Does Bidder have home office safety representatives who visit/audit the job site?
   Quarterly _____ Semi-annually _____ Annually _____ Other _____

5. What is Bidder's Interstate Experience Modification Rate? _____. (A rating in excess of ***[1]*** may constitute grounds for disqualification as non-responsible).

(PREVAILING WAGE PROVISIONS)

6. Has Bidder been fined, penalized or otherwise found to have violated any prevailing wage or labor code provision? If yes, attach description of each occurrence.
   Yes _____ No _____

(LICENSE PROVISIONS)

7. Has Bidder changed names or license numbers in the past 5 years? If so, please state reason for change.
   Yes _____ No _____ Reason: _____

   _____

(DISPUTES)

8. Has Bidder had any claims, litigation, or disputes ending in mediation or arbitration, or termination for cause associated with any project in the past 5 years? If yes, attach description of each instance including details of total claim amount, settlement amount, and Owner's name and phone number.
   Yes _____ No _____

(BONDING)

9. Bonding Capacity – Provide documentation from Bidder's surety identifying the following:
   Name of bonding company/surety: _____

   Name of Surety Agent: _____

   Surety Agent address: _____

   Surety Agent phone number: _____

   Is surety a California-admitted surety? Yes _____ No _____

   Is surety listed in the current edition of the California Department of the Treasury's Listing of approved sureties? Yes _____ No _____

   List surety's A.M. Best Rating: _____

   What is Bidder's total bonding capacity? _____

   What percent does Bidder pay for bonds? _____

PART C: EXPERIENCE OF PRIME CONTRACTOR

The nature of this Project requires prior similar experience for the firm and the Key Personnel assigned. Summarize similar project experience below and provide the detailed project information requested:

Prime Contractor. List three projects of similar size and scope to the Work of the Contract, completed in the past three (3) years, and indicate who were the superintendent, project manager and scheduler. NOTE: this listing will be used to assess compliance with the stated minimum qualifications in Section 1.01.

Project Name	Construction Cost ($)	Year Completed	Name of Project Superintendent	Name of Project Manager	Name of Project Scheduler

List Key Personnel that will be assigned to the Work of the current Project and their experience/training with the projects listed above:

Project Manager: _____

Project Superintendent: _____

Project Scheduler: _____

Recent Projects.

Provide information about three (3) of its most currently completed projects. Names and references must be current and verifiable. This listing will be used to assess compliance with the stated minimum qualifications in Section 1.01. If a separate sheet is used, it must contain all of the following information:

1. Project Name: _____

   Location: _____

   Owner: _____

   Owner Contact (name and phone): _____

   Architect/Engineer: _____

   Architect/Engineer Contact (name and phone number): _____

   Const. Mgr. or Project Mgr. (name and phone number): _____

   Description of Project, Scope of Work Performed: _____

   _____

   Total Construction Cost: _____

   Total Change Order Amount: _____

   Did Change Orders exceed 10% of original contract sum? _____ If yes, please explain on separate sheet.

   Original Scheduled Date of Completion: _____

   Time Extensions Granted (number of calendar days): _____

   Actual Date of Completion: _____

   Number of Stop Notices filed by Subcontractors or Suppliers: _____

2. Project Name: _____

   Location: _____

   Owner: _____

   Owner Contact (name and phone): _____

   Architect/Engineer: _____

   Architect/Engineer Contact (name and phone number): _____

   Const. Mgr. or Project Mgr. (name and phone number):_____

   Description of Project, Scope of Work Performed: _____

_____

Total Construction Cost: _____

Total Change Order Amount: _____

Did Change Orders exceed 10% of original contract sum? _____ If yes, please explain on separate sheet.

Original Scheduled Date of Completion: _____

Time Extensions Granted (number of calendar days): _____

Actual Date of Completion: _____

Number of Stop Notices filed by Subcontractors or Suppliers: _____

3. Project Name: _____

Location: _____

Owner: _____

Owner Contact (name and phone): _____

Architect/Engineer: _____

Architect/Engineer Contact (name and phone number): _____

Const. Mgr. or Project Mgr. (name and phone number): _____

Description of Project, Scope of Work Performed: _____

_____

Total Construction Cost: _____

Total Change Order Amount: _____

Did Change Orders exceed 10% of original contract sum? _____ If yes, please explain on separate sheet.

Original Scheduled Date of Completion: _____

Time Extensions Granted (number of calendar days): _____

Actual Date of Completion: _____

Number of Stop Notices filed by Subcontractors or Suppliers: _____

PART D: FINANCIAL INFORMATION

1. Has Bidder ever reorganized under the protection of bankruptcy laws?
   Yes _____ No _____ If yes, please state when _____

2. If Bidder has had the general liability carrier identified in Document 00 4314 (Bidder Registration and Safety Experience Form) for less than 5 years, please provide additional information below for balance of the last 5 years:

   Agency Name: _____

   Contact Name: _____

   Phone Number _____

   Carrier: _____ A.M. Best Rating: _____

   Carrier: _____ A.M. Best Rating: _____

   Carrier: _____ A.M. Best Rating: _____

3. Has Bidder ever had insurance terminated by a carrier? Yes _____ No _____
   If yes, explain on a separate signed sheet marked with correlating cross-reference to this paragraph of the questionnaire.

Bidder hereby declares under penalty of perjury that all the information provided in this questionnaire is true and correct.

_____
SIGNATURE

_____
TITLE

END OF SECTION

DOCUMENT 00 4519

NON-COLLUSION AFFIDAVIT

PUBLIC CONTRACT CODE §7106

NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

STATE OF CALIFORNIA)
) ss.
COUNTY OF)

_____, being first duly sworn,
(Name of Principal of Bidder)

deposes and says that he or she is _____
(Office of Affiant)

of _____, the party
(Name of Bidder)

making the foregoing Bid, that the Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the Bid is genuine and not collusive or sham; that Bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham Bid, and has not directly or indirectly colluded, conspired, connived or agreed with any bidder or anyone else to put in a sham Bid, or that anyone shall refrain from bidding, and that the Bidder has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the Bid price of Bidder or any other bidder, or to fix any overhead, profit or cost element of the Bid price, or of that of any other bidder, or to secure any advantage against City , or anyone interested in the proposed contract; that all statements contained in the Bid are true; and further, that Bidder has not, directly or indirectly, submitted its Bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, Bid depository, or to any member or agent thereof to effectuate a collusive or sham Bid.

Executed under penalty of perjury under the laws of the State of California:

_____
(Name of Bidder)

_____
(Signature of Principal)

Subscribed and sworn before me _____

This _____ day of _____, 20___

Notary Public of the State of _____

In and for the County of_____

My Commission expires_____ (Seal)

NOTE: If Bidder is a partnership or a joint venture, this affidavit must be signed and sworn to by every member of the partnership or venture.

NOTE: If Bidder [including any partner or venturer of a partnership or joint venture] is a corporation, this affidavit must be signed by the Chairman, President, or Vice President and by the Secretary, Assistant Secretary, Chief Financial Officer, or Assistant Treasurer.

NOTE: If Bidder's affidavit on this form is made outside the State of California, the official position of the person taking such affidavit shall be certified according to law.

END OF SECTION

DOCUMENT 00 4546

BIDDER CERTIFICATIONS

TO BE EXECUTED BY ALL BIDDERS AND SUBMITTED WITH BID

The undersigned Bidder certifies to City as set forth in sections 1 through 5 below.

1. STATEMENT OF CONVICTIONS

By my signature hereunder, I hereby swear, under penalty of perjury, that no more than one final, unappealable finding of contempt of court by a Federal Court has been issued against Bidder within the past two years because of failure to comply with an order of a Federal Court or to comply with an order of the National Labor Relations Board.

2. CERTIFICATION OF WORKER'S COMPENSATION INSURANCE

By my signature hereunder, as the Contractor, I certify that I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract.

3. CERTIFICATION OF PREVAILING WAGE RATES AND RECORDS

By my signature hereunder, as the Contractor, I certify that I am aware of the provisions of Section 1773 of the California Labor Code, which requires the payment of prevailing wage on public projects. Also, that the Contractor and any subcontractors under the Contractor shall comply with California Labor Code §1776, regarding wage records, and with California Labor Code §1777.5, regarding the employment and training of apprentices. It is the Contractor's responsibility to ensure compliance by any and all subcontractors performing work under this Contract.

4. CERTIFICATION OF COMPLIANCE WITH PUBLIC WORKS CHAPTER OF LABOR CODE

By my signature hereunder, as the Contractor, I certify that I am aware of Sections 1777.1 and 1777.7 of the California Labor Code and Contractor and Subcontractors and am eligible to bid and work on public works projects.

5. CERTIFICATION OF ADEQUACY OF CONTRACT AMOUNT

By my signature hereunder, as the Contractor, pursuant to Labor Code Section 2810(a), I certify that, if awarded the Contract based on the undersigned's Bid, the Contract will include funds sufficient to allow the Contractor to comply with all applicable local, state, and federal laws or regulations governing the labor or services to be provided. I understand that Owner will be relying on this certification if it awards the Contract to the undersigned.

BIDDER: _____
(Name of Bidder)

Date: _____, **[20]** By: _____
(Signature)

Name: _____
(Print Name)

Its: _____
(Title)

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 5100

NOTICE OF INTENT TO AWARD

Dated _____

TO: _____

ADDRESS: _____

CONTRACT NO.: _____

CONTRACT FOR: City of Berkeley
Santa Fe Trackbed to Park Conversion –
Remediation, Demolition and Perimeter Fencing
AT 0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St.

The Contract Sum of your contract is _().

1. Two copies of the proposed Contract Documents listed below accompany this Notice of Award.

2. You must comply with the following conditions precedent by **5:00 p.m.** of the **20th Day** following the date of this Notice of Award, that is, by Day of Week, Month Day, Year.

   a. Deliver to Owner **two** fully executed counterparts and an emailed PDF copy of Document 00 5200 (Agreement). Each copy of Document 00 5200 (Agreement) must bear your original signature on the signature page and your initials on each page.

   b. Deliver to Owner **two** originals and an emailed PDF of Document 00 6113.13 (Construction Performance Bond), executed by you and your surety.

   c. Deliver to Owner **two** originals and an emailed PDF of Document 00 6113.16 (Construction Labor and Material Payment Bond), executed by you and your surety.

   d. Deliver to Owner **two** original copies and an emailed PDF of Document 00 6536 (Guaranty), each executed by you.

   e. Deliver to Owner **one** original set and an emailed PDF of the insurance certificates with endorsements required under Document 00 7316 (Supplementary Conditions – Insurance).

   f. Deliver to Owner **one** original copy and an emailed PDF of all documents found in Document 00 6580 (City of Berkeley Contracting Policies) executed by you.

3. Failure to comply with these conditions within the time specified will entitle Owner to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid security forfeited.

4. Within 21 calendar days after you comply with the conditions in Paragraph 2 of this Document 00 5100, Owner will return to you one fully signed counterpart of Document 00 5200 (Agreement) with 1 copy of the Project Manual and 1 set of full-size Drawings.

5. Before you may start any Work at the Site, you must attend a preconstruction conference. The preconstruction conference may be arranged through **Stacey Rutherford (510) 981-6738.** Questions regarding bonds and insurance may be directed to **Stacey Rutherford** at the same number. All other inquiries regarding the Project should be directed to **Stacey Rutherford.**

6. Upon commencement of the Work, you and each of your Subcontractors shall certify and provide Owner copies of payroll records on forms provided by the Division of Labor Standards Enforcement, in accordance with California Labor Code §1776.

OWNER

BY: _____
(Title)

_____
(Print Name)

ATTEST: _____
Secretary

_____
(Print Name)

AUTHORIZED BY **[CITY / COUNTY / DISTRICT]** RESOLUTION:

NO: _____

ADOPTED: _____, **[20___]**

[Copy of Resolution Attached]

END OF DOCUMENT

DOCUMENT 00 5200

AGREEMENT

THIS AGREEMENT, dated this **[date]** day of **[Month], [20___]**, by and between whose place of business is located at ("Contractor"), and **City of Berkeley** ("City"), acting under and by virtue of the authority vested in Owner by the laws of the State of California.

SPECIFICATION NUMBER 26-11756-C

Santa Fe Trackbed to Park Conversion
Remediation, Demolition and Perimeter Fencing
at
0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St.
See plans for locations, on and around:
0 Parker Street: APN 054-1790-028
0 Carleton Street: APN 054-1794-028
0 Derby Street: APN 054-1793-027
0 Ward Street: APN 054-1735-020

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, Contractor and City agree as follows:

ARTICLE 1 – SCOPE OF WORK OF THE CONTRACT

1.01 WORK OF THE CONTRACT

A. Contractor shall complete all Work specified in the Contract Documents, in accordance with the Specifications, Drawings, and all other terms and conditions of the Contract Documents (**Work**).

1.02 PRICE FOR COMPLETION OF THE WORK

A. City shall pay Contractor the following Contract Sum for completion of Work in accordance with Contract Documents as follows: [HERE INSERT LUMP SUM, UNIT PRICES, OR CONTRACTOR'S BID IN WORDS AND NUMBERS]

B. The Contract Sum includes all allowances (if any).

ARTICLE 2 – COMMENCEMENT AND COMPLETION OF WORK

2.01 COMMENCEMENT OF WORK

A. Contractor shall commence Work on the date established in the Notice to Proceed (**Commencement Date**).

B. City reserves the right to modify or alter the Commencement Date.

2.02 COMPLETION OF WORK

A. Contractor shall achieve Substantial Completion of the entire Work within **140 calendar** days from the Commencement Date.

B. Contractor shall achieve Final Completion of the entire Work **154 calendar days** from the Commencement Date.

ARTICLE 3 – PROJECT REPRESENTATIVES

3.01 CITY'S PROJECT MANAGER

A. City has designated Stacey Rutherford as its Project Manager to act as City's Representative in all matters relating to the Contract Documents.

B. Project Manager shall have final authority over all matters pertaining to the Contract Documents and shall have sole authority to modify the Contract Documents on behalf of City, to accept work, and to make decisions or actions binding on City, and shall have sole signature authority on behalf of City.

C. City may assign all or part of the Project Manager's rights, responsibilities and duties to a Construction Manager, or other City Representative.

3.02 CONTRACTOR'S PROJECT MANAGER

A. Contractor has designated **[_____ or other]** as its Project Manager to act as Contractor's Representative in all matters relating to the Contract Documents.

3.03 ARCHITECT/ENGINEER

A. **GSI Environmental** furnished the Final Removal Action Work Plan and shall have the rights assigned to Architect/Engineer in the Contract Documents for scope of work described in the Removal Action Work Plan.

B. **MIG | PGA** furnished the Plans and Technical Specifications and shall have the rights assigned to Architect/Engineer in the Contract Documents for scope of work described in the Plans and Technical Specifications.

C. Architect/Engineer has designated **Evan MacGregor** as its project manager, to act as its representative for receiving and making communications authorized under the Contract Documents.

ARTICLE 4 – LIQUIDATED DAMAGES FOR DELAY IN COMPLETION OF WORK

4.01 LIQUIDATED DAMAGE AMOUNTS

A. As liquidated damages for delay, Contractor shall pay City four thousand two hundred dollars ($4,200.00) for each Day that expires after the time specified herein for Contractor to achieve Substantial Completion of the entire Work, until achieved.

B. As liquidated damages for delay, Contractor shall pay City four thousand two hundred dollars ($4,200.00) for each Day that expires after the time specified herein for Contractor to achieve Final Completion of the entire Work, until achieved.

4.02 SCOPE OF LIQUIDATED DAMAGES

A. Measures of liquidated damages shall apply cumulatively.

B. Limitations and stipulations regarding liquidated damages are set forth in Document 00 7200 (General Conditions).

ARTICLE 5 – CONTRACT DOCUMENTS

5.01 Contract Documents consist of the following documents, including all changes, Addenda, and Modifications thereto:

Document 00 5100	Notice of Award
Document 00 5200	Agreement
Document 00 5500	Notice to Proceed
Document 00 6113.13	Construction Performance Bond
Document 00 6113.16	Construction Labor and Material Payment Bond
Document 00 6536	Guaranty
Document 00 6530	Release of Claims

Document 00 6325	Substitution Request Form
Document 00 6290	Escrow Agreement for Security Deposits
Document 00 6580	City of Berkeley Contracting Policies
Document 00 7200	General Conditions
Document 00 7201	Supplementary Conditions
Document 00 7316	Supplementary Conditions – Insurance
Document 00 7317	Supplemental Conditions – Contracting Policies
Document 00 7319	Supplemental Conditions – Hazardous Materials
Document 00 7380	Apprenticeship Programs
Document 00 9113	Addenda [LIST ADDENDA ISSUED]
Specifications	Divisions 1 through 9

Maps, Drawings and Sketches listed in Document 00 0115

5.02 There are no Contract Documents other than those listed above. The Contract Documents may only be amended, modified or supplemented as provided in Document 00 7200 (General Conditions).

ARTICLE 6 – CONTRACTOR'S REPRESENTATIONS

In order to induce City to enter into this Agreement, Contractor makes the following representations and warranties:

6.01 Contractor has visited the site and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions, and federal, state and local laws and regulations that in any manner may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Contractor and safety precautions and programs incident thereto.

6.02 Contractor has examined thoroughly and understood all reports of exploration and tests of subsurface conditions, as-built drawings, drawings or reports, available for Bidding purposes, of physical conditions, including Underground Facilities, identified in the Bid Documents, or which may appear in the Drawings, and accepts the determination set forth in these documents and Document 00 7200 General Conditions of the limited extent of the information contained in such reports and drawings upon which the Contractor may be entitled to rely. Contractor agrees that except for the information so identified, Contractor does not and shall not rely on any other information contained in such reports and drawings.

6.03 Contractor has conducted or obtained and has understood all such examinations, investigations, explorations, tests, reports and studies (in addition to or to supplement those referred to in Article 6.02 above) which pertain to the subsurface conditions, as-built conditions, Underground Facilities and all other physical conditions at or contiguous to the site or otherwise which may affect the cost, progress, performance or furnishing of Work, as Contractor considers necessary for the performance or furnishing of Work at the Contract Sum, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of the General Conditions; and no additional examinations, investigations, explorations, test, reports, studies or similar information or data are or will be required by Contractor for such purposes.

6.04 Contractor has correlated its knowledge and the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

6.05 Contractor has given the Project Manager prompt written notice of all conflicts, errors, ambiguities

or discrepancies that it has discovered in or among the Contract Documents and as-built and actual conditions and the written resolution thereof through Addenda issued by Project Manager is acceptable to Contractor.

ARTICLE 7 – MISCELLANEOUS

7.01 Terms and abbreviations used in this Agreement are defined in Document 00 7200 (General Conditions) and Section 01 4200 (References and Definitions) and will have the meaning indicated therein.

7.02 It is understood and agreed that in no instance are the persons signing this Agreement for or on behalf of City or acting as an employee, agent, or representative of City, liable on this Agreement or any of the Contract Documents, or upon any warranty of authority, or otherwise, and it is further understood and agreed that liability of City is limited and confined to such liability as authorized or imposed by the Contract Documents or applicable law.

7.03 In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, Contractor or Subcontractor offers and agrees to assign to the awarding body all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. §15) or under the Cartwright Act (Chapter 2 (commencing with §16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time City tenders final payment to Contractor, without further acknowledgment by the parties.

7.04 Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are deemed included in the Contract Documents and on file at Owner's Office, and shall be made available to any interested party on request. Pursuant to California Labor Code §§ 1860 and 1861, in accordance with the provisions of Section 3700 of the Labor Code, every contractor will be required to secure the payment of compensation to his employees. Contractor represents that it is aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and Contractor shall comply with such provisions before commencing the performance of the Work of the Contract Documents.

7.05 No contractor or subcontractor may be listed on a bid proposal for a public works project (submitted on or after March 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].

No contractor or subcontractor may be awarded a contract for public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

7.06 This Agreement and the Contract Documents shall be deemed to have been entered into in the County of Alameda, State of California, and governed in all respects by California law (excluding choice of law rules). The exclusive venue for all disputes or litigation hereunder shall be in the Superior Court for the County of Alameda.

IN WITNESS WHEREOF the parties have executed this Agreement in triplicate the day and year first above written.

CITY OF BERKELEY

By:_____
City Manager

_____
(Print Name)

By: _____
(Signature)

Its: _____
Title (If Corporation: Chairman, President or Vice President)

Attest:
CITY OF BERKELEY

_____
City Clerk

_____
(Print Name)

By: _____
(Signature)

Its: _____
Title (If Corporation: Secretary, Assistant Secretary, Chief Financial Officer or Assistant Treasurer)

Pre-approved as to form:
CITY ATTORNEY
8/2016

END OF DOCUMENT

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 5500

NOTICE TO PROCEED

Dated: _____, 20___

To: _____
(Contractor)

Address: _____

CONTRACT FOR: **City of Berkeley Santa Fe Trackbed to Park Conversion Remediation, Demolition and Perimeter Fencing AT 0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St.**

CONTRACT NO: XXXXXX

You are notified that the Contract Time under the above Contract will commence to run on _____ **[20___]**. On that date, you are to start performing your obligations with respect to Work at the Site under the Contract Documents. In accordance with Article 2 of Document 00 5200 (Agreement), the dates of Substantial Completion and Final Completion for the entire Work are _____,**[20___]** and _____, **[20___]**, respectively.

Before you may start any Work at the Site, you must:

1. Submit copies of applicable permits
2. Submit Progress Schedule
3. Submit approved fire protection plan, if applicable
4. Submit Site-Specific Health and Safety Plan
5. Submit Traffic Control and Staging Plan
6. Submit Equipment and Vehicle Decontamination Plan
7. Submit Spill Prevention and Emergency Response Plan
8. Attend a pre-job meeting with subcontractors on all tiers
9. Submit Shoring Plan
10. Submit Clean Import Fill Product Data

OWNER

By: _____

Its: _____

END OF DOCUMENT

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 6113.13

CONSTRUCTION PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

1.01 THAT WHEREAS, **City of Berkeley** ("City"), a public agency of the State of California, has awarded to as Principal, Specification Number **26-11756-C,** dated the ___ day of _____, 20___ (the "Contract"), titled Santa Fe Trackbed to Park Conversion Remediation, Demolition and Perimeter Fencing in the amount of , which Contract is by this reference made a part hereof, for the work of the following Contract:

(Describe Contract Work) _____

1.02 AND WHEREAS, Principal is required to furnish a bond in connection with the Contract, guaranteeing the faithful performance thereof;

1.03 NOW, THEREFORE, we, the undersigned Principal and **(Name of Surety)** _____ _____ as Surety are held and firmly bound unto City in the sum of 100% OF THE CONTRACT PRICE to be paid to City or its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

1.04 THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by City, shall promptly and faithfully perform the covenants, conditions, and agreements of the Contract during the original term and any extensions thereof as may be granted by City, with or without notice to Surety, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Contract made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless City as stipulated in the Contract, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.

1.05 No extension of time, change, alteration, modification, or addition to the Contract, or of the work required thereunder, or work or actions by City to mitigate the damages resulting from any breach in performance by Contractor, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.

1.06 Whenever Principal shall be and declared by City in default under the Contract, Surety shall promptly remedy the default, or shall promptly, and in no event later than thirty (30) calendar days from notice:

A. Undertake through its agents or independent contractors (but having qualifications and experience reasonably acceptable to City, to complete the Contract in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, indemnities, and the payment of liquidated damages; or

B. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and, upon determination by City of the lowest responsible bidder, arrange for a contract between such bidder and City and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum, and to pay and perform all obligations of Principal under the Contract, including, without limitation, all

obligations with respect to warranties, guarantees, and the payment of liquidated damages; but, in any event, Surety's total obligations hereunder shall not exceed the amount set forth in the third paragraph hereof. The term "balance of the Contract Sum," as used in this paragraph, shall mean the total amount payable by City to the Principal under the Contract and any amendments thereto, less the amount paid by City to Principal.

1.07 Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing City's rights against the others.

1.08 Surety may not use Contractor to complete the Contract absent City's Consent. City shall have the right in its sole discretion to continue the work of the Contract, as necessary following a default and/or termination, as necessary to prevent risks of personal injury, property damage or delay to the Project.

1.09 No right of action shall accrue on this bond to or for the use of any person or corporation other than City or its successors or assigns.

1.10 Surety shall join in any proceedings brought under the Contract upon City's demand, and shall be bound by any judgment.

1.11 Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this _____ day of _____, 20____.

CONTRACTOR AS PRINCIPAL	**SURETY**
Company: (Corp. Seal)	Company: (Corp. Seal)
Signature:_____	Signature:_____
Name and Title:_____	Name and Title:_____
Address:_____	Address:_____
_____	_____
_____	_____

END OF DOCUMENT

DOCUMENT 00 6113.16

CONSTRUCTION LABOR AND MATERIAL PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS:

1.01 THAT WHEREAS, City of Berkeley ("City") has awarded to_ as Principal, Specification No. **26-11756-C** dated the _____ day of _____, 20___ (the "Contract"), titled Santa Fe Trackbed to Park Conversion Remediation, Demolition and Perimeter Fencing in the amount of , which Contract is by this reference made a part hereof, for the work of the following Contract:

(**Describe Contract Work)** _____

1.02 AND WHEREAS, Principal is required to furnish a bond in connection with the Contract to secure the payment of claims of laborers, mechanics, material suppliers, and other persons as provided by law;

1.03 NOW, THEREFORE, we, the undersigned Principal and **(Name of Surety)** _____ , as Surety, are held and firmly bound unto City in the sum of 100% OF THE CONTRACT PRICE **($)**, for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

1.04 THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its executors, administrators, successors, or assigns approved by City, or its subcontractors shall fail to pay any of the persons named in California Civil Code §3181, or amounts due under the State of California Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the State of California Employment Development Department from the wages of employees of Principal and subcontractors pursuant to Section 13020 of the State of California Unemployment Insurance Code with respect to such work and labor, that Surety will pay for the same in an amount not exceeding the sum specified in this bond, plus reasonable attorneys' fees, otherwise the above obligation shall become and be null and void.

1.05 This bond shall inure to the benefit of any of the persons named in California Civil Code §3181, as to give a right of action to such persons or their assigns in any suit brought upon this bond. The intent of this bond is to comply with the California Mechanic's Lien Law.

1.06 Surety, for value received, hereby expressly agrees that no extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder, shall in any way affect the obligation of this bond; and it does hereby waive notice of any such extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder.

1.07 Surety's obligations hereunder are independent of the obligations of any other surety for the payment of claims of laborers, mechanics, material suppliers, and other persons in connection with Contract; and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing Owner's rights against the other.

1.08 Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this ____ day of _____, 20___.

CONTRACTOR AS PRINCIPAL	**SURETY**
Company: (Corp. Seal)	Company: (Corp. Seal)
_____	_____
Signature	Signature
_____	_____
Name	Name
_____	_____
Title	Title
_____	_____
Street Address	Street Address
_____	_____
City, State, Zip Code	City, State, Zip Code

END OF DOCUMENT

DOCUMENT 00 6290

ESCROW AGREEMENT FOR SECURITY DEPOSIT IN LIEU OF RETENTION

California Public Contract Code §22300

THIS ESCROW AGREEMENT ("Escrow Agreement") is made and entered into this _____ day of _____, 20___, by and between City of Berkeley ("City"), whose address is 2180 Milvia Street, Berkeley, California 94704, _ ("Contractor"), whose place of business is located at and _____ **(Name)**, as escrow agent **OR [ ] (Name of Bank)** _____, a state or federally chartered bank in the State of California, whose place of business is located at _____ ("Escrow Agent").

For the consideration hereinafter set forth, City, Contractor and Escrow Agent agree as follows:

1. Pursuant to California Public Contract Code §22300, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by City pursuant to Contract Number _____ entered into between City and Contractor for Santa Fe Trackbed to Park Conversion – Remediation, Demolition and Perimeter Fencing project located at **0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St.** in the amount of _____ dated _____, 20___ (the "Contract"). Alternatively, on written request of Contractor, City shall make payments of the retention earnings directly to Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, Escrow Agent shall notify City within ten calendar days of the deposit. The market value of the securities at the time of substitution shall be at least equal to the cash amount then required to be withheld as retention under terms of Contract between Owner and Contractor. Securities shall be held in name of _____ _____, and shall designate Contractor as the beneficial owner.

2. City shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to Contract provisions, provided that Escrow Agent holds securities in form and amount specified in Paragraph 1 of this Document 00 6290.

3. When City makes payment(s) of retention earned directly to Escrow Agent, Escrow Agent shall hold said payment(s) for the benefit of Contractor until the time that the escrow created under this Escrow Agreement is terminated. Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when City pays Escrow Agent directly.

4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of City. Such expenses and payment terms shall be determined by Owner, Contractor, and Escrow Agent.

5. Interest earned on securities or money market accounts held in escrow and all interest earned on that interest shall be for sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to City.

6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from City to Escrow Agent that City consents to withdrawal of amount sought to be withdrawn by Contractor.

7. City shall have the right to draw upon the securities in event of default by Contractor. Upon seven (7) calendar days written notice to Escrow Agent from City of the default, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by City.

8. Upon receipt of written notification from City certifying that the Contract is final and complete, and that Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.

9. Escrow Agent shall rely on written notifications from City and Contractor pursuant to Paragraphs 5 through 8, inclusive, of this Document 00 6290 and City and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of securities and interest as set forth.

10. Names of persons who are authorized to give written notice or to receive written notice on behalf of City and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

ON BEHALF OF CITY:

_____
Title

_____
Name

_____
Signature

_____
Address

_____
City/State/Zip Code

ON BEHALF OF CONTRACTOR:

_____
Title

_____
Name

_____
Signature

_____
Address

_____
City/State/Zip Code

ON BEHALF OF ESCROW AGENT:

_____
Title

_____
Name

_____
Signature

_____
Address

_____
City/State/Zip Code

IN WITNESS WHEREOF, the parties have executed this Escrow Agreement by their proper officers on the date first set forth above.

CITY

_____

_____
Title

_____
Name

_____
Signature

CONTRACTOR

_____

_____
Title

_____
Name

_____
Signature

ATTEST

_____
Signature

_____
Print Name

City Clerk

ESCROW AGENT

_____

_____
Title

_____
Print Name

_____
Signature

Pre-approved as to form:
CITY ATTORNEY
8/2016

At the time the Escrow Account is opened, City and Contractor shall deliver to Escrow Agent a fully executed counterpart of this Document 00 6290.

END OF DOCUMENT

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 6325

SUBSTITUTION REQUEST FORM

To: **Stacey Rutherford, Project Manager, City of Berkeley**

(510) 981 - 6738

PROJECT: Santa Fe Trackbed to Park Conversion Remediation, Demolition and Perimeter Fencing **City's Specification No. : 26-11756-C**	**Contractor:**

Substitution Request By:	Firm:

Transmittal Record	**Attn:**	**Firm:**	**Date Sent:**	**Date Rec'd:**	**Date Due:**
Contractor to City					
Contractor to Architect					
City / Architect to Consultant					
Architect to City Representative					
City Representative to Contractor					

We hereby submit for your consideration the following product instead of the specified item for the Project:

Section / Drawing	**Article**	**Specified Item**
Proposed Substitution:		

We have (a) attached manufacturer's literature, including complete technical data and laboratory test results, if applicable, (b) attached an explanation of why proposed substitution is a true equivalent to specified item, (c) included complete information on changes to Contract Documents that the proposed substitution will require for its proper installation, and (d) filled in the blanks below:

Contractor to complete questions that follow and certifies to the accuracy of all answers:

A.	Does the substitution affect dimensions shown on Drawings? Yes __ / No __. If No, please explain proposed mitigation and why substitution is equivalent to originally specified item:
B.	Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution? Yes __ / No __. If No, please state reasons explain why substitution is equivalent to originally specified item:
C.	What effect does the substitution have on other trades? No effect: __ / Some effect__. If substitution will affect other trades, please explain the effect and why substitution is equivalent to originally specified item:
D.	Will substitution cause change to Project Schedule, or to critical delivery dates? Add? Shorten? If the substitution will add to schedule dates or affect critical activities, please explain why substitution is equivalent to originally specified item:
E.	Please describe differences between proposed substitution and specified item? Please explain and identify any and all differences, and please explain why substitution is equivalent to originally specified item:
F.	What is the Cost Differential to Contractor in original specified item and proposed substitution including all mark-ups? [If substitution requested during bid period, skip this question.]

G.	Are Manufacturer's guarantees for the proposed item the same as for item specified? Yes ____; No____. If No, please explain why substitution is equivalent to originally specified item:
H.	Contractor accepts full responsibility for delays caused by redesign of other items of the Work necessitated by substitution? Yes __ / No __. If No, please state reasons and explain why substitution is equivalent to originally specified item:
I.	Contractor states that the function, appearance and quality are equivalent or superior to the specified item? Yes __ / No __. If No, please explain why substitution is equivalent to originally specified item:

We certify that the function, appearance, and quality of the proposed substitution are equivalent or superior to those of the specified item, except as we may specifically state otherwise in this request.

Submitted by:_____ Signature: _____

Firm:_____ Date: _____

Address:_____ Phone/ Fax: _____

Remarks:_____

Consultant Response:	**City Representative Response:**
o Accepted	o Accepted
o Not Accepted	o Not Accepted
o Accepted As Noted	o Accepted As Noted
o Received Too Late	o Received Too Late

Remarks:_____ **Remarks:**_____

_____ _____

By:_____ **By:**_____

END OF DOCUMENT

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 6530

AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS

[Public Contract Code § 7100]

THIS AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS ("Agreement and Release"), made and entered into this **_____** day of **_____**, **20___**, by and between City of Berkeley ("City"), and ("Contractor"), whose place of business is at .

RECITALS

A. City and Contractor entered into Contract Number **XXXXXX** (the "Contract") for construction of City **Santa Fe Trackbed to Park Conversion – Remediation, Demolition and Perimeter Fencing** project located at **0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St.,** California.

B. The Work under the Contract has been completed.

AGREEMENT

NOW THEREFORE, it is mutually agreed between City and Contractor as follows:

1. Contractor will not be assessed liquidated damages except as detailed below:

Original Contract Sum	$ _____
Modified Contract Sum	$ _____
Payment to Date	$ _____
Liquidated Damages	$ _____
Payment Due Contractor	$ _____

2. Subject to the provisions of this Agreement and Release, Owner will forthwith pay to Contractor the sum of [($)] under the Contract, less any amounts withheld under the Contract or represented by any Notice to Withhold Funds on file with City as of the date of such payment.

3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against City arising from the Contract, except for the claims described in Paragraph 4 of this Document 00 6530. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against City, and all if its agents, employees, consultants, inspectors, representatives, assignees and transferees, except for the Disputed Claims set forth in Paragraph 4 of this Document 00 6530. Nothing in this Agreement and Release shall limit or modify Contractor's continuing obligations described in Paragraph 6 of this Document 00 6530.

4. The following claims submitted under Document 00 7200 (General Conditions), Article 12, are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Agreement and Release.

[Insert information in Chart below, affix attachment if necessary]

CLAIM NO.	DATE SUBMITTED	DESCRIPTION OF CLAIM	AMOUNT OF CLAIM

5. Consistent with California Public Contract Code §7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 2 of this Document 00 6530, Contractor hereby releases and forever discharges City, and all of its agents, employees, consultants, inspectors, assignees and transferees from any and all liability, claims, demands, actions or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.

6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.

7. Contractor shall immediately defend, indemnify and hold harmless City, any of the City's Representatives, Project Manager, and all of their agents, employees, consultants, inspectors, assignees and transferees, from any and all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities that may be asserted against them by any of Contractor's suppliers and/or Subcontractors of any tier and/or any suppliers to them for any and all labor, materials, supplies and equipment used, or contemplated to be used in the performance of the Contract, except for the Disputed Claims set forth in Paragraph 4 of this Document 00 6530.

8. Contractor hereby waives the provisions of California Civil Code §1542, which provide as follows:

> **A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM OR HER, MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR.**

9. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable, and if any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal or other law, ruling, or regulation, then such provision, or part thereof shall remain in force and effect only to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.

10. Contractor represents and warrants that it is the true and lawful owner of all claims and other matters released pursuant to this Agreement and Release, and that it has full right, title and authority to enter into this instrument. Each party represents and warrants that it has been represented by counsel of its own choosing in connection with this Agreement and Release.

11. All rights of City shall survive completion of the Work or termination of the Contract, and execution of this Agreement and Release.

*** * * CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING * * ***

CITY

By: _____
Signature

Name: _____
Print

Its: _____
Title

ATTEST:

_____
Title

_____
Print

[CONTRACTOR]

By: _____
Signature

Name: _____
Print

Its: _____
Title

[CONTRACTOR]

By: _____
Signature

Name: _____
Print

Its: _____

Title

Pre-approved as to form:
CITY ATTORNEY
8/2016

END OF DOCUMENT

DOCUMENT 00 6536

GUARANTY

TO: The City of Berkeley ("City"), for construction of Santa Fe Trackbed to Park Conversion Remediation, Demolition and Perimeter Fencing located at 0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St., California.

The undersigned guarantees all construction performed on this Project and also guarantees all material and equipment incorporated therein.

Contractor hereby grants to City for a period of one year following the date of Final Acceptance of the Work completed, or such longer period specified in the Contract Documents, its unconditional warranty of the quality and adequacy of all of the Work including, without limitation, all labor, materials and equipment provided by Contractor and its Subcontractors of all tiers in connection with the Work.

Neither final payment nor use nor occupancy of the Work performed by the Contractor shall constitute an acceptance of Work not done in accordance with this Guaranty or relieve Contractor of liability in respect to any express warranties or responsibilities for faulty materials or workmanship. Contractor shall remedy any defects in the Work and pay for any damage resulting therefrom, which shall appear within one year, or longer if specified, from the date of Final Acceptance of the Work completed.

If within one year after the date of Final Acceptance of the Work completed, or such longer period of time as may be prescribed by laws or regulations, or by the terms of Contract Documents, any Work is found to be Defective, Contractor shall promptly, without cost to City and in accordance with City's written instructions, correct such Defective Work. Contractor shall remove any Defective Work rejected by City and replace it with Work that is not Defective, and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If Contractor fails to promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, City may have the Defective Work corrected or the rejected Work removed and replaced. Contractor shall pay for all claims, costs, losses and damages caused by or resulting from such removal and replacement. Where Contractor fails to correct Defective Work, or defects are discovered outside the correction period, City shall have all rights and remedies granted by law.

Inspection of the Work shall not relieve Contractor of any of its obligations under the Contract Documents. Even though equipment, materials, or Work required to be provided under the Contract Documents have been inspected, accepted, and estimated for payment, Contractor shall, at its own expense, replace or repair any such equipment, material, or Work found to be Defective or otherwise not to comply with the requirements of the Contract Documents up to the end of the guaranty period.

All abbreviations and definitions of terms used in this Agreement shall have the meanings set forth in the Contract Documents.

The foregoing Guaranty is in addition to any other warranties of Contractor contained in the Contract Documents, and not in lieu of, any and all other liability imposed on Contractor under the Contract Documents and at law with respect to Contractor's duties, obligations, and performance under the Contract Documents. In the event of any conflict or inconsistency between the terms of this Guaranty and any warranty or obligation of the Contractor under the Contract Documents or at law, such inconsistency or conflict shall be resolved in favor of the higher level of obligation of the Contractor.

Date: _____, 20___ _____
Contractor's name

By: _____

Signature

_____
Print Name

_____
Title

_____
Street Address

_____
City, State, Zip code

END OF DOCUMENT

DOCUMENT 00 6580

CITY OF BERKELEY CONTRACTING POLICIES

Contractor shall comply with the City of Berkeley's adopted employment policies applying to City construction projects as described in Document 00 7317. The following certifications/forms shall be submitted in accordance with Document 00 2113 Instructions to Bidders:

- Memorandum of Understanding
- Workforce Composition Form
- Agreement for Change in Subcontractors
- Nuclear Free Zone Disclosure Form
- Oppressive States Compliance Statement
- Sanctuary City Compliance Certification
- Hardwood Disclosure Form
- First Source Construction Agreement (for projects between $100,000 and $500,000) - Not applicable to this project.
- Community Workforce Agreement, Agreement to be Bound (for projects over $500,000)
- Right to Audit Form
- Certification Of Compliance With Equal Benefits Ordinance
- Taxpayer Identification Report
- Contractor's License
- City of Berkeley Business License

CITY OF BERKELEY
MEMORANDUM OF UNDERSTANDING
(MOU)

1. The Contractor (and all Subcontractors) agree not to discriminate pursuant to City Ordinance No. 5876.

2. The Contractor agrees that he/she is also responsible for his/her Subcontractors' compliance with City of Berkeley Ordinance No. 5876.

3. For contracts over $100,000, the Contractor agrees to comply with Ordinance No. 5876 as applied to the First Source Program (see Section 8 of Ordinance 5876).

The Contractor agrees to submit periodic employment and wage reports to the City's Contract Compliance Officer upon reasonable request.

Contractor	City of Berkeley Contracts Compliance Officer Or his/her designee
Date	Date

CITY OF BERKELEY
WORKFORCE COMPOSITION FORM FOR ALL CONSTRUCTION CONTRACTS

This form is to be completed and submitted prior to the Contract Compliance Conference. The Contractor and all Subcontractors who will do work valued at $3,000 or more are required to submit this form. Weekly payroll reports will be compared to this listing to monitor for compliance. A payroll printout or other listing of employees providing the same information will be accepted.

Name of Contractor/Subcontractor: _____

Project: _____

Name		Race*	Sex**	Trade/Craft	Basic Hourly Rate	Hire Date	Employees to be used on this job

* A=Asian or Pacific Islander
AI=American Indian
B=Afro American
C=Caucasian
H=Hispanic (Mexican, Puerto Rican, Spanish, Cuban, Chicano, Central or South American)
8/91

**M = Male
**F = Female

Signature: _____ Date: _____
Contractor/Subcontractor

Verified By: _____ Date: _____
City of Berkeley Contracts Compliance Officer or his/her designee

CITY OF BERKELEY
AGREEMENT FOR CHANGE IN SUB-CONTRACTORS

I agree to use the Subcontractor(s) listed in the signed contract with the City of Berkeley. If it should become necessary to change Subcontractors, I will notify the Capital Projects Manager by completing the following information:

Current Subcontractor(s)	Alternate Subcontractors	Reason for Change	Date

Signed by:

Verified by:

Prime Contractor

Subcontractor

City of Berkeley Contracts Compliance Officer
Or his/her designee

Date: _____

Date: _____

Date: _____

CITY OF BERKELEY

NUCLEAR FREE ZONE DISCLOSURE FORM

I (we) certify that:

1. I am (we are) fully cognizant of any and all contracts held, products made or otherwise handled by this business entity, and of any such that are anticipated to be entered into, produced or handled for the duration of its contract(s) with the City of Berkeley. (To this end, this disclosure form may be signed by more than one individual, if a description of which type of contracts each individual is cognizant is attached.)

2. I (we) understand that Section 12.90.070 of the Nuclear Free Berkeley Act (Berkeley Municipal Code Ch. 12.90; Ordinance No. 5784-N.S.) prohibits the City of Berkeley from contracting with any person or business that knowingly engages in work for nuclear weapons.

3. I (we) understand the meaning of the following terms as set forth in Berkeley Municipal Code section 12.90.130:

"Work for nuclear weapons" is any work the purpose of which is the development, testing, production, maintenance or storage of nuclear weapons or the components of nuclear weapons; or any secret or classified research or evaluation of nuclear weapons; or any operation, management or administration of such work.

"Nuclear weapon" is any device, the intended explosion of which results from the energy released by reactions involving atomic nuclei, either fission or fusion or both. This definition of nuclear weapons includes the means of transporting, guiding, propelling or triggering the weapon if and only if such means is destroyed or rendered useless in the normal propelling, triggering, or detonation of the weapon.

"Component of a nuclear weapon" is any device, radioactive or non-radioactive, the primary intended function of which is to contribute to the operation of a nuclear weapon (or be a part of a nuclear weapon).

4. Neither this business entity nor its parent nor any of its subsidiaries engages in work for nuclear weapons or anticipates entering into such work for the duration of its contract(s) with the City of Berkeley.

I (we) declare under penalty of perjury of the laws of the State of California that the foregoing is true and correct.

Signed: _____ Date: _____

Printed Name and Title(s): _____

Company: _____

CITY OF BERKELEY

Oppressive States Compliance Statement for Personal Services

The undersigned, an authorized agent of_____(hereafter "Vendor"), has had an opportunity to review the requirements of Berkeley City Council Resolution Nos. 59,853-N.S., 60,382-N.S., and 70,606-N.S., (hereafter "Resolutions"). Vendor understands and agrees that the City may choose with whom it will maintain business relations and may refrain from contracting with those Business Entities which maintain business relationships with morally repugnant regimes. Vendor understands the meaning of the following terms used in the Resolutions:

"Business Entity" means "any individual, firm, partnership, corporation, association or any other commercial organization, including parent-entities and wholly-owned subsidiaries" (to the extent that their operations are related to the purpose of the contract with the City).

"Oppressive State" means: **Tibet Autonomous Region, the provinces of Ado, Kham, and U-Tsang; and Burma (Myanmar)**

“Personal Services” means “the performance of any work or labor and shall also include acting as an independent contractor or providing any consulting advice or assistance, or otherwise acting as an agent pursuant to a contractual relationship.”

Contractor understands that it is not eligible to receive or retain a City contract if at the time the contract is executed, or at any time during the term of the contract it provides Personal Services to:

a. The governing regime in any Oppressive State.
b. Any business or corporation organized under the authority of the governing regime of any Oppressive State.
c. Any person for the express purpose of assisting in business operations or trading with any public or private entity located in any Oppressive State.

Vendor further understands and agrees that Vendor's failure to comply with the Resolution shall constitute a default of the contract and the City Manager may terminate the contract and bar Vendor from bidding on future contracts with the City for five (5) years from the effective date of the contract termination.

The undersigned is familiar with, or has made a reasonable effort to become familiar with, Vendor's business structure and the geographic extent of its operations. By executing the Statement, Vendor certifies that it complies with the requirements of the Resolution and that if any time during the term of the contract it ceases to comply, Vendor will promptly notify the City Manager in writing.

Based on the foregoing, the undersigned declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Printed Name: _____Title:_____

Signature: _____ Date:_____

Business Entity: _____

I am unable to execute this Statement; however, Vendor is exempt under Section VII of the Resolution. I have attached a separate statement explaining the reason(s) Vendor cannot comply and the basis for any requested exemption.

Signature: _____ Date:_____

Contract Description/Specification No.:_____

ATTACHMENT D **REV. 1/1/2023**

CITY OF BERKELEY
Sanctuary City Compliance Statement

The undersigned, an authorized agent of _____(hereafter "Contractor"), has had an opportunity to review the requirements of Berkeley Code Chapter 13.105 (hereafter "Sanctuary City Contracting Ordinance" or "SCCO"). Contractor understands and agrees that the City may choose with whom it will maintain business relations and may refrain from contracting with any person or entity that provides Data Broker or Extreme Vetting services to the U.S. Immigration and Customs Enforcement Division of the United States Department of Homeland Security ("ICE"). Contractor understands the meaning of the following terms used in the SCCO:

a. "Data Broker" means either of the following:

   i. The collection of information, including personal information about consumers, from a wide variety of sources for the purposes of reselling such information to their customers, which include both private-sector business and government agencies;

   ii. The aggregation of data that was collected for another purpose from that for which it is ultimately used.

b. "Extreme Vetting" means data mining, threat modeling, predictive risk analysis, or other similar services." Extreme Vetting does not include:

   i. The City's computer-network health and performance tools;

   ii. Cybersecurity capabilities, technologies and systems used by the City of Berkeley Department of Information Technology to predict, monitor for, prevent, and protect technology infrastructure and systems owned and operated by the City of Berkeley from potential cybersecurity events and cyber-forensic based investigations and prosecutions of illegal computer based activity.

Contractor understands that it is not eligible to receive or retain a City contract if at the time the Contract is executed, or at any time during the term of the Contract, it provides Data Broker or Extreme Vetting services to ICE.

Contractor further understands and agrees that Contractor's failure to comply with the SCCO shall constitute a material default of the Contract and the City Manager may terminate the Contract and bar Contractor from bidding on future contracts with the City for five (5) years from the effective date of the contract termination.

By executing this Statement, Contractor certifies that it complies with the requirements of the SCCO and that if any time during the term of the Contract it ceases to comply, Contractor will promptly notify the City Manager in writing. Any person or entity who knowingly or willingly supplies false information in violation of the SCCO shall be guilty of a misdemeanor and up to a $1,000 fine.

Based on the foregoing, the undersigned declares under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed this _____day of ____, 20__, at _____, California.

Printed Name: _____Title:_____

Signed: _____Date:_____

Attachment D

Business Entity: _____ SCCO CompStmt (Oct2019)

Attachment D

CITY OF BERKELEY

HARDWOOD DISCLOSURE FORM

For use by vendors on contracts utilizing lumber

1. I understand that on December 12, 1995, the City Council directed staff not to purchase lumber from companies that purchase or sell wood or paper products that come from tropical rainforests. I understand that wood species with tropical origins include, but are not limited to: Apitong, Banak, Bocote, Bubinga, Cocobolo, Cordia, Ebony, Goncalo alves, Greenheart, Iroko, Jelutang, Koa, Luauan, Mahogany, Meranti, Padauk, Purpleheart, Ramin, Rosewood, Satinwood, Teak, Virola, Wenge, and Zebrawood.

2. I am knowledgeable about the wood and paper products purchased and sold by this company.

3. This company does not currently purchase or sell wood or paper products having their origins in tropical rainforests. In addition, this company will not, for the duration of its contract with the City of Berkeley, purchase or sell wood or paper products having their origins in tropical rainforests.

I declare under penalty of perjury of the laws of the State of California that the foregoing is true and correct.

Signed: _____ Date: _____

Printed Name & Title: _____

Company: _____

I am unable to sign this disclosure form for the following reason(s):

_____

_____

_____

_____

_____

Attachment D

FIRST SOURCE CONSTRUCTION AGREEMENT

EXHIBIT "A"

First Source Construction Agreement

I certify that:

I. I am authorized to enter into this agreement on behalf of the company whose name appears below ("Contractor").

II. Contractor understands and agrees to comply with the City of Berkeley First Source Construction Agreement.

III. I choose Method One: check here _____

A. Contractor understands that selecting Method One agreement with the City of Berkeley means that
Contractor agrees as follows:

1. To utilize the First Source Program Construction Employment Program as the first place for recruitment and referral of applicants for new and replacement workers.

2. To allow the First Source Program a minimum of seventy-two (72) hours to refer applicants to Contractors. (Contractor may apply to the City of Berkeley for a waiver of the seventy-two hour requirement for an emergency situation.)

3. To employ qualified applicants referred by the First Source Program.

4. To fully document the reason(s) for not hiring persons referred by the First Source Program.

5. To provide to the First Source Program, upon request, information on the employment status of First Source Program placements, and reason for separation if employee is terminated.

B. Should the First Source Program be unable to provide the employees needed, Contractor or subcontractor is relieved of its obligation to achieve the goals of the First Source Program.

1. No documentation of "good Faith Effort Steps" would be required of Contractor and subcontractors

2. No penalty would be assessed.

C. Contractor must go back to the First Source Program whenever its employment needs increase, to comply with the First Source Program.

D. Should Contractor or a listed subcontractor fail to comply with the First Source Program, Contractor shall be liable for liquidated damages in the amount of $1,000 or 1% of the contract amount for each day of non-compliance. In addition, Contractor or listed subcontractor may be deemed a non-responsible bidder in connection with future City of Berkeley contracts.

Attachment D

Attachment D

IV. I choose Method Two: check here _____

A. Should the contractor choose Method Two, Contractor can use any means of hiring Berkeley residents to achieve the goal. This also can include using union hiring halls requesting in writing for Berkeley residents. A copy must be sent to the First Source Program.

B. Should Contractor or subcontractor fail to achieve the goals at any time during the course of this project, Contractor or listed subcontractor will be required to document compliance with each of the "good Faith Effort Steps" listed in the First Source Program description document.

C. Should Contractor or a listed subcontractor fail to comply with the First Source Program, Contractor shall be liable for liquidated damages in the amount of $1,000 or 1% of the contract amount for each day of non-compliance. In addition, Contractor or listed subcontractor may be deemed a non-responsible bidder in connection with future City of Berkeley contracts.

Company Name	Owner/Authorized Representative Signature
Address	Printed Name of Owner / Authorized Representative
	Telephone Number

Attachment D

AGREEMENT TO BE BOUND

The undersigned, as a Contractor or Subcontractor ("Contractor") on a City Project ("Project"), for and in consideration of the award to it of a contract to perform work on said Project, and in further consideration of the mutual promises made in the Project's Community Workforce Agreement ("Agreement"), a copy which was received and is acknowledged, hereby:

1. Accepts and agrees to be bound by the terms and conditions of the Agreement, together with any and all amendments and supplements now existing or which are later made to said Agreement.

2. Certifies that it has no commitments or agreements which would preclude its full and complete compliance with the terms and conditions of said Agreement;

3. Agrees to secure from any Contractor (as defined in said Agreement) which is or becomes a subcontractor (or any tier) to it, and from any successors, a duly executed Agreement to be Bound in form identical to this document.

4. Contractor agrees that it shall be bound by all applicable trust agreements and plans for the provision of such fringe benefits as accrue to the direct benefit of the construction persons, including Health and Welfare, Pension, Training, Vacation, and/or other direct benefits provided pursuant to the appropriate craft agreement contained in Schedule "A" of Agreement.

Date: _____

Company Name: _____

Name of Prime Contractor or Higher Level Subcontractor:

_____

Name of Project: _____

Signature: _____

Print Name: _____

Title: _____

Mailing Address: _____

Phone Number and Email Address: _____

Contractor's License #: _____

Motor Carrier Permit (CA) #: _____

Attachment D

CITY OF BERKELEY
RIGHT TO AUDIT FORM

The Contractor agrees that pursuant to Section 61 of the Berkeley City Charter, the City Auditor's office may conduct an audit of Contractor's financial, performance and compliance records maintained in connection with the operations and services performed under this contract.

In the event of such audit, Contractor agrees to provide the Auditor with reasonable access to Contractor's employees and make all such financial, performance and compliance records available to the Auditor's office. City agrees to provide Contractor an opportunity to discuss and respond to any findings before a final audit report is filed.

Contractor's signature _____ Date: _____

Print Name and Title: _____

Company: _____

Attachment D

Attachment D

To be completed by Contractor/Vendor

Form EBO-1
CITY OF BERKELEY
CERTIFICATION OF COMPLIANCE WITH EQUAL BENEFITS ORDINANCE

If you are a ***contractor***, return this form to the originating department/project manager. If you are a ***vendor*** (supplier of goods), return this form to the Purchasing Division of the Finance Dept.

SECTION 1. CONTRACTOR/VENDOR INFORMATION

Name:			Vendor No.:
Address:	City:	State:	ZIP:
Contact Person:			Telephone:
E-mail Address:			Fax No.:

SECTION 2. COMPLIANCE QUESTIONS

A. The EBO is inapplicable to this contract because the contractor/vendor has no employees.
☐ Yes ☐ No *(If "Yes," proceed to Section 5; if "No", continue to the next question.)*

B. Does your company provide (or make available at the employees' expense) any employee benefits?
☐ Yes ☐ No
If "Yes," continue to Question C.
If "No," proceed to Section 5. (The EBO is not applicable to you.)

C. Does your company provide (or make available at the employees' expense) any benefits to the spouse of an employee? ..... ☐ Yes ☐ No

D. Does your company provide (or make available at the employees' expense) any benefits to the domestic partner of an employee? ..... ☐ Yes ☐ No
If you answered "No" to both Questions C and D, proceed to Section 5. (The EBO is not applicable to this contract.)
If you answered "Yes" to both Questions C and D, please continue to Question E.
If you answered "Yes" to Question C and **"No"** to Question D, please continue to Section 3.

E. Are the benefits that are available to the spouse of an employee identical to the benefits that are available to the domestic partner of the employee? ..... ☐ Yes ☐ No
If you answered "Yes," proceed to Section 4. (You are in compliance with the EBO.)
If you answered "No," continue to Section 3.

SECTION 3. PROVISIONAL COMPLIANCE

A. Contractor/vendor is not in compliance with the EBO now but will comply by the following date:

☐ By the first effective date after the first open enrollment process following the contract start date, not to exceed two years, if the Contractor submits evidence of taking reasonable measures to comply with the EBO; or

☐ At such time that administrative steps can be taken to incorporate nondiscrimination in benefits in the Contractor's infrastructure, not to exceed three months; or

☐ Upon expiration of the contractor's current collective bargaining agreement(s).

B. If you have taken all reasonable measures to comply with the EBO but are unable to do so, do you agree to provide employees with a cash equivalent?* ..... ☐ Yes ☐ No

* The cash equivalent is the amount of money your company pays for spousal benefits that are unavailable for domestic partners.

SECTION 4. REQUIRED DOCUMENTATION

At time of issuance of purchase order or contract award, you may be required by the City to provide documentation (copy of employee handbook, eligibility statement from your plans, insurance provider statements, etc.) to verify that you do not discriminate in the provision of benefits.

SECTION 5. CERTIFICATION

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I am authorized to bind this entity contractually. By signing this certification, I further agree to comply with all additional obligations of the Equal Benefits Ordinance that are set forth in the Berkeley Municipal Code and in the terms of the contract or purchase order with the City.

Executed this _____day of _____, in the year _____, at _____ (City), _____ (State)

_____ Name (please print)

_____ Signature

_____ Title

_____ Federal ID or Social Security Number

FOR CITY OF BERKELEY USE ONLY

☐ Non-Compliant (The City may not do business with this contractor/vendor)

☐ One-Person Contractor/Vendor ☐ Full Compliance ☐ Reasonable Measures

☐ Provisional Compliance Category, Full Compliance by Date: _____

Staff Name(*Sign and Print*): _____Date: _____ _____

TAXPAYER IDENTIFICATION REPORT

NAME/COMPANY'S NAME: _____

_____

MAILING ADDRESS: _____

_____

SOCIAL SECURITY NO.: _____

OR

EMPLOYER IDENTIFICATION NO.: _____

My Company is a Corporation [ ]

My Company is not a Corporation [ ]

I certify that the above information is true and correct:

_____ _____
(Signature) (Title)

The Tax Equity and Fiscal Responsibility Act of 1982 (Public Law 97-248) requires the above reporting information be furnished to the City.

Persons who do not furnish their tax information numbers become subject to backup withholding by the City at a rate of 20% from each disbursement made to the recipient.

Attachment D

END OF DOCUMENT

Attachment D

DOCUMENT 007200

GENERAL CONDITIONS

Page
ARTICLE 1 – INTERPRETATION OF CONTRACT DOCUMENTS 1
1.01 Interpretation Of Documents 1
1.02 Order Of Precedence Of Documents 1
ARTICLE 2 – PRE-BID INVESTIGATIONS 1
2.01 Pre-Bid Investigations Required 1
2.02 Limited Reliance Permitted On City's Existing Conditions Data 2
2.03 Pre-Bid Investigation Requirements For Excavation And Utilities Relocation Projects 2
ARTICLE 3 – SUBCONTRACTORS 3
3.01 Subcontractor Listing Law 3
3.02 Subcontracts 3
ARTICLE 4 – DRAWINGS AND SPECIFICATIONS 3
4.01 Intent Of Drawings And Specifications 3
4.02 Checking Of Drawings And Specifications 3
4.03 Interpretation Of Drawings And Specifications 4
4.04 Use Of Drawings And Specifications. 4
ARTICLE 5 – COMMENCEMENT OF THE WORK 4
5.01 Submission Of Required Schedules 4
5.02 Commencement Date Of Contract Time 5
ARTICLE 6 – CONTRACTOR'S ORGANIZATION AND EQUIPMENT 5
6.01 Contractor's Legal Address 5
6.02 Contractor's Superintendents Or Forepersons 5
6.03 Proficiency In English 5
6.04 Contractor's And Subcontractors' Employees 5
6.05 Contractor's Use Of The Site 5
6.06 Contractor's Site Office 6
ARTICLE 7 – City'S ADMINISTRATION OF WORK 6
7.01 City's Representative(s) 6
7.02 City's Observation Of The Work 6
7.03 Architect/Engineer's Observation Of Work 6
7.04 Owner's And Architect/Engineer's Exercise Of Contract Responsibilities 7
7.05 City's Right Of Access To The Work 7
7.06 City's Right Of Separate Construction 7
ARTICLE 8 – CONTRACTOR'S PROSECUTION AND PROGRESS OF THE WORK 7
8.01 Contractor To Supervise The Work 7
8.02 Contractor To Maintain Cost Data 8
8.03 Contractor To Supply Sufficient Workers And Materials 8
8.04 Contractor To Maintain Project Record Documents 9
8.05 Contractor To Not Disrupt City Operation 9
8.06 Contractor To Provide Temporary Facilities And Controls 9
ARTICLE 9 – WARRANTY, GUARANTY, AND INSPECTION OF WORK 10
9.01 Warranty And Guaranty 10
9.02 Inspection Of Work 10
9.03 Correction Of Defective Work 11
9.04 Acceptance And Correction Of Defective Work By City 12
9.05 Rights Upon Inspection, Correction Or Acceptance 12
9.06 Proof Of Compliance Of Contract Provisions 13
9.07 Correction Period And Project Warranty Period: 13

9.08 No Waiver ... 13
ARTICLE 10 – MODIFICATIONS OF CONTRACT DOCUMENTS ... 14
10.01 City's Right To Direct Changed Work. ... 14
10.02 Required Documentation For Changed Work ... 14
10.03 Procedures And Pricing Of Changed Work ... 14
ARTICLE 11 – TIME ALLOWANCES ... 14
11.01 Time Allowances ... 14
11.02 Excusable Delay And Inexcusable Delay Defined. ... 14
11.03 Notice Of Delay ... 15
11.04 Compensable Time Extensions ... 15
11.05 Non-Compensable Time Extensions ... 15
11.06 Adverse Weather ... 15
11.07 Liquidated Damages ... 16
ARTICLE 12 – CLAIMS BY CONTRACTOR ... 17
12.01 Obligation to File Claims for Disputed Work ... 17
12.02 Form And Contents Of Claim ... 17
12.03 Administration During/After Claim Submission ... 17
12.04 Compliance ... 17
ARTICLE 13 – UNDERGROUND CONDITIONS ... 18
13.01 Contractor To Locate Underground Facilities. ... 18
13.02 Contractor To Protect Underground Facilities. ... 18
13.03 Concealed Or Unknown Conditions ... 19
13.04 Notice Of Hazardous Waste Or Materials Conditions ... 20
ARTICLE 14 – LEGAL AND MISCELLANEOUS ... 21
14.01 Laws And Regulations ... 21
14.02 Permits And Taxes ... 21
14.03 Communications And Information Distribution ... 22
14.04 Suspension Of Work ... 22
14.05 Termination Of Contract For Cause ... 22
14.06 Termination Of Contract For Convenience ... 23
14.07 Contingent Assignment Of Subcontracts ... 23
14.08 Remedies And Contract Integration ... 23
14.09 Interpretation. ... 24
14.10 Patents ... 24
14.11 Substitution For Patented And Specified Articles ... 25
14.12 Interest Of Public Officers ... 25
14.13 Limit Of Liability ... 25
ARTICLE 15 – WORKING CONDITIONS AND PREVAILING WAGES ... 25
15.01 Use Of Site/Sanitary Rules ... 25
15.02 Protection Of Work, Persons, And Property ... 26
15.03 Responsibility For Safety And Health ... 26
15.04 Emergencies ... 27
15.05 Use Of Roadways And Walkways ... 27
15.06 Nondiscrimination ... 27
15.07 Prevailing Wages And Working Hours ... 27
15.08 Environmental Controls ... 29
15.09 Shoring Safety Plan ... 29

GENERAL CONDITIONS

ARTICLE 1 – INTERPRETATION OF CONTRACT DOCUMENTS

1.01 Interpretation Of Documents

A. Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. Individual Contract Documents subdivide at first level into Articles, and then into paragraphs.

1.02 Order Of Precedence Of Documents

A. In the case of discrepancy or ambiguity in the Contract Documents, the following order of precedence shall prevail:

1. Modifications in inverse chronological order (i.e., most recent first), and in the same order as specific portions they are modifying;
2. Agreement Forms (Document 00 5200), and terms and conditions referenced therein;
3. Supplementary General Conditions (Document 00 7201 et seq), if included;
4. General Conditions (Document 00 7200);
5. Division 1 Specifications, if included;
6. Drawings and Technical Specifications (Division 2 and above);
7. Written numbers over figures, unless obviously incorrect;
8. Figured dimensions over scaled dimensions;
9. Large-scale Drawings over small-scale Drawings.

B. Any conflict between Drawings and Technical Specifications (Division 2 and above) will be resolved in favor of the document of the latest date (i.e., the most recent document), and if the dates are the same or not determinable, then in favor of Specifications.

C. Any conflict between a bill or list of materials shown in the Contract Documents and the actual quantities required to complete Work required by Contract Documents, will be resolved in favor of the actual quantities.

D. All Technical Specifications included in the Project manual shall be included within the Contract Documents unless identified otherwise.

ARTICLE 2 – PRE-BID INVESTIGATIONS

2.01 Pre-Bid Investigations Required

A. Prior to and as a condition of submitting a Bid and executing Document 00 5200 (Agreement), Contractor shall make reasonable efforts to investigate fully the Work of the Contract. Contractor shall visit the Site, examine thoroughly and understand fully the nature and extent of the Contract Documents, Work, Site, locality, actual conditions and as-built conditions.

B. Contractor's investigation shall include, without limitation, requesting and thoroughly examining of all reports of exploration and tests of subsurface conditions, as-built drawings, drawings, product specification(s) or reports, made available by City for contracting purposes or during Contractor's pre-bid investigations, of existing above ground and (to the extent applicable) below ground conditions (together, "Existing Conditions Data"), including, as applicable, Underground Facilities, geotechnical data, as-built data, utility surveys, record documents of all types, hazardous materials surveys, or similar materials which may appear or be referenced in the Project Manual or the in the Contract Documents, and all local conditions, and federal, state and local laws and regulations that in any manner may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Contractor and safety precautions and programs incident thereto.

C. Contractor's investigations shall consider fully the fact that Existing Conditions Data is in many cases based on information furnished to City by others (e.g., the prior owner or builders), and that due to their age or their chain of custody since preparation, may not meet current industry

standards for accuracy. Contractor shall also: (i.) provide City with prompt written notice of all conflicts, errors, ambiguities, or discrepancies of any type, that it discovered in or among the Contract Documents and the Existing Conditions Data, and (ii.) subject to City's approval, conduct any such additional or supplementary examinations, investigations, explorations, tests, studies and data compilations, concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise, which Contractor may deem necessary in order to perform and furnish the Work in accordance with the terms and conditions of Contract Documents.

D. During performance of the Contract, Contractor will be charged with knowledge of all information that it should have learned in performing these pre-bid investigations and other obligations, and shall not be entitled to Change Orders (time or compensation) due to any information, error, inconsistency, omission, or conditions that Contractor should have known as a part of this Work. Contractor shall be responsible for the resultant losses, including, without limitation, the cost of correcting Defective Work.

2.02 Limited Reliance Permitted On City's Existing Conditions Data

A. Regarding aboveground and as-built conditions shown on the Contract Documents or supplied by City, such information has been compiled in good faith, however, City does not expressly or impliedly warrant or represent that such information is correctly shown or indicated, or otherwise complete for construction purposes. Contractor must independently verify such information as part of its pre-bid investigations, and where conditions are not reasonably verifiable or discrepancies are identified, bring such matters to City's attention through written question issued during the bid period. In executing Document 00 5200 (Agreement), Contractor shall rely on the results of its own independent investigation and shall not rely on City-supplied information regarding aboveground conditions and as-built conditions, and Contractor shall accept full responsibility for its verification work sufficient to complete the Work as intended.

B. Regarding subsurface conditions other than Underground Facilities shown on the Contract Documents or otherwise supplied by City, Contractor may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated in the Contract Documents. City is not responsible for the completeness of any subsurface condition information, Contractor's conclusions or opinions drawn from any subsurface condition information, or subsurface conditions that are not specifically shown. (For example, City is not responsible for soil conditions in areas contiguous to areas where a subsurface condition is shown.)

2.03 Pre-Bid Investigation Requirements For Excavation And Utilities Relocation Projects

A. As part of its pre-bid investigations for Projects involving excavation and/or relocation of existing utilities, Contractor shall make reasonable efforts to verify information regarding Underground Facilities, including but not limited to, requesting additional information or verification of information as necessary.

B. Because of the nature and location of City and the Project, the existence of Underground Facilities is deemed inherent in the Work of the Contract, as is the fact that Underground Facilities are not always accurately shown or completely shown on as-built records, both as to their depth and location. Contractor shall, therefore, take care to note the existence and potential existence of Underground Facilities, in particular, above and below grade structures, drainage lines, storm drains, sewers, water, gas, electrical, chemical, hot water, and other similar items and utilities. Contractor shall carefully consider all supplied information, request additional information Contractor may deem necessary, and visually inspect the Site for above ground indications of Underground Facilities (such as, for example not by way of limitation, the existence of existing service laterals, appurtenances or other types of utilities, indicated by the presence of an underground transmission main or other visible facilities, such as buildings, new asphalt, meters and junction boxes, on or adjacent to the Site). Contractor shall also consider local underground conditions and typical practices for Underground Facilities, either through its own direct knowledge or through its subcontractors, and fully consider this knowledge in assessing the existing information and the reasonableness of its reliance.

ARTICLE 3 – SUBCONTRACTORS

3.01 Subcontractor Listing Law

A. Contractor shall comply with the Subcontractor Listing law, California Public Contract Code §§4101 et seq. Contractor shall not substitute any other person or firm in place of any Subcontractor listed in the Bid except as may be allowed by law.

B. Subcontractors shall not assign or transfer their subcontracts or permit them to be performed by any other contractor without City's written approval. At City's request, Contractor shall provide City with a complete copy of all executed subcontracts or final commercial agreements with Subcontractors and/or suppliers.

3.02 Subcontracts

A. Subcontract agreements shall preserve and protect the rights of City under the Contract Documents so that subcontracting will not prejudice such rights. To the extent of the Work to be performed by a Subcontractor, Contractor shall require the Subcontractor's written agreement (1) to be bound to the terms of Contract Documents and (2) to assume vis-à-vis Contractor all the obligations and responsibilities that Contractor assumes toward City under the Contract Documents. (These agreements include for example, and not by way of limitation, all warranties, claims procedures and rules governing submittals of all types to which Contractor is subject under the Contract Documents.)

B. Contractor shall provide for the assignment to City of all rights any Subcontractor (of any tier) may have against any manufacturer, supplier, or distributor for breach of warranties and guarantees relating to the Work performed by the Subcontractor under the Contract Documents. Subcontracts shall provide and acknowledge City as an intended third-party beneficiary of each subcontract and supply contract (of any tier).

ARTICLE 4 – DRAWINGS AND SPECIFICATIONS

4.01 Intent Of Drawings And Specifications

A. Contractor shall interpret words or phrases used to describe Work (including services), materials, or equipment that have well-known technical or construction industry or trade meaning in accordance with that meaning. Drawings' intent specifically includes the intent to depict construction that complies with all applicable laws, codes and standards.

B. As part of the "Work," Contractor shall provide all labor, materials, equipment, machinery, tools, facilities, services, employee training and testing, hoisting facilities, Shop Drawings, storage, testing, security, transportation, disposal, the securing of all necessary or required field dimensions, the cutting or patching of existing materials, notices, permits, documents, reports, agreements and any other items required or necessary to timely and fully complete Work described and the results intended by Contract Documents and, in particular, Drawings and Specifications. Divisions and Specification Sections and the identification on any Drawings shall not control Contractor in dividing Work among Subcontractors or suppliers or delineating the Work to be performed by any specific trade.

C. Contractor shall perform reasonably implied parts of Work as "incidental work" although absent from Drawings and Specifications. Incidental work includes any work not shown on Drawings or described in Specifications that is necessary or normally or customarily required as a part of the Work shown on Drawings or described in Specifications. Incidental work includes any work necessary or required to make each installation satisfactory, legally operable, functional, and consistent with the intent of Drawings and Specifications or the requirements of Contract Documents. Contractor shall perform incidental work without extra cost to City. Incidental work shall be treated as if fully described in Specifications and shown on Drawings, and the expense of incidental work shall be included in price Bid and Contract Sum.

4.02 Checking Of Drawings And Specifications

A. Before undertaking each part of Work, Contractor shall carefully study and compare Contract

Documents and check and verify pertinent figures shown in the Contract Documents and all applicable field measurements. Contractor shall be responsible for any errors that might have been avoided by such comparison. Figures shown on Drawings shall be followed; Contractor shall not scale measurements. Contractor shall promptly report to City, in writing, any conflict, error, ambiguity or discrepancy that Contractor may discover. Contractor shall obtain a written interpretation or clarification from City before proceeding with any Work affected thereby. Contractor shall provide City with a follow-up correspondence every ten calendar days until it receives a satisfactory interpretation or clarification.

4.03 Interpretation Of Drawings And Specifications

A. A typical or representative detail on Drawings shall constitute the standard for workmanship and material throughout corresponding parts of Work. Where necessary, and where reasonably inferable from Drawings, Contractor shall adapt such representative detail for application to such corresponding parts of Work. The details of such adaptation shall be subject to prior approval by City. Repetitive features shown in outline on Drawings shall be in exact accordance with corresponding features completely shown.

B. Should any discrepancy appear or any misunderstanding arise as to the import of anything contained in Drawings and Specifications, or should Contractor have any questions or requests relating to Drawings or Specifications, Contractor shall refer the matter to City, in writing, with a copy to the Architect/Engineer. City will issue with reasonable promptness written responses, clarifications or interpretations as City may determine necessary, which shall be consistent with the intent of and be reasonably inferable from Contract Documents. Such written clarifications or interpretations shall be binding upon Contractor. If Contractor believes that a written response, clarification or interpretation justifies an adjustment in the Contract Sum or Contract Time, Contractor shall give City prompt written notice. If the parties are unable to agree to the amount or extent of the adjustment, if any, then Contractor shall perform the Work in conformance with City's response, clarification, or interpretation and may make a written claim for the adjustment as provided in Article 12.

C. The following general specifications shall apply wherever in the Specifications, or in any directions given by City in accordance with or supplementing Specifications, it is provided that Contractor shall furnish materials or manufactured articles or shall do Work for which no detailed specifications are shown. Materials or manufactured articles shall be of the best grade, in quality and workmanship, obtainable in the market from firms of established good reputation. If not ordinarily carried in stock, the materials or manufactured articles shall conform to industry standards for first class materials or articles of the kind required, with due consideration of the use to which they are to be put. Work shall conform to the usual standards or codes, such as those cited herein, for first class work of the kind required. Contractor shall specify in writing to City the materials to be used or Work to be performed under this Paragraph ten Business Days prior to furnishing such materials or performing such Work.

4.04 Use Of Drawings And Specifications.

A. Drawings, Specifications and other Contract Documents were prepared for use for Work of Contract Documents only. No part of Contract Documents shall be used for any other construction or for any other purpose except with the written consent of City. Any unauthorized use of Contract Documents is prohibited and at the sole liability of the user.

ARTICLE 5 – COMMENCEMENT OF THE WORK

5.01 Submission Of Required Schedules

A. Contractor shall submit to City in draft for review and discussion at the Preconstruction Conference, and in final prior to the first payment application, the following schedules:
   1. Schedule of Values
   2. Progress Schedule, and
   3. Schedule of Submittals.

B. No progress payment shall be due or owing to Contractor until such schedules are submitted to and acceptable to City and/or Architect/Engineer as meeting the requirements of the Contract Documents. In City's sole discretion, City may elect to instead withhold a portion of any progress payment for unacceptable compliance with contract requirements for such schedules.

C. City's acceptance of Contractor's schedules will not create any duty of care or impose on City any responsibility for the sequencing, scheduling or progress of Work nor will it interfere with or relieve Contractor from Contractor's full responsibility therefore.

5.02 Commencement Date Of Contract Time

A. The Contract Time will commence to run on the 60th Day after the issuance of the Notice of Award or, if a Notice to Proceed is given, on the date indicated in the Notice to Proceed.

B. City may give a Notice to Proceed at any time within 60 calendar days after the Notice of Award. Contractor shall not do any Work at the Site prior to the date on which the Contract Time commences to run.

ARTICLE 6 – CONTRACTOR'S ORGANIZATION AND EQUIPMENT

6.01 Contractor's Legal Address

A. Address and facsimile number given in Contractor's Bid are hereby designated as Contractor's legal address and facsimile number. Contractor may change its legal address and facsimile number by notice in writing, delivered to City, which in conspicuous language advises City of a change in legal address or facsimile number, and which City accepts in writing. Delivery to Contractor's legal address or depositing in any post office or post office box regularly maintained by the United States Postal Service, in a wrapper with postage affixed, directed to Contractor at legal address, or of any drawings, notice, letter or other communication, shall be deemed legal and sufficient service thereof upon Contractor. Facsimile to Contractor's designated facsimile number of any letter, memorandum, or other communication on standard or legal sized paper, with proof of facsimile transmission, shall be deemed legal and sufficient service thereof upon Contractor.

6.02 Contractor's Superintendents Or Forepersons

A. Contractor shall at all times be represented on Site by one or more superintendents or forepersons authorized and competent to receive and carry out any instructions that City may give, and shall be liable for faithful observance of instructions delivered to Contractor or to authorized representative or representatives on Site.

6.03 Proficiency In English

A. Supervisors, security guards, safety personnel and employees who have unescorted access to the Site shall possess proficiency in the English language in order to understand, receive and carry out oral and written communications or instructions relating to their job functions, including safety and security requirements.

6.04 Contractor's And Subcontractors' Employees

A. Contractor shall employ, and shall permit its Subcontractors to employ, only competent and skillful personnel to do Work. If City notifies Contractor that any of its employees, or any of its Subcontractors' employees on Work is incompetent, unfaithful, disorderly or profane, or fails to observe customary standards of conduct or refuses to carry out any provision of the Contract Documents, or uses threatening or abusive language to any person on Work representing City, or violates sanitary rules, or is otherwise unsatisfactory, and if City requests that such person be discharged from Work, then Contractor or its Subcontractor shall immediately discharge such person from Work and the discharged person shall not be re-employed on the Work except with consent of City.

6.05 Contractor's Use Of The Site

A. Contractor shall not make any arrangements with any person to permit occupancy or use of any land, structure or building within the limits of the Work, for any purpose whatsoever, either with or without compensation, in conflict with any agreement between City and any owner, former owner or tenant of such land, structure or buildings. Contractor may not occupy City-owned property outside the limit of the Work as indicated on the Drawings unless it obtains prior approval from City.

6.06 Contractor's Site Office

A. Unless expressly provided otherwise in the Contract Documents, Contractor shall provide a site office staffed by a resident project manager or job superintendent.

ARTICLE 7 – CITY'S ADMINISTRATION OF WORK

7.01 City's Representative(s)

A. City's Representative(s) will have limited authority to act on behalf of City as set forth in the Contract Documents.

B. Except as otherwise provided in these Contract Documents or subsequently identified in writing by City, City will issue all communications to Contractor through City's Representative, and Contractor shall issue all communications to City through City's Representative in a written document delivered to City.

C. Should any direct communications between Contractor and City's consultants, architects or engineers not identified in Article 2 of Document 00 5200 (Agreement) occur during field visits or by telephone, Contractor shall immediately confirm them in a written document copied to City.

7.02 City's Observation Of The Work

A. Work shall be performed under City's general observation and administration. Contractor shall comply with City's directions and instructions in accordance with the terms of Contract Documents, but nothing contained in these General Conditions shall be taken to relieve Contractor of any obligations or liabilities under the Contract Documents. City's failure to review or, upon review, failure to object to any aspect of Work reviewed, shall not be deemed a waiver or approval of any non-conforming aspect of Work.

B. Subject to those rights specifically reserved in the Contract Documents, City will not supervise, or direct, or have control over, or be responsible for, Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or Contractor's failure to comply with laws and regulations applicable to the furnishing or performance of Work. City will not be responsible for Contractor's failure to perform or furnish the Work in accordance with Contract Documents.

7.03 Architect/Engineer's Observation Of Work

A. City may engage an Architect/Engineer, an independent consultant or Project Manager (collectively for purposes of this Paragraph, "Project Manager/Architect") to assist in administering the Work. If so engaged, Project Manager/Architect will advise and consult with City, but will have authority to act on behalf of City only to extent provided in the Contract Documents or as set forth in writing by City. Project Manager/Architect will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with Work. Project Manager/Architect will not be responsible for or have control over the acts or omissions of Contractor, Subcontractors or their agents or employees, or any other persons performing Work.

B. Project Manager/Architect may review Contractor's Submittals, such as Shop Drawings, Product Data, and Samples, but only for conformance with design concept of Work and with information given in the Contract Documents.

C. Project Manager/Architect may visit the Site at intervals appropriate to stage of construction to become familiar generally with the progress and quality of Work and to determine in general if Work is proceeding in accordance with Contract Documents. Based on its observations, Project

Manager/Architect may recommend to City that it disapproves or rejects Work that Project Manager/Architect believes to be Defective or will not produce a complete Project that conforms to Contract Documents or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by Contract Documents. City will also have authority to require special inspection or testing of Work, whether or not the Work is fabricated, installed or completed.

D. Project Manager/Architect may conduct inspections to recommend to City the dates that Contractor has achieved Substantial Completion and Final Acceptance, and will receive and forward to City for review written warranties and related documents required by Contract Documents.

7.04 Owner's And Architect/Engineer's Exercise Of Contract Responsibilities

A. City, Project Manager, Architect/Engineer and all City's representatives, in performing their duties and responsibilities under the Contract Documents, accept no duties, responsibilities or duty of care, nor may the same be implied or inferred, towards Contractor, any Subcontractor, sub-Subcontractor or supplier, except those set forth expressly in the Contract Documents.

7.05 City's Right Of Access To The Work

A. During performance of Work, City and its agents, consultants, and employees may at any time enter upon Work, shops or studios where any part of the Work may be in preparation, or factories where any materials for use in Work are being or are to be manufactured, and Contractor shall provide proper and safe facilities for this purpose, and shall make arrangements with manufacturers to facilitate inspection of their processes and products to such extent as City's interests may require. Other contractors performing work for City may also enter upon Work for all purposes required by their respective contracts. Subject to the rights reserved in the Contract Documents, Contractor shall have sole care, custody, and control of the Site and its Work areas.

7.06 City's Right Of Separate Construction

A. City may perform with its own forces, construction or operations related to the Project, or the Site during Contractor's operations. City may also award separate contracts in connection with other portions of the Project or other construction or operations, on the Site or areas contiguous to the Site, under conditions similar to these Contract Documents, or may have utility owners perform other work.

B. Contractor shall adjust its schedule and fully coordinate with and shall afford all other contractors, utility districts and City (if City is performing work with its own forces), proper and safe access to the Site, and reasonable opportunity for the installation and storage of their materials. Contractor shall ensure that the execution of its Work properly connects and coordinates with others' work, do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work, and shall cooperate with them to facilitate the progress of the Work.

C. To the extent that any part of Contractor's Work is to interface with work performed or installed by other contractors or utility owners, Contractor shall inspect and measure the in-place work. Contractor shall promptly report to City in writing any defect in in-place work that will impede or increase the cost of Contractor's interface unless corrected.

ARTICLE 8 – CONTRACTOR'S PROSECUTION AND PROGRESS OF THE WORK

8.01 Contractor To Supervise The Work

A. Subject to those rights specifically reserved in the Contract Documents, Contractor shall supervise, direct, have control over, and be responsible for, Contractor's means, methods, techniques, sequences or procedures of construction, safety precautions and programs incident thereto, and compliance with laws and regulations applicable to the furnishing or performance of Work.

B. Contractor shall keep on the Site at all times during Work progress a competent resident

Superintendent, who shall not be replaced without City's express written consent. The Superintendent shall be Contractor's representative at the Site and shall have complete authority to act on behalf of Contractor. All communications to and from the Superintendent shall be as binding as if given to or by Contractor.

C. Contractor shall supervise, inspect, and direct Work competently and efficiently, devoting the attention and applying such personal skills and expertise as may be required and necessary to perform Work in accordance with Contract Documents. Contractor shall be solely responsible for and have control and charge of construction means, methods, techniques, sequences and procedures, safety precautions and programs in connection with the Work. Contractor shall be responsible to see that the completed Work complies accurately with Contract Documents.

D. Contractor is fully responsible for Contractor's own acts and omissions. Contractor is responsible for all acts and omissions of its Subcontractors, suppliers, and other persons and organizations performing or furnishing any of the Work, labor, materials, or equipment under a direct or indirect contract with Contractor.

E. Contractor shall conduct monthly Contractor Safety Committee meetings, and weekly toolbox safety talks.

8.02 Contractor To Maintain Cost Data

A. Contractor shall maintain full and correct information as to the number of workers employed in connection with each subdivision of Work, the classification and rate of pay of each worker in form of certified payrolls, the cost to Contractor of each class of materials, tools and appliances used by Contractor in Work, and the amount of each class of materials used in each subdivision of Work. Contractor shall provide City with monthly summaries of this information. If Contractor maintains or is capable of generating summaries or reports comparing actual Project costs with Bid estimates or budgets, Contractor shall provide City with a copy of such report upon City's request.

B. Contractor shall maintain daily job reports recording all significant activity on the job, including the number of workers on Site, Work activities, problems encountered and delays. Contractor shall provide City with copies for each Day Contractor works on the Project, to be delivered to City either the same Day or the following morning before starting work at the Site. Contractor shall take pre-construction and monthly progress photographs of all areas of the Work. Contractor shall maintain copies of all correspondence with Subcontractors and records of meetings with Subcontractors.

C. City shall have the right to audit and copy Contractor's books and records of any type, nature or description relating to the Project (including but not limited to financial records reflecting in any way costs claimed on the Project), and to inspect the Site, including Contractor's trailer, or other job Site office, and this requirement shall be contained in the subcontracts of Subcontractors working on Site. By way of example, City shall have the right to inspect and obtain copies of all Contract Documents, planning and design documents, Bid proposal and negotiation documents, cost records and job cost variance reports, design modification proposals, value engineering or other cost reduction proposals, revisions made to the original design, job progress reports, photographs, and as-built drawings maintained by Contractor. City and any other applicable governmental entity shall have the right to inspect all information and documents maintained hereunder at any time during the Project and for a period of five years following Final Completion, in accordance with the provisions of Section 8546.7 of the California Government Code. This right of inspection shall not relieve Contractor of its duties and obligations under the Contract Documents. This right of inspection shall be specifically enforceable in a court of law, either independently or in conjunction with enforcement of any other rights in the Contract Documents.

8.03 Contractor To Supply Sufficient Workers And Materials

A. Unless otherwise required by City under the terms of Contract Documents, Contractor shall at all times keep on the Site materials and employ qualified workers sufficient to prosecute Work at a rate and in a sequence and manner necessary to complete Work within the Contract Time. This obligation shall remain in full force and effect notwithstanding disputes or claims of any type.

B. At any time during progress of Work should Contractor directly or indirectly (through Subcontractors) refuse, neglect, or be unable to supply sufficient materials or employ qualified workers to prosecute the Work as required, then City may require Contractor to accelerate the Work and/or furnish additional qualified workers or materials as City may consider necessary, at no cost to City. If Contractor does not comply with the notice within three Business Days of date of service thereof, City shall have the right (but not a duty) to provide materials and qualified workers to finish the Work or any affected portion of Work, as City may elect. City may, at its discretion, exclude Contractor from the Site, or portions of the Site or separate work elements during the time period that City exercises this right. City will deduct from moneys due or which may thereafter become due under the Contract Documents, the sums necessary to meet expenses thereby incurred and paid to persons supplying materials and doing Work. City will deduct from funds or appropriations set aside for purposes of Contract Documents the amount of such payments and charge them to Contractor as if paid to Contractor. Contractor shall remain liable for resulting delay, including liquidated damages and indemnification of City from claims of others.

C. Exercise by City of the rights conferred upon City in this subparagraph is entirely discretionary on the part of City. City shall have no duty or obligation to exercise the rights referred to in this subparagraph and its failure to exercise such rights shall not be deemed an approval of existing Work progress or a waiver or limitation of City's right to exercise such rights in other concurrent or future similar circumstances. (The rights conferred upon City under this subparagraph are, like all other such rights, cumulative to City's other rights under any provision of the Contract Documents.)

8.04 Contractor To Maintain Project Record Documents

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Contract Modifications, Change Orders, Work Directives, Force Account orders, and written interpretations and clarifications in good order and annotated to show all as-built changes made during construction. These Project Record Documents, together with all approved Samples and a counterpart of all approved Shop Drawings, shall be maintained and available to City for reference. Upon completion of the Work, Contractor shall deliver to City, the Project Record Documents, Samples and Shop Drawings and as-built drawings.

B. Throughout Contractor's performance of the Work of the Project, Contractor shall maintain construction records to include: shop drawings; product data/material data sheets; samples; submittal; purchases; materials; equipment; inspections; applicable handbooks; applicable codes and standards; maintenance and operating manuals and instructions; RFI Log; Submittal Log; other related documents and revisions which arise out of the Construction Contracts. Contractor shall maintain records of principal building layout lines, elevations for the bottom of footings, floor levels, and key site elevations (certified by a qualified surveyor or professional engineer). Contractor shall make all records available to City. At the completion of the Project, Contractor shall deliver all such records to the City to have a complete set of record as-built drawings.

8.05 Contractor To Not Disrupt City Operation

A. Contractor shall schedule and execute all Work in a manner that does not interfere with or disrupt City operations, including but not limited to, parking, utilities (electricity, gas, water), noise, access by employees and administration, access by vendors, physicians, patients and any other person or entity using City facilities or doing business with City. Contractor shall produce and supply coordination plans and requests to City, following City procedures, for all necessary interference of construction with City, which City will reasonably cooperate with.

8.06 Contractor To Provide Temporary Facilities And Controls

A. Unless expressly provided otherwise in the Contract Documents, Contractor shall provide all temporary utilities (including without limitation electricity, water, natural gas), lighting, heating, cooling and ventilating devices, telephone, sanitary facilities, barriers, fences and enclosures, tree and plant protection, fire protection, pollution, erosion, Storm Water Pollution Prevention controls, noise and traffic control, and any other necessary services required for construction, testing or

completion of the Work.

ARTICLE 9 – WARRANTY, GUARANTY, AND INSPECTION OF WORK

9.01 Warranty And Guaranty

A. General Representations and Warranties: Contractor represents and warrants that it is and will be at all times fully qualified and capable of performing every Phase of the Work and to complete Work in accordance with the terms of Contract Documents. Contractor warrants that all construction services shall be performed in accordance with generally accepted professional standards of good and sound construction practices and all requirements of Contract Documents. Contractor warrants that Work, including but not limited to each item of materials and equipment incorporated therein, shall be new, of suitable grade of its respective kind for its intended use, and free from defects in design, engineering, materials, construction and workmanship. Contractor warrants that Work shall conform in all respects with all applicable requirements of federal, state and local laws, applicable construction codes and standards, licenses, and permits, Drawings and Specifications and all descriptions set forth therein, and all other requirements of Contract Documents. Contractor shall not be responsible, however, for the negligence of others in the specification of specific equipment, materials, design parameters and means or methods of construction where that is specifically shown and expressly required by Contract Documents.

B. Extended Guarantees: Any guarantee exceeding one year provided by the supplier or manufacturer of any equipment or materials used in the Project shall be extended for such term. Contractor expressly agrees to act as co-guarantor of such equipment and materials and shall supply City with all warranty and guarantee documents relative to equipment and materials incorporated in the Project and guaranteed by their suppliers or manufacturers.

C. Environmental and Toxics Warranty: The covenants, warranties and representations contained in this Paragraph are effective continuously during Contractor's Work on the Project and following cessation of labor for any reason including, but not limited to, Project completion. Contractor covenants, warrants and represents to City that:

1. To Contractor's knowledge after due inquiry, no lead or Asbestos-containing materials were installed or discovered in the Project at any time during Contractor's construction thereof. If any lead or Asbestos-containing materials were discovered, Contractor made immediate written disclosure to City.
2. To Contractor's knowledge after due inquiry, no electrical transformers, light fixtures with ballasts or other equipment containing PCBs are or were located on the Project at any time during Contractor's construction thereof.
3. To Contractor's knowledge after due inquiry, no storage tanks for gasoline or any other toxic substance are or were located on the Project at any time during Contractor's construction thereof. If any such materials were discovered, Contractor made immediate written disclosure to City.
4. Contractor's operations concerning the Project are and were not in violation of any applicable environmental federal, state, or local statute, law or regulation dealing with hazardous materials substances or toxic substances and no notice from any governmental body has been served upon Contractor claiming any violation of any such law, ordinance, code or regulation, or requiring or calling attention to the need for any Work, repairs, construction, alteration, or installation on or in connection with the Project in order to comply with any such laws, ordinances, codes, or regulations, with which Contractor has not complied. If there are any such notices with which Contractor has complied, Contractor shall provide City with copies thereof.

9.02 Inspection Of Work

A. Work and materials, and manufacture and preparation of materials, from beginning of construction until Final Completion and acceptance of Work, shall be subject to inspection and rejection by City, its agents, representatives or independent contractors retained by City to perform inspection services, or governmental agencies with jurisdictional interests. Contractor

shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and program so that they may comply therewith as applicable. Upon request or where specified, City shall be afforded access for inspection at the source of supply, manufacture or assembly of any item of material or equipment, with reasonable accommodations supplied for making such inspections.

B. Contractor shall furnish, in such quantities and sizes as may be required for proper examination and tests, Samples or test specimens of all materials to be used or offered for use in connection with Work. Contractor shall prepare Samples or test specimens at its expense and furnish them to City. Contractor shall submit all Samples in ample time to enable City to make any necessary tests, examinations, or analyses before the time it is desired to incorporate the material into the Work.

C. Contractor shall give City timely notice of readiness of Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

D. If applicable laws or regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, and furnish City with the required certificates of inspection, or approval. City will pay the cost of initial testing and Contractor shall pay all costs in connection with any follow-up or additional testing. Contractor shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for the acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

E. If Contractor covers any Work, or the work of others, prior to any required inspection, test or approval without written approval of City, Contractor shall uncover the Work at City's request. Contractor shall bear the expense of uncovering Work and replacing Work. In any case where Contractor covers Work contrary to City's request, Contractor shall uncover Work for City's observation or inspection at City's request. Contractor shall bear the cost of uncovering Work.

F. Whenever required by City, Contractor shall furnish tools, labor and materials necessary to make examination of Work that may be completed or in progress, even to extent of uncovering or taking down portions of finished Work. Should Work be found unsatisfactory, cost of making examination and of reconstruction shall be borne by Contractor. If Work is found to be satisfactory, City, in manner herein prescribed for paying for alterations, Modifications, and extra Work, except as otherwise herein specified, will pay for examination.

G. Inspection of the Work by or on behalf of City, or City's failure to do so, shall not under any circumstances be deemed a waiver or approval of any non-conforming aspect of the Work. Contractor shall have an absolute duty, in the absence of a written Change Order signed by City, to perform Work in conformance with the Contract Documents and to immediately correct Defective Work immediately upon Contractor's knowledge.

H. Any inspection, evaluation, or test performed by or on behalf of City relating to the Work is solely for the benefit of City, and shall not be relied upon by Contractor. Contractor shall not be relieved of the obligation to perform Work in accordance with the Contract Documents, nor relieved of any guaranty, warranty, or other obligation, as a result of any inspections, evaluations, or tests performed by City, whether or not such inspections, evaluations, or tests are permitted or required under the Contract Documents. Contractor shall be solely responsible for testing and inspecting Work already performed to determine whether such Work is in proper condition to receive later Work.

9.03 Correction Of Defective Work

A. City may direct Contractor to correct any Defective Work or remove it from the Site and replace it with Work that is not Defective and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting from the correction or removal. Contractor shall be responsible for any and all claims, costs, losses and damages caused by or resulting from such

correction or removal. A Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, City may decide the proper amount or, in its discretion may elect to leave the Contract Sum unchanged and deduct from monies due Contractor, all such claims, costs, losses and damages caused by or resulting from the correction or removal. If Contractor disagrees with City's calculations, it may make a claim as provided in Article 12 of this Document 00 7200. City's rights under this Paragraph shall be in addition to any other rights it may have under the Contract Documents or by law.

B. If Contractor fails to supply sufficient skilled workers, suitable materials or equipment, or to furnish or perform the Work in such a way that the completed Work will conform to Contract Documents, City may order Contractor to replace any such Defective Work, or stop any portion of Work to permit City (at Contractor's expense) to replace such Defective Work. These City rights are entirely discretionary on the part of City, and shall not give rise to any duty on the part of City to exercise the rights for the benefit of Contractor or any other party.

9.04 Acceptance And Correction Of Defective Work By City

A. City may in its sole discretion elect to accept Defective Work. Contractor shall pay all claims, costs, losses and damages attributable to City's evaluation of and determination to accept such Defective Work. If City accepts any Defective Work prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, City may deduct from monies due Contractor, all claims, costs, losses, damages, expenses and liabilities attributable to the Defective Work. If Contractor disagrees with City's calculations, Contractor may make a claim as provided in Article 12 of this Document 00 7200. If City accepts any Defective Work after final payment, Contractor shall pay to City, an appropriate amount as determined by City.

B. City may correct and remedy deficiency if, after five calendar days' written notice to Contractor, Contractor fails to correct Defective Work or to remove and replace rejected Work; or provide a plan for correction of Defective Work acceptable to City; or perform Work in accordance with Contract Documents. In connection with such corrective and remedial action, City may exclude Contractor from all or part of the Site; take possession of all or part of Work and suspend Contractor's Work related thereto; take possession of all or part of Contractor's tools, appliances, construction equipment and machinery at the Site; and incorporate in Work any materials and equipment stored at the Site or for which City has paid Contractor but which are stored elsewhere. Contractor shall allow City, its representatives, agents, employees, and other contractors and Project Manager/Architect's consultants' access to the Site to enable City to exercise the rights and remedies under this Paragraph. Contractor shall be responsible for all claims, costs, losses, damages, expenses and liabilities incurred or sustained by City in exercising such rights and remedies. A Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, City may deduct from moneys due Contractor, all claims, costs, losses and damages caused by or resulting from the correction or removal. If Contractor disagrees with City's calculations, Contractor may make a claim as provided in Article 12.

9.05 Rights Upon Inspection, Correction Or Acceptance

A. Contractor shall not be allowed an extension of Contract Time because of any delay in the performance of Work attributable to the exercise by City of its rights and remedies under this Article. Where City exercises its rights under this Article, it retains and may still exercise all other rights it has by law or under the Contract Documents including, but not limited to, the right to terminate Contractor's right to proceed with the Work under the Contract Documents for cause and/or make a claim or back charge where a Change Order cannot be agreed upon.

B. Inspection by City or its authorized agents or representatives shall not relieve Contractor of its obligation to have furnished material and workmanship in accordance with Contract Documents. Payment for Work completed through periodic progress payments, final payment or otherwise

shall not operate to waive City's right to require full compliance with Contract Documents and shall in no way be deemed as acceptance of any defective Work paid therefor. Contractor's obligation to complete the Work in accordance with Contract Documents shall be absolute, unless City agrees otherwise in writing.

9.06 Proof Of Compliance Of Contract Provisions

A. In order that City may determine whether Contractor has complied or is complying with requirements of Contract Documents not readily enforceable through inspection and tests of Work and materials, Contractor shall at any time, when requested, submit to City properly authenticated documents or other satisfactory proofs of compliance with all applicable requirements.

B. Before commencing any portion of Work, Contractor shall inform City in writing as to time and place at which Contractor wishes to commence Work, and nature of Work to be done, in order that proper provision for inspection of Work may occur, and to assure measurements necessary for record and payment. Information shall be given to City a reasonable time in advance of time at which Contractor proposes to begin Work, so that City may complete necessary preliminary work without inconvenience or delay to Contractor.

9.07 Correction Period And Project Warranty Period:

A. If within one year after the date of Final Acceptance, or such longer period of time as may be prescribed by laws, regulations or by the terms of Contract Documents or any extended warranty or guaranty, any Work (completed or incomplete) is found to be Defective, Contractor shall promptly without cost to City and in accordance with City's written instructions, correct such Defective Work. Contractor shall remove any Defective Work rejected by City and replace it with Work that is not Defective, and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If Contractor fails to promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, City may have the Defective Work corrected or the rejected Work removed and replaced. Contractor shall pay for all claims, costs, losses and damages caused by or resulting from such removal and replacement. Where Contractor fails to correct Defective Work, or defects are discovered outside the correction period, City shall have all rights and remedies granted by law.

B. In special circumstances where a part of the Work is occupied or a particular item of equipment is placed in continuous service before Final Acceptance of all the Work, the correction period for that part of Work or that item may start to run from an earlier date if so provided by Change Order.

C. Where Defective Work or rejected Work (and damage to other Work resulting therefrom) has been corrected, removed, or replaced under this provision after the commencement of the correction period, the correction period hereunder with respect to such Work shall be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

9.08 No Waiver

A. Neither recordation of Final Acceptance nor final certificate for payment nor provision of the Contract nor partial or entire use or occupancy of premises by City shall constitute acceptance of Work not done in accordance with Contract Documents nor relieve Contractor of liability in respect to express warranties or responsibility for faulty materials or workmanship.

B. If, after installation, operation, or use of materials or equipment to be provided under Contract proves to be unsatisfactory to City, City shall have right to operate and use materials or equipment until said materials and equipment can, without damage to City, be taken out of service for correction or replacement. Period of use of Defective materials or equipment pending correction or replacement shall in no way decrease guarantee period required for acceptable corrected or replaced items of materials or equipment.

C. Nothing in the Contract Documents shall be construed to limit, relieve, or release Contractor's,

Subcontractors', and equipment suppliers' liability to City for damages sustained as result of latent defects in materials or equipment caused by negligence of Contractor, its agents, suppliers, employees, or Subcontractors.

ARTICLE 10 – MODIFICATIONS OF CONTRACT DOCUMENTS

10.01 City's Right To Direct Changed Work.

A. City may, without notice to the sureties and without invalidating the Contract, make changes in the Work ("Changed Work"), including without limitation: alterations, deviations, additions to, or deletions from Contract Documents; increase or decrease the quantity of any item or portion of the Work; expand, reduce or otherwise change the Contract Time; delete any item or portion of the Work; and require extra Work. Contractor shall perform such Work under applicable provisions of the Contract Documents, unless specifically provided otherwise at the time the change is ordered. In the case of any ordered extra Work, City reserves the right to furnish all or portions of associated labor, material, and equipment, which Contractor shall accept and use without payment for costs, markup, profit, or otherwise for such City-furnished labor, materials, and equipment.

B. If Changed Work is of such a nature as to increase or decrease the time or cost of any part of Work, price fixed in Contract shall be increased or decreased by amount as the Contractor and City may agree upon as reasonable and proper allowance for increase or decrease in cost of Work using the cost guidelines set forth in this Article, and absent such agreement, then as City may direct (with Contractor retaining its rights under Article 12 herein).

10.02 Required Documentation For Changed Work

A. Changes affecting the Contract Time or Contract Sum of the Work shall be set forth in a written Change Order or Change Directive that shall specify:
   1. The Work performed in connection with the change to be made;
   2. The amount of the adjustment of the Contract Sum, if any, and the basis for compensation for the Work ordered; and
   3. The extent of the adjustment in the Contract Time, if any.

B. A Change Order or Change Directive will become effective when signed by City, notwithstanding that Contractor has not signed it. A Change Order will become effective without Contractor's signature, provided City indicates same thereon (by indicating it as a "unilateral change order").

C. All changes in any plans and specifications approved by any authority with jurisdiction may also require addenda or change orders approved by that authority.

D. Where City requests, a performance bond rider covering the changed Work must be executed and delivered to City before proceeding with the changed Work or shortly in time thereafter.

10.03 Procedures And Pricing Of Changed Work

A. Procedures for changed work and pricing of changed work, claims and all forms of extra compensation, are set forth in Section 01 2600 (Modification Procedures).

ARTICLE 11 – TIME ALLOWANCES

11.01 Time Allowances

A. Time is of the essence. Contract Time may only be changed by Change Order, and all time limits stated in the Contract Documents are to mean that time is of the essence.

11.02 Excusable Delay And Inexcusable Delay Defined.

A. Excusable Delay. Subject to the provisions on Notice of Delay below, Contract Time may be adjusted in an amount equal to the time lost due to:
   1. Changes in the Work ordered by City ("**Changes**");
   2. Acts or neglect by City, Architect, any City Representative, utility owners or other

contractors performing other work, not permitted or provided for in the Contract Documents, provided that Contractor has performed its responsibilities under the Contract Documents (including but not limited to pre-bid investigations) ("**Acts or Neglect**"); or

3. Fires, floods, epidemics, abnormal weather conditions beyond the parameters otherwise set forth in this Article, earthquakes, civil or labor disturbances, or acts of God (together, "force majeure events"), provided damages resulting therefrom are not the result of Contractor's failure to protect the Work as required by Contract Documents ("**Force Majeure**").

B. Inexcusable Delay. Contract Time shall not be extended for any period of time where Contractor (and/or any Subcontractor) is delayed or prevented from completing any part of the Work due to a cause that is within Contractor's risk or responsibility under the Contract Documents. Delays attributable to or within the control of a Subcontractor, or its subcontractors, or supplier, are deemed delays within the control of Contractor.

C. Float. Float shall be treated as a Project resource. Contractor shall not be entitled to a time extension for impacts that consume float, but do not impact the critical path.

11.03 Notice Of Delay

A. Within seven calendar days of the beginning of any delay (excepting adverse weather delays), Contractor shall notify City in writing, by submitting a notice of delay that shall describe the anticipated delays resulting from the delay event in question. If Contractor requests an extension of time, Contractor shall submit a Time Impact Evaluation (TIE) within ten calendar days of the notice of delay. City will determine all claims and adjustments in the Contract Time. No claim for an adjustment in the Contract Time will be valid and such claim will be waived if not submitted in accordance with the requirements of this subparagraph. In cases of substantial compliance with the seven-day notice requirement here (but not to exceed twenty-one calendar days from the beginning of the delay event), City may in its sole discretion recognize a claim for delay accompanied with the proper TIE, provided Contractor also shows good faith and a manifest lack of prejudice to City from the late notice.

11.04 Compensable Time Extensions

A. Subject to other applicable provisions of the Contract Documents, Contractor may be entitled to adjustment in Contract Sum in addition to Contract Time for:

1. Excusable delay caused solely by Changes in the Work ordered by City, as provided above, and/or
2. Excusable delay caused solely by Acts or Neglect by City or other person, as provided above.

11.05 Non-Compensable Time Extensions

A. Subject to other applicable provisions of the Contract Documents, Contractor may be entitled to adjustment in Contract Time only, without adjustment in Contract Sum, for

1. Periods of excusable delay caused solely by weather or Force Majeure events as provided above in this Article, or
2. Periods of concurrent delay, where delay results from two or more causes, one of which is compensable (resulting from Changes or Acts or Neglect as set forth above in this Article), and the other of which is non-compensable or inexcusable, such as: acts or neglect of Contractor, Subcontractors or others for whom Contractor is responsible; other acts, omissions and conditions which would not entitle Contractor to adjustment in Contract Time; adverse weather; and/or actions of Force Majeure as provided above in this Article.

11.06 Adverse Weather

A. Adverse weather delays may be allowed only if the number of workdays of adverse weather exceeds the parameters listed or referenced immediately below in this subparagraph and Contractor proves that adverse weather actually caused delays to work on the critical path. Contractor shall give written notice of intent to claim an adverse weather day within one Day of

the adverse weather day occurring.

B. Claims for extension of time for rain delay will not be granted unless the number of calendar days work is prevented by rain exceeds 110% of the average number of rain days expected for the period of the Contract Time, based on the records of the National Oceanic & Atmospheric Administration (NOAA) weather station closest to the Project Site, as measured and reported by NOAA. (For example, for California, Oregon and Washington, these figures are contained in the ">=0.10 inch" column at the applicable weather station's "General Climate Summary Table" for "Precipitation" at https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0693), pro-rated in the individual month Contractor starts and finishes Work. Delays due to adverse weather conditions will not be allowed for weather conditions that fall within these parameters.

C. In order to qualify as an adverse weather delay with respect to the foregoing parameters, (i.) daily rainfall must exceed .1 inch, and/or (ii.) daily snowfall must exceed 1.0 inch or more, at the NOAA station located closest to the Project site, as measured and reported by NOAA. Notwithstanding these allowances, Contractor shall at all times employ all available mitigation measures to enable Work to continue, Contractor shall take reasonable steps to mitigate potential weather delays, such as dewatering the Site, lime treatment, and covering Work and material that could be affected adversely by weather. Failure to do so shall be cause for City to not grant a time extension due to adverse weather, where Contractor could have avoided or mitigated the potential delay by exercising reasonable care.

D. Contractor shall include the foregoing precipitation parameters as a monthly activity in its progress schedule. As Work on the critical path is affected by precipitation, Contractor shall notify City and request that the days be moved to the affected activities. Any adverse weather days remaining shall be considered Project float available to either City or Contractor.

E. Adverse weather delay for precipitation shall be recognized for the actual period of time Contractor proves it was delayed by precipitation exceeding the specified parameters. For example, and not by way of limitation, if precipitation exceeding the specified parameters does not in fact delay Contractor's progress on the critical path, then no time extension shall be recognized; and conversely, if Contractor proves to City's satisfaction that precipitation exceeding the specified parameters causes delay to Contractor for a period longer than the number of precipitation days incurred (e.g., if it rains or snows during grading work), then Contractor shall be entitled to a time extension equal to the actual period of such delay.

F. During unfavorable weather, wet ground, or other unsuitable construction conditions, Contractor shall employ best practices to protect the Work, manage the construction site and rainwater during inclement weather. Persons performing the Work shall examine surfaces to receive their Work and shall report in writing to Contractor, with copy to City representative and the Architect conditions detrimental to the Work. Failure to examine and report discrepancies makes the Contractor responsible, at no increase in Contract Sum, for corrections City may require. Commencement of Work constitutes acceptance of surface.

11.07 Liquidated Damages

A. Time is of the essence. Execution of Contract Documents by Contractor shall constitute its acknowledgement that City will actually sustain damages in the form of Contract administration expenses (such as Project management and consultant expenses) in the amount fixed in the Contract Documents for each and every Day during which completion of Work required is delayed beyond expiration of time fixed for completion plus extensions of time allowed pursuant to provisions hereof.

B. Contractor and City agree that because of the nature of the Project, it would be impractical or extremely difficult to fix the amount of such actual damages incurred by City because of a delay in completion of all or any part of the Work. Contractor and City agree that specified measures of liquidated damages shall be presumed to be the amount of such damages actually sustained by City, and that because of the nature of the Project, it would be impracticable or extremely difficult to fix the actual damages.

C. Liquidated damages for delay shall cover administrative, overhead, interest on bonds, and general loss of public use damages suffered by City as a result of delay. Liquidated damages

shall not cover the cost of completion of the Work, damages resulting from Defective Work, lost revenues or costs of substitute facilities, or damages suffered by others who then seek to recover their damages from City (for example, delay claims of other contractors, subcontractors, tenants, or other third-parties), and defense costs thereof. City may deduct from any money due or to become due to Contractor subsequent to time for completion of entire Work and extensions of time allowed pursuant to provisions hereof, a sum representing then-accrued liquidated damages.

ARTICLE 12 – CLAIMS BY CONTRACTOR

12.01 Obligation to File Claims for Disputed Work

A. Should it appear to Contractor that the Work to be performed or any of the matters relative to the Contract Documents are not satisfactorily detailed or explained therein, or should any questions arise as to the meaning or intent of the Contract Documents, or should any dispute arise regarding the true value of any work performed, work omitted, extra work that the Contractor may be required to perform, time extensions, payment to the Contractor during performance of this Contract, performance of the Contract, and/or compliance with Contract procedures, or should Contractor otherwise seek extra time or compensation FOR ANY REASON WHATSOEVER, then Contractor shall first follow procedures set forth in the Contract (including but not limited to other Articles of this Document 00 7200 and Section 01 2600.) If a dispute remains, then Contractor shall give written notice to City that expressly invokes this Article 12. City shall decide the issue in writing within 15 calendar days; and City's written decision shall be final and conclusive. If Contractor disagrees with City's decision, or if Contractor contends that City failed to provide a decision timely, then Contractor's SOLE AND EXCLUSIVE REMEDY is to promptly file a written claim setting forth Contractor's position as required herein.

12.02 Form And Contents Of Claim

A. Contractor's written claim must identify itself as a "Claim" under this Article 12 and must include the following: (1) a narrative of pertinent events; (2) citation to contract provisions; (3) theory of entitlement; (4) complete pricing of all cost impacts; (5) a time impact analysis of all time delays that shows actual time impact on the critical path; (6) documentation supporting items 1 through 5; a verification under penalty of perjury of the claim's accuracy. The Claim shall be submitted to City within thirty (30) calendar days of receiving City's written decision, or the date Contractor contends such decision was due, and shall be priced like a change order according to Section 01 2600, and must be updated monthly as to cost and entitlement if a continuing claim. Routine contract materials, for example, correspondence, RFI, Change Order requests, or payment requests shall not constitute a claim. Contractor shall bear all costs incurred in the preparation and submission of a claim.

12.03 Administration During/After Claim Submission

A. City may render a final determination based on the Claim or may in its discretion conduct an administrative hearing on Contractor's claim, in which case Contractor shall appear, participate, answer questions and inquiries, and present any further evidence or analysis requested by City prior to rendering a final determination. Should City take no action on the Claim within 45 calendar days of submission, it shall be deemed denied.

B. Notwithstanding and pending the resolution of any claim or dispute, Contractor shall diligently prosecute the disputed work to final completion in accordance with City's determination.

C. After their submission, claims less than $375,000 shall also be subject to the Local Agency Disputes Act.

12.04 Compliance

A. The provisions of this Article 12 constitute a non-judicial claim settlement procedure that, pursuant to Section 930.2 of the California Government Code, shall constitute a condition precedent to submission of a valid Government Code Claim under the California Government Code. Contractor shall bear all costs incurred in the preparation, submission and administration of a claim. Any claims presented in accordance with the Government Code must affirmatively

indicate Contractor's prior compliance with the claims procedure herein and the previous dispositions under Paragraph 12.3 above of the claims asserted. Pursuant to Government Code Section 930.2, the one-year period in Government Code section 911.2 shall be reduced to 150 calendar days from either accrual of the cause of action, substantial completion or termination of the contract, whichever occurs first; in all other respects, the Government Code shall apply unchanged.

B. Failure to submit and administer claims as required in Article 12 shall waive Contractor's right to claim on any specific issues not included in a timely submitted claim. Claim(s) or issue(s) not raised in a timely protest and timely claim submitted under this Article 12 may not be asserted in any subsequent litigation, Government Code Claim, or legal action.

C. City shall not be deemed to waive any provision under this Article 12, if at City's sole discretion, a claim is administered in a manner not in accord with this Article 12. Waivers or modifications of this Article 12 may only be made a signed change order approved as to form by legal counsel for both City and Contractor; oral or implied modifications shall be ineffective.

ARTICLE 13 – UNDERGROUND CONDITIONS

13.01 Contractor To Locate Underground Facilities.

A. During construction, Contractor shall comply with Government Code Sections 4216 to 4216.9, and in particular Section 4216.2 which provides, in part: "Except in an emergency, every person planning to conduct any excavation shall contact the appropriate regional notification center at least two working days, but no more than 14 calendar days, prior to commencing that excavation, if the excavation will be conducted in an area which is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the excavator, and, if practical, the excavator shall delineate with white paint or other suitable markings the area to be excavated. The regional notification center shall provide an inquiry identification number to the person who contacts the center and shall notify any member, if known, who has a subsurface installation in the area of the proposed excavation."

B. Contractor shall contact USA, and schedule the Work to allow ample time for the center to notify its members and, if necessary, for any member to field locate and mark its facilities. Contractor is charged with knowledge of all subsurface conditions reflected in USA records. Prior to commencing excavation or trenching work, Contractor shall provide City with copies of all USA records secured by Contractor. Contractor shall advise City of any conflict between information provided in Document 00 3132 (Geotechnical Data and Existing Conditions), the Drawings and that provided by USA records. Contractor's excavation shall be subject to and comply with the Contract Documents.

C. Contractor shall also investigate the existence of existing service laterals, appurtenances or other types of utilities, indicated by the presence of an underground transmission main or other visible facilities, such as buildings, new asphalt, meters and junction boxes, on or adjacent to the Site, even if not shown or indicated in Document 00 3132 (Geotechnical Data and Existing Conditions), the Drawings or that provided by USA records. Contractor shall immediately secure all such available information and notify City and the utility owner, in writing, of its discovery.

13.02 Contractor To Protect Underground Facilities.

A. At all times during construction, all operating Underground Facilities shall remain in operation, unless the Contract Documents expressly indicate otherwise. Contractor shall maintain such Underground Facilities in service where appropriate; shall repair any damage to them caused by the Work; and shall incorporate them into the Work, including reasonable adjustments to the design location (including minor relocations) of the existing or new installations. Contractor shall take immediate action to restore any in service installations damaged by Contractor's operations.

B. Prior to performing Work at the Site, Contractor shall lay out the locations of Underground Facilities that are to remain in service and other significant known underground installations indicated by the Underground Facilities Data. Contractor shall further locate, by carefully excavating with small equipment, potholing and principally by hand, all such utilities or

installations that are to remain and that are subject to damage. If additional utilities whose locations are unknown are discovered, Contractor shall immediately report to City for disposition of the same. Additional compensation or extension of time on account of utilities not shown or otherwise brought to Contractor's attention, including reasonable action taken to protect or repair damage, shall be determined as provided in this Document 00 7200.

C. If during construction, an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated in the materials supplied by City for bidding or in information on file at USA or otherwise reasonably available to Contractor, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby (and in no event later than seven calendar days), and prior to performing any Work in connection therewith (except in an emergency), identify the owner of such Underground Facility and give written notice to that owner and to City. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. The cost of all of the following will be included in the Contract Sum and Contractor shall have full responsibility for (a) reviewing and checking all available information and data including, but not limited to, information made available for bidding and information on file at USA; (b) locating all Underground Facilities shown or indicated in the Contract Documents, available information, or indicated by visual observation including, but not limited to, and by way of example only, engaging qualified locating services and all necessary backhoeing and potholing; (c) coordination of the Work with the owners of such Underground Facilities during construction; and (d) the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

E. Consistent with California Government Code §4215, as between City and Contractor, City will be responsible for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the Site only if such utilities are not identified in the Contract Documents or information made available for bidding. City will compensate for the cost of locating and repairing damage not due to Contractor's failure to exercise reasonable care, removing and relocating such main or trunk line utility facilities not indicated in the Contract Documents or information made available for bidding with reasonable accuracy, and equipment on the Project necessarily idled during such Work. Contractor shall not be assessed liquidated damages for delay in completion of the Project, when such delay was caused by the failure of City or the utility to provide for removal or relocation of such utility facilities.

13.03 Concealed Or Unknown Conditions

A. If either of the following conditions is encountered at Site when digging trenches or other excavations that extend deeper than four feet below the surface, Contractor shall give a written Notice of Differing Site Conditions to City promptly before conditions are disturbed, except in an emergency as set forth in this Document 00 7200, and in no event later than seven calendar days after first observance of:

1. Subsurface or Latent physical conditions which differ materially from those indicated in the Contract Documents; or
2. Unknown physical conditions of an unusual nature or which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents.

B. In response to Contractor's Notice of Differing Site Conditions under this Paragraph, City will investigate the identified conditions, and if they differ materially and cause increase or decrease in Contractor's cost of, or time required for, performance of any part of the Work, City will negotiate the appropriate change order following the procedures set forth in the Contract Documents. If City determines that physical conditions at the Site are not Latent or are not materially different from those indicated in Contract Documents or that no change in terms of the Contract Documents is justified, City will so notify Contractor in writing, stating reasons (with Contractor retaining its rights under Article 12 of this Document 00 7200.)

C. Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time regarding claimed Latent or materially different Site conditions (whether above or below grade) if Contractor

knew or should have known of the existence of such conditions at the time Contractor submitted its Bid, failed to give proper notice, or relied upon information, conclusions, opinions or deductions of the kind that the Contract Documents preclude reliance upon.

D. Regarding Underground Facilities, Contractor shall be allowed an increase in the Contract Sum or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility that is owned and was built by City only where the Underground Facility:
   1. Was not shown or indicated in the Contract Documents or in the information supplied for bidding purposes or in information on file at USA; and
   2. Contractor did not know of it; and
   3. Contractor could not reasonably have been expected to be aware of it or to have anticipated it from the information available. (For example, if surface conditions such as pavement repairs, valve covers, or other markings, indicate the presence of an Underground Facility, then an increase in the Contract Sum or an extension of the Contract Time will not be due, even if the Underground Facility was not indicated in the Contract Documents, in the information supplied to Contractor for bidding purposes, in information on file at USA, or otherwise reasonably available to Contractor.)

E. Contractor shall bear the risk that Underground Facilities not owned or built by City may differ in nature or locations shown in information made available by City for bidding purposes, in information on file at USA, or otherwise reasonably available to Contractor. Underground Facilities are inherent in construction involving digging of trenches or other excavations on City's Project, and Contractor is to apply its skill and industry to verify the information available.

F. Contractor's compensation for claimed Latent or materially different Site conditions shall be limited to the actual, reasonable, incremental increase in cost of that portion of the Work, resulting from the claimed Latent or materially different Site conditions. Such calculation shall take into account the estimated value of that portion of the Work and the actual value of that portion of the Work, using for guidance Contractor's or its subcontractor's bid amount and actual amounts incurred for that portion of the Work and the reasonable expectation (if any) of differing or difficult site conditions in the Work area based on the available records and locale of the Work. For example, if Contractor excavates in an area unexpected, then such costs would be recoverable entirely; while if Contractor extends an existing excavation, then such costs would be recoverable if the resulting excavation costs in that work area exceeded the reasonable expectations therefore.

13.04 Notice Of Hazardous Waste Or Materials Conditions

A. Contractor shall give a written Notice of Hazardous Materials Condition to City promptly, before any of the following conditions are disturbed (except in an emergency as set forth in this Document 00 7200), and in no event later than 24 hours after first observance of any:
   1. Material that Contractor believes may be hazardous waste or hazardous material, as defined in Section 25117 of the Health and Safety Code (including, without limitation, Asbestos, lead, PCBs, petroleum and related hydrocarbons, and radioactive material) that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law ("hazardous material"); or
   2. Other material that may present an imminent substantial danger to persons or property exposed thereto in connection with Work at the Site ("other materials").

B. Except as otherwise provided in the Contract Documents or as provided by applicable law, Contractor shall not be required to give any notice for the disturbance or observation of any such hazardous materials or other materials where such matter is disturbed or observed as part of the scope of Work under the Contract Documents (such as hazardous waste or hazardous material investigation, remediation or disposal activities which are identified as the subject of Work under the Contract Documents), where Contractor complies with all requirements in the Contract Documents and applicable law respecting such materials.

C. Contractor's Notice of Hazardous Materials Condition shall indicate whether the hazardous

materials or other materials were shown or indicated in the Contract Documents to be within the scope of Work, and whether the hazardous materials or other materials were brought to the Site by Contractor, its Subcontractors, suppliers, or anyone else for whom Contractor is responsible.

D. Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time regarding claimed hazardous waste or materials if:

1. Contractor knew of the existence of such hazardous materials or other materials at the time Contractor submitted its Bid; or
2. Contractor should have known of the existence of such hazardous material or other materials as a result of its having the responsibility to obtain additional or supplementary examinations, investigation, explorations, tests, studies, and data concerning the conditions at or contiguous to the Site prior to submitting its Bid; or
1. Contractor failed to give the written notice within the required timeframe set forth below.

E. If City determines that conditions involve hazardous materials or other materials and that a change in Contract Document terms is justified, City will issue either a Request for Proposal or Construction Change Directive under the procedures described in the Contract Documents. If City determines that conditions do not involve hazardous materials or other materials or that no change in Contract Document terms is justified, City will notify Contractor in writing, stating the reasons for its determination.

F. In addition to the parties' other rights under this Document 00 7200, if Contractor does not agree to resume Work based on a reasonable belief that it is unsafe, or does not agree to resume Work under special conditions, City may order the disputed portion of Work deleted from the Work, or performed by others, or City may invoke its right to terminate Contractor's right to proceed under the Contract Documents in whole or in part, for convenience or for cause as the facts may warrant.

G. If Contractor does not agree with any City determination of any adjustment in the Contract Sum or Contract Time under this Article, Contractor may make a claim as provided in Article 12 of this Document 00 7200.

ARTICLE 14 – LEGAL AND MISCELLANEOUS

14.01 Laws And Regulations

A. Contractor shall keep fully informed of and shall comply with all laws, ordinances, regulations and orders of any properly constituted authority affecting the Contract Documents, Work and persons connected with Work, and shall protect and indemnify City and its officers, employees, consultants and agents against any claim or liability, including attorney's fees, arising from or based on violation of law, ordinance, regulation or order, whether by Contractor or by Subcontractors, employees or agents. Authorized persons may at any time enter upon any part of Work to ascertain compliance of all applicable laws, ordinances, regulations and orders.

14.02 Permits And Taxes

A. Contractor shall procure all permits and licenses applicable to the Work (including environmental matters to the extent applicable); pay all charges and fees, including fees for street opening permits; comply with, implement and acknowledge effectiveness of all permits; initiate and cooperate in securing all required notifications or approvals therefore; and give all notices necessary and incident to due and lawful prosecution of Work, unless otherwise provided herein. City will pay applicable building permits, sanitation and water fees for the completed construction, except as otherwise provided in the Contract Documents. Contractor shall pay all sales and/or use taxes levied on materials, supplies, or equipment purchased and used on or incorporated into Work, and all other taxes properly assessed against equipment or other property used in connection with Work, without any increase in the Contract Sum. Contractor shall make necessary arrangements with proper authorities having jurisdiction over roads, streets, pipelines, navigable waterways, railroads, and other works in advance of operations, even where City may have already obtained permits for the Work.

14.03 Communications And Information Distribution

A. All communications recognized under the Contract Documents shall be in writing, in the form of a serialized document, by type of communication. For example, RFI's shall be serialized beginning with RFI No. 1; payment applications shall be serialized beginning with Payment Application No. 1, submittals shall be serialized per specification section and transmitted with transmittal sheets beginning with Transmittal No. 1; and correspondence shall be serialized beginning with letter No. 1. Contractor may propose other record management and identification systems or protocols, intended to facilitate orderly transmittal of project information, storage and retrieval of such information, which City will review consistent with these stated objectives, and accept or reject in its sole discretion.

B. Documents Requiring Signatures. All documents requiring signatures for approval prior to implementing action, as stipulated in other portions of Contract Documents, shall require a manually signed, serialized letter delivered to the other party at its address for notice otherwise specified in the Contract Documents, either personally or by mail.

C. Electronic data transfer of such correspondence will serve to expedite preliminary concurrence of information, only. Receipt of "hard copy" signature on forms is required prior to implementing action or work as the conditions may require. For example, change orders and authorizations for extra cost, require signatures. A party may acknowledge receipt of PDF copies of required correspondence by e-mail, but in the absence of such acknowledgment, mail or personal delivery is required.

D. All emails shall be copied to City's and Contractor's Project Representative. City reserves the right to preclude e-mail communication, in whole or in part, as Project needs may require. Communication between City and Contractor shall not be via Twitter, Facebook, or other types of instant text message systems. Any such communications shall be inadmissible for any purpose related to this Contract.

14.04 Suspension Of Work

A. City may, without cause, order Contractor in writing to suspend, delay or interrupt Work in whole or in part for such period of time as City may determine. An adjustment shall be made for increases in cost of performance of Work of the Contract Documents caused by any such suspension, delay or interruption, calculated using the measures set forth in Section 01 2600 (Modification Procedures). No adjustment shall be made to extent that performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible.

14.05 Termination Of Contract For Cause

A. The Contractor shall be in default of the Contract Documents and City may terminate the Contractor's right to proceed under the Contract Documents, for cause, in whole or in part, should the Contractor commit a material breach of the Contract Documents and not cure such breach within ten (10) calendar days of the date of notice from City to the Contractor demanding such cure; or, if such breach is curable but not curable within such ten (10) day period, within such period of time as is reasonably necessary to accomplish such cure. (In order for the Contractor to avail itself of a time period in excess of 10 calendar days, the Contractor must provide City within the ten (10) day period with a written plan acceptable to City that demonstrates actual resources, personnel and a schedule to promptly to cure said breach, and then diligently commence and continue such cure according to the written plan).

B. In the event of termination by City for cause as provided herein, the Contractor shall deliver to City possession of the Work in its then condition, including but not limited to, all designs, engineering, Project records, cost data of all types, plans and specifications and contracts with vendors and subcontractors, all other documentation associated with the Project, and all construction supplies and aids dedicated solely to performing the Work which, in the normal course of construction, would be consumed or only have salvage value at the end of the construction period. The Contractor shall remain fully liable for the failure of any Work completed and materials and equipment provided through the date of such termination to comply with the

provisions of the Contract Documents. The provisions of this Section shall not be interpreted to diminish any right which City may have to claim and recover damages for any breach of the Contract Documents or otherwise, but rather, the Contractor shall compensate City for all loss, cost, damage, expense, and/or liability suffered by City as a result of such termination and/or failure to comply with the Contract Documents.

C. In the event a termination for cause is later determined to have been made wrongfully or without cause, then the termination shall be treated as a termination for convenience, and the Contractor shall have no greater rights than it would have had following a termination for convenience. Any Contractor claim arising out of a termination for cause shall be made in accord with Article 12 herein. No other loss, cost, damage, expense or liability may be claimed, requested or recovered by the Contractor.

14.06 Termination Of Contract For Convenience

A. City may terminate performance of the Work under the Contract Documents in accordance with this clause in whole, or from time to time in part, whenever City shall determine that termination is in City's best interest. Termination shall be effected by City delivering to the Contractor notice of termination specifying the extent to which performance of the Work under the Contract Documents is terminated, and the effective date of the termination.

B. Contractor shall comply strictly with City's direction regarding the effective date of the termination, the extent of the termination, and shall stop work on the date and to the extent specified.

C. Contractor shall be entitled to a total payment on account of the Contract work so terminated measured by (i.) the actual cost to Contractor of Work actually performed, up to the date of the termination, with profit and overhead limited to twelve percent (12%) of actual cost of work performed, up to but not exceeding the actual contract value of the work completed as measured by the Schedule of Values and Progress Schedule, (ii.) offset by payments made and other contract credits. In connection with any such calculation, however, City shall retain all rights under the Contract Documents, including but not limited to claims, indemnities, or setoffs.

D. Under no circumstances may Contractor recover legal costs of any nature, nor may Contract recover costs incurred after the date of the termination.

14.07 Contingent Assignment Of Subcontracts

A. Contractor hereby assigns to City each Subcontract for a portion of the Work, provided that:

1. The assignment is effective only after City's termination of Contractor's right to proceed under the Contract Documents (or portion thereof relating to that Subcontract) as set forth herein.
2. The assignment is effective only for the Subcontracts which City expressly accepts by notifying the Subcontractor in writing;
3. The assignment is subject to the prior rights, if any, of the Surety, obligated by Document 00 6113.13 (Construction Performance Bond) provided under the Contract Documents, where the Surety exercises its rights to complete the Contract;
4. After the effectiveness of an assignment, Contractor shall, at its sole cost and expense (except as otherwise provided in this Document 00 7200), sign all instruments and take all actions reasonably requested by City to evidence and confirm the effectiveness of the assignment in City; and
5. Nothing in this Paragraph shall modify or limit any of Contractor's obligations to City arising from acts or omissions occurring before the effectiveness of any Subcontract assignment, including but not limited to all defense, indemnity and hold-harmless obligations arising from or related to the assigned Subcontract.

14.08 Remedies And Contract Integration

A. Subject to Contract Documents provisions regarding Contractor claims, claim review, and claim resolution, and subject to the limitations therein, the exclusive jurisdiction and venue for resolving all claims, counter claims, disputes and other matters in question between City and Contractor

arising out of or relating to Contract Documents, any breach thereof or the Project shall be the applicable court of competent jurisdiction located in the State and County where the Project is located. All City remedies provided in the Contract Documents shall be taken and construed as cumulative and not exclusive; that is, in addition to each and every other remedy herein provided; and in all instances City shall have any and all other equitable and legal rights and remedies which it would have according to law.

B. The Contract Documents, any Contract Modifications and Change Orders, shall represent the entire and integrated agreement between City and Contractor regarding the subject matters hereof and thereof and shall constitute the exclusive statement of the terms of the parties' agreement. The Contract Documents, and any Contract Modifications and Change Orders, shall supersede any and all prior negotiations, representations or agreements, written or oral, express or implied, that relate in any way to the subject matter of the Contract Documents or written Modifications. City and Contractor represent and agree that, except as otherwise expressly provided in the Contract Documents, they are entering into the Contract Documents and any subsequent written Modification in sole reliance upon the information set forth or referenced in the Contract Documents or Contract Modifications; the parties are not and will not rely on any other information, which shall be inadmissible in any proceeding to enforce these documents.

C. Either party's waiver of any breach or failure to enforce any of the terms, covenants, conditions or other provisions of the Contract Documents at any time shall not in any way affect, limit, modify or waive that party's right thereafter to enforce or compel strict compliance with every term, covenant, condition or other provision hereof, any course of dealing or custom of the trade or oral representations notwithstanding.

D. Neither acceptance of the whole or any part of Work by City nor any verbal statements on behalf of City or its authorized agents or representatives shall operate as a waiver or modification of any provision of the Contract Documents, or of any power reserved to City herein nor any right to damages provided in the Contract Documents.

14.09 Interpretation.

A. Should any part, term or provision of this Agreement or any of the Contract Documents, or any document required herein or therein to be executed or delivered, be declared invalid, void or unenforceable, all remaining parts, terms and provisions shall remain in full force and effect and shall in no way be invalidated, impaired or affected thereby. If the provisions of any law causing such invalidity, illegality or unenforceability may be waived, they are hereby waived to the end that this Agreement and the Contract Documents may be deemed valid and binding agreements, enforceable in accordance with their terms to the greatest extent permitted by applicable law. In the event any provision not otherwise included in the Contract Documents is required to be included by any applicable law, that provision is deemed included herein by this reference (or, if such provision is required to be included in any particular portion of the Contract Documents, that provision is deemed included in that portion).

B. Contract Documents shall not be construed to create a contractual relationship of any kind between (1) Project Manager or any City's representative and Contractor; (2) City and/or its Representatives and a Subcontractor, sub-Subcontractor, or supplier of any Project labor, materials, or equipment; or (3) between any persons or entities other than City and Contractor.

14.10 Patents

A. Fees or claims for any patented invention, article or arrangement that may be used upon or in any manner connected with performance of the Work or any part thereof shall be included in the Bid price for doing the Work. Contractor shall defend, indemnify and hold harmless City and each of its officers, employees, consultants and agents, including, but not limited to, the Board and each City's Representative, from all damages, claims for damages, costs or expenses in law or equity, including attorney's fees, arising from or relating to any claim that any article supplied or to be supplied under the Contract Documents infringes on the patent rights, copyright, trade name, trademark, service mark, trade secret or other intellectual property right of any person or persons or that the person or entity supplying the article does not have a lawful right to sell the same.

Such costs or expenses for which Contractor agrees to indemnify and hold harmless the above indemnities include but are not limited to any and all license fees, whether such fees are agreed by any indemnitee or ordered by a court or administrative body of any competent jurisdiction.

14.11 Substitution For Patented And Specified Articles

A. Except as noted specifically in the instructions to Bidders or in Contract Documents, whenever in Specifications, material or process is designated by patent or proprietary name or by name of manufacturer, such designation shall be deemed to be used for purpose of facilitating description of material and process desired, and shall be deemed to be followed by the words “or Approved Equal” and Contractor may offer any substitute material or process that Contractor considers “equal” in every respect to that so designated and if material or process offered by Contractor is, in opinion of City, Equal in every respect to that so designated, its use will be approved. However, Contractor may utilize this right only by timely submitting Document 00 6325 (Substitution Request Form) as provided in Document 00 2113 (Instructions to Bidders). A substitution will be approved only if it is a true “or equal” item in every aspect of its design and quality, including but not limited to its dimensions, weights, service requirements, durability, functioning, impact on contiguous construction elements, overall schedule and design.

14.12 Interest Of Public Officers

A. No representative, officer, or employee of City no member of the governing body of the locality in which the Project is situated, no member of the locality in which City was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the Project, during the tenure of the official or for one year thereafter, shall, as principal, agent, attorney or otherwise, be directly or indirectly interested, in the Contract Documents or the proceeds thereof.

14.13 Limit Of Liability

A. CITY, AND EACH OF ITS OFFICERS, BOARD MEMBERS, EMPLOYEES, CONSULTANTS AND AGENTS INCLUDING, BUT NOT LIMITED TO, PROJECT MANAGER AND EACH OTHER CITY REPRESENTATIVE, SHALL HAVE NO LIABILITY TO CONTRACTOR FOR SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, EXCEPT TO THE LIMITED EXTENT THAT THESE CONTRACT DOCUMENTS OR APPLICABLE PUBLIC CONTRACTING STATUTES MAY SPECIFY THEIR RECOVERY.

ARTICLE 15 – WORKING CONDITIONS AND PREVAILING WAGES

15.01 Use Of Site/Sanitary Rules

A. All portions of the Work shall be maintained at all times in neat, clean and sanitary condition. Contractor shall furnish toilets for use of Contractor’s and Subcontractors’ employees on the Site where needed, and their use shall be strictly enforced. All toilets shall be properly secluded from public observation, and shall be located, constructed and maintained subject to City’s approval.

B. Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Site and land areas identified in and permitted by Contract Documents and other land and areas permitted by applicable laws and regulations, rights of way, permits and easements or as designated by City, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, any improvement located thereon, or to City or occupant thereof resulting from the performance of Work.

C. During the progress of the Work, Contractor shall keep the Site and the Project free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, Contractor shall clean the site, remove all waste materials, rubbish and debris from and about the Site as well as all tools, appliances, construction equipment and machinery and surplus materials. Contractor shall leave the premises clean and ready for occupancy by City at Substantial Completion of Work. Contractor shall restore to original condition all property not designated for alteration by Contract Documents.

D. Contractor shall not load nor permit any part of any structure or pavement to be loaded in any manner that will endanger the structure or pavement, nor shall Contractor subject any part of Work or adjacent property to stresses or pressures that will endanger it. Contractor shall conduct all necessary existing conditions investigation regarding structural, mechanical, electrical or any other system existing, shall perform Work consistent with such existing conditions, and shall have full responsibility for insufficiencies or damage resulting from insufficiencies of existing systems, equipment or structures to accommodate performing the Work.

15.02 Protection Of Work, Persons, And Property

A. Contractor shall be responsible for initiating, maintaining and supervising all safety and site security precautions and programs in connection with Work, and shall develop and implement a site security and safety plan throughout construction. Contractor shall comply with all safety requirements specified in any safety program established by City, or required by state, federal or local laws and ordinances. Contractor shall be responsible for all theft or damage to Work, property or structures, and all injuries to persons, either on the Site or constituting the Work (e.g., materials in transit), arising from the performance of Work of the Contract Documents from a cause.

B. Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property.

C. Contractor shall remedy all damage, injury or loss to any property referred to above in this Article, caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, supplier, or any other person or organization directly or indirectly employed by any of them to perform or furnish any Work or anyone for whose acts any of them may be liable. Contractor's duties and responsibility for safety and for protection of Work shall continue until such time as all the Work is completed and Final Acceptance of the Work. City and its agents do not assume any responsibility for collecting any indemnity from any person or persons causing damage to Contractor's Work.

D. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

E. City may, at its option, retain such moneys due under the Contract Documents as City deems necessary until any and all suits or claims against Contractor for injury to persons or property shall be settled and City receives satisfactory evidence to that effect.

F. Work within the right-of-way lines of the city and/or City and/or State shall be done in accordance with the standards and specifications of the controlling agency. Permit for such work shall be obtained and paid for by the Contractor before executing the work within such right-of-ways.

15.03 Responsibility For Safety And Health

A. Contractor shall ensure that its and each tier of Subcontractors' employees, agents and invitees comply with applicable health and safety laws while at the Site. These laws include the Occupational Safety and Health Act of 1970 and rules and regulations issued pursuant thereto, and City's safety regulations as amended from time to time. Contractor shall comply with all City directions regarding protective clothing and gear.

B. Contractor shall be fully responsible for the safety of its and its Subcontractors' employees, agents and invitees on the Site. Contractor shall notify City, in writing, of the existence of hazardous conditions, property or equipment at the Site that are not under Contractor's control. Contractor shall be responsible for taking all the necessary precautions against injury to persons or damage to the property of Contractor, Subcontractors or persons from recognized hazards until the responsible party corrects the hazard.

C. Contractor shall confine all persons acting on its or its Subcontractors' behalf to that portion of the

Site where Work under the Contract Documents is to be performed, City-designated routes for ingress and egress thereto, and any other City-designated area. Except those routes for ingress and egress over which Contractor has no right of control, within such areas, Contractor shall provide safe means of access to all places at which persons may at any time have occasion to be present.

15.04 Emergencies

A. In emergencies affecting the safety or protection of persons or Work or property at the Site or adjacent thereto, Contractor, without special instruction or authorization from City, is obligated to act to prevent threat and damage, injury or loss, until directed otherwise by City. Contractor shall give City prompt written notice if Contractor believes that any significant changes in Work or variations from Contract Documents have been caused thereby. If City determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Change Order or Construction Change Directive will be issued to document the consequences of such action.

15.05 Use Of Roadways And Walkways

A. Contractor shall not unnecessarily interfere with use of any roadway, walkway or other facility for vehicular or pedestrian traffic. Before beginning any interference and only with City's prior concurrence, Contractor may provide detour or temporary bridge for traffic to pass around or over the interference, which Contractor shall maintain in satisfactory condition as long as interference continues. Unless otherwise provided in the Contract Documents, Contractor shall bear the cost of these temporary facilities.

15.06 Nondiscrimination

A. No person or entity shall discriminate in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sexual preference, or gender of such persons, except as provided in Section 12940 of the California Government Code. Every contractor for public works violating the provisions of Section 1735 of the California Labor Code is subject to all the penalties imposed for a violation of Chapter 1, Part 7, Division 2 of the California Labor Code.

15.07 Prevailing Wages And Working Hours

A. Contractor shall pay to persons performing labor in and about Work provided for in the Contract Documents an amount equal to or more than the general prevailing rate of per diem wages for (1) work of a similar character in the locality in which the Work is performed and (2) legal holiday and overtime work in said locality. The per diem wages shall be an amount equal to or more than the stipulated rates contained in a schedule that has been ascertained and determined by the Director of the State Department of Industrial Relations and City to be the general prevailing rate of per diem wages for each craft or type of workman or mechanic needed to execute this Contract. Contractor shall also cause a copy of this determination of the prevailing rate of per diem wages to be posted at each Site.

B. Contractor shall forfeit, as a penalty to City, Fifty Dollars ($50.00) for each laborer, workman, or mechanic employed in performing labor in and about the Work provided for in the Contract Documents for each Day, or portion thereof, that such laborer, workman or mechanic is paid less than the said stipulated rates for any Work done under the Contract Documents by him or her or by any Subcontractor under him or her, in violation of Articles 1 and 2 of Chapter 1 of Part 7 of Division II of the California Labor Code. The sums and amounts which shall be forfeited pursuant to this Paragraph and the terms of the California Labor Code shall be withheld and retained from payments due to Contractor under the Contract Documents, pursuant to this Document 00 7200 and the California Labor Code, but no sum shall be so withheld, retained or forfeited except from the final payment without a full investigation by either the State Department of Industrial Relations or by City. The Labor Commissioner pursuant to California Labor Code §1775 shall determine the final amount of forfeiture.

C. Contractor shall insert in every subcontract or other arrangement which Contractor may make for

performance of Work or labor on Work provided for in the Contract, provision that Subcontractor shall pay persons performing labor or rendering service under subcontract or other arrangement not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the Work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed in the California Labor Code.

D. Contractor stipulates that it shall comply with all applicable wage and hour laws, including without limitation, California Labor Code §§ 1776 and 1810-1815. Failure to so comply shall constitute a default under this Contract.

E. Contractor and its Subcontractors shall be responsible for compliance with Labor Code §§ 1810-1815.

1. Eight hours of labor performed in execution of the Contract constitutes a legal day's work. The time of service of any workman employed on the Project is limited and restricted to 8 hours during any one calendar day, and 40 hours during any one calendar week.
2. Contractor and its Subcontractors shall keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by him or her in connection with the Project. The record shall be kept open at all reasonable hours to the inspection City and to the Division of Labor Standards Enforcement.
3. Contractor or its Subcontractors shall, as a penalty to City, forfeit twenty-five dollars ($25) for each worker employed in the execution of the Contract Documents by the respective Contractor or Subcontractor for each calendar day during which the worker is required or permitted to work more than 8 hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Labor Code §§ 1810-1815.
4. Work performed on the Project by employees of Contractor or its Subcontractors in excess of 8 hours per day, and 40 hours during any one week, shall be permitted upon compensation for all hours worked in excess of 8 hours per day at not less than 1 1/2 times the basic rate of pay.

F. Contractor and its Subcontractors shall be responsible for compliance with Labor Code Section 1776.

1. Contractor and Subcontractors must keep accurate payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the Work of the Contract Documents. Each payroll record shall contain or be verified by a written declaration as required by Labor Code Section 1776.
2. The payroll records enumerated above must be certified and shall be available for inspection at all reasonable hours at the principal office of the Contractor as required by Labor Code Section 1776.
    a. Contractor shall inform City of the location of records enumerated above, including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.
    b. Contractor or Subcontractor has 10 calendar days in which to comply subsequent to receipt of a written notice requesting the records enumerated above. In the event that the Contractor or Subcontractor fails to comply with the ten-day period, he or she shall, as a penalty to City on whose behalf the contract is made or awarded, forfeit $25.00 for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due. Contractor is not subject to a penalty assessment pursuant to this Paragraph due to the failure of a Subcontractor to comply with this Paragraph.
3. Contractor shall also deliver certified payrolls to City with each Application for Payment as set forth above in this Document 00 7200 (General Conditions).

15.08 Environmental Controls

A. Contractor shall comply with all rules, regulations, ordinances, and statutes that apply to any Work performed under the Contract Documents including, without limitation, any toxic, water, stormwater management and soil pollution controls and air pollution controls specified in California Government Code §11017. Contractor shall be responsible for insuring that Contractor's Employees, Subcontractors, and the public are protected from exposure to airborne hazards or contaminated water, soil, or other toxic materials used during or generated by activities on the Site or associated with the Project.

15.09 Shoring Safety Plan

A. Any conflict between this Paragraph and Division 2 of the Specifications shall be resolved in favor of the most stringent requirement.

B. At least five calendar days in advance of any excavation five feet or more in depth, Contractor shall submit to City a detailed plan showing the shoring, bracing and sloping design (including calculations) and other provisions to be made for worker protection from the hazard of caving ground during the excavation, as required by California Labor Code §6705. A civil or structural engineer registered in California shall prepare and sign any plan that varies from the shoring system standards established by the State Construction Safety Orders.

C. During the course of Work, Contractor shall be responsible for determining where sloping, shoring, and/or bracing is necessary and the adequacy of the design, installation, and maintenance of all shoring and bracing for all excavation, including any excavation less than five feet in depth. Contractor will be solely responsible for any damage or injuries that may result from excavating or trenching. City's acceptance of any drawings showing the shoring or bracing design or Work schedule shall not relieve Contractor of its responsibilities under this Paragraph.

D. Appoint a qualified supervisory employee who shall be responsible to determine the sloping or shoring system to be used depending on local soil type, water table, stratification, depth, etc.

END OF DOCUMENT

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 7201

SUPPLEMENTAL GENERAL CONDITIONS

[OPTIONAL]

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 7316

SUPPLEMENTARY CONDITIONS – INSURANCE AND INDEMNIFICATION

ARTICLE 1 – INSURANCE

1.01 **At or before the date specified in Document 00 2113 (Instructions to Bidders), Contractor shall furnish to City of Berkeley ("City") satisfactory proof that Contractor has taken out for the entire period covered by the Contract the following classes of insurance in the form and with limits and deductibles specified below, unless otherwise specified in Contract Documents:**

A. Comprehensive General Liability Insurance covering claims for personal injury, bodily injury and property damage arising out of the Work and in a form providing coverage not less than that of a Standard Commercial General Liability Insurance policy ("Occurrence Form"). Such insurance shall provide for all operations and include independent contractors, products liability, completed operations for one year after Final Completion and acceptance of the final payment for the Work, contractual liability, and coverage for explosion, collapse, and underground hazards. The limits of such insurance shall not be coverage of less than **$2,000,000** each occurrence, **$2,000,000** general aggregate limit, and **$2,000,000** aggregate for products and completed operations, with defense costs payable in addition to policy limits. The policies shall be endorsed to provide Broad Form Property Damage Coverage.

B. Comprehensive Automobile Liability Insurance covering all owned, non-owned, and hired vehicles. Such insurance shall provide coverage not less than the standard Comprehensive Automobile Liability policy with limits not less than **$2,000,000** each occurrence Bodily Injury, and **$2,000,000** each occurrence Property Damage.

C. All-Risk Course of Construction Insurance including damage to property owned by City, Contractor or third parties caused by fire. Insurance shall be in the amount of 100 percent of the completed value of the Work to be performed under this Contract. Deductible shall not exceed **$10,000**. Each loss shall be borne by Contractor.

D. Workers' Compensation Insurance for all persons whom the Contractor may employ in carrying out Work contemplated under Contract Documents, in accordance with the Act of Legislature of State of California, known as "Workers' Compensation Insurance and Safety Act," approved May 26, 1913, and all acts amendatory or supplemental thereto, in the statutory amount. Workers' Compensation Insurance is **$1,000,000** each accident, with defense cost payable in addition to policy limits.

E. Environmental Impairment Liability Insurance covering bodily injury and property damage utilizing an occurrence policy form, in an amount no less than **$1,000,000** combined single limit for each occurrence, subject to a **$1,000,000** aggregate applicable to each job, with defense costs payable in addition to policy limits. The minimum deductible or self-insured retention permissible is **$25,000** each occurrence.

1.02 All policies of insurance shall be placed with insurers acceptable to City. The insurance underwriter(s) for all insurance policies except Workers' Compensation shall have an A. M. Best Company rating of A-, VIII or better, unless otherwise specified in Contract Documents. Required minimum amounts of insurance may be increased should conditions of Work, in opinion of City, warrant such increase. Contractor shall increase required insurance amounts upon direction by City.

1.03 Required Endorsements: The policies required under Document 00 7200 (General Conditions) and this Document 00 7316 shall be endorsed as follows:

A. City of Berkeley, its officers, agents, volunteers, consultants, and employees shall be named as additional insureds, but only with respect to liability arising out of the activities of the named insured, and there shall be a waiver of subrogation as to each named and additional insured.

B. Each such policy shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limit of the insurance company's liability required hereunder. Should any of the policies identified herein contain a "cross-suits" exclusion, such exclusion must not apply to any additional insureds.

C. Written notice of cancellation or of any limits reduction change in said policy shall be mailed to the City thirty (30) calendar days in advance of the effective date thereof, and ten (10) calendar days written notice to the same in advance of payment of any insurance claims under such policies to any person, firm or entity.

D. Insurance shall be primary insurance and no other insurance or self-insured retention carried or held by any named or additional insureds shall be called upon to contribute to a loss covered by insurance for the named insured.

1.04 Written notice of cancellation, non-renewal, or reduction in coverage of any policy shall be mailed to City (Attention: Project Manager and the Construction Manager) at the address listed in Document 00 5200 (Agreement), 30 calendar days in advance of the effective date of the cancellation, non-renewal, or reduction in coverage. Written notice of cancellation for non-payment shall be mailed within 10 calendar days of cancellation.

1.05 Certificates of insurance and endorsements shall have clearly typed thereon City Specification Number, and Title of Project of Contract Documents. Contractor shall maintain insurance in full force and effect during entire period of performance of Contract Documents.

1.06 Contractor shall keep insurance in force during warranty and guarantee periods, except that Contractor may discontinue All-Risk Course of Construction Insurance after Final Payment. At time of making application for extension of time, and during all periods exceeding the Contract Time resulting from any cause, Contractor shall submit evidence that insurance policies will be in effect during requested additional period of time. Upon City's request, Contractor shall submit to City, within 30 calendar days, copies of the actual insurance policies or renewals or replacements.

1.07 Contractor shall pay all insurance premiums, including any charges for required waivers of subrogation or the endorsement of additional insureds. If Contractor fails to maintain insurance, City may take out comparable insurance, and deduct and retain amount of premium from any sums due Contractor under Contract Documents.

1.08 If injury occurs to any employee of Contractor, Subcontractor or sub-subcontractor for which the employee, or the employee's dependents in the event of employee's death, is entitled to compensation from City under provisions of the Workers' Compensation Insurance and Safety Act, as amended, or for which compensation is claimed from City, City may retain out of sums due Contractor under Contract Documents, amount sufficient to cover such compensation, as fixed by the Act, as amended, until such compensation is paid, or until it is determined that no compensation is due. If City is compelled to pay compensation, City may, in its discretion, either deduct and retain from the Contract Sum the amount so paid, or require Contractor to reimburse City.

1.09 Nothing herein shall be construed as limiting in any way the extent to which Contractor or any Subcontractor may be held responsible for payment of damages resulting from their operations.

1.10 All Subcontractors shall maintain the same insurance required to be maintained by Contractor with respect to their portions of the Work unless otherwise indicated in Contract Documents, and Contractor shall cause the Subcontractors to furnish proof thereof to City within ten calendar days of City's request.

1.11 The following provisions apply to any licensed professional engaged by Contractor to perform portions of the Work ("Professional").

A. Each Professional shall maintain the following insurance, unless otherwise specified in Contract Documents:

B. Professional Liability Insurance, insuring against professional errors and omissions arising from

Professional's Work on the Project, in an amount not less than **[$2,000,000]** combined single limit for each occurrence. If Professional cannot provide an occurrence policy, Professional shall provide insurance covering claims made as a result of performance of Work on this Project and shall maintain such insurance in effect for not less than two years following Final Completion of the Project.

C. Professional shall satisfy all other provisions of this Document 00 7316 relating to that insurance, including without limitation providing required insurance certificates (containing the required endorsements) before commencing its Work on the Project.

ARTICLE 2 – RESPONSIBILITY OF CONTRACTOR AND INDEMNIFICATION

2.01 City and each of its officers, employees, consultants and agents including, but not limited to, the Board, Project Manager and Construction Manager and each City's Representative, shall not be liable or accountable in any manner for loss or damage that may happen to any part of the Work; loss or damage to materials or other things used or employed in performing the Work; injury, sickness, disease, or death of any person; or damage to property resulting from any cause whatsoever except their sole negligence, willful misconduct or active negligence, attributable to performance or character of the Work, and Contractor releases all of the foregoing persons and entities from any and all such claims.

2.02 To the furthest extent permitted by law (including without limitation California Civil Code §2782), Contractor shall assume defense of, and indemnify and hold harmless, City and each of its officers, employees, consultants and agents, including but not limited to the Board, Project Manager and Construction Manager and each City's Representative, from claims, suits, actions, losses and liability of every kind, nature and description, including but not limited to claims and fines of regulatory agencies and attorney's fees and consultant's fees, directly or indirectly arising out of, connected with or resulting from performance of the Work, failure to perform the Work, or condition of the Work which is caused in whole or part by any act or omission of Contractor, Subcontractors, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, resulting from any cause whatsoever except their sole negligence, willful misconduct or active negligence.

2.03 With respect to third-party claims against Contractor, Contractor waives any and all rights to any type of express or implied indemnity against City and each of its officers, employees, consultants and agents including, but not limited to City, the Board, Project Manager and Construction Manager and each City's Representative. City shall provide timely notice to Contractor of any third-party claim relating to the Contract Documents, in accordance with Section 9201 of the California Public Contract Code.

2.04 Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of Contractor, its Subcontractors of any tier, or the officers or agents of any of them.

2.05 To the furthest extent permitted by law (including, without limitation, Civil Code §2782), the indemnities, releases of liability and limitations of liability, claims procedures, and limitations of remedy expressed throughout Contract Documents shall apply even in the event of breach of Contract, negligence (active or passive), fault or strict liability of the party(ies) indemnified, released, or limited in liability, and shall survive the termination, rescission, breach, abandonment, or completion of the Work or the terms of the Contract Documents. If Contractor fails to perform any of these defense or indemnity obligations, City may in its discretion back charge Contractor for City's costs and damages resulting therefrom and withhold such sums from progress payments or other Contract moneys which may become due.

2.06 The indemnities in the Contract Documents shall not apply to any indemnified party to the extent of its sole negligence or willful misconduct; nor shall they apply to City or other indemnified party to the extent of its active negligence.

END OF DOCUMENT

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 7317

SUPPLEMENTARY CONDITIONS – CITY OF BERKELEY CONTRACTING POLICIES

ARTICLE 1 – GENERAL

1.01 DESCRIPTION

A. This document includes requirements which supplement the sections of the General Conditions.

1.02 PROHIBITED DISCRIMINATION. The following paragraphs shall be added to the General Conditions as a new Article 16.A, and, with the additions set forth in paragraphs 1.03 through 1.08, below, shall constitute a new Section 16 of Document 00 7200, General Conditions, entitled "16: City of Berkeley Contracting Policies".

"16. A PROHIBITED DISCRIMINATION: During prosecution of the Work to be done under the Contract, Contractor shall comply with the provisions of Berkeley Municipal Code ("B.M.C.") Chapter 13.26, including, but not limited to, the following:

1. Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, ancestry, national origin, age (over 40), sex, pregnancy, marital status, disability, sexual orientation or AIDS.

2. Contractor shall permit the City access to records of employment, employment advertisements, application forms, EEO-1 forms, affirmative action plans and any other documents which, in the opinion of the City, are necessary to monitor compliance with this non-discrimination provision. In addition, Contractor shall submit forms supplied by the City to monitor this non-discrimination provision."

1.03 CONFLICTS OF INTEREST PROHIBITED. The following paragraphs shall be added to Document 00 7200, General Conditions, as a new Section:

"16. B CONFLICTS OF INTEREST PROHIBITED:

1. In accordance with Government Code section 1090, Berkeley City Charter section 36 and B.M.C. Chapter 3.64, neither Contractor nor any employee, officer, director, partner or member of Contractor or immediate family member of any of the preceding, shall have served as an elected officer, an employee, or a City board, committee or commission member, who has directly or indirectly influenced the making of the Agreement.

2. In accordance with Government Code section 1090 and the Political Reform Act, Government Code section 87100 *et seq*., no person who is a director, officer, partner, trustee, employee or consultant of the Contractor, or immediate family member of any of the preceding, shall make or participate in a decision made by the City or a City board, commission or committee, if it is reasonably foreseeable that the decision will have a material effect on any source of income, investment or interest in real property of that person or Contractor.

   a. Interpretation of this section shall be governed by the definitions and provisions used in the Political Reform Act, Government Code section 87100 *et seq*., its implementing regulations, manuals and codes, Government Code section 1090, Berkeley City Charter section 36 and B.M.C. Chapter 3.64."

1.04 NUCLEAR FREE BERKELEY ORDINANCE. The following paragraphs shall be added to Document 00 7200, General Conditions, as a new Section:

"16. C NUCLEAR FREE BERKELEY ORDINANCE:

1. Contractor agrees to comply with B.M.C. Chapter 12.90, the Nuclear Free Berkeley Act, as amended from time to time."

1.05 CONTRACTUAL RELATIONS WITH PROHIBITED ENTITIES. The following paragraphs shall be added to Document 00 7200, General Conditions, as a new Section:

"16. D CONTRACTUAL RELATIONS WITH PROHIBITED ENTITIES

1. OPPRESSIVE STATES

a. In accordance with Resolution No. 59,853-N.S. (Appendix 00812-A), Contractor certifies that it has no contractual relations with, and agrees during the term of this agreement to forego contractual relations to provide personal services to, the following entities:

1. The governing regime in any Oppressive State.
2. Any business or corporation organized under the authority of the governing regime of any Oppressive State.
3. Any individual, firm, partnership, corporation, association, or any other commercial organization, and including parent-entities and wholly-owned subsidiaries (to the extent that their operations are related to the purpose of its contract with the City), for the express purpose of assisting in business operations or trading with any public or private entity located in any Oppressive State.

b. Appendix A to Resolution No. 59,853-N.S., and Resolution No. 60,382-N.S. and 70,606-N.S. designates the following as Oppressive States for the purposes of this Contract:

1. Tibet Autonomous Region and the provinces of Ado, Kham, and U-Tsang; and Burma (Myanmar)

c. Contractor's failure to comply with this section shall constitute a default of this Contract and City may terminate the Contractor's right to proceed with the Work pursuant to Document 00 7200, General Conditions, Article 14.05.

1. In the event that the City terminates Contractor due to a default under this provision, City may deem Contractor a non-responsible bidder for five (5) years from the date this Contract is terminated."

1.06 REQUIRED AND PROHIBITED WORK MATERIALS. The following paragraphs are added to Document 00 7200, General Conditions, as a new Section:

"16. E REQUIRED AND PROHIBITED WORK MATERIALS

1. RECYCLED PAPER

a. If Contractor is required by this Agreement to prepare a written report or study, Contractor shall use recycled paper for said report or study when such paper is available at a cost of not more than ten percent more than the cost of virgin paper, and when such paper is available at the time it is needed. For the purposes of this Agreement, recycled paper is paper that contains at least 50% recycled product. If recycled paper is not available, Contractor shall use white paper. Written reports or studies prepared under this Agreement shall be printed on both sides of the page whenever practical.

TROPICAL HARDWOODS

a. Contractor shall comply with the terms of Resolution No. 58,291-N.S. (Appendix 00812-B) prohibiting the use of any tropical hardwood or wood product, including, but not limited to, those enumerated in Resolution No. 58,291-N.S. Contractor must submit, with its bid, a statement Tropical Hardwood Disclosure form.

b. Except as expressly permitted by the application of Sections 3.B and 4.B. of Resolution No. 58,291-N.S., Contractor shall not provide any items to the City in performance of this contract which are tropical hardwoods or tropical wood products.

c. Contractor's failure to comply with this section shall constitute a default of this Agreement and Contractor agrees that City may take any of the following actions:

1. terminate the Contractor’s right to proceed with the Work pursuant to Document 00 7200, General Conditions, Article 14.05;

2. withhold funds due the Contractor under any contract with the City;

3. order revision of the Contract Documents based upon a material breach of Contract Documents provisions or pertaining to representations made in bidding, execution or performance of the Contract Documents;

4. disqualify the Contractor from eligibility for providing commodities or services to the City for a period not to exceed five (5) years, with a right to review and reconsideration by the City after two (2) years upon a showing of corrective action, indicating violations are not likely to recur.

d. Notwithstanding Article 4 of the Agreement, Contractor acknowledges and agrees that its failure to comply with this requirement justifies the imposition of liquidated damages in an amount equal to Contractor's net profit, or five percent (5%) of the total contract amount, whichever is greater.

1. Liquidated damages under this provision shall be payable to the City upon demand and may be set off against any monies due to the Contractor from any contract with the City.

3. VIRGIN REDWOOD

a. Contractor agrees to comply with the City Council's October 29, 1996, directive not to purchase virgin redwood for the prosecution of the work to be done under this Contract and in its place purchase and use:

1. Redwood that has been previously used or;

2. Certified, sustainable-harvested redwood as the preferred alternative to virgin and non-certified redwood, and not pressure-treated lumber of other species as an alternative to redwood."

4. TREATED WOOD

a. Contractor shall comply with the terms of Resolution No. 61,724-N.S. (Appendix 00812-E) prohibiting the use of Pentachlorophenol, arsenic and creosote treated wood. No such wood shall be used by the contractor in this or any other City project without the express written consent of the City Council.

1.07 FIRST SOURCE HIRING REQUIREMENT. The following paragraphs shall be added to Document 00 7200, General Conditions, as a new Section if the contract exceeds $100,000 but is less than $500,000:

"16. F FIRST SOURCE HIRING REQUIREMENT

1. Contractor, and any subcontractors, shall utilize the City's First Source Construction Program under the terms set forth in the First Source specifications. (Appendix 00812-C).

a. Under the First Source program, Contractor must employ, to the extent possible, a work force where no less than twenty-five percent of the work hours are performed by Berkeley residents, and fifty percent of all new hires are Berkeley residents, on a craft-by-craft basis.

b. To achieve the goals, Contractor may either:

1. Utilize the City's First Source referral service, or

2. Demonstrate a good faith effort to achieve the goals."

OR

1.07 COMMUNITY WORKFORCE AGREEMENT. The following paragraph shall be added to Document 00 7200 (General Conditions) as a new Section if the contract exceeds $500,000.

"16.F COMMUNITY WORKFORCE AGREEMENT

1. Contractor and any subcontractor at any tier shall comply with the City's Community Workforce Agreement set forth in the Appendix 00812 C.

a. Under the Community Workforce Agreement, Contractor must sign and comply with the Agreement to be Bound prior to execution of the Contract.
b. Subcontractors at any tier must also sign and comply with an Agreement to be Bound prior to execution of their respective subcontracts.
c. The signing of an Agreement to be Bound is a condition precedent to entering into any contract for this project."

1.08 EQUAL BENEFITS ORDINANCE. The following paragraph shall be added to Document 00 7200 (General Conditions) as a new Section:

"16.G EQUAL BENEFITS ORDINANCE:

1. Contractor hereby agrees to comply with the provisions of the Berkeley Equal Benefits Ordinance, B.M.C. Chapter 13.29 (Appendix 00812-D). If Contractor is currently subject to the Berkeley Equal Benefits Ordinance, as indicated by the Equal Benefits Certification form, as contained in Document 00680, Contractor will be required to provide all eligible employees with City mandated equal benefits, as defined in B.M.C. Chapter 13.29, during the term of this contract, as well as comply with the terms enumerated herein.

2. If Contractor is currently or becomes subject to the Berkeley Equal Benefits Ordinance, Contractor agrees to provide the City with all records the City deems necessary to determine compliance with this provision. These records are expressly subject to the auditing terms described in Document 00 7200, General Conditions, Article 8.02.

3. If Contractor fails to comply with the requirements of this Article, City shall have the rights and remedies described in this Section, in addition to any rights and remedies provided by law or equity.

    3. Contractor's failure to comply with this Article shall constitute a material breach of the Contract, upon which City may terminate the Contractor's right to proceed with the Work pursuant to Document 00 7200, General Conditions, Article 14.05. In the event the City terminates the Contractor's right to proceed with the Work due to a default by Contractor under this Article, the City may deem Contractor a non-responsible bidder for not more than five (5) years from the date this Contract is terminated. In addition, at City's sole discretion, Contractor may be responsible for liquidated damages in the amount of $50.00 per employee per day for each and every instance of violation of this Section. It is mutually understood and agreed that Contractor's failure to provide its employees with equal benefits will result in damages being sustained by City; that the nature and amount of these damages will be extremely difficult and impractical to fix; that the liquidated damages set forth herein is the nearest and most exact measure of damages for such breach that can be fixed at this time; and that the liquidated damage amount is not intended as a penalty or forfeiture for Contractor's breach. City may deduct any assessed liquidated damages from any payments otherwise due Contractor.

1.09 SANCTUARY CITY CONTRACTING: The following paragraph shall be added to Document 00 7200 (General Conditions) as a new Section:

"16. H SANCTUARY CITY ORDINANCE:

1. Contractor hereby agrees to comply with the provisions of the Sanctuary City Contracting Ordinance, B.M.C. Chapter 13.105. In accordance with this Chapter, Contractor agrees not to provide the U.S. Immigration and Customs Enforcement Division of the United States Department of Homeland Security with any Data Broker or Extreme Vetting Services as defined herein:

    a. "Data Broker" means either of the following:

ii. The collection of information, including personal information about consumers, from a wide variety of sources for the purposes of reselling such information to their customers, which include both private-sector business and government agencies;

iii. The aggregation of data that was collected for another purpose from that for which it is ultimately used.

b. “Extreme Vetting” means data mining, threat modeling, predictive risk analysis, or other similar services. Extreme Vetting does not include:

i. The City’s computer-network health and performance tools;

ii. Cybersecurity capabilities, technologies and systems used by the City of Berkeley Department of Information Technology to predict, monitor for, prevent, and protect technology infrastructure and systems owned and operated by the City of Berkeley from potential cybersecurity events and cyber-forensic based investigations and prosecutions of illegal computer based activity.”

SCHEDULE OF APPENDENCES
TO
MODIFICATIONS TO GENERAL CONDITIONS

Schedule of Exhibits: (the following Exhibits are on file at the Berkeley City Clerk's office and will be made available on request to any interested party)

A. City Council Resolution No. 59,853-N.S. (Re: Oppressive States).

B. City Council Resolution No. 58,291-N.S. (Re: Tropical Hardwoods).

C. City Council Resolution No. 61,724-N.S. (Re: Treated Wood).

D. Berkeley Municipal Code, Chapter 13.29, Equal Benefits Ordinance

E. Specifications for City's First Source Construction Program, for contracts between $100,000 and $500,000.

E. Community Workforce Agreement and Agreement to be Bound for contract exceeding $500,000.

F. Sanctuary City Contracting Ordinance, B.M.C. Chapter 13.105.

END OF DOCUMENT

DOCUMENT 00 7319

SUPPLEMENTARY CONDITIONS – HEALTH AND SAFETY REQUIREMENTS; HAZARDOUS MATERIALS

ARTICLE 1 – GENERAL

1.01 Summary

A. This document includes requirements as they apply to location, removal, remediation and disposal of hazardous materials and hazardous waste.

1.02 HAZARDOUS MATERIALS SURVEY

A. Reference Section 01 1100 for a list of available documents, including any Hazardous Materials Surveys, if available.

B. Data regarding the locations of hazardous materials was obtained only for use of City and its consultants, contractors, and tenants for planning and design and are not part of Contract Documents.

C. Bidders may rely on this data and information for general accuracy regarding the locations of potentially hazardous materials subject of the Work. City does not warrant and makes no representation regarding the completeness or thoroughness of any data or information regarding existing conditions or hazardous materials, including, but not limited to, quantities, characteristics, volumes, or associated structural features. Bidder represents and agrees that in submitting a Bid it is not relying on any such data, information or deductions.

D. Before submitting a Bid, each Bidder shall be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise, which may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of Contract Documents.

E. Bidders shall advise City in writing during the Bid period of any questions, suppositions, inferences or deductions Bidders may have for City's review and response. City has provided time in the period prior to bidding for Bidder to perform these investigations.

F. During the Pre-Bid Site Visit(s), City will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a Bid. Bidders must fill all holes and clean up and restore the Site to its former conditions upon completion of such explorations, investigations, tests, and studies. Such investigations may be performed only under the provisions of Document 00 2113 (Instructions to Bidders) and Document 00 7200 (General Conditions) including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such investigation work. Each Bidder shall supply all equipment required to perform any investigations as each Bidder deems necessary. City has the right to limit the number of pieces of machinery operating at one time due to safety concerns.

1.03 Precedence of Documents

A. Should any provision or requirement of any Contract Document conflict with another provision or requirement in the Contract Documents on subject matters of hazardous waste abatement, clean up, disposal, or required safety standards or methods, then the most stringent provision or requirement shall control.

1.04 Means and Methods of Construction

A. Nothing contained in these Contract Documents or inferable therefrom shall be deemed or construed (1) to make Contractor the agent, servant or employee of City, or (2) to create any partnership, joint venture or other association between City and Contractor.

1.05 Control of the Work

A. City shall exercise administration of the Contract. The City may employ a consultant to assist. City reserves the right to assign or delegate to this consultant, or any other consultant ("Consultant") any or all of the responsibilities of the Architect/Engineer under the Contract Documents, or alternatively, to act as City's representative.

B. Contractor shall cooperate with Consultant as directed by City. Consultant's duties may include observing the Contractor's health and safety program and practices, observing the abatement construction activities, observing the contractor's abatement work practices for compliance with the Contract Documents, observing the extent of material removed from each job site, reviewing payment requests, reviewing reports required by governmental or quasi-governmental agencies or the Contract Documents, and providing clearance tests after abatement is completed. No action, omission to act, approval, or failure to advise Contractor as to any matter by Consultant shall in any way relieve the Contractor from its responsibility for the performance of the Work in strict accordance with the Contract Documents and applicable Law.

1.06 Warranty, Guarantee and Inspection of Work.

A. Contractor represents and warrants that it, its employees and its subcontractors and their employees, shall at all times have the required levels of familiarity with the Site and the Work, training and ability to comply fully with all applicable Law and contract requirements for safe and expeditious performance of the Work, including whatever training is or may be required regarding the activities to be performed (including, but not limited to, all training required to adequately address the actual or potential dangers of contract performance).

B. Contractor represents and warrants that it, its employees and its subcontractors and their employees, shall at all times have and maintain in good standing any and all certifications and licenses required by applicable federal, state and other governmental and quasi-governmental requirements applicable to the Work.

C. Contractor represents and warrants that it has studied carefully all requirements of the specifications regarding procedures for demolition, hazardous waste abatement, or safety practices, specified in this contract, and prior submitting its bid, has either (a) verified to its satisfaction that the specified procedures are adequate and sufficient to achieve the results intended by the Contract Documents, or (b) by way of approved "or equal" request or request for clarification and written Addenda, secured changes to the specified procedures sufficient to achieve the results intended by the Contract Documents. Contractor accepts the risk that any specified procedure will result in a completed project in full compliance with the contract requirements.

D. City reserves the right, in its sole discretion, to conduct air monitoring, earth monitoring, work monitoring, and any other tests (in addition to testing required under the agreement or applicable law), to monitor contract requirements of safe and statutory compliant work methods and (where applicable) safe re-entry level air standards under State and Federal law upon completion of the job, and compliance of the work with periodic and final inspection of public and quasi-public entities having jurisdiction.

E. Contractor acknowledges that City also has the right to perform, or cause to be performed, various activities and tests including, but not limited to, pre-abatement, during abatement and post-abatement air monitoring, provided that City shall have no obligation to perform said activities and tests, and that a portion of said activities and tests may take place prior to the completion of the Work by Contractor. In the event City elects to perform these activities and tests, Contractor shall afford City ample access to the Site and all areas of the Work as may be necessary for the performance of these activities and tests. Contractor will include the potential impact of these activities for tests by City in the Contract Sum and the Scheduled Completion

Date. Contractor shall not be entitled to increases in the contract sum or any damages for delay in the event City elects to perform these activities and tests, provided any delays resulting therefrom are reasonable under the circumstances involved. Notwithstanding City's rights granted by this paragraph, Contractor shall retain its own industrial hygiene consultant and shall have primary responsibility for collecting samples and perform all applicable, relevant or appropriate activities and tests including, but not limited to, pre-abatement, during abatement and post-abatement air monitoring, required or suggested by the Contract Documents, the Law, or both, and City reserves the right to request documentation of all such activities and tests performed by Contractor relating to the Work.

1.07 RECORDS

A. Contractor shall obtain and maintain and shall furnish to City on completion of the Work, or at any other time requested by City, all necessary permits, licenses, approvals, authorizations, notifications, training certificates, respirator certificates, reports, correspondence, test results, air monitoring certificates, forms, medical records, medical certificates, notes and photographs of work conditions, approved shipping and disposal facility receipts, manifests, and all other documentation required by the Contract Documents or applicable Law, or both.

B. Contractor shall provide City with copies of each such document as it is generated and shall, as a condition to final payment, provide City with a complete set of such documents (bound, organized and indexed) at the conclusion of the Work. Contractor shall keep and maintain in retrievable files true and correct copies of all such documents for a period of not less than thirty (30) years after final completion of the Work. City shall have the right to inspect or photocopy these records and, if Contractor should cease business operations, then it shall furnish these records to City.

1.08 Compliance with laws

A. Contractor represents that it is familiar with and shall comply with all laws applicable to the Work or completed Work including, but not limited to, all federal, state and local laws, statutes standards, rules, regulations and ordinances applicable to the Work (collectively, the "Law") relating to:

1. the protection of the public health, welfare and environment;
2. storage, handling or use of asbestos, PCB, lead, petroleum based products or other hazardous materials;
3. the generation, processing, treatment, storage, transport, disposal, destruction or other management of asbestos, PCB, lead, petroleum or hazardous waste materials or other waste materials of any kind; or,
4. the protection of environmentally sensitive areas such as wetlands.

B. Contractor has the sole responsibility for determining current waste storage, handling, transportation and disposal regulations for the jobsite and for each waste disposal facility. Contractor must comply fully at its sole cost and expense with these regulations and any applicable Law. City, may, but is not obligated to, require submittals with this information for it to review consistent with the Contract Documents.

C. Contractor shall develop and implement a system acceptable to City to track hazardous waste from the site to disposals, including appropriate "Hazardous Waste Manifests" on the EPA form, so that City may track the volume of waste it put in each landfill and receive from each landfill a certificate of receipt.

D. Contractor shall provide City with the name and address of each waste disposal facility prior to any disposal, and City shall have the express right to reject any proposed disposal facility. Contractor shall not use any disposal facility to which City has objected. Contractor shall document actual disposal or destruction of waste at a designated facility by completing a disposal certificate or certificate of destruction forwarding the original to the general contractor.

1.09 Permits

A. Before performing any of the Work, and at such other times as may be required by applicable Law, Contractor shall deliver all requisite notices and obtain the approval of all governmental and

quasi-governmental authorities having jurisdiction over the Work. Contractor shall submit evidence satisfactory to City that it and any disposal facility (1) have obtained all required permits, approvals and the like in a timely manner both prior to commencement of the Work and thereafter as and when required by applicable Law, and (2) are in compliance with all such permits, approvals and the like. For example, before commencing any work in connection with the Work involving asbestos-containing materials or PCB subject to regulation, Contractor agrees to provide the required notice of intent to renovate or demolish to the appropriate state or federal agency having jurisdiction, by certified mail, return receipt requested, or by some other method of transmittal for which a return receipt is obtained, and to send a copy of that notice to City. Contractor shall not conduct any Work involving asbestos-containing materials or PCB unless Contractor has first confirmed that the appropriate agency having jurisdiction is in receipt of the required notification. All permits, licenses, bonds required by governmental or quasi-governmental authorities, fees, deposits, tap fees, offsite easements and asbestos and PCB disposal facilities necessary for the prosecution of the Work shall be procured and paid for by Contractor. Contractor shall give all notices and comply with the Law bearing on the conduct of the Work as drawn and specified. If Contractor observes or reasonably should have observed that Plans and Specifications and other Contract Documents are at variance therewith, it shall be responsible for promptly notifying City in writing of such fact. If Contractor performs any Work contrary to the Law without such notice to City, it shall bear all costs arising therefrom.

B. In the case of any permits or notices held in City's name or of necessity to be made in City's name, City shall cooperate with Contractor in securing the permit or giving the notice, but the Contractor shall prepare for City's review and execution upon approval, all necessary applications, notices and other materials.

1.10 Indemnification and Termination

A. To the extent permitted by law, the indemnities and limitations of liability expressed throughout the Contract Documents apply with equal force and effect to any claims or liabilities imposed or existing by virtue of the removal, abatement and disposal of hazardous waste. This includes liabilities connected to the selection and use of a waste disposal facility, personal injury, property damage, loss of use of property, damage to the environment or natural resources, or "disposal" and "release" of materials associated with the Work (as defined in 42 U.S.C. 9601 et seq).

B. Notwithstanding anything in Document 00 7200 to the contrary, City shall have an absolute right to terminate the Contractor’s right to proceed with the Work for cause immediately, without ten calendar days notice and without an opportunity to cure, should Contractor knowingly or recklessly commit a material breach of the terms of the Contract Documents or the Law, on any matter involving the exposure of persons or property to hazardous waste. However, if the breach of contract exposing persons or property to hazardous waste is due solely to an ordinary, unintentional and non-reckless failure to exercise reasonable care, then the procedures in Document 00 7200, Article 14.05, shall apply without modification.

1.11 Protection of Work, Persons and Property

A. Contractor shall perform safe, expeditious and orderly work in accordance with the best practices and the highest standards in the hazardous waste abatement, removal and disposal industry, the Law (as herein defined), and the Contract Documents, including, but not limited to, all responsibilities relating to the preparation and return of waste shipment records, all requirements of the Law, delivering of all requisite notices, and obtaining all necessary governmental and quasi governmental approvals.

END OF DOCUMENT

DOCUMENT 00 7380

APPRENTICESHIP PROGRAM

ARTICLE 1 – COMPLIANCE REQUIRED

1.01 Contractor and Subcontractors shall comply with the requirements of California Labor Code §§1776, 1777.5, and 1777.6 concerning the employment of apprentices by Contractor or Subcontractors. Willful failure to comply may result in penalties, including loss of the right to Bid on or receive public works contracts.

ARTICLE 2 – CERTIFICATION OF APPROVAL

2.01 California Labor Code §1777.5, as amended, requires a Contractor or Subcontractor employing tradespersons in any apprenticeable occupation to apply to the joint apprenticeship committee nearest the site of a public works project and which administers the apprenticeship program in that trade for a certification of approval. The certificate shall also fix the ratio of apprentices to journeypersons that will be used in performance of the Contract. The ratio of work performed by apprentices to journeypersons in such cases shall not be less than one *hour* of apprentices work for every five *hours* of labor performed by journeypersons (the minimum ratio for the land surveyor classification shall not be less than one apprentice for each five journeypersons), except:

A. When unemployment for the previous three month period in the area exceeds an average of 15 percent;

B. When the number of apprentices in training in the area exceeds a ratio of one to five;

C. When a trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis state-wide or locally; or

D. Assignment of an apprentice to any work performed under a public works contract would create a condition which would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyperson.

ARTICLE 3 – FUND CONTRIBUTIONS

3.01 Contractor is required to make contributions to funds established for administration of apprenticeship programs if Contractor employs registered apprentices or journeypersons in any apprenticeable trade on such contracts and if other contractors on the public works site are making such contributions.

ARTICLE 4 – APPRENTICESHIP STANDARDS

4.01 Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of the California Department of Industrial Relations, or from the Division of Apprenticeship Standards and its branch offices.

END OF DOCUMENT

THIS PAGE INTENTIONALLY LEFT BLANK

DOCUMENT 00 9113

ADDENDA

SPECIFICATION NO. 26-11756-C

CITY OF BERKELEY

SANTA FE TRACKBED TO PARK CONVERSION
REMEDIATION, DEMOLITION AND PERIMETER FENCING

0 PARKER ST., 0 CARLETON ST., 0 DERBY ST., 0 WARD ST.

[DOCUMENT TO BE COMPLETED AS ADDENDA DURING BID PERIOD]

[If a conformed copy is created, delete bracketed line above and replace with the following:]

The following Addenda were issued, modifying the Project Manual:

Addendum No. 1, issued on **[date]**
Addendum No. 2, issued on **[date]**
[continue as appropriate]

(Addenda have been incorporated into the conformed Project Manual.)

END OF DOCUMENT

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 1100

SUMMARY OF WORK

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes Summary of Work and Work Restrictions including:

1. Work Covered By Contract Documents
2. Bid Item, Allowances and Alternates
3. Contract Document Organization
4. Maintenance
5. Work Under Other Contracts
6. Future Work
7. Work Sequence
8. Work Days and Hours
9. Shutdown for Discovery of Cultural Resources
10. Cooperation of Contractor and Coordination with Other Work
11. Partial Occupancy/Utilization Requirements
12. Contractor Use of Site
13. Air Quality Standards
14. Construction Staking, Monument Protection and Replacement
15. Geotechnical Data and Existing Conditions
16. Protection of Existing Structures and Underground Facilities
17. Permits
18. Actual Damages for Permit Violations
19. Reference Standards
20. Products Ordered in Advance
21. City-Furnished Products

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. Work comprises of the construction of City's **Santa Fe Trackbed to Park Conversion Remediation, Demolition and Perimeter Fencing** located at **0 Parker St., 0 Carleton St., 0 Derby St., 0 Ward St.**. The Work includes, without limitation, removal of contaminated soil left behind by the site's historic railroad use, demolition of existing encroaching structures, demolition and clearing of the site, import and installation of clean soil fill, construction of new fences along the property lines, and other related site work. Contract Documents fully describe the Work.

B. The Work of this Contract comprises construction of all the Work indicated, described in the Specifications, or otherwise required by the Contract Documents. Unless provided otherwise in the Contract Documents, all risk of loss to Work covered by Contract Documents shall rest with Contractor until Final Acceptance of the Work. Cost of maintenance of systems and equipment prior to Final Acceptance will be considered as included in prices Bid and no direct or additional payment will be made therefore.

C. For all Bid items, furnish and install all Work, including connections to existing systems, indicated and described in Specifications and all other Contract Documents. Work and requirements applicable to each individual Bid item, or unit of Work, shall be deemed incorporated into the description of each Bid item (whether Lump Sum or Unit Price). Any Bid item may be deleted from the Work and Contract Sum, in total or in part, prior to or after award of Contract without compensation in any form or adjustment of other Bid items or prices therefore.

D. Allowance Work shall be done as Change Orders and as specified in Section 01 2600 (Modification Procedures). Identify Allowance Items (See Document 00 4113 [Bid Form]) work on the Progress Schedules and on Applications for Payment. The Amount given on Document 00 4113 (Bid Form) under each Allowance Item is the sum of money set aside for each Allowance Item. These amounts shall be included in the Contract Sum on the Bid Form. If the cost of Work done under any Allowance Item is less than the amount given on the Bid Form under that Allowance Item, the Contract Sum shall be reduced by the difference between the amount given in the Bid Form and the cost of Work actually done.

1.03 BID ITEMS, ALLOWANCES AND ALTERNATES

A. Descriptions of Lump Sum Items (listed by Bid item numbers). Bid items shall include all labor, materials, services, and equipment necessary for the completion of the Work, including connections to existing systems:

1.01 Mobilization – Planning, resource acquisition, and setup before physical work. Work includes but is not limited to acquiring all necessary permits, notifying USA, nesting bird survey, tree protection, and installing temporary facilities.

1.02 Prepare and Implement SWPPP (Risk Level 2) – Submit an approved SWPPP with WDID #. Bid item includes inspection services per the approved SWPPP and submittal of all required documents to the State Water Board for the duration of construction including closeout procedures. Implementing specifications, including Section 01 5700 “Temporary Controls” and Section 01 7413 “Project Cleaning” of the General Requirements.

1.03 Traffic Control – Submit an approved Traffic Control and Staging Plan. Bid item includes implementation of measures in the approved Traffic Control and Staging Plan.

1.04 Dust Control – dust control as noted in the Final Removal Action Workplan and specifications.

1.05 Demobilization – Removing all personnel, equipment, materials, and temporary facilities from the site after project completion.

2.01 Demolition of 1410 Parker encroachments, including Construction Waste Management – demolition of 1410 Parker encroachments as noted in the plans and specifications. Bid item includes submitting an Approved Construction Waste Management and tracking waste on GreenHalo.

2.02 Demolition and Clearing of Site, including Tree Protection & Removal – Tree protection, tree removal, demolition and clearing of the site as noted in the plans and specifications.

2.03 Construction Staking – construction staking required to perform excavation work as noted in the plans, specifications, and Final Removal Action Workplan.

3.01 Shoring – shoring required to perform excavation work as noted in the plans, specifications, and Final Removal Action Workplan. Bid item includes submitting an approved Shoring Plan and obtaining the required permits.

3.04 Equipment and Vehicle Decontamination – equipment and vehicle decontamination as noted in the Final Removal Action Workplan and specifications including the requirements of the Site-Specific Health and Safety Plan (Appendix E of the Final Removal Action Workplan). Bid item includes the containment and collection of any water generated from the cleaning processes on Site.

3.05 Decontamination Wash Water Disposal (non-hazardous) – disposal of the decontaminated wash water as noted in the Final Removal Action Workplan and specifications including the requirements of the Site-Specific Health and Safety Plan (Appendix E of the Final Removal Action Workplan).

B. Descriptions of Unit Price Items and Basis of Measurement for Payment (listed by Bid item numbers):

3.02 Excavate Soil – excavating soil as noted in the plans, specifications, and Final Removal Action Workplan. Quantity is estimated based on the soil in the undisturbed state before excavation. Bid item includes required safety measures as noted in the Removal Action Workplan and specifications including the requirements of the Site-Specific Health and Safety Plan (Appendix E of the Final Removal Action Workplan).

3.03 Load and Transfer Soil for Offsite Disposal (non-RCRA California Hazardous) – loading and transferring excavated soil for offsite disposal. Quantity is estimated based on the soil in the undisturbed state before excavation. Bid item includes all necessary trucking and obtaining oversized load permits, if necessary.

4.01 Import and Place Soil, Soil Compaction – import clean soil and compact per the plans, specifications, and Final Removal Action Workplan. Quantity is estimated based on the soil in its compacted state in the ground. Place Soil per the Landscape Material Plans and Compact per the specifications. Bid item includes submitting an Approved Clean Import Soil Product Data Submittal prior to delivering material to the site.

4.02 6-ft Chain Link Fence and Gates – 6-ft chain link fence and gates as noted in the plans and specifications including the requirements of specification section 32 3113 Chain Link Fence and Gates and other related specifications.

4.03 6-ft Wood Fence – 6-ft wood fence as noted in the plans and specifications including the requirements of specification section 06 2013 Exterior Finish Carpentry – Wood Fences and other related specifications.

4.04 6-ft Wood Fence atop Vertical Curb – 6-ft wood fence atop vertical curb as noted in the plans and specifications including the requirements of specification section 06 2013 Exterior Finish Carpentry – Wood Fences, 03 3000 Cast-In-Place Concrete, and other related specifications.

4.05 5-6 Chain Link Fence and Gates – 6-ft chain link fence and gates as noted in the plans and specifications including the requirements of specification section 32 3113 Chain Link Fence and Gates and other related specifications

C. Allowances

1. Scope of Allowances: N/A

1.04 CONTRACT DOCUMENT ORGANIZATION

A. The Drawings illustrate locations, arrangements, dimensions, and details to determine the general character of the Work. Parts not detailed shall be subject to the Architect's approval. Where reasonably inferable that a Drawing illustrates only part of a given work on a number of items, the remainder shall be deemed repetitious and so construed. Drawings of greater scale take precedence over Drawings of lesser scale. Do not scale documents.

B. Drawings indicate general arrangement and location of such items as piping, conduit, apparatus, and equipment. Drawings and Specifications are for guidance of the Contractor and exact locations, distances, and levels will be governed by building site and actual building conditions. The Contractor shall make minor changes, as directed, to arrangements or locations shown in order to meet Structural or Architectural conditions.

C. Specifications describe performances and qualities required of materials and of methods. Items listed under each Section of the Specifications are not necessarily all inclusive. The Contractor shall be responsible for the complete work.

D. For convenience, Specifications are separated into topical divisions of work, each of which is further related to topical divisions under which it occurs. Such separation shall not be construed as an attempt by the Architect to establish limits of any agreements between the Contractor and his/her subcontractors.

E. Portions of these Specifications are of abbreviated, simplified type and may include incomplete sentences.

1. Omissions of words or phrases such as “the Contractor shall”, “in conformity with”, “shall be”, “as noted on the Drawings”, “in accordance with the details”, “a”, “the”, “all”, “any”, and “each” are intentional. Omitted words or phrases shall be supplied by inference.
2. Terms such as “approved”, “or approved equal”, “as directed”, “as required”, “as provided”, “acceptable”, and “satisfactory” mean by or to the Architect or the City.
3. Furnish: The term furnish means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
4. Install: The term install describes operations at the Project Site, including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar ions.
5. Provide: The term provide means to furnish and install, complete and ready for the intended use.

F. Reference Standards

1. For products specified by association or trade standards, comply with requirements of the standard except where more rigid requirements are specified or are required by applicable codes.
2. The date of the standard is that in effect as of bid date except where specific date is specified

1.05 MAINTENANCE

A. Cost of maintenance of systems and equipment prior to Final Acceptance will be considered as included in prices bid and no direct or additional payment will be made therefor.

1.06 WORK UNDER OTHER CONTRACTS

A. Survey work to establish property lines

1.07 FUTURE WORK

A. Construction of new community gardens, dog park, and playground.

1.08 WORK SEQUENCE

A. Construct Work in stages and at times to accommodate City operation requirements during the construction period; coordinate construction schedule and operations with City.

B. **Special operational constraints include the following**:

1. Retain fencing around the site at all times to the extent feasible

1.09 WORK DAYS AND HOURS

A. Work Days and hours: Monday-Friday inclusive, **7:00 a.m.-5:00 p.m.** local time.

B. Work at the Site on weekends or holidays is not permitted, unless Contractor requests otherwise from City in writing at least 48 hours in advance and City approves in its sole discretion.

1.10 SHUTDOWN FOR DISCOVERY OF CULTURAL RESOURCES

A. If discovery is made of items of historical archaeological or paleontological interest, immediately cease all Work in the area of discovery. Archaeological indicators may include, but are not limited to, dwelling sites, locally darkened soils, stone implements or other artifacts, fragments of glass or ceramics, animal bones, human bones, and fossils. After cessation of excavation, immediately contact City. Do not resume Work until authorization is received from City. When resumed, excavation or other activities shall be as directed by City.

1.11 COOPERATION OF CONTRACTOR AND COORDINATION WITH OTHER WORK

A. Coordinate with City and any City forces, or other contractors and forces, as required by Document 00 7200 (General Conditions).

1.12 PARTIAL OCCUPANCY/UTILIZATION REQUIREMENTS

A. Allow City to take possession of and use any completed or partially completed portion of the Work during the progress of the Work as soon as is possible without interference to the Work.

B. Possession, use of Work, and placement and installation of equipment by City shall not in any way evidence the completion of the Work or any part of it.

C. Contractor shall not be held responsible for damage to the occupied part of the Work resulting from City occupancy.

D. Make available, in areas occupied, on a 24 hour per day and 7 day per week basis if required, any utility services, heating, and cooling in condition to be put in operation at the time of occupancy.

1. Responsibility for operation and maintenance of said equipment shall remain with Contractor.
2. Make, and City shall certify, an itemized list of each piece of equipment so operated with the date operation commences.
3. Itemized list noted above shall be basis for commencement of warranty period for equipment.
4. City shall pay for utility cost arising out of occupancy by City during construction.

E. Use and occupancy by City prior to acceptance of Work does not relieve Contractor of its responsibility to maintain insurance and bonds required under the Contract until entire Work is completed and accepted by City.

F. Prior to date of Final Acceptance of the Work by City, all necessary repairs or renewals in Work or part thereof so used, not due to ordinary wear and tear, but due to Defective materials or workmanship or to operations of Contractor, shall be made at expense of Contractor, as required in Document 00 7200 (General Conditions).

G. Use by City of Work or part thereof as contemplated by this Section 01 1100 shall in no case be construed as constituting acceptance of Work or any part thereof. Such use shall neither relieve Contractor of any responsibilities under Contract, nor act as waiver by City of any of the conditions thereof.

H. City may specify in the Contract Documents that portions of the Work, including electrical and mechanical systems or separate structures, shall be substantially completed on dates described in this Section 01 1100, if any, prior to Substantial Completion of all of the Work. Notify City in writing when Contractor considers any such part of the Work ready for its intended use and Substantially Complete and request City to issue a Certificate of Substantial Completion for that part of the Work.

1.13 CONTRACTOR USE OF SITE

A. Access is available to the Site from **Blake Street, Acton Street, Parker Street, Carleton Street, Derby Street, and Ward Street**. Contractor shall insert Contractor's own lock in series and ensure that the entrance is locked at the end of each work day and at other times as may be

necessary to control unauthorized entry.

B. Confine operations at Site to areas permitted by Contract Documents, permits, ordinances, and laws. Do not unreasonably encumber Site with materials or equipment.

C. Assume full responsibility for protection and safekeeping of products stored on premises. Move any stored products that interfere with operations of City or other contractor.

D. Coordinate parking, storage, staging, and Work areas with City. City will review and approve the proposed storage area for Contractor's equipment and materials. Do not store construction materials in the dripline of any tree.

E. Prior to commencement of Work or excavation, Contractor and City shall jointly survey the area adjacent to the Project area making permanent note and record of such existing damage such as cracks, sags or other similar damage. This record shall serve as a basis for determination of subsequent damage to structures, conditions or other existing improvements due to Contractor's operations. All parties making the survey shall sign the official record of existing damage. Cracks, sags or damage of any nature to the adjacent Project area, not noted in the original survey but subsequently noted, shall be reported immediately to City.

F. The Contractor shall follow all city ordinances in force during the duration of this Contract.

G. It is essential that the Contractor perform the Work with as little interference and disturbance as possible to the surrounding neighborhood.

H. When suspect materials, outside the scope of Work, are encountered during the Work or restoration process, the Contractor shall immediately contact the Project Manager for evaluation and approval of the methods for dealing with the material.

1.14 AIR QUALITY STANDARDS

A. Ensure that idling time for all heavy equipment is minimized to reduce on-Site emissions.

B. Maintain equipment in good mechanical condition.

C. Cover trucks hauling dirt.

D. Limit dust emissions during periods of high winds (greater than 15 miles per hour).

E. Replace ground cover in disturbed areas as soon as possible.

F. Enclose, cover, water, or apply soil binders to exposed stockpiles.

G. Remove earth tracked onto neighboring paved roads at least once daily.

H. Limit equipment speed to 10 miles per hour in unpaved areas.

1.15 CONSTRUCTION STAKING, MONUMENT PROTECTION AND REPLACEMENT

A. Notify City at least ten (10) Business Days prior to the need for initial staking. City will provide engineering surveys, City benchmarks, corner records, reference points, and/or monument cards that in City's judgment are necessary to establish site elevations for the Contractor to establish construction stakes in order to enable Contractor to proceed with the Work.

B. If Contractor finds any additional information is necessary, notify City in writing 2 Business Days in advance. City shall have no liability for any inadequacy unless Contractor notifies City and City fails to cure within 3 Business Days of such notice.

C. Contractor shall be responsible for laying out the Work and provide all construction staking. Contractor shall replace or repair construction stakes at own expense.

D. Contractor shall perform brush clearing and traffic control, as necessary, in City's sole judgment.

E. The Contractor shall protect and preserve all existing survey monuments, benchmarks, reference points, property monuments and stakes.

F. Whenever Contractor knows or reasonably should know that any Work activity is likely to damage or destroy any survey monuments, benchmarks, reference points, property monuments, or construction stakes, or require relocation because of necessary changes in grades or locations, provide at least 3 Business Days advance notice to City. Survey monuments, benchmarks, reference points and property monuments shall not be disturbed until authorized by the City.

G. Whenever the Contractor disturbs or removes any survey monuments, benchmarks, reference points, or property monuments, the Contractor shall replace the monument in accordance with City Standard Plan 8090 or City Standard Plan 8091, as applicable. Standard Plans are available upon request. Monument casings (boxes and lids) shall be provided by the Contractor, and dome brass markers shall be supplied by the City.

H. In the event that any non-referenced monuments become in danger of being disturbed due to construction, the Contractor shall cease the threatening activity and notify the City immediately. Response to endangered monuments is a priority call, and each monument shall be referenced in accordance with the City of Berkeley Monument Reference Guidelines, available upon request. In no case may an unreferenced monument be damaged during construction.

I. Should any monument not designated for replacement sustain damage during construction, the Contractor shall bear the expense for rebuilding it as well as for the survey work the City survey crew or its survey consultant must perform in the process. In any instance where the City deems a damaged monument to be irreplaceable, the contractor shall be fined $20,000 per monument.

J. Monument replacement must be done in a neat, workman-like manner. Pavement cuts shall be accurate, with vertical cuts to exact dimensions as shown on the Standard Plans. Monument boxes and lids shall be placed at the proper finished grade and as detailed by Standard Plan 8090 or Standard Plan 8091. Existing monument lids shall be salvaged by the Contractor and delivered to the City.

K. Each replacement monument shall be constructed such that the center of the dome brass marker is set within 0.04 foot of the referenced position. The new dome brass marker shall not receive final punching prior to seven (7) calendar days after completion of the monument construction.

L. In any event, notify City whenever any survey monuments, benchmarks, reference points, or property monuments are lost or destroyed or require relocation because of necessary changes in grades or locations.

M. If the City has elected to reference known monuments around or within the project site, a copy of the corner records for the referenced monuments shall be provided to the Contractor prior to the start of construction. For each monument that has been disturbed or removed, the replacement monument location(s) will be established by the City's survey crew or its survey consultant after final pavement is completed and upon request by the Contractor.

N. All City of Berkeley Monuments located within the project area must be referenced, prior to work commencing, by a licensed land surveyor as required by Section 8771 of the Business and Professions Code. Corner Records of this work must be submitted for filing to both the County Surveyor of Alameda County, and the City of Berkeley, Public Works Department, Engineering Division, Survey Section.

O. Illegible survey requests or requests without proper notification (at least 3 Business Days in advance), may result in delayed response. No extension of Contract Time will be allowed due to such delays.

1.16 GEOTECHNICAL DATA AND EXISTING CONDITIONS

A. Available Documentation: In accordance with, and subject to, the provisions of Document 00 3132 (Geotechnical Data and Existing Conditions), the following documentation is available for review. This information is not part of the Contract Documents.

1. **Supplemental Geotechnical Recommendations, Santa Fe Trackbed to Park Conversion Project**

Berkeley, CA
ENGEO
February 27, 2025

2. **Geotechnical Exploration, Santa Fe Trackbed to Park Conversion Project**
Berkeley, CA
ENGEO
November 18, 2022, Revised January 6, 2023

1.17 PROTECTION OF EXISTING STRUCTURES AND UNDERGROUND FACILITIES

A. The Drawings may indicate existing above- and below-grade structures, drainage lines, storm drains, sewers, water lines, gas lines, electrical lines, hot water lines, and other similar items and Underground Facilities that are known to City. At least (2) two Business Days, or as otherwise noted, prior to commencement of excavation, notify the owners of the following Underground Facilities:

1. **Water lines:** EBMUD
2. **Sewer lines**: Berkeley Public Works Department
3. **Telephone Conduit**: Telephone Provider
4. **Cable**: Cable Provider
5. **Electrical Lines**: PG&E
6. **Gas Lines**: PG&E

B. Where overhead service to a structure, known to receive service, does not exist, then underground service shall be assumed to exist.

C. Attention is also directed to the existence of overhead power and telephone lines.

D. Perform pot-holing by hand within 24 inches (in any direction) of the Underground Facilities. This may be done on an area-by-area basis, but shall be accomplished at least 7 calendar days in advance of the date of construction within such area.

E. No attempt has been made to locate utilities on private property such as sprinkler irrigation systems or electrical conduits on the project site or adjacent property. Contractor is responsible for contacting all property owners as necessary, and locating and marking utilities in the vicinity of the work prior to construction.

F. In addition to reporting, if a utility is damaged, Contractor must take appropriate action as provided in Document 00 7200 (General Conditions).

G. Additional compensation or extension of time on account of utilities not indicated or otherwise brought to Contractor's attention including reasonable action taken to protect or repair damage shall be determined as provided in Document 00 7200 (General Conditions).

1.18 PERMITS

A. Permits, agreements, or written authorizations that are known by City to apply to this Project are listed below:

1. City of Berkeley Building Permit
2. Construction General Permit Storm Water Pollution Prevention Plan (SWPPP)
3. Cal/OSHA Permit. Obtain, as applicable, permit(s) as required by Cal/OSHA for the following:
    a. Construction of trenches or excavations that are five feet or more in depth and into which a person is required to descend.
    b. Construction or demolition of any building, structure, or scaffolding for falsework more than three stories high, or the equivalent height (36 feet).

c. Erection or dismantling of vertical shoring systems more than three stories high, or the equivalent height (36 feet).

4. The local Cal/OSHA district office is located at:

CAL/OSHA Headquarters
1515 Clay Street, Suite 1303
Oakland, CA 94612

(510) 622-2916

B. All other permits that may be required, such as electrical, mechanical, fire prevention, irrigation, grading, slope protection, tree cutting, etc., have not been applied for and shall be obtained by Contractor. Applicable permit fees will be reimbursed to the extent specified in Document 00 7200 (General Conditions).

1.19 ACTUAL DAMAGES FOR PERMIT VIOLATIONS

A. In addition to damages which are impracticable or extremely difficult to determine, for which liquidated damages will be assessed as described in Document 00 5200 (Agreement) and Document 00 7200 (General Conditions), City may incur actual damages, including fines imposed by any regulatory agency, resulting from **loss of use, or from** use in violation of legal or regulatory requirements where the violations result from Contractor's activities. Continuous operation in compliance with legal or regulatory requirements is essential to avoid discharges that would violate applicable regulations. Violations or threatened violations may subject City to fines and/or other costs or civil liabilities.

B. Contractor shall be liable for and shall pay City the amount of any actual losses in addition to liquidated damages or other remedies provided by the Contract Documents.

C. The amount of liquidated damages provided in Document 00 5200 (Agreement) and Document 00 7200 (General Conditions) is not intended to include, nor does the amount include, any damages incurred by City for reasons other than those listed in that paragraph. Any money due or to become due to Contractor may be retained by City to cover both the liquidated and the actual damages described above and, should such money not be sufficient to cover such damages, City shall have the right to recover the balance from Contractor or its sureties.

PART 2 - PRODUCTS

2.01 REFERENCE STANDARDS

A. For products specified by association or trade standards, comply with requirements of standard, except where more rigid requirements are specified or are required by applicable codes.

2.02 PRODUCTS ORDERED IN ADVANCE

A. As provided in Document 00 7200 (General Conditions) and Section 01 2000 (Measurement and Payment), and subject to all other provisions of the Contract Documents, City will pay for the following materials and equipment prior to incorporation into the Work as long as the receipt is submitted with the pay application:

1. N/A

PART 3 - EXECUTION – NOT USED

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 2000

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes description of requirements and procedures for determining amount of Work performed and for obtaining payment for Work performed.

1.02 REFERENCES

A. California Public Contract Code

B. Code of Civil Procedures

C. Government Code

1.03 COMPOSITION AND SCOPE OF CONTRACT SUM

A. Scope of Contract Sum

1. The Contract Sum for performance of the Work under Contract Documents, or under any Bid item, allowance, or Alternate, shall include full compensation for all Work required under the Contract Documents, including without limitation, all labor, materials, taxes, transport, handling, storage, supervision, administration, and all other items necessary for the satisfactory completion of the Work, whether or not expressly specified or indicated, incidental work and unexpected expenses, and all terms, conditions, requirements and limitations set forth in the Contract Documents.
2. Contract Sum may be expressed as lump sum, unit price, GMP, allowance, or combination thereof.

B. Unit Price items

1. Quantity of Work to be paid for under any item for which a unit price is fixed in Contract Documents shall be determined by City based on, so far as practicable, actual number of units satisfactorily completed, as determined by City and certified by Contractor, within prescribed or ordered limits, and no payment will be made for Work unsatisfactorily performed or done outside of limits.
2. Unit Prices shall apply to Work covered by unit prices so long as actual quantities performed on the Project are not less than 75 percent or greater than 125 percent of the estimated quantities bid or otherwise stated in the Contract Documents. If actual quantities exceed these parameters, then the unit price shall be adjusted by an amount to reflect the Contractor's incremental cost differential resulting from increased or decreased economies of scale.

C. Lump Sum Items

1. When estimated quantity for specific portion of Work is not indicated and/or Work is designated as lump sum, payment will be on a lump sum basis for Work satisfactorily completed in accordance with Contract Documents.
2. Payment for lump sum Work, or items of Work subject to a lump sum (e.g. without limitation, change order work), shall be made on the basis of satisfactory completion of such Work or work item, earned in progressive stages in accordance with the Contract Documents, up to but not exceeding the Contractor's percentage completion of the Work or item.
3. Lump sum items shall be paid based upon the approved Schedule of Values, which shall be

used to measure progressive payments based upon satisfactory progress towards completion of the item.

D. Allowance Items

1. Allowances: Allowance Work will be authorized by City in writing, following change order procedures to determine cost, supporting documentation and authorization to proceed. Unused allowance amounts at Contract completion shall reduce the Contract price accordingly.

1.04 PAYMENT PROCEDURES

A. Schedule of Values:

1. Within ten calendar days from issuance of Notice of Award and prior to the Contractor's first Application for Payment, Contractor shall submit a detailed breakdown of its Bid by scheduled Work items and/or activities, including coordination responsibilities and Project Record Documents responsibilities. Where more than one Subcontractor comprises the work of a Work item or activity, the Schedule of Values shall show a separate line item for each subcontract. Contractor shall furnish such breakdown of the total Contract Sum by assigning dollar values (cost estimates) to each applicable Progress Schedule network activity, which cumulative sum equals the total Contract Sum. This breakdown shall be referred to as the Schedule of Values.
2. Contractor's overhead, profit, insurance, cost of bonds (except to the extent expressly identified in a Bid item) and/or other financing, as well as "general conditions costs," (e.g., Site cleanup and maintenance, temporary roads and access, off-Site access roads, temporary power and lighting, security, and the like), shall be prorated through all activities so that the sum of all the Schedule of Values line items equals Contractor's total Contract Sum, less any allowances designated by City. Scheduling, record documents and quality assurance control shall be separate line items.
3. City will review the breakdown in conjunction with the Progress Schedule to ensure that the dollar amounts of this Schedule of Values are, in fact, reasonable cost allocations for the Work items listed. Upon favorable review by City, City will accept this Schedule of Values for use. City shall be the sole judge of fair market cost allocations.
4. City will reject any attempt to increase the cost of early activities, i.e., "front loading," resulting in a complete reallocation of moneys until such "front loading" is corrected. Repeated attempts at "front loading" may result in suspension or termination of the Work for default, or refusal to process progress payments until such time as the Schedule of Values is acceptable to City.

B. Contractor's Requests for Progress Payments

1. If requested by Contractor, progress payments will be made monthly, under the following conditions:
2. On or before the 25th Day of each month, Contractor shall submit to City five copies of an Application for Payment for the cost of the Work put in place during the period from the last Day of the previous month to the end of the current month, along with one copy of an updated Progress Schedule. Such Applications for Payment shall be for the expected total value of activities completed or partially completed, based upon Schedule of Values prices (or Bid item prices if unit price) of all labor and materials incorporated in the Work up until midnight of the last Day of that one month period, less the aggregate of previous payments. Accumulated retainage shall be shown as separate item in payment summary. City and Contractor will reconcile any differences in the field, based on the reconciled monthly report sheets. If Contractor is late submitting its Application for Payment, that Application may be processed at any time during the succeeding one-month period, resulting in processing of Contractor's Application for Payment being delayed for more than a Day for Day basis.
3. Except as otherwise provided in a labor compliance program applicable to the Work (if any) or as otherwise required by City, concurrently with each Application for Payment, Contractor shall submit to the City the Contractor's and its Subcontractors' certified payroll records required to

be maintained pursuant to Labor Code Section 1776 for all labor performed during pay periods ending during the period covered by the Application for Payment.

4. No progress payment will be processed prior to City receiving all requested, acceptable schedule update information and certified payrolls, and in City's sole and absolute discretion, City may deny the entire Application for Payment for noncompliance.
5. Each Application for Payment shall list each Change Order and Construction Change Directive ("CCD") executed prior to date of submission, including the Change Order/CCD Number, and a description of the Work activities, consistent with the descriptions of original Work activities. Contractor shall submit a monthly Change Order/CCD status log to City.
6. If City requires substantiating data, Contractor shall submit information requested by City, with cover letter identifying Project, Application for Payment number and date, and detailed list of enclosures. Contractor shall submit one copy of substantiating data and cover letter for each copy of Application for Payment submitted.
7. If Contractor fails or refuses to participate in monthly Work reconciliations or other construction progress evaluation with City, Contractor shall not receive current payment until Contractor has participated fully in providing construction progress information and schedule update information to City.

C. City's Review of Progress Payment Applications

1. City will review Contractor's Application for Payment following receipt and during the Progress Schedule and Billing Meeting. If adjustments need to be made to percent of completion of each activity, City will make appropriate notations and return to Contractor. Contractor shall revise and resubmit. All parties shall update percentage of completion values in the same manner, i.e., express value of an accumulated percentage of completion to date.
2. If City determines that portions of the Application for Payment are not proper or not due under the Contract Documents, then City may approve the other portions of the Application for Payment, and in the case of disputed items or Defective Work not remedied, may withhold up to 150 percent of the disputed amount from the progress payment.
3. Pursuant to California Public Contract Code §20104.50, if City fails to make any progress payment within 30 calendar days after receipt of an undisputed and properly submitted Application for Payment from Contractor, City shall pay interest to the Contractor equivalent to the legal rates set forth in subdivision (a) of Section 685.010 of the California Code of Civil Procedure. The 30-Day period shall be reduced by the number of calendar days by which City exceeds the seven-Day return requirement set forth herein.
4. As soon as practicable after approval of each Application for Payment for progress payments, City will pay to Contractor in manner provided by law, an amount equal to 95 percent of the amounts otherwise due as provided in the Contract Documents, or a lesser amount if so provided in Contract Documents and by law, provided that payments may at any time be withheld if, in judgment of City, Work is not proceeding in accordance with Contract, or Contractor is not complying with requirements of Contract, or to comply with stop notices or to offset liquidated damages accruing or expected. In City's sole discretion, if Contractor has failed to comply with either its Progress Schedule update or project record documents requirements, City may retain an additional 5% of any earned amounts until such requirements are satisfied.
5. Before any progress payment or final payment is due or made, Contractor shall submit satisfactory evidence that Contractor is not delinquent in payments to employees, Subcontractors, suppliers, or creditors for labor and materials incorporated into Work. This specifically includes, without limitation, conditional lien release forms for the current progress payment and unconditional release forms for past progress payments. This also includes copies of certified payroll from contractor and subcontractors for the current payment period.

D. Payment for Material and Equipment Not Yet Incorporated Into the Work

1. No payment shall be made for materials or equipment not yet incorporated into the Work, except as specified elsewhere in the Contract Documents or as may be agreed to by City in its sole discretion. Where Contractor requests payment on the basis of materials and equipment not incorporated in the Work, Contractor must satisfy the following conditions:
2. The materials and/or equipment shall be delivered and suitably stored at the Site or at another local location agreed to in writing, for example, a mutually acceptable bonded and insured warehouse.
3. Full title to the materials and/or equipment shall vest in City at the time of delivery to the Site, warehouse or other storage location. Obtain a negotiable warehouse receipt, endorsed over to City for materials and/or equipment stored in an off-site warehouse. No payment will be made until such endorsed receipts are delivered to City.
4. Stockpiled materials and/or equipment shall be available for City inspection, but City shall have no obligation to inspect them and its inspection or failure to inspect shall not relieve Contractor of any obligations under the Contract Documents. Materials and/or equipment shall be segregated and labeled or tagged to identify these specific Contract Documents.
5. After delivery of materials and/or equipment, if any inherent or acquired defects are discovered, defective materials and/or equipment shall be removed and replaced with suitable materials and/or equipment at Contractor's expense.
6. At Contractor's expense, insure the materials and/or equipment against theft, fire, flood, vandalism, and malicious mischief, as well as any other coverages required under the Contract Documents.
7. Contractor's Application for Payment shall be accompanied by a bill of sale, invoice or other documentation warranting that City has received the materials and equipment free and clear of all liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect City interest therein, all of which must be satisfactory to City. This documentation shall include, but not be limited to, conditional releases of mechanics' liens and stop notices from all those providing materials and equipment as to which the Application for Payment relates, as well as unconditional releases of the same from the same as to the previous Application for Payment for which they have not already been provided. Amounts previously paid for materials and equipment prior to incorporation into the Work shall be deducted from amounts otherwise due Contractor as they are incorporated.

1.05 FINAL PAYMENT

A. Final Payment

1. As soon as practicable after all required Work is completed in accordance with Contract Documents, including punchlist, testing, record documents and Contractor maintenance after Final Acceptance, Contractor shall submit its Application for Final Payment.
2. Provided Contractor has met all conditions required for Final payment, City will pay to Contractor, in manner provided by law, unpaid balance of Contract Sum of Work (including, without limitation, retentions), or whole Contract Sum of Work if no progress payment has been made, determined in accordance with terms of Contract Documents, less sums as may be lawfully retained under any provisions of Contract Documents or by law.

B. Final Accounting

1. Prior progress payments and change orders shall be subject to audit and correction in the final payment.
2. Contractor and each assignee under an assignment in effect at time of final payment shall execute and deliver at time of final payment, and as a condition precedent to final payment, Document 00 6530 (Agreement and Release of Claims).

1.06 SUBSTITUTION OF SECURITIES

A. **Public Contract Code Section 22300**. In accordance with the provisions of Public Contract Code Section 22300, substitution of securities for any moneys withheld under Contract Documents to ensure performance is permitted under following conditions:

1. At request and expense of Contractor, securities listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by Contractor and City which are equivalent to the amount withheld under retention provisions of Contract shall be deposited with Controller or with a state or federally chartered bank in California, as the escrow agent, who shall then pay such moneys to Contractor. Upon satisfactory completion of Contract, securities shall be returned to Contractor.
2. Alternatively, Contractor may request and City shall make payment of retentions earned directly to the escrow agent at the expense of Contractor. At the expense of Contractor, Contractor may direct the investment of the payments into securities and receive the interest earned on the investments upon the same terms provided for securities deposited by Contractor. Upon satisfactory completion of the work of the Contract Documents, Contractor shall receive from escrow agent all securities, interest, and payments received by the escrow agent from City. Contractor shall then pay to each Subcontractor, not later than 10 calendar days after receipt of the payment, the respective amount of interest earned, net of costs attributed to retention withheld from each Subcontractor, on the amount of retention withheld to insure the performance of Contractor.
3. Contractor shall be beneficial owner of securities substituted for moneys withheld and shall receive any interest thereon.
4. Contractor may enter into an escrow agreement, form included in Contract Documents, as authorized under Public Contract Code Section 22300, specifying amount of securities to be deposited, terms and conditions of conversion to cash in case of default of Contractor, and termination of escrow upon completion of Contract Documents.
5. Public Contract Code Section 22300, in effect on Bid Day, is hereby incorporated in full by this reference and shall supersede anything inconsistent therewith.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 2600

MODIFICATION PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes requirements that supplement the paragraphs of Document 00 7200 (General Conditions).

B. Description of procedures for modifying the Contract Documents and determining costs for changes in contract amounts.

1.02 PROCEDURES FOR CONTRACTOR INITIATED CHANGE ORDER

A. Contractor-Initiated Change Proposal Request (CPR) and Procedures:

1. Contractor may initiate changes by submitting a Change Proposal Request ("CPR").
2. Whenever Contractor elects or is entitled to submit a CPR, Contractor shall prepare and submit to City for consideration a CPR using the form included in this Project Manual. All CPRs must contain a complete breakdown of costs of credits, deducts and extras; itemizing materials, labor, taxes, Markup and any requested changes to Contract Time. All Subcontractor Work shall be so indicated. Individual entries on the CPR form shall include applicable Schedule of Values code, with all amounts determined as provided herein. After receipt of a CPR with a detailed breakdown, City will act promptly thereon.
3. If City accepts a CPR, City will prepare a Change Order for City and Contractor signatures.
4. If CPR is not acceptable to City because it does not agree with Contractor's proposed cost and/or time, City will provide comments thereto. Contractor will then, within seven (7) calendar days (except as otherwise provided herein), submit a revised CPR.
5. When necessity to proceed with a change does not allow City sufficient time to conduct a proper check of a CPR (or revised CPR), City may issue a Change Directive (CD) as provided below.

B. Contractor-Initiated Request for Information (RFI) Procedures, Requirements and Limitations:

1. Contractor may submit RFI's for clarifications in City-prepared Contract Documents, which may result in the Contractor submitting a CPR.
2. Whenever Contractor requires information regarding the Project or City-prepared Contract Documents, or receives a request for such information from a Subcontractor, Contractor may prepare and deliver an RFI to City. Contractor shall use RFI format provided on approval by City. Contractor shall not issue an RFI to City solely to clarify Contractor-prepared Construction Documents. Contractor must submit time critical RFIs at least 30 calendar days before scheduled start date of the affected Work activity. Contractor shall reference each RFI to an activity of Progress Schedule and shall note time criticality of the RFI, indicating time within which a response is required. Contractor's failure to reference RFI to an activity on the Progress Schedule and note time criticality on the RFI shall constitute Contractor's waiver of any claim for time delay or interruption to the Work resulting from any delay in responding to the RFI.
3. Contractor shall be responsible for its costs to implement and administer RFIs throughout the Contract duration. Regardless of the number of RFIs submitted, Contractor shall not be entitled

to additional compensation for the effort required to submit the RFIs. Contractor shall be responsible for City's administrative costs for answering RFIs where the answer could reasonably be found by reviewing the Contract Documents, as determined by City; at City discretion, such costs may be deducted from progress payments or final payment.

4. City will respond within ten (10) calendar days from receipt of RFI with a written response to Contractor. Contractor shall distribute response to all appropriate Subcontractors.
5. If Contractor is satisfied with the response and does not request a change in Contract Sum or Contract Time, then the response shall be executed without a change.
6. If Contractor believes the response is incomplete, Contractor shall issue another RFI (with the same RFI number with the letter "A" indicating it is a follow-up RFI) to City clarifying original RFI. Additionally, City may return RFI requesting additional information should original RFI be inadequate in describing condition.

C. Time Requirements:

1. If Contractor believes that a City response to an RFI, submittal or other City direction, results in change in Contract Sum or Contract Time, Contractor shall notify City with the issuance of a preliminary CPR within ten calendar days after receiving City's response or direction, and in no event after starting the disputed work or later than the time allowed under Article 12 of Document 00 7200 (General Conditions). If Contractor also requests a time extension, or has issued a notice of delay or otherwise requests a time extension with a CPR, then Contractor shall submit a Time Impact Evaluation (TIE) required herein concurrently with the CPR and in no event later than ten calendar days after providing the notice of delay.
2. If Contractor requires more time to accurately identify the required changes to the Contract Sum or Contract Time, Contractor may submit an updated and final CPR and TIE within 14 calendar days of submitting the preliminary CPR.
3. If City agrees with Contractor's CPR and/or TIE, then City will prepare a Change Order for City and Contractor signatures. If City disagrees with Contractor, then Contractor may give notice of potential claim as provided in Article 12 of Document 00 7200 (General Conditions), and proceed thereunder.
4. Contractor must submit CPRs, notices of potential claim or Claims within the required time periods. Any failure to do so waives Contractor's right to submit a CPR or file a Claim.

D. Cost Estimate Information:

1. Contractor and subcontractors shall, upon City's request, permit inspection of the original unaltered cost estimates, subcontract agreements, purchase orders relating to the change, and documents substantiating all costs associated with its CPR or Claims arising from changes in the Work.

1.03 PROCEDURES FOR CITY INITIATED CHANGE ORDERS

A. City Initiated Change Directives (CD):

1. City may, by Change Directive ("CD") or initially by Instruction Bulletin or by following the procedures for disputed work herein, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, with or without adjustment to Contract Sum or Contract Time.
2. If at any time City believes in good faith that a timely Change Order will not be agreed upon using the foregoing procedures, or at any other time, City may issue a CD with its recommended cost and/or time adjustment (if any). Upon receipt of CD, Contractor shall promptly proceed with the change of Work involved and respond to City within ten (10) calendar days.
3. Contractor's response must be any one of following:

a. Return CD signed, thereby accepting City response, including adjustment to time and cost (if any).
b. Submit a (revised if applicable) Cost Proposal with supporting documentation (if applicable, reference original Cost Proposal number followed by letter A, B, etc. for each revision), if City so requests.
c. Give notice of intent to submit a claim as described in Article 12 of Document 00 7200 (General Conditions), and submit its claim as provided therein.

4. If CPR or the CD provides for an adjustment to any Contract Sum, the adjustment shall be based on one of the following methods:

a. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation.
b. Contractor to proceed on cost reimbursable (force account) basis while negotiating towards a firm price.
c. Cost to be determined in a manner agreed.

5. Change Directive signed by Contractor indicates the agreement of Contractor therewith, including adjustment in Contract Sum or the method for determining them. Such agreement shall be effective immediately and shall be finalized as a Change Order. Where City authorizes CD work on a time and materials basis up to a maximum amount, then Contractor shall promptly advise City upon reaching 75% of such maximum amount, otherwise Contractor shall accept fully the risk of completing the CD work without exceeding such maximum amount.

6. If Contractor does not respond promptly or disagrees with the method for adjustment (or non-adjustment) in the Contract Sum, the method and the adjustment shall be determined by City on the basis of the Contract Documents and the reasonable expenditures and savings of those performing the Work attributable to the change. If the parties still do not agree on the proper adjustment due to a Change Directive, Contractor may file a Claim per Article 12 of Document 00 7200 (General Conditions) and/or City may direct the changed work through a unilateral change order. Contractor shall keep and present an itemized accounting in a manner consistent with the SOV, together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this paragraph shall be limited to those provided herein.

7. Pending final determination of cost to City, Contractor may include amounts not in dispute in its Applications for Payment. The amount of credit to be allowed by Contractor to City for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by City. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for Markup shall be figured on the basis of net increase, if any, with respect to that change.

B. City Initiated Change Order (CO) or Request for Proposal (RFP):

1. City may initiate changes in the Work or Contract Time by issuing a Request for Proposal (“RFP”) or Change Order (“CO”) to Contractor.

2. City may issue an RFP to Contractor. Any RFP will detail all proposed changes in the Work and request a quotation of changes in Contract Sum and Contract Time from Contractor.

3. In response to an RFP, Contractor shall furnish a Change Proposal Request (CPR) within twenty-one (21) Business Days of City’s RFP. Upon approval of CPR, City may issue a Change Directive directing Contractor to proceed with extra Work.

4. If the parties agree on price and time for the work, the City will issue a Contact Change Order. If the parties do not agree on the price or time for a CPR, City may either issue a CD or decide the issue per Article 12 of Document 00 7200 (General Conditions). Contractor shall perform the changed Work notwithstanding any claims or disagreements of any nature.

1.04 PROCEDURES THAT APPLY TO CONTRACTOR- AND CITY-INITIATED CHANGE ORDERS

A. Adjustment of Schedules to Reflect Change Orders or CDs:

1. Contractor shall revise Schedule of Values and Application for Payment forms to record each authorized Change Order or CD as a separate line item and adjust the Contract Sum as shown thereon prior to the next monthly pay period.
2. Contractor shall revise the Progress Schedules prior to the next monthly pay period, to reflect CO or CD.
3. Contractor shall enter changes in Project Record Documents prior to the next monthly pay period.

B. Required Documentation for Adjustments to Contract Amounts:

1. For all changes and cost adjustments requested, Contractor shall provide documentation of change in Contract Amounts asserted, with sufficient data to allow evaluation of the proposal.
2. In all requests for compensation, cost proposals, estimates, claims and any other calculation of costs made under the Contract Documents, Contractor shall breakout and quantify costs of labor, equipment and materials identified herein, for Contractor and subcontractors of any tier.
3. Contractor shall, on request, provide additional data to support computations for:
   a. Quantities of products, materials, labor and equipment.
   b. Taxes, insurance, and bonds.
   c. Justification for any change in Contract Time and new Progress Schedule showing revision due, if any.
   d. Credit for deletions from Contract, similarly documented.
4. Contractor shall support each claim or computation for additional cost, with additional information including:
   a. Origin and date of claim or request for additional compensation.
   b. Dates and times Work was performed and by whom.
   c. Time records and wage rates paid.
   d. Invoices and receipts for products, materials, equipment and subcontracts, similarly documented.
   e. Credit for deletions from Contract, similarly documented.

C. Responses and Disputes:

1. For all responses for which the Contract Documents do not provide a specific time period, recipients shall respond within a reasonable time.
2. For all disputes arising from the procedures herein, Contractor shall follow Article 12 of Document 00 7200 (General Conditions).

1.05 COST DETERMINATION FOR CHANGES IN CONTRACT AMOUNTS

A. Calculation of Total Cost of Extra Work:

1. Total cost of changed Work, extra Work or of Work omitted shall be the sum of three components defined immediately below as: Component 1 (Direct Cost(s)); Component 2 (Markup); and, Component 3 (bonds, insurance, taxes)
2. Component 1: Direct Cost(s) of labor, equipment and materials, is calculated based upon actually incurred (or omitted) labor costs, material costs and equipment rental costs, as defined herein;
3. Component 2: Markup on such actually incurred Direct Costs, is applied in the percentages identified below; and
4. Component 3: Actual additional costs for any additionally required insurance, bonds, and/or taxes, defined herein, is calculated without Markup.

1.06 MEASUREMENT OF DIRECT COST OF CONSTRUCTION (COST COMPONENT NO. 1)

A. Composition of Component 1 (Direct Cost of Construction):

1. Component 1 has four subcomponents, also referred to as “LEMS”:

   a. Labor (Component 1A)
   b. Equipment (Component 1B)
   c. Materials (Component 1C)
   d. Subcontractors (Component 1D)

B. Measurement of Cost of Labor (Component 1A):

1. Cost of Labor shall be calculated as: Cost of labor for workers (including forepersons when authorized by City) used in actual and direct performance of the subject work, whether employer is Contractor, Subcontractor or other forces, in the sum of the following:

   a. Actual Wages: Actual wages paid shall include any employer payments to or on behalf of workers for health and welfare, pension, vacation, and similar purposes.
   b. Labor surcharge: Payments imposed by local, county, state, and federal laws and ordinances, and other payments made to, or on behalf of, workers, other than actual wages as defined, such as worker’s compensation insurance. Such labor surcharge shall not exceed generally accepted standards in the State for labor rates in effect on date upon which extra Work is accomplished.
   c. Cost of labor shall include no other costs, fees or charges.

2. Labor cost for operators of equipment owned and operated by Contractor or any Subcontractor, shall be no more than rates of such labor established by collective bargaining agreements for type of worker and location of Work, whether or not owner-operator (i.e., Contractor or Subcontractor) is actually covered by such an agreement.

3. Cost of labor shall be recorded and documented in certified payroll records, maintained in the form customary and/or required in the State, delivered to City weekly.

C. Measurement of Cost of Equipment (Component 1B):

1. Measurement of Component 1B (Cost of Equipment). Cost of Equipment shall be calculated as: Cost of Equipment used in actual and direct performance of the subject work, whether by Contractor, Subcontractor or other forces. Cost of Equipment shall be calculated as herein described.

2. For rented equipment, cost will be based on actual rental invoices, appropriate for the use and duration of the work. Equipment used on extra Work shall be of proper size and type. If, however, equipment of unwarranted size or type and cost is used, cost of use of equipment shall be calculated at rental rate for equipment of proper size and type, as determined by City.

3. Equipment rental cost for Contractor or Subcontractor-owned equipment, shall be determined by reference to, and not in excess of, the generally accepted standards in the State for equipment rental rates in effect on date upon which extra Work is accomplished. If there is no applicable rate for an item of equipment, then payment shall be made for Contractor- or Subcontractor-owned equipment at rental rate listed in the most recent edition of the CalTrans Standard Schedules and Specifications, and absent a rental rate therein, then the Association of Equipment Distributors (AED) book.

4. In all cases, rental rates paid shall be deemed to cover cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.

5. Unless otherwise specified, manufacturer’s ratings, and manufacturer-approved modifications, shall be used to classify equipment for determination of applicable rental rates. Individual pieces of equipment or tools not listed in said publication and having a replacement value of $100 or less, whether or not consumed by use, shall be considered to be small tools and no

payment will be made therefore as payment is included in payment for labor. Rental time will not be allowed while equipment is inoperative due to breakdowns.

6. For equipment on Site, rental time to be paid for equipment shall be time equipment is in operation on extra Work being performed or on standby as approved by City. The following shall be used in computing rental time of equipment:
   a. When hourly rates are listed, less than 30 minutes of operation shall be considered to be ½ hour of operation.
   b. When daily rates are listed, less than four hours of operation shall be considered to be ½ Day of operation.
   c. Rates shall correspond to actual rates paid by Contractor, i.e., if Contractor pays lower weekly or monthly rates, then same shall be charged to City.
7. For equipment that must be brought to Site to be used exclusively on extra Work, cost of transporting equipment to Site and its return to its original location shall be determined as follows:
   a. City will pay for costs of loading and unloading equipment.
   b. Cost of transporting equipment in low bed trailers shall not exceed hourly rates charged by established haulers.
   c. Cost of transporting equipment shall not exceed applicable minimum established rates of California Public Utilities Commission or appropriate State Dept. of Transportation.
   d. City will not make any payment for transporting and loading and unloading equipment if equipment is used on Work in any other way than upon extra Work.
   e. Rental period may begin at time equipment is unloaded at Site of extra Work and terminate at end of the performance of the extra Work or Day on which City directs Contractor to discontinue use of equipment, whichever first occurs. Excluding Saturdays, Sundays, and City legal holidays, unless equipment is used to perform extra Work on such Days, rental time to be paid per Day shall be four hours for zero hours of operation, six hours for four hours of operation and eight hours for eight hours of operation, time being prorated between these parameters. Hours to be paid for equipment that is operated less than eight hours due to breakdowns, shall not exceed eight less number of hours equipment is inoperative due to breakdowns.
8. Employee vehicles are not part of Component 1A, rather, are included within Component 2 (Markup).
9. Equipment costs shall include no other costs, fees or charges.

D. Measurement of Cost of Material (Component 1C):

1. Cost of Material shall be calculated as herein described. Cost of such materials will be cost to purchaser (Contractor, Subcontractor or other forces) from supplier thereof, except as the following are applicable:
2. If cash or trade discount by actual supplier is offered or available to purchaser, it shall be credited to City notwithstanding fact that such discount may not have been taken.
3. For materials salvaged upon completion of Work, salvage value of materials shall be deducted from cost, less discounts, of materials.
4. If cost of a material is, in opinion of City, excessive, then cost of material shall be deemed to be lowest current wholesale price at which material is available in quantities concerned delivered to Site, less any discounts as provided in this Paragraph.
5. Material costs shall include no other costs, fees or charges.

E. Measurement of Cost of Subcontractors (Component 1D):

1. Where reimbursed or calculated per the terms of the Contract Documents, change order or Change Directive, cost of Subcontractors shall be calculated as amounts earned by

Subcontractors procured in compliance with the Contract Documents and approved by the City, provided such subcontractor earned amounts meet the following requirements:

a. Such amounts are earned under the terms of the Subcontracts and the Work complies with the terms of the Contract Documents;
b. Such amounts are properly requested, documented and permitted under the terms of the subcontract(s) and the Contract Documents.
c. Total cost to City of Direct Costs of Construction (labor, equipment, materials), Markup, and costs of bonds, insurance and taxes, conform to contract limitations (i.e., totals paid by City do not exceed the 20% Markup limitation.).

1.07 MEASUREMENT AND PAYMENT OF MARK UP (COST COMPONENT 2)

A. Markup Percentages for Changed Work (Component 2):

1. Markup on Direct Cost of labor and materials for extra Work shall be 15%. Markup on Direct Cost of equipment for extra Work shall be 15%.

2. When extra Work is performed by Subcontractors, regardless of the number of tiers, total Markup on “Component 1” Direct Costs shall not exceed 20%. Contractor and its Subcontractors shall divide the 20% as they may agree.

3. Under no circumstances shall the total Markup on any extra Work exceed twenty (20) percent, stated as a percent of the Direct Cost of labor, equipment and materials. This limitation shall apply regardless of the actual number of subcontract tiers.

4. On proposals covering both increases and decreases in Contract Sum, Markup shall be allowed on the net increase only as determined above. When the net difference is a deletion, no percentage for Markup shall be allowed, but rather an appropriate percentage deduction shall be issued in the amount of the net difference.

B. Measurement and Payment of Mark Up (Component 2):

1. Mark Up (Component 2) provides complete compensation to Contractor for:

a. All Contractor profit;
b. All Contractor home-office overhead;
c. All Contractor assumption of risk assigned to Contractor under the Contract Documents;
d. Subject to the qualifications below regarding self-performed work, all General Conditions and General Requirements.

2. Profit. Compensation for profit included within Component 2 (Mark Up), includes without limitation: Fees of all types, nature and description; and Profit and margins of all types, nature and description.

3. Home Office Expenses. Compensation for home office expenses included within Component 2 (Mark Up), includes without limitation: Salaries and other compensation of any type of Contractor’s personnel (management, administrative and clerical), and all direct and indirect operating, travel, payroll, safety, storage, quality control, maintenance and overhead costs of any nature whatsoever, incurred by Contractor at any location other than the Project specific site office, including without limitation, Contractor’s principal or branch offices; insurance premiums other than those for Project specific insurance directed by the City in a change order; all hardware, software, supplies and support personnel necessary or convenient for Contractor’s capture, documentation and maintenance of its costs and cost accounting data and cost accounting and control systems and work progress reporting.

4. Assumption of Risk. Compensation for Contractor’s assumption of risk under the Contract Documents, included within Component 2 (Mark Up), includes without limitation loss, cost, damage, expense or liability resulting directly or indirectly from any of the following causes (“unallowable costs”), for Contractor and subcontractors of any tier: noncompliance with the Contract Documents, fault or negligence, defective or non-conforming Work, by Contractor or

any Subcontractor or Vendor of any tier or anyone directly or indirectly employed by any of them, or for whose acts or omissions any of them are responsible or liable at law or under the Contract Documents; cost overruns of any type; costs in excess of any lump sum, not to exceed amount or GMP; costs resulting from bid or "buy out" errors, unallocated scope, or incomplete transfer of scope or contract terms to subcontractors; any costs incurred by Contractor relating to a Change in the Work without a Change Order or Change Directive in accordance with the Contract Documents; costs for work or materials for which no price is fixed in the Contract Documents, unless it is expressly specified that such work or material is to be paid for as extra work.

5. General Conditions and Division 1 General Requirements. Compensation for Contractor's General Conditions and General Requirements Costs included within Component 2 (Mark Up), includes compensation to Contractor for: Contractor's direct costs, without overhead or profit, for salaries and related forms of compensation and employer's costs for labor and personnel costs, of Contractor's employees and subconsultant's employees (if any), while and only to the extent they are performing Work at the Project Site. Personnel and Work compensated by this Component include without limitation: All required Project management responsibilities; all on-site services; monthly reporting and scheduling; routine field inspection of Work; general superintendence; general administration and preparation of cost proposals, schedule analysis, change orders and other supporting documentation as necessary; salaries of project superintendent, project engineers, project managers, safety manager, other manager, timekeeper, and secretaries; all cost estimates and updates thereto; development, validation and updates to the project schedule; surveying; estimating. Compensation for Contractor's General Requirements Costs included within Component 2 (Mark Up), compensates Contractor for its "General Requirements" Costs, including without limitation: all scheduling hardware, software, licenses, equipment, materials and supplies; purchase, lease or rental, build out, procurement, supporting equipment and maintenance of temporary on-Site facilities, Project field and office trailers and other temporary facilities, office equipment and supporting utilities; platforms, fencing, cleanup and jobsite security; temporary roads, parking areas, temporary security or safety fencing and barricades, etc.; all Contractor's motor vehicles used by any Contractor's personnel, and all costs thereof; all health and safety requirements, required by law or City procedures; all surveying; all protection of Work; handling and disposal fees; final cleanup; repair or maintenance; other incidental Work; all items, activities and function similar to any of those described above; all travel, entertainment, lodging, board and the like.

6. Personnel compensated by the Markup Component do not include workers of foreman level or below in the case of self-performed work; rather, such personnel shall be treated as a Direct Cost of Construction. Costs compensated by the Markup component do not include temporary measures specifically required by the changed work, not otherwise required or ongoing in the prosecution of the Work, that commence specifically to support the changed work and conclude with the completion of the changed work. Such costs shall be treated as Direct Costs of Construction. Examples of General Requirements costs that this component may not cover are the following: temporary barricades or fencing of specific areas required specifically for the changed work; cranes required specifically for the changed work; extra security required specifically for the changed work.

1.08 MEASUREMENT AND PAYMENT OF BONDS INSURANCE TAXES (COMPONENT 3)

A. Measurement of Bonds, Insurance, Taxes (Component 3):

1. Component 3 (Bonds, Insurance, Taxes) consists of the cost of bonds, insurance and taxes, also referred to as **"BIT".** All State sales and use taxes, applicable County and applicable City sales taxes, shall be included. Federal and Excise tax shall not be included.

2. There is no mark up on BIT.

1.09 EFFECT OF PAYMENT

A. Change Order Compensation is All Inclusive.

1. Except as provided expressly below regarding changes that extend the Contract Time, payment of calculated cost of extra work constitutes full and complete compensation for costs or expense arising from the extra Work, and is intended to be all inclusive.
2. Payment for Direct Cost of Construction (Component 1 or LEMS) is intended to be all-inclusive. Any costs or risks not delineated within cost of labor, equipment or materials herein, shall be deemed to be within the costs and risks encompassed by the applicable Markups and unallowable in any separate amount.
3. Payment of Markup (Component 2) is intended to be all-inclusive. Contractor waives claims for any further or different payment of cost and risk items delineated herein, other than the allowable percentage markup on costs set forth in the Contract Documents; such separate, further or different cost or risk items shall be unallowable, waived and liquidated within the allowable percentage markup.
4. Contractor shall recover no other costs or markups on extra work of any type, nature or description.

B. Exception for Changes Extending the Contract Time.

1. Where a change in the Work extends the Contract Time, Contractor may request and recover additional, actual direct costs, provided Contractor can demonstrate such additional costs are (i.) actually incurred performing the Work, (ii.) not compensated by the Markup allowed, and (iii) directly result from the extended Contract Time. Contractor shall make such request and provide such documentation following all required procedures, documentation and time requirements in the Contract Documents, and subject to all contract limitations of liability. Contractor may not seek or recover such costs using formulas (e.g., Eichleay).

C. Limits of Liability / Accord and Satisfaction.

1. The foregoing limits of compensation apply in all cases of claims for changed Work, whether calculating Change Proposal Requests, Change Orders or CDs, or calculating claims and/or damages of all types, and applies even in the event of fault, negligence, strict liability, or tort claims of all kinds, including strict liability or negligence. Contractor may recover no other costs arising out of or connected with the performance of extra Work, of any nature.
2. Under no circumstances may Contractor claim or recover special, incidental or consequential damages against City, its representatives or agents, whether arising from breach of contract, negligence, strict liability or other tort or legal theory, unless specifically and expressly authorized in the Contract Documents.
3. No change in Work shall be considered a waiver of any other condition of Contract Documents. No claim shall be made for anticipated profit, for loss of profit, for damages, or for extra payment whatever, except as expressly provided for in Contract Documents.
4. Accord and Satisfaction: Every Change Order and accepted CD shall constitute a full accord and satisfaction, and release, of all Contractor (and if applicable, Subcontractor) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay and any other type of claim. Contractor may elect to reserve its rights to disputed claims arising from or relating to the changed Work at the time it signs a Change Order or approves a CD, but must do so expressly in a writing delivered concurrently with the executed Change Order or approved CD, and must also submit a Claim for the reserved disputed items pursuant to Article 12 of Document 00 7200 (General Conditions) no later than thirty (30) calendar days after Contractor's first written notice of its intent to reserve rights. Execution of any Change Order or CD shall constitute Contractor's representation of its agreement with this provision.

1.10 MISCELLANEOUS REQUIREMENTS

A. City-Furnished Materials.

1. City reserves right to furnish materials as it deems advisable, and Contractor shall have no claims for costs and Markup on such materials.

B. Records And Certification.

1. All charges shall be recorded daily and summarized in Change Proposal Request form attached hereto. Contractor or authorized representative shall complete and sign form each day. Contractor shall also provide with the form: the names and classifications of workers and hours worked by each; an itemization of all materials used; and a list by size type and identification number of equipment and hours operated.
2. City shall have the right to audit all records in possession of Contractor relating to activities covered by Contractor's claims for modification of Contract, including CD Work. This right shall be specifically enforceable, and any failure of Contractor to voluntarily comply shall be deemed an irrevocable waiver and release of all claims then pending that were or could have been subject to Article 12 of Document 00 7200 (General Conditions).

C.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

[COST PROPOSAL FORM FOLLOWS ON NEXT PAGE]

COST PROPOSAL (CP)

Owner **Santa Fe Trackbed to Park Conversion Remediation, Demolition and Perimeter Fencing**
Contract Number _____

CP Number: _____
Date: _____
In Response To _____
RFP #, etc.

To: City of Berkeley
Attention: **Stacey Rutherford**
1947 Center Street, 5th Floor
Berkeley, CA 94704
Phone: (510) 981-6400
Fax: (510) 981-6390

From: [Insert Contractor's Name/Address]
_____
_____

This Cost Proposal is in response to the above-referenced _____ **[insert RFP, etc. as applicable]**.
Brief description of change(s): _____
_____

ITEM DESCRIPTION	PRIME CONTRACTOR	SUB 1	SUB 2	SUB 3	SUB 4	TOTAL
MATERIAL						
LABOR						
EQUIPMENT						
Other (Specify) Extended Overhead						
TOTAL COST						
Subcontractor's Overhead & Profit 15 percent						
Contractor's Overhead & Profit 15 percent						
Overhead & Profit to Contractor for Subcontractor's Work 5 percent						
SUBTOTAL						
Bond and Insurance (2.5%)						
GRAND TOTAL						
REQUESTED CHANGE IN CONTRACT TIME (CALENDAR DAYS) (Time Impact Evaluation Enclosed)						

_____
By Contractor: Signature: Date:

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 3119

PROJECT MEETINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Summary

1. Section includes description of required project meetings.

1.02 PRECONSTRUCTION CONFERENCE

A. Preconstruction Conference. City will call for and administer Preconstruction Conference at time and place to be announced (usually the week prior to start of Work at the Site). Contractor, all major Subcontractors, and major suppliers shall attend Preconstruction Conference. Agenda may include, but not be limited to, the following items:

1. Schedules
2. Personnel and vehicle permit procedures
3. Use of premises
4. Location of the Contractor's on-Site facilities & Temporary Utilities
5. Security
6. Housekeeping
7. Submittal and RFI procedures
8. Inspection and testing procedures, on-Site and off-Site
9. Utility shutdown procedures
10. Control and reference point survey procedures
11. Injury and Illness Prevention Program
12. Contractor's Initial Progress Schedule
13. Contractor's Schedule of Values
14. Contractor's Schedule of Submittals
15. Jurisdictional agency requirements
16. Project Communication Procedures
17. Modification Procedures
18. Site Access by City and Consultants
19. As-Built/Record Documents
20. Permits & Fees
21. Coordination: (Work Performed for City under separate contract). (As Appropriate)
22. City will distribute copies of minutes to attendees. Attendees shall have 7 calendar days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of Preconstruction Conference.

1.03 WEEKLY PROJECT MEETINGS

A. City will schedule and administer weekly progress meetings throughout duration of Work. Progress meetings will be held weekly unless otherwise directed by City. Meetings shall be held at City's Offices unless otherwise specified in Contract Documents.

1. City's Representative will prepare agenda and distribute it 4 calendar days in advance of meeting to Contractor.

2. Participants with agenda items shall present them.

3. The Architect/Engineer and other responsible entities shall attend meetings unless otherwise specified in Contract Documents or provided by City.
4. City shall record and distribute the meeting minutes. Minutes shall be distributed by the City to the Contractor within 3 business days after the meeting. Contractor shall distribute the minutes to those affected by decisions made at meeting. Attendees shall have five business days to submit comments or additions to the minutes. Minutes shall constitute final memorialization of results of meeting.
5. Progress meetings shall be attended by Contractor's job superintendent, major Subcontractors and suppliers, City, and others as appropriate to agenda topics for each meeting.
6. Agenda may contain the following items, as appropriate:
   a. Review, revise as necessary, and approve previous meeting minutes
   b. Review of Work progress since last meeting
   c. Status of Construction Work Schedule, delivery schedules, adjustments
   d. Submittal, RFI, and Change Order status
   e. Review of the Contractor's safety program activities and results, including report on all serious injury and/or damage accidents
   f. Other items affecting progress of Work

1.04 PROGRESS SCHEDULE AND BILLING MEETINGS

A. A meeting will be held on approximately the 20th of each month to review the schedule update submittal and progress payment application.

B. At this meeting, at a minimum, the following items will be reviewed:

1. Percent complete of each activity;
2. Time impact evaluations for Change Orders and Time Extension Request;
3. Actual and anticipated activity sequence changes;
4. Actual and anticipated duration changes; and
5. Actual and anticipated Contractor delays.
6. Waste Management Tracking/Tags
7. As-Built/Record Documents

C. These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate personnel attend. At a minimum, Contractor's General Superintendent and Scheduler shall attend these meetings.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 3230

PROGRESS SCHEDULES AND SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes description of requirements and procedures for submitting progress schedules and submittals.

1.02 CONTRACTOR TO SUBMIT PROGRESS SCHEDULES

A. Contractor shall submit original (baseline) progress schedule two weeks prior to the first Application for Payment.

B. Baseline Progress Schedule shall show Contractor's construction and procurement activities, including but not limited to, equipment procurement and delivery (Contractor and City supplied), activities with Subcontractors and suppliers, major submittal reviews, commissioning of systems, use of major equipment on site, and necessary interface with City and third parties required to complete the Work in a timely manner and in accordance with Contract Time.

1.03 SCHEDULE REQUIREMENTS.

A. Unless City agrees in writing otherwise, progress schedule shall be on Microsoft Project, Primavera P6, Suretrack, or equivalent software, as City may specify, which Contractor shall prepare and supply to City, with all datapoint entries completed for start dates, necessary work activities, durations (not longer than 21 calendar days) and logic ties.

B. Contractor's progress schedule may be in the form of a CPM (arrow) diagram or, if City agrees in writing, a bar chart or a Gantt chart. The hard copies of the schedule supplied to City shall indicate the critical path of the Work (in red) and shall show a logical progression of the Work through completion within Contract Time.

C. Unless City agrees in writing otherwise, progress schedule shall also show early and late start and finish dates and total available float (float to the successor activity's late start date) for each activity. City has no obligation to accept an early completion schedule.

1.04 MONTHLY UPDATES

A. Contractor's progress schedule shall be updated monthly to reflect actual progress. The schedule shall be subject to City's review and acceptance for use in monitoring Contractor's Work and evaluating Applications for Payment.

B. Contractor shall supply City with an electronic copy of the updated progress schedule with each monthly payment application. Contractor shall provide City with **three-week** look ahead schedules weekly, showing in detail and activities and resources scheduled for the immediate two week period.

1.05 RECOVERY SCHEDULE

A. City may request a recovery schedule should Contractor fall 21 or more calendar days behind any schedule Milestone, which schedule shall show Contractor's plan and resources committed to retain Contract completion dates.

B. The recovery schedule shall show the intended critical path. If City requests, Contractor shall also:

1. Secure and demonstrate appropriate Subcontractor and supplier consent to the recovery Schedule.
2. Submit a narrative explaining trade flow and construction flow changes and man-hour loading assumptions for major Work activities and/or Subcontractors.

1.06 TIME IMPACT EVALUATION ("TIE") FOR CHANGE ORDERS, TIME EXTENSIONS AND DELAYS:

A. When Contractor requests a time extension for any reason, Contractor shall submit a TIE that includes both a written narrative and a schedule diagram depicting how the changed Work or other impact affects other schedule activities. The schedule diagram shall show how Contractor proposes to incorporate the changed Work or other impact in the schedule and how it impacts the current Schedule update critical path or otherwise. Contractor is also responsible for requesting time extensions based on the TIE's impact on the critical path. The diagram shall be tied to the main sequence of scheduled activities to enable City to evaluate the impact of changed Work to the scheduled critical path.

B. Contractor is responsible for all costs associated with the preparation of TIE's, and the process of incorporating TIE's into the current schedule update. Provide City with four copies of each TIE.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 3300

SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes description of requirements and procedures for submittals.

1.02 SCHEDULE OF SUBMITTALS

A. Contractor shall prepare for City's review and acceptance prior to commencement of work on the Site, for purposes of contract administration, a schedule of submittals (also referred to as a submittal register) required to complete the Work, prepared by Contractor and accepted by City for contract administration. Schedule of submittals shall include, for each submittal: the specification or drawing reference requiring the submittal, if applicable; the material, item, or process for which the submittal is required; the submittal number and identifying title of the submittal; the Contractor's anticipated submission date and the approval need date.

B. Contractor shall update monthly the schedule of submittals to reflect actual submission and acceptance dates for submittals. Review by City of schedule of submittals does not excuse Contractor of obligation to supply, schedule and coordinate all submittals required by the Contract Documents.

1.03 CONTRACTOR TO SUBMIT SHOP DRAWINGS, PRODUCT DATA AND SUBMITTALS.

A. Contractor shall review for compliance with Contract Documents, approve and submit to City Shop Drawings, Product Data, Samples and similar submittals required by Contract Documents.

B. Contractor shall schedule and submit concurrently submittals covering component items forming a system or items that are interrelated. Contractor shall include certifications to be submitted with the pertinent drawings at the same time.

C. Contractor shall coordinate scheduling, sequencing, preparing and processing of all submittals with performance of work so that work will not be delayed by submittal processing.

D. Submittals shall specifically identify any Work depicted that does not conform to the Contract Documents.

1.04 CITY REVIEW OF SHOP DRAWINGS, PRODUCT DATA AND SUBMITTALS.

A. After review by City of each Submittal, material will be returned to Contractor with actions defined as follows:

1. NO EXCEPTIONS TAKEN - Accepted subject to its compatibility with general design concept of the Work, future Submittals and additional partial Submittals for any portions of the Work not covered in this Submittal. Does not constitute acceptance or deletion of specified or required items not shown on the Submittal.
2. MAKE CORRECTIONS NOTED (NO RESUBMISSIONS REQUIRED) - Same as item 1 above, except that minor corrections as noted shall be made by Contractor.
3. REVISE AS NOTED AND RESUBMIT - Rejected because of major inconsistencies or errors that shall be resolved or corrected by Contractor prior to subsequent review by City.
4. REJECTED - RESUBMIT - Submitted material does not conform to Drawings and/or Specifications in major respect, i.e.: wrong size, model, capacity, or material.

B. Favorable review will not constitute acceptance by City of any responsibility for the accuracy, coordination, or completeness of the Submittals. Accuracy, coordination, and completeness of Submittals shall be sole responsibility of Contractor, including responsibility to back-check comments, corrections, and modifications from City's review before fabrication. Contractor, Subcontractors, or suppliers may prepare Submittals, but Contractor shall ascertain that Submittals meet requirements of Contract Documents, while conforming to structural space and access conditions at point of installation. City's review will be only to assess if the items covered by the Submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as indicated by the Contract Documents. Favorable review of Submittal, method of Work, or information regarding materials and equipment Contractor proposes to furnish shall not relieve Contractor of responsibility for errors therein and shall not be regarded as assumption of risks or liability by City, or any officer or employee thereof, and Contractor shall have no claim under Contract Documents on account of failure or partial failure or inefficiency or insufficiency of any plan or method of Work or material and equipment so accepted. Favorable review shall be considered to mean merely that City has no objection to Contractor using, upon Contractor's own full responsibility, plan or method of Work proposed, or furnishing materials and equipment proposed.

C. Unless otherwise specified, City's review will not extend to the means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

D. Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been favorably reviewed by the City; otherwise, any such Work is at Contractor's sole risk.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 4100

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Regulatory requirements applicable to Contract Documents
2. Required provisions under Local Agency Disputes Act
3. Required references under federal law

1.02 GENERAL

A. Compliance with Laws

1. Conform to all applicable codes, laws, ordinances, rules and regulations, which shall have full force and effect as though printed in full in these Specifications. Codes, laws, ordinances, rules, regulations and ordinances (**Regulatory Requirements**) are not furnished to Contractor, because Contractor is assumed to be familiar with these requirements.
2. Any listing of Regulatory Requirements for hazardous waste abatement Work in the Contract Documents is supplied to Contractor as a courtesy and shall not limit Contractor's responsibility for complying with all applicable Regulatory Requirements having application to the Work. Where conflict among the Regulatory Requirements or with these Specifications occurs, the most stringent requirements shall be used.
3. Specific reference in the Specifications to codes and regulations or requirements of regulatory agencies shall mean the latest printed edition of each adopted by the regulatory agency in effect at the time of the opening of Bids, except as may be otherwise specifically stated in the Contract Documents.

B. Precedence

1. Where specified requirements differ from Regulatory Requirements, the more stringent requirements shall take precedence. Where Drawings or Specifications require or describe products or execution of better quality, higher standard or greater size than required by Regulatory Requirements, then Drawings and Specifications shall take precedence so long as such increase is legal. Where no requirements are identified on Drawings or in Specifications, comply with all Regulatory Requirements of governing authorities having jurisdiction.
2. Should any conditions develop not covered by the Contract Documents wherein the finished Work will not comply with current codes, a Change Order detailing and specifying the required Work shall be submitted to and approved by City before proceeding with the Work.

1.03 REGULATORY REQUIREMENTS

A. Applicable Codes

1. Codes that apply to Contract Documents include all Codes applicable to construction, including, but not limited to, the following:
   a. California Building Code (2016 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.

b. California Electrical Code (2016 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.
c. California Plumbing Code (2016 Edition or latest applicable code) as amended by applicable local ordinances for plumbing, sewage disposal and health requirements.
d. California Mechanical Code (2016 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.
e. California Energy Code (2016 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.
f. California Green Building Standard Code (2016 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.
g. International Fire Code (2016 Edition or latest applicable code) as amended by applicable local ordinances for all construction work.
h. California Administrative Code Titles 15, 19 and 24 (with California amendments), and Americans with Disabilities Act (ADA) accessibility guidelines, whichever is more stringent.
i. All State laws and City and County Ordinances, rules of the State or City or County Health Departments, rules of the National Board of Fire Underwriters and National Fire Protection Associations, and local power company regulations for mechanical and electrical work.

B. Applicable Laws, Statutes, Ordinances, Rules, And Regulations

1. During prosecution of Work to be done under Contract Documents, Contractor shall comply with applicable laws, ordinances, rules and regulations, including, but not limited to, the following:

a. Federal:
   1) Americans With Disabilities Act of 1990
   2) 29 CFR, Section 1910.1001, Asbestos
   3) 40 CFR, Subpart M, National Emission Standards for Asbestos
   4) Executive Order 11246
   5) Federal Endangered Species Act
   6) Clean Water Act

b. State of California:
   1) California Code of Regulations, Titles 5, 8, 17, 19, 21, 22, 24 and 25
   2) California Public Contract Code
   3) California Health and Safety Code
   4) California Government Code
   5) California Labor Code
   6) California Civil Code
   7) California Code of Civil Procedure
   8) CPUC General Order 95, Rules for Overhead Electric Line Construction
   9) CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communications Systems
   10) Cal/OSHA
   11) OSHA: Hazard Communications Standards
   12) California Endangered Species Act
   13) Water Code
   14) Fish and Game Code

c. State of California Agencies:
   1) State and Consumer Services Agency
   2) Office of the State Fire Marshall
   3) Office of Statewide Health Planning and Development
   4) Department of Fish and Game
   5) All Air Quality Management Districts with jurisdiction
   6) All Regional Water Quality Control Boards with jurisdiction
   7) Division of the State Architect (if having jurisdiction)

d. <u>All Local Agencies with jurisdiction (cities, counties, fire departments)</u>

C. Change Orders and Claims:

1. The California Public Contract Code, including but not limited to Section 7105(d)(2), and the California Government Code Section 930.2 et seq., apply to all contract procedures for changes, time extensions, change orders (time or compensation) and claims. Federal law (U.S. v. Holpuch 326 U.S. 234) shall supplement California law on the enforceability of these requirements.
2. Any change, waiver, or omission to implement contract change order and claim procedures shall have no legal effect unless expressly permitted in a fully executed change order approved by Contractor and City and approved as to form by their respective legal counsel.

D. Required Provisions On Contract Claim Resolution

1. The California Public Contract Code specifies required provisions on resolving contract claims less than $375,000, which are set forth below, and constitute a part of this Contract.
2. For the purposes of this section, “Claim” means a separate demand by Contractor of $375,000 or less for (1) a time extension, (2) payment or money or damages arising from Work done by or on behalf of Contractor arising under the Contract Documents and payment of which is not otherwise expressly provided for or the Claimant is not otherwise entitled to, or (3) an amount the payment of which is disputed by City. In order to qualify as a Claim, the written demand must state that it is a Claim submitted under paragraph 12 of Document 00 7200 (General Conditions) and be submitted in compliance with all requirements of Document 00 7200 (General Conditions), paragraph 12. Separate Claims which total more than $375,000 do not qualify as a “separate demand of $375,000 or less,” as referenced above, and are not subject to this section.
3. A voucher, invoice, payment application, or other routine or authorized form of request for payment is not a Claim for purposes of this section. If such request is disputed as to liability or amount, then the disputed portion of the submission may be converted to a Claim under this section by submitting a separate claim in compliance with Contract Documents claim submission requirements.
4. Caution. This section does not apply to tort claims and nothing in this section is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 and Chapter 2 of Part 3 of Division 3.6 of Title 1 of the California Government Code.
5. Procedure:
   a. The Claim must be in writing, submitted in compliance with all requirements of Document 00 7200 (General Conditions), paragraph 12, including, but not limited to, the time prescribed by and including the documents necessary to substantiate the Claim, pursuant to Document 00 7200 (General Conditions), paragraph 12.3. Claims must be filed on or before the day of final payment. Nothing in this section is intended to extend the time limit or supersede notice requirements for the filing of claims as set forth in Document 00 7200 (General Conditions), paragraph 12 or elsewhere in the Contract Documents.
   b. For Claims of fifty thousand dollars ($50,000) or less, City shall respond in writing within forty-five (45) calendar days of receipt of the Claim, or City may request in writing within thirty (30) calendar days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims City may have against Claimant. If additional information is thereafter required, it shall be requested and provided in accordance with this section upon mutual agreement of City and Claimant. City’s written response to the Claim, as further documented, shall be submitted to Claimant within fifteen (15) calendar days after receipt of further documentation or within a period of time no greater than taken by Claimant in producing the additional information, whichever is greater.
   c. For Claims over Fifty Thousand Dollars ($50,000) and less than or equal to $375,000: City shall respond in writing within sixty (60) calendar days of receipt of the Claim, or City may request in writing within thirty (30) calendar days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims City may have against Claimant. If additional information is thereafter required, it shall be requested and

provided in accordance with this section, upon mutual agreement of City and Claimant; City's written response to the Claim, as further documented, shall be submitted to Claimant within thirty (30) calendar days after receipt of further documentation or within a period of time no greater than taken by Claimant in producing the additional information, whichever is greater.

d. Meet and Confer: If Claimant disputes City's written response, or City fails to respond within the time prescribed above, Claimant shall notify City, in writing, either within fifteen (15) calendar days of receipt of City's response or within fifteen (15) calendar days of City's failure to timely respond, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon demand City will schedule a meet and confer conference within thirty (30) calendar days for settlement of the dispute.

e. Following the meet and confer conference, if the Claim or any portion remains in dispute, Claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the California Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time Claimant submits its written claim as set forth herein, until the time that Claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

E. Compliance With Americans With Disabilities Act

1. Contractor acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through a Contractor, must be accessible to the disabled public. Contractor shall provide the services specified in the Contract Documents in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. Contractor agrees not to discriminate against disabled persons in the provision of services, benefits or activities provided under the Contract Documents and further agrees that any violation of this prohibition on the part of Contractor, its employees, agents or assigns shall constitute a material breach of the Contract Documents.

F. Compliance With IRCA

1. Contractor acknowledges that Contractor, and all subcontractors hired by Contractor to perform services under this Agreement, are aware of and understand the immigration Reform and Control Act ("IRCA"). Contractor is and shall remain in compliance with the IRCA and shall ensure that any subcontractors hired by Contractor to perform services under this Agreement are in compliance with the IRCA. In addition, Contractor agrees to indemnify, defend and hold harmless City, its agents, officers and employees, from any liability, damages or causes of action arising out of or relating to any claims that Contractor's employees, or employees of any subcontractor hired by Contractor, are not authorized to work in the United States for Contractor or its subcontractor and/or any other claims based upon alleged IRCA violations committed by Contractor or Contractor's subcontractors.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 4200

REFERENCES AND DEFINITIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Reference standards, abbreviations, symbols, and definitions used in Contract Documents.
2. Full titles are given in this Section for standards cited in other Sections of Specifications.

1.02 REFERENCE TO STANDARDS AND SPECIFICATIONS OF TECHNICAL SOCIETIES; REPORTING AND RESOLVING DISCREPANCIES

A. References

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code, or laws or regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated in the Contract Documents.
2. If during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such law or regulation applicable to the performance of the Work or of any such standard, specification, manual, or code or of any instruction of any supplier, Contractor shall report it in writing at once to City's Representative and Architect/Engineer, and Contractor shall not proceed with the Work affected thereby until consent to do so is given by City.

B. Precedence

1. Except as otherwise specifically stated in the Contract Documents or as may be provided by Change Order, CCD, or Supplemental Instruction, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
   a. The provisions of any such standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
   b. The provisions of any such laws or regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such law or regulation).
2. No provision of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of City, City's Representative, Architect/Engineer or Contractor, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to City, Architect/Engineer, or any of their consultants, agents, representatives or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

C. Referenced Grades, Classes, and Types:

1. Where an alternative or optional grade, class, or type of product or execution is included in a

reference but is not identified in Drawings or in Specifications, provide the highest, best, and greatest of the alternatives or options for the intended use and prevailing conditions.

D. Edition Date of References:

1. When an edition or effective date of a reference is not given, it shall be understood to be the current edition or latest revision published as of the date of opening Bids.
2. All amendments, changes, errata and supplements as of the effective date shall be included.

E. **ASTM and ANSI References:** Specifications and Standards of the American Society for Testing and Materials (ASTM) and the American National Standards Institute (ANSI) are identified in the Drawings and Specifications by abbreviation and number only and may not be further identified by title, date, revision, or amendment. It is presumed that Contractor is familiar with and has access to these nationally- and industry-recognized specifications and standards.

1.03 DEFINITIONS

A. Meaning of Words and Phrases

Wherever any of the words or phrases defined below, or a pronoun used in place thereof, is used in any part of the Contract Documents, it shall have the meaning here set forth. Where abbreviations and symbols are used, such abbreviations and symbols shall be given their common meaning in the construction industry. In the Contract Documents, the neuter gender includes the feminine and masculine, and the singular number includes the plural.

While City has made an effort to identify all defined terms with initial caps, the following definitions shall apply regardless of case unless the context otherwise requires:

1. Addenda: Written or graphic instruments issued prior to the opening of Bids, which clarify, correct, or change the bidding requirements or the Contract Documents. Addenda shall not include the minutes of the Pre-Bid Conference and/or Site Visit.
2. Agreement (Document 00 5200): Agreement is the basic Contract Document that binds the parties to construction Work. Agreement defines relationships and obligations between City and Contractor and by reference incorporates Conditions of Contract, Drawings, and Specifications and contains Addenda and all Modifications subsequent to execution of Contract Documents.
3. Alternate: Work added to or deducted from the base Bid, if accepted by City.
4. Application for Payment: Written application for monthly or periodic progress or final payment made by Contractor complying with the Contract Documents.
5. Approved Equal: Approved in writing by City as being of equivalent quality, utility and appearance.
6. Architect/Engineer: If used elsewhere in the Contract Documents, “Architect/Engineer” shall mean a person (or that person’s firm) holding a valid California State Architect’s or Engineer’s license representing the City in the administration of the Contract Documents. Architect/Engineer may be an employee of or an independent consultant to City. When Architect/Engineer is referred to within the Contract Documents and not an employee of City, Architect/Engineer shall be construed to include employees of Architect/Engineer and/or employees that Architect/Engineer supervises. When the designated Architect/Engineer is an employee of City, his or her authorized representatives on the Project will be included under the term Architect/Engineer. If Architect/Engineer is an employee of City, Architect/Engineer is the beneficiary of all Contractor obligations to City, including without limitation, all releases and indemnities. Architect/Engineer may also be referred to as Architect or Engineer.
7. Asbestos: Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by OSHA or

Cal/OSHA.

8. Bid: The offer or proposal of the Bidder submitted on the prescribed form(s) setting forth the prices for the Work to be performed.
9. Bidder: One who submits a Bid.
10. Bidding Documents: All documents comprising the Project Manual (including all documents and Specification Sections listed in Document 00 0110 [Table of Contents]), including documents supplied for bidding purposes only and Contract Documents.
11. Board: The governing body of the City.
12. Business Day: Any Day other than Saturday, Sunday, and the following days that have been designated as holidays by City. If a holiday falls on a Saturday, the preceding Friday will be the holiday. If a holiday falls on a Sunday, the following Monday will be the holiday.
    a. New Year's Day, January 1;
    b. Martin Luther King Jr.'s Birthday, third Monday in January;
    c. Lincoln's Birthday, February 12;
    d. Presidents' Day, third Monday in February;
    e. Malcolm X Day, third Friday in May;
    f. Memorial Day, last Monday in May;
    g. Juneteenth, June 19;
    h. Independence Day, July 4;
    i. Labor Day, first Monday in September;
    j. Indigenous People's Day, second Monday in October;
    k. Veterans' Day, November 11;
    l. Thanksgiving Day, as designated by the President;
    m. The Day following Thanksgiving Day;
    n. Christmas Day, December 25; and
    o. Each day appointed by the Governor of California and formally recognized by the Governing Board as a day of mourning, thanksgiving, or special observance.
13. By City: Work that will be performed by City or its agents at the City's expense.
14. By Others: Work that is outside scope of Work to be performed by Contractor under this Contract, which will be performed by City, other contractors, or other means.
15. Change Order: A written instrument prepared by City and signed by City and Contractor, stating their agreement upon all of the following:
    a. a change in the Work;
    b. the amount of the adjustment in the Contract Sum, if any; and
    c. the amount of the adjustment in the Contract Time, if any.
16. Change Proposal Request (CPR): A document prepared by Contractor requesting or initiating a request for modifying the Contract Documents and determining costs for changes in contract amount and any requested changes to Contract Time.
17. City: City is defined in Document 00 5200 (Agreement).
18. City-Furnished, Contractor Installed: Items furnished by City at its cost for installation by Contractor at its cost under Contract Documents.
19. City's Representative(s): See Document 00 5200 (Agreement).
20. Code Inspector: A local or state agency responsible for the enforcement of applicable codes and regulations.
21. Concealed: Work not exposed to view in the finished Work, including within or behind various construction elements.

22. Construction Change Directive ("CCD"): A written order prepared and signed by City, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both.
23. Contract Amount: a change order price, line item price, Contract Sum, or other price assigned to a scope of work.
24. Contract Conditions or Conditions of the Contract: Consists of two parts: General Conditions and Supplementary Conditions.
    a. General Conditions are general clauses that are common to the City Contracts, including Document 00 7200 (General Conditions).
    b. Supplementary Conditions modify or supplement General Conditions to meet specific requirements for Contract Documents, including Document 00 7201 (Supplementary Conditions).
25. Contract Documents and Contract: Contract Documents and Contract shall consist of the documents identified as the Contract Documents in Document 00 5200 (Agreement), plus all changes, Addenda, and modifications thereto.
26. Contract Modification: Either:
    a. a written amendment to Contract signed by Contractor and City; or
    b. a Change Order; or
    c. a Construction Change Directive; or
    d. a written directive for a minor change in the Work issued by City.
27. Contract Sum: The sum stated in the Agreement and, including authorized adjustments, the total amount payable by City to Contractor for performance of the Work and the Contract Documents. The Contract Sum is also sometimes referred to as the Contract Price or the Contract Amount.
28. Contract Time: The number or numbers of calendar days or the dates stated in the Agreement to achieve Substantial Completion of the Work or designated Milestones; and/or to achieve Final Completion of the Work so that it is ready for final payment and is accepted.
29. Contractor: The person or entity identified as such in the Agreement and referred to throughout the Contract Documents as if singular in number and neutral in gender. The term "Contractor" means the Contractor or its authorized representative.
30. Contractor's Employees: Persons engaged in execution of Work under Contract as direct employees of Contractor, as Subcontractors, or as employees of Subcontractors.
31. Day: One calendar day of 24 hours measured from midnight to the next midnight, unless the word "day" is specifically modified to the contrary.
32. Defective: An adjective which, when modifying the word "Work," refers to Work that is unsatisfactory or unsuited for the use intended, faulty, or deficient, that does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents (including but not limited to approval of Samples and "or equal" items), or has been damaged prior to final payment (unless responsibility for the protection thereof has been assumed by City). Unapproved substitutions are defective. City is the judge of whether Work is Defective.
33. Division of State Architect: A division of the State of California providing, design and construction oversight for K–12 schools and community colleges, and developing and maintaining accessibility standards and codes utilized in public and private buildings throughout the State of California.
34. Drawings: The graphic and pictorial portions of Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

35. Equal: Equal in opinion of City. Burden of proof of equality is responsibility of Contractor.
36. Final Acceptance or Final Completion: City's acceptance of the Work as satisfactorily completed in accordance with Contract Documents. Requirements for Final Acceptance/Final Completion include, but are not limited to:
    a. Final cleaning is completed.
    b. All systems having been tested and accepted as having met requirements of Contract Documents.
    c. All required instructions and training sessions having been given by Contractor.
    d. All Project Record Documents having been submitted by Contractor, reviewed by City, and accepted by City.
    e. All punch list Work, as directed by City, having been completed by Contractor.
    f. Generally all Work, except Contractor maintenance after Final Acceptance/Final Completion, having been completed to satisfaction of City.
37. Force Account: Work directed to be performed without prior agreement as to lump sum or unit price cost thereof, and which is to be billed at cost for labor, materials, equipment, taxes, and other costs, plus a specified percentage for overhead and profit.
38. Exposed: Work exposed to view in the finished Work, including behind louvers, grilles, registers and various other construction elements.
39. Furnish: Supply Indicated: Shown or noted on the Drawings.
40. Indicated: Shown or noted on the Drawings.
41. Install: Install or apply only, do not furnish.
42. Latent: Not apparent by reasonable inspection, including but not limited to, the inspections and research required as a condition to bidding under Document 00 7200 (General Conditions).
43. Law: Unless otherwise limited, all applicable laws including without limitation all federal, state, and local laws, statutes, standards, rules, regulations, ordinances, and judicial and administrative decisions.
44. Material: This word shall be construed to embrace machinery, manufactured articles, materials of construction (fabricated or otherwise), and any other classes of material to be furnished in connection with Contract, except where a more limited meaning is indicated by context.
45. Milestone: A principal event specified in Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all Work.
46. Modification: Same as Contract Modification.
47. Not in Contract or "NIC": Work that is outside the scope of Work to be performed by Contractor under Contract Documents.
48. Notice of Completion: Shall have the meaning provided in California Civil Code §3093, and any successor statute.
49. Off Site: Outside geographical location of the Project.
50. Owner: Owner is the City of Berkeley, see Document 00 5200 (Agreement).
51. Partial Utilization: Use by City of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all of the Work.
52. PCBs: Polyclorinated byphenyls.
53. Phase: A specified portion of the Work (if any) specifically identified as a Phase in Document 00 5200 (Agreement) or Document 01 1100 (Summary).
54. Product Data: That information (brochures, catalog sheets, manufacturer's cut sheets, etc.) supplied by vendors having technical and commercial characteristics of the supplied equipment

or materials and accompanying commercial terms such as warranties, instructions, and manuals.

55. Progress Report: A periodic report submitted by Contractor to City with progress payment invoices accompanying progress schedule. See Document 00 7200 (General Conditions).

56. Project: Total construction of which Work performed under Contract Documents may be whole or part.

57. Project Manager: If used elsewhere in the Contract Documents, "Project Manager" shall mean a person representing the City in the administration of the Contract Documents. Project Manager may be an employee of or an independent consultant to City. When Project Manager is referred to within the Contract Documents and no Project Manager has in fact been designated, then the matter shall be referred to City. The term Project Manager shall be construed to include employees of Project Manager and/or employees that Project Manager supervises. When the designated Project Manager is an employee of City, his or her authorized representatives on the Project will be included under the term Project Manager. If Project Manager is an employee of City Project Manager is the beneficiary of all Contractor obligations to City, including without limitation, all releases and indemnities.

58. Project Manual: Project Manual consists of Bidding Requirements, Agreement, Bonds, Certificates, Contract Conditions, Drawings, and Specifications.

59. Project Record Documents: All Project deliverables required under the Contract Documents, including without limitation, as built drawings; Installation, Operation, and Maintenance Manuals; and Machine Inventory Sheets.

60. Provide: Furnish and install.

61. Request for Information ("RFI"): A document prepared by Contractor requesting information regarding the Project or Contract Documents. The RFI system is also a means for City to submit Contract Document clarifications or supplements to Contractor.

62. Request for Proposals ("RFP"): A document issued by City to Contractor whereby City may initiate changes in the Work or Contract Time as provided in Contract Documents.

63. Request for Substitution ("RFS"): A document prepared by Contractor requesting substitution of materials as permitted and to the extent permitted in Contract Documents.

64. RFI-Reply: A document consisting of supplementary details, instructions, or information issued by City that clarifies or supplements Contract Documents, and with which Contractor shall comply. RFI-Replies do not constitute changes in Contract Sum or Contract Time except as otherwise agreed in writing by City. RFI-Replies will be issued through the RFI administrative system.

65. Samples: Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

66. Shop Drawings: All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

67. Shown: As indicated on Drawings.

68. Site: The particular geographical location of Work performed pursuant to the Contract Documents.

69. Specifications: The written portion of the Contract Documents consisting of requirements for materials, equipment, construction systems, standards, and workmanship for the Work; performance of related services.

70. Specified: As written in Specifications.

71. Subcontractor: A person or entity that has a direct contract with Contractor to perform a portion of the Work at the Site. The term “Subcontractor” is referred to throughout the Contract Documents as if singular in number and neutral in gender and means a Subcontractor or an authorized representative of the Subcontractor. The term “Subcontractor” does not include a separate contractor or subcontractors of a separate contractor.
72. Substantial Completion: The Work (or a specified part thereof) has progressed to the point where, in the opinion of City as evidenced by a notice or certificate of Substantial Completion, the Work is sufficiently complete, in accordance with Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended, and unperformed or incomplete work elements are minor in nature; or if no such certificate is issued, when the Work (or specified part) is complete and ready for final payment as evidenced by written recommendation of City for final payment. The terms “Substantially Complete” and “Substantially Completed” as applied to all or part of the Work refer to Substantial Completion thereof.
73. Supplemental Instruction: A written directive from City to Contractor ordering alterations or Modifications that do not result in change in Contract Sum or Contract Time, and do not substantially change Drawings or Specifications.
74. Testing and Special Inspection Agency: An independent entity engaged to inspect and/or test the workmanship, materials, or manner of construction of buildings or portions of buildings, to determine if such construction complies with the Contract Documents and applicable codes.
75. Time Impact Evaluation (TIE): A written narrative and a schedule diagram depicting how the changed Work or other impact affects other scheduled activities, prepared by Contractor in conjunction with a Change Proposal Request (CPR) for Change Orders, Time Extensions, and Delays. See Document 01 3230 (Progress Schedules and Submittals), and Document 01 2600 (Modification Procedures).
76. Underground Facilities: All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities that have been installed underground to furnish any of the following services or materials: Electricity, gases, chemicals, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems, or water.
77. Unit Price Work: Shall be the portions of the Work for which a unit price is provided in Document 00 5200 (Agreement) or Section 01 1100 (Summary).
78. Work: The entire completed construction, or the various separately identifiable parts thereof, required to be furnished under the Contract Documents within the Contract Time. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents including everything shown in the Drawings and set forth in the Specifications. Wherever the word “work” is used, rather than the word “Work,” it shall be understood to have its ordinary and customary meaning.

B. Other Defined Terms

The following terms are not necessarily identified with initial caps; however they shall have the meaning set forth below:

1. Wherever words “as directed,” “as required,” “as permitted,” or words of like effect are used, it shall be understood that direction, requirements, or permission of City is intended. Words “sufficient,” “necessary,” “proper,” and the like shall mean sufficient, necessary, or proper in judgment of City. Words “approved,” “acceptable,” “satisfactory,” “favorably reviewed,” or words of like import, shall mean approved by, or acceptable to, or satisfactory to, or favorably reviewed by City.

2. Wherever the word “may” or “ought” is used, the action to which it refers is discretionary. Wherever the word “shall” or “will” is used, the action to which it refers is mandatory.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 4500

TESTING AND INSPECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Regulatory requirements for testing and inspection.
2. Contractor's quality control.
3. Quality of the Work.
4. Inspections and tests by governing authorities.
5. Inspections and tests by serving utilities.
6. Inspections and tests by manufacturer's representatives.
7. Inspections by Independent Testing and Inspection Agency.

1.02 RELATED SECTIONS

A. Document 00 7200 General Conditions

B. Section 01 4100 Regulatory Requirements

1.03 CONTRACTOR'S QUALITY CONTROL

A. Contractor's Quality Control: Contractor shall ensure that products, services, workmanship and site conditions comply with requirements of the Drawings and Specifications by coordinating, supervising, testing and inspecting the work and by utilizing only suitably qualified personnel.

B. Quality Requirements: Work shall be accomplished in accordance with quality requirements of the Drawings and Specifications, including, by reference, all Codes, laws, rules, regulations and standards. When no quality basis is prescribed, the quality shall be in accordance with the best accepted practices of the construction industry for the locale of the Project, for projects of this type.

C. Quality Control Personnel: Contractor shall employ and assign knowledgeable and skilled personnel as necessary to perform quality control functions to ensure that the Work is provided as required.

1.04 QUALITY OF THE WORK

A. Quality of Products: Unless otherwise indicated or specified, all products shall be new, free of defects and fit for the intended use.

B. Quality of Installation: All Work shall be produced plumb, level, square and true, or true to indicated angle, and with proper alignment and relationship between the various elements.

C. Protection of Completed Work: Take all measures necessary to preserve completed Work free from damage, deterioration, soiling and staining, until Acceptance by the City.

D. Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Unless more stringent requirements are indicated or specified, comply with manufacturer's instructions and recommendations, reference standards and building code research report

requirements in preparing, fabricating erecting, installing, applying, connecting and finishing Work.

E. Deviations from Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Document and explain all deviations from reference standards and building code research report requirements and manufacturer's product installation instructions and recommendations, including acknowledgement by the manufacturer that such deviations are acceptable and appropriate for the Project.

F. Verification of Quality: Work shall be subject to verification of quality by City or Architect/Engineer in accordance with provisions of the General Conditions of the Contract.

1. Contractor shall cooperate by making Work available for inspection by City, Architect/Engineer or their designated representatives.
2. Such verification may include mill, plant, shop, or field inspection as required.
3. Provide access to all parts of the Work, including plants where materials or equipment are manufactured or fabricated.
4. Provide all information and assistance as required, including that by and from subcontractors, fabricators, materials suppliers and manufacturers, for verification of quality by City or Architect/Engineer.
5. Contract modifications, if any, resulting from such verification activities shall be governed by applicable provisions in the General Conditions of the Contract.

G. Observations by Architect/Engineer: Periodic and occasional observations of Work in progress will be made by Architect/Engineer as deemed necessary to review progress of Work and general conformance with design intent.

H. Limitations on Inspection, Test and Observation: Neither employment of independent testing and inspection agency nor observations by Architect/Engineer shall in way relieve Contractor of obligation to perform Work in full conformance to all requirements of Contract Documents.

I. Rejection of Work: City reserves the right to reject all Work not in conformance to the requirements of the Drawings and Specifications.

J. Correction of Non-Conforming Work: Non-conforming Work shall be modified, replaced, repaired or redone by the Contractor at no change in Contract Sum or Contract Time.

K. Acceptance of Non-Conforming Work: Acceptance of nonconforming Work, without specific written acknowledgement and approval of the City, shall not relieve the Contractor of the obligation to correct such Work.

L. Contract Adjustment for Non-Conforming Work: Should City determine that it is not feasible or in City's interest to require non-conforming Work to be repaired or replaced, an equitable reduction in Contract Sum shall be made by agreement between City and Contractor. If equitable amount cannot be agreed upon, a Construction Change Directive will be issued and the amount in dispute resolved in accordance with applicable provisions of the General Conditions.

1.05 INSPECTIONS AND TESTS BY GOVERNING AUTHORITIES

A. Regulatory Requirements for testing and Inspection: Comply with Uniform Building Code (UBC) requirements and all other requirements of governing authorities having jurisdiction.

B. Inspections and Tests by Governing Authorities: Contractor shall cause all tests and inspections required by governing authorities having jurisdiction to be made for Work under this Contract.

1. Such authorities include the Division of Occupational Safety and Health (Cal/OSHA), City of Berkeley Public Works Department, Fire Department, and similar agencies.
2. Except as specifically noted, scheduling, conducting and paying for such inspections shall be solely the Contractor's responsibility.

1.06 INSPECTIONS AND TESTS BY SERVING UTILITIES

A. Inspections and Tests by Serving Utilities: Contractor shall cause all tests and inspections required by serving utilities to be made for Work under this Contract. Scheduling conducting and paying for such inspections shall be solely the Contractor's responsibility.

1.07 INSPECTIONS AND TESTS BY MANUFACTURER'S REPRESENTATIVES

A. Inspections and Tests by Manufacturer's Representatives: Contractor shall cause all tests and inspections specified to be conducted by materials or systems manufacturers to be made. Additionally, all tests and inspections required by materials or systems manufacturers as conditions of warranty or certification of Work shall be made, the cost of which shall be included in the Contract Sum.

1.08 INSPECTIONS BY INDEPENDENT TESTING AND INSPECTION AGENCY

A. City will select an independent testing and inspection agency or agencies to conduct tests and inspections as indicated on Drawings, in Specifications and as required by governing authorities having jurisdiction.

B. Responsibility for payment for tests and inspections shall be as indicated in schedule below. All time and costs for Contractor's service related to such tests and inspections shall be included in Contract Time and Contract Sum.

C. Contractor shall notify City and, if directed by City, testing and inspection agency, when Work is ready for specified tests and inspections.

D. Contractor shall pay for all additional charges by testing and inspection agencies and governing authorities having jurisdiction due to the following:

1. Contractor's failure to properly schedule or notify testing and inspection agency or authorities having jurisdiction.
2. Changes in sources, lots or suppliers of products after original tests or inspections.
3. Changes in means methods, techniques, sequences and procedures of construction which necessitate additional testing, inspection and related services.
4. Changes in mix designs for concrete and mortar after review and acceptance of submitted mix design.

E. Tests and inspections shall include the following:

Section	Inspections and Tests	Paid by
Section 31 2000-Earthwork	Compaction	Paid by City
Section 03 3000-Cast-in-Place Concrete	Formwork and reinforcement	Paid by City
Section 03 3000-Cast-in-Place Concrete	Slump Tests	Paid by City
	Compressive strength	Paid by City

F. Test and Inspection Reports: After each inspection and test, one copy of report shall be promptly submitted each to Architect/Engineer, City, City's field representative, Contractor and to agency having jurisdiction (if required by Code).

1. Reports shall clearly identify the following:
   a. Date issued.

b. Project name and number.
c. Identification of product and Specifications Section in which Work is specified.
d. Name of inspector.
e. Date and time of sampling or inspection.
f. Location in Project where sampling or inspection was conducted.
g. Type of inspection or test.
h. Date of test.
i. Results of tests.
j. Comments concerning conformance with Contract Documents and other requirements.

2. Test reports shall indicate specified or required values and shall include statement whether test results indicate satisfactory performance of products.
3. Samples taken but not tested shall be reported.
4. Test reports shall confirm that methods used for sampling and testing conform to specified test procedures.
5. When requested, testing and inspection agency shall provide interpretations of test results.
6. Verification reports shall be prepared and submitted, stating that tests and inspections specified or otherwise required for the project, have been completed and that material and workmanship comply with the Contract Drawings and Specifications. Verification reports shall be submitted at intervals not exceeding 6 months, at Substantial Completion of the Project, and at all times when Work of Project is suspended.

G. Contractor Responsibilities in Inspections and Tests:

1. Notify testing and inspection agencies 24 hours in advance of expected time for operations requiring inspection and testing services.
2. Deliver to laboratory or designated location, adequate samples of materials proposed to be used which require advance testing, together with proposed mix designs.
3. Cooperate with testing and inspection agency personnel, City's field representative, Architect/Engineer. Provide access to Work areas and off-site fabrication and assembly locations, including during weekends and after normal work hours.
4. Provide incidental labor and facilities to provide safe access to Work to be tested and inspected, to obtain and handle samples at the Project site or at source of products to be tested, and to store and cure test samples.
5. Provide, at least 15 calendar days in advance of first test or inspection of each type, a schedule of tests or inspections indicating types of tests or inspections and their scheduled dates.
6. Provide 24 hours advance notice to the Project Manager, Architect/Engineer of each test and inspection, as directed.
   a. When tests or inspections cannot be performed after such notice , reimburse City for Testing Laboratory personnel and travel expenses incurred due to Contractor's negligence.

1.09 ADDITIONAL TESTING AND INSPECTION

A. If initial tests or inspections made by the Testing Laboratory reveal that materials do not comply with Contract Documents, or if City has reasonable doubt that materials do not comply with Contract Documents, additional tests and inspections shall be made as directed.

1. If additional tests and inspections establish that materials comply with Contract Documents, all costs for such tests and inspections shall be paid by City.
2. If additional tests and inspections establish that materials do not comply with Contract Documents, all costs of such tests and inspections shall be deducted for Contract Sum.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 5200

TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. General Conditions Document 00 7200

B. Supplemental General Conditions Document 00 7201

1.02 SUMMARY

A. This section describes the temporary facilities required for the Project site. The Project site shall be maintained by Contractor as set forth in this section unless otherwise added to or superseded by the requirements of Document 00 7200 (General Conditions).

1.03 TEMPORARY FACILITIES

A. Contractor shall obtain permits for, install and maintain in safe condition, whatever scaffolds, hoisting equipment, barricades, walkways, or other temporary structures which may be required to accomplish the work on the Project. Such structures shall be adequate for the intended use and capable of safely accepting all loads that may be imposed upon them. They shall be installed and maintained in accordance with all applicable State and local codes and regulations.

B. Contractor shall provide and maintain temporary heat from an approved source whenever in the course of the Work it may become necessary for curing and drying of materials, or to warm spaces as may be required for the installation of materials or finishes.

C. Contractor shall provide and maintain any and all facilities that may be required for dewatering in order that work may proceed on the Project. If it is necessary for dewatering to occur continually, Contractor shall have on hand whatever spare parts or equipment that may be required to prevent interruption of dewatering.

D. Contractor shall provide and maintain all utility services necessary to perform the work under this Contract.

E. Materials, tools, accessories, etc., shall be stored only where directed by City. Storage area shall be kept neat and clean. Security of stored items shall be Contractor's responsibility.

F. Flammable materials stored on site, shall be stored in a safe and secure manner per the manufacture’s direction. Extra precautions, including clear identification, shall be the responsibility of Contractor.

G. Contractor shall maintain an office at the Project site that will be his headquarters for the Project. Any communications delivered to this office shall be considered as delivered to Contractor. Location and size of office shall be such that it will adequately serve the needs of Contractor's superintendent and assistants in the performance of their duties.

H. Contractor shall promptly remove all such temporary facilities when they are no longer needed for the work or for completion of the Project, mutually agreed upon by Contractor and City.

I. Contractor shall safe-off building prior to demolition.

1.04 SIGNS

A. No signs may be displayed on or about the City's property (except those required by law) without the City's specific approval; the size, content, and location to be as specified by the City.

1.05 USE OF ROADWAYS AND WALKWAYS

A. Contractor shall never block or interfere with use of any existing roadway, walkway or other facility for vehicular or pedestrian traffic, from any party entitled to use it. Wherever and whenever such interference becomes necessary for the proper and convenient performance of the Work, and no satisfactory detour route exists, Contractor shall, before beginning the interference, notify City and post signs at least 72 hours in advance of such interference, and provide a satisfactory detour, including temporary bridge if necessary, or other proper facility for traffic to pass around or over the interference. Contractor shall maintain the detour in a safe and satisfactory condition as long as the interference continues, all without extra payment unless otherwise expressly stipulated in the Specifications.

B. Contractor shall at all times comply with any and all requirements applying to the work under the transportation, circulation and parking mitigation measures, truck and construction access plan.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 5526

TRAFFIC CONTROL

Contractor shall provide traffic control throughout the project as needed for the various traffic situations and street configurations in full conformance with the latest "California Manual on Uniform Traffic Control Devices and the Federal Highway Administration (FHWA) Manual of Uniform Traffic Control Devices (MUTCD) latest edition, as amended for use in California)" herein after referred to as Traffic Control Manual. The Traffic Control Manual may be obtained online at https://dot.ca.gov/programs/safety-programs/camutcd/camutcd-files

As required, the Contractor shall submit a Traffic Control Plan to the City of Berkeley's Transportation Division or the California Department of Transportation (Caltrans).

Construction area signs and temporary traffic control devices shall be furnished, installed, maintained and removed by the Contractor. Traffic signage, e.g., warning signs and detour signs, may be required for this project. Contractor shall be responsible for placing all barricades for perimeter street closures as required. Per Section 501.10 – Traffic Control of the General Provisions, at main entry and exit points of each work location, the Contractor shall provide a 30" x 30" sign advising the public of the anticipated period of time that traffic delays may be anticipated. This sign will also include name and telephone number of the Contractor along with starting and completion dates of the contract. Sign will be erected 7 calendar days in advance of any work.

Construction work requiring traffic control on San Pablo Avenue (State Route 123) or Ashby Avenue (State Route 13) will require an encroachment permit from Caltrans. Contractor is soley responsible for obtaining and abiding by any necessary encroachment permits. The permit fees and other associated costs to obtain the required permits from the State of California shall be included in the cost bid for this item. Contractor shall be responsible for providing traffic control plan for encroachment permit to and obtaining approval of said traffic control plan from State of California. Contractor shall be responsible for all notification of work to, application for and obtaining work authorization number from Caltrans. Any damages arising from work related to encroachment permit shall be the responsibility of the Contractor.

The Contractor shall be responsible for posting "No Parking" signs a minimum of four calendar days in advance of concrete work, paving operations, failed area, and planning work so as to comply with the City's construction notification requirement of 4 days. Cones shall not be used as barricades. "No Parking" signs may be obtained from the City at no cost to the Contractor. The "No Parking" signs shall be updated as necessary. The Contractor shall check and maintain (e.g., re-install missing signs, reposition displaced barricades, etc.) postings on a regular basis prior to start of work.

If traffic is to be detoured over a centerline or detoured in advance of the work, detour plans must be part of the submitted Traffic Control plans and approved by the City prior to starting work. Police, Fire and Public Works Department shall be notified by the contractor at least four calendar days in advance of any work which will interfere with the normal flow of vehicular or pedestrian traffic. Intersection closure may only occur if the two adjacent intersections remain open, unless otherwise approved by the City. The Contractor shall coordinate his traffic control/diversion plan with the City, a minimum of 3 weeks prior to starting work, to assure that traffic is diverted in a safe and convenient manner.

Truck routes shall be approved by the City prior to start of work.

Truck traffic is not allowed on Marin Avenue within the City of Albany. Personal vehicles of the Contractor's employees shall not be parked within the area of work.

A minimum of one (paved) traffic lane, not less than 12 ft. wide, shall remain open for use by public traffic during construction operations. When construction operations are not actively in progress, not less than two such lanes shall be open to public traffic. The Contractor may be allowed to close residential streets if approved in writing in advance by the City. No work that interferes with public traffic shall be performed between 6:00 p.m. and 7:00 a.m.

Start of work shall be no earlier than 7:00 a.m. No work process, including starting, warm up, and delivery of equipment, shall be done outside of work hours. The use of vehicle horns to alert residents to move their vehicles out of the construction zone is not permitted. The Contractor should attempt to locate vehicle owners by knocking on doors.

The full width of the traveled way shall be open for use by public traffic on Saturdays, Sundays and designated legal holidays, and when construction operations are not actively in progress, unless specified otherwise.

Minor deviations from the requirements of this section concerning hours of work may be permitted upon the written request of the Contractor, if in the opinion of the City, public traffic will be better served and the work expedited. Such deviations shall not be adopted until the City provides written approval.

The traffic control system shall consist of closing traffic lanes in accordance with the Traffic Control Manual. Signs and other devices for the traffic control system shall conform to the Traffic Control Manual.

If any component in the traffic control system is damaged, displaced or ceases to operate or function as specified, from any cause during the progress of the work, the Contractor shall immediately repair said component to its original condition or replace said component and shall restore the component to its original location.

Lane closures may be made for work periods only. At the end of each work period, all components of the traffic control system shall be removed from the traveled way, shoulder and auxiliary lanes. If the Contractor so elects, said components may be stored at selected central locations approved by the City within the limits of the public right-of-way.

Sufficient barricades and flashing lights shall also placed to supplement all traffic signs used to divert and control traffic. Signs and barricades shall be checked periodically every day and replaced or repaired as necessary. Any hazardous conditions shall be immediately eliminated.

The Contractor, at the end of each day, shall provide ADA compliant pedestrian and vehicle crossings at all street intersections. If the project is left open overnight, it shall be graded in such a way that pedestrians and vehicles can safely pass through the project. Temporary concrete, asphalt, or wood ramps shall be installed and maintained at all locations where existing ramps have been temporarily removed.

Cleanliness is extremely important. Dust producing conditions shall be eliminated as soon as they are created.

If Contractor violates any of these provisions, a fine of $1,000 will be assessed for the first violation, $5,000 for the second and $10,000 for the third and further subsequent violations**.**

ACCESS AND EGRESS

The Contractor shall endeavor to cooperate with all business owners and residents occupying properties fronting on the streets in the matter of access and egress. **Contractor shall maintain a clear and accessible pedestrian corridor.**

Where a business property has more than two vehicular paths of access, one path, 10 feet in width, shall remain open during all business hours, unless accepted by the City.

LANE CLOSURES

No lane closures shall be permitted on the following streets Monday through Friday between 7:00 A.M. – 9:00 A.M. and 4:00 P.M. – 6:00 P.M., and Saturdays between 10:00 A.M. – 2:00 P.M., unless approved in advance by the City, if it can be explained why such closure cannot reasonably be avoided. On Saturdays when UC football games are scheduled all construction-related lane closures along these corridors must be reopened at least 4 hours before the start of the game and remain open for 2 hours after the conclusion of the game.

Major Streets:

- University Avenue
- San Pablo Avenue
- Shattuck Avenue
- Telegraph Avenue
- Sacramento Street
- Martin Luther King Jr. Way
- Ashby Avenue
- College Avenue
- Gilman Avenue
- Adeline Street

Notwithstanding the above, the City reserves the right to review and comment on each individual traffic control plan based on its own merits.

Note: Routine maintenance, inconvenience to construction method or schedule, or adverse impacts on cost of work will generally not be accepted as grounds for exceptions.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 5700

TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. General Conditions Document 00 7200

B. Supplemental General Conditions Document 00 7201

1.02 SUMMARY

A. This section describes the temporary controls required for the Project site. The Project site shall be maintained by Contractor as set forth in this section unless otherwise added to or superseded by the requirements of Document 00 7200 (General Conditions).

1.03 TEMPORARY CONTROLS

A. Contractor shall obtain permits for, install and maintain in safe condition, whatever scaffolds, equipment, shoring, barricades, walkways, or other temporary structures which may be required to accomplish the Work. Such items shall be adequate for the intended use and shall be installed and maintained in accordance with all applicable State and local codes and regulations.

B. The Contractor shall perform a pre-construction audio/video tape survey and provide supplemental photographic documentation to adequately document the condition of existing improvements. It is the responsibility of the Contractor to adequately document the condition of existing improvements and the Contractor may be held liable for any damage or condition whose pre-existence he/she is unable to document. No additional compensation for such tape survey and still photographs will be allowed.

C. Upon notification of the City, the Contractor shall correct any deficiencies of the temporary controls within 72 hours. The City may request City crews or contract with another contractor to perform the necessary work and repairs if the deficiencies have not been corrected after the 72-hour notification. The Contractor shall pay the cost of the work performed by the City crews or other contractor plus an additional seventy percent (70%) surcharge by deduction from payment due on the contract.

D. The Contractor shall begin cleanup operation at least one hour before the end of each day's work, clean all paved portions of the project and paved streets leading from the project that have dust-producing materials or debris deposited upon them. The work areas shall be swept clean at the end of each day's work and at other times when directed by the City.

1.04 DUST AND DEBRIS CONTROLS

A. The Contractor shall be responsible for controlling dust in the air and rocks, debris, mud or dirt which are scattered as a result of his operations on the job. The Contractor shall be responsible for cleaning all mud, rock, dust, dirt, and debris-producing materials that originate in the project area and are deposited on other public or private property by truck tires, spillages, or by other means. The Contractor shall have suitable and adequate street cleaning equipment on the project site at all times.

B. The Contractor shall endeavor, whenever possible, to restrict the use of water to control dust for his convenience in order to conserve water during drought situations or

mandated rationing required by the Water Utility Company. Whenever flushing of streets or any other work is necessary, the Contractor shall provide filter materials at the catch basin to retain any debris and dirt flowing into the City's drainage system.

C. The cost of the above work, including the providing of barricades, water and other materials, labor, and equipment shall be at the sole cost and expense of the Contractor.

D. The City may determine that an emergency exists when dust, rocks, debris, mud, or dirt are scattered in the public right of way or in the private properties as a result of Contractor's activities and/or deterioration of such conditions due to rain. The emergency conditions may also be declared when traffic or the Contractor's equipment travelling through a job causes dust to fly or rocks, debris, mud, or dirt to be scattered. Similar emergency conditions may be determined by the City's Representative if the storage of materials, tools, or any other equipment related to the project, in the public rights of way, is causing any obstruction or blocks access to the neighboring properties and/or dangerously placed without proper barricades and lights and/or backfill stockpiles or debris washing away into the street gutter and catch basins.

1.05 NOISE CONTROL

A. Equipment which operates with noise levels in excess of 85 decibels measured on the A-weighted scale defined in ANSI S-1.4 at a distance of 100 feet from the equipment is prohibited.

B. All equipment and impact tools shall have mufflers to comply with specified noise control.

C. Use of unusually noisy equipment, such as jackhammers and roto-hammers is prohibited.

D. Exterior construction work is limited to the hours of 8 AM to 5 PM.

E. Cooperate with City if an ongoing construction activity becomes objectionable by its longevity, or by overlapping into an activity started later by the City. It is understood and agreed that both parties shall cooperate so that neither will be unduly inconvenienced by this requirement.

F. Comply by requirements specified in the various sections.

1.06 CLEAN UP

A. The Contractor shall not allow the site of the work to become littered with trash, rubbish, and waste material but shall maintain the same in a neat and orderly condition throughout the construction period. Cleanup, debris and dust control shall be a daily maintenance requirement. The City shall have the right to determine what is or is not trash, rubbish or waste material and the place and manner of disposal.

B. The Contractor shall maintain a neat appearance to the work. Contractor shall promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids and cleaning solutions from surfaces to prevent marring or other damage.

C. Broken concrete debris, and unsuitable excavated native soil during construction shall be disposed of concurrently with its removal. If stockpiling is necessary all debris shall be placed in trash bins daily and shall be removed or disposed of weekly. Any waste shall not be buried on the site or disposed of into storm drains, sanitary sewers, streams, or waterways.

D. Forms or falsework that are to be re-used shall be stacked neatly concurrently with their removal. Forms and falsework that are not to be re-used shall be disposed of concurrently with their removal.

E. Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

F. Sidewalks, street area, parking strips, and driveway approaches must be kept reasonably

clean at all times during construction and be completely and carefully cleaned after the work has progressed beyond the immediate vicinity to the satisfaction of the City's Representative. Reasonable cleanup is defined as no dust, rock, or mud on any portion of the public right-of-way or the private properties as a result of the Contractor's work.

1.07 EMERGENCY CLEAN UP WORK

A. In any case in which the Contractor fails to satisfactorily complete the cleanup work described in this section, the City may determine that an emergency exists. In the event an emergency is determined by the City, the Contractor will be notified by the City to correct the violation immediately. The Contractor shall immediately make available manual labor or mechanical equipment capable of handling the cleaning process. During such an emergency, City forces may be called upon to complete the cleanup work, or the City may contract for the cleanup work. All construction work shall be shut down during this cleanup work by the City/contract forces. The City may shut down further construction work until the violations are corrected to the satisfaction of the City. The cost of the work performed by City/Contract forces plus an additional 70% surcharge shall be paid by the Contractor by deduction from payment due him on the contract. No compensation shall be given to the Contractor for stoppage of work.

B. Such action by the City, however, shall not relieve the Contractor of his responsibility for any damages which may occur before, during or after such action has been taken by the City, and shall place no liability upon the City.

1.08 FINAL CLEAN UP

A. Upon completion of the work, and before acceptance and final payment, the Contractor shall clean the project areas and remove all surplus and discarded materials, falsework, rubbish and temporary structures and restore in an acceptable manner all property, both public and private, which has been damaged during the prosecution of the work, and shall leave the improvement in a neat and presentable condition throughout the entire length of the improvement under contract to the satisfaction of the City. If the Conditions as noted above are not corrected immediately, the City may declare an emergency and take necessary action in accordance with the Emergency Cleanup Work section of this specification.

1.09 CLEAN UP AND SAFETY

A. If the Contractor stockpiles granular material in the gutter, he must provide a minimum 4" pipe below the stockpile in the gutter to accommodate typical gutter flow. Any lumber or stockpiles on the site, not ready for immediate use, shall be free of nails or torn edges that may cause injury. Any materials stockpiled in the street and any open excavation shall have barricades equipped with operative automatic flashers placed at each end. The Contractor shall maintain a neat appearance at all times. All material removed shall be disposed of off-site in a legal manner.

B. The Contractor must take special precautions to protect the public and City employees from bodily and property damage resulting from the work. Contractor must exercise all necessary precautions to ensure a safe execution of the work.

1.10 CREEK PROTECTION

A. The Contractor shall be responsible for and conduct all aspects of the work within the requirements of BMC Chapter 17.08 – PRESERVATION AND RESTORATION OF NATURAL WATERCOURSES (Creek Ordinance), and any other creek protection requirements by other agencies.

B. Portions of Work involving a creek channel may not be permitted between October 15 through April 15 or other dates as may be stipulated in applicable permits.

C. Any work between creek banks shall be conducted to not create conditions, which will allow erosion, and shall be fully restored to at least the same erosion resistant condition as before the Work.

D. Complying with the requirements of creek protection shall include but not be limited to scheduling the Work around any time periods prohibiting work within creek limits, installing erosion control measures and employing appropriate BMPs for controlling erosion, monitoring, updating and modifying BMPs to meet the requirements for changing site conditions to comply with erosion control and creek protection, replanting creek banks to reestablish erosion resistance and bank stability.

1.11 PROJECT SITE MAINTENANCE

A. Water Pollution Control. The intent of these requirements is to enforce federal, state, and other local agencies' regulations that prohibit storm water pollution at construction sites. Storm drains discharge directly to creeks and the Bay without treatment, and discharge of pollutants (i.e., any substance, material, or waste other than uncontaminated storm water) into the storm drain system is strictly prohibited.

B. The term "storm drain system" shall include storm water conduits, storm drain inlets and other storm drain structures, street gutters, channels, watercourses, creeks, lakes, and the San Francisco Bay.

C. For the purpose of eliminating storm water pollution, the Contractor shall implement effective control measures at construction sites. There are several publications that provide guidance on selecting and implementing effective control measures known as Best Management Practices (BMPs). BMPs include schedules of activities, prohibition of specific practices, general good housekeeping practices, operational practices, pollution prevention practices, maintenance procedures and other management procedures to prevent the discharge of pollutants directly or indirectly to the storm drain system. BMPs also include the construction of some facilities that may be required to prevent, control, and abate storm water pollution. The reference publications are as follows:

1. California Storm Water Best Management Practice Handbook - Industrial/Commercial
2. California Storm Water Best Management Practice Handbook - Construction Activity

These handbooks may be purchased from Blue Print Service (BPS), 1700 Jefferson St, Oakland, CA 94612.

3. Manual of Standards for Erosion and Sediment Control Measures by the Association of Bay Area Governments (ABAG).
4. Heavy Equipment Operation, Fresh Concrete & Mortar Application, Painting & Application of Solvents & Adhesives, Roadwork & Paving Activities, General Construction & Site Supervision, Parking Lots and Finish the Pour Right

These brochures are available at the Engineering Division, 1947 Center Street, 4th Floor, Berkeley, CA 94704.

1.12 STORMWATER POLLUTION CONTROL

A. Stormwater Pollution Control. The intent of these requirements is to comply with federal, state, and other local agencies' regulations that prohibit non-stormwater discharges to storm drain sewer systems, creeks and San Francisco Bay. Storm drain sewers discharge directly to creeks and the Bay without treatment, and discharge of pollutants (any substance, material, or waste other than rainfall derived stormwater) into the storm drain sewer system is strictly prohibited. Further, the Contractor is informed that Federally Endangered species have been identified in creeks within the City Limits. The storm drain sewer system, pollutants, and other relevant information are further defined in

Berkeley Municipal Code (BMC) Chapter 17.20 DISCHARGE OF NON-STORMWATER INTO CITY'S STORM DRAIN SYSTEM – REDUCTION OF STORMWATER POLLUTION, and the City's stormwater NPDES (National Pollutant Discharge Elimination System) Permit No. CAS612008. These documents are available upon request.

B. Best Management Practices (BMP) and Source Control. The contractor shall use appropriate BMPs and source control techniques on the site(s) at all times, regardless of time of year or rainfall conditions, in order to prohibit the discharge of non-stormwater discharges into the storm drain sewer system, creeks, and Bay. BMPs shall be in conformance with the California Stormwater Quality Association's "Stormwater Best Management Practice Handbook", current edition.

C. Water Pollution Control Plan (WPCP) and Coordinator. The Contractor shall prepare, submit for favorable review by the City, and implement a WPCP which shall contain at a minimum the items included in this section.

1. The Contractor shall designate an individual (to be approved by the City) available at all times of sufficient authority to halt work and implement BMPs and source control measures for the Contractor and all sub-contractors, suppliers, and other personnel that may be at the construction site(s), to prevent non-stormwater discharges from the construction site(s). This individual shall be the contact person for all matters of the project regarding non-stormwater discharges.
2. The WPCP shall show the locations of all storm drains, storm drain pipes, creeks, creek culverts, points of entry (catch basins, inlets, outlets), and other features through which stormwater flows.
3. The WPCP shall identify each point of entry and show how each entry point will be protected. The WPCP shall include a protocol for allowing drainage to flow properly during rainfall events WHILE STILL PREVENTING non-stormwater discharges from entering the storm drains, creeks, and Bay.
4. The WPCP shall include descriptions and sketches of all BMPs, show locations and describe protocols for implementing and maintaining the following BMPs for but not limited to material storage, dewatering operations, bypass pumping, saw-cutting operations, pavement operations, concrete operations, grading and excavation operations, spill prevention and control, vehicle and equipment cleaning, vehicle and equipment operation and maintenance, litter control, dust control, pavement cleaning, and construction waste management.
5. All employees, subcontractors, suppliers, and any others involved with the construction site(s) shall be trained in implementing, the importance of, and purpose of the WPCP.
6. The WPCP shall be updated to meet changing stages of the construction site(s). Work shall not begin without the City completing its review and finding no exceptions taken on the WPCP and finding at City's sole discretion that the WPCP meets the intent and goals of the project.
7. In addition, the Contractor shall observe the following guidelines:
    a. Paving during wet weather:
        i. No paving while it is raining.
        ii. No paving of the top lift of asphalt concrete (AC) on any day that experiences ¼" of rain in a twenty-four period.
        iii. No paving of bottom lift if previous seventy-two (72) hour period experienced more than ½" of rain, unless directed by the City Engineer or his designee.
    b. Store materials as required by BMPs.

c. Cover inlets and manholes when applying asphalt, seal coat, tack coat, slurry seal, fog seal, etc., and while sawcutting, grooving, and grinding, etc.
d. Place drip pans or absorbent materials under equipment when not in use.
e. During wet weather, store paving equipment indoors or cover with tarp or other waterproof covering.
f. Sweep site daily to prevent sand, gravel or excess asphalt from entering or being transported by rain into the storm drain system.
g. Keep ample supplies of drip pans or absorbent materials on-site.
h. If paving involves Portland cement concrete:
    i. Do not wash out concrete trucks into storm drains, open ditches, streets, streams, etc. The Contractor shall prevent the discharge of pollutants from concrete operations by using measures to prevent run-on and run-off pollution, properly disposing of wastes, and by implementing the following BMP's:
        a. Store all materials in waterproof containers or under cover away from drain inlets or drainage areas.
        b. Avoid mixing excess amounts of Portland cement materials. Dispose of any excess materials properly.
        c. Whenever possible, perform washout of concrete trucks off-site where discharge is controlled and not permitted to discharge to the storm drain system.
    ii. For on-site washout:
        a. Locate washout area at least fifty (50) feet from storm drains, open ditches or other water bodies, preferably in a dirt area.
        b. Confine run-off from this area by constructing a temporary pit or bermed area large enough for the liquid and solid waste.
    iii. Wash out concrete wastes into the temporary pit where the concrete can set, be broken up and then disposed of properly. If the volume of water is greater than what will allow concrete to set, allow the wash water to infiltrate and/or evaporate, if possible. Remove or vacuum the remaining silt and debris from the ponding or bermed area and dispose of it properly.
    iv. Dispose of waste water from washing of exposed aggregate to dirt area. The dirt area shall be adequate to contain all the waste water and once the waste water has infiltrated, any remaining residue must be removed.
    v. Collect and return sweepings from exposed aggregate concrete to a stockpile or dispose of the waste in trash container.

D. Training. Contractor is responsible for ensuring all personnel, laborers, sub-contractors, suppliers, and any other personnel that are involved with the Work are trained in the importance of preventing non-stormwater discharges. Each worker shall be trained or certified as being trained before being allowed to work. Before any work begins, the Contractor shall submit and certify under penalty of perjury a list of all workers who have been trained on the importance of pollution prevention, BMP and source control operation and maintenance, and recognize the authority of the City to stop the work in the event of a non-stormwater discharge. The training shall include as a minimum, review of the BMP and WPCP, and all BMPs (including BMP operation and maintenance) that are planned for the Work.

E. Enforcement. The City has the authority through this contract and appropriate sections of the BMC to enforce any portions of this section. City enforcement may include but is not limited to: citations, orders to abate, bills for City cleanup costs and administration, civil suits, and criminal charges and enforcement. Enforcement action by the City does not void or suspend any enforcement actions by other agencies, and actions by the City and other agencies shall be cumulative.

F. Submittals and Contract Time. Contractor is cautioned and advised to have appropriately trained staff with any applicable certifications prepare all submittals for Storm Water

Pollution Controls including the WPCP, and have appropriately trained staff available to meet with City staff to review the submittals. It is considered reasonable that the Contractor shall make a complete and acceptable submittal at least by the second submission. The City reserves the right to deduct monies from payments due Contractor to cover additional costs of City's and Architect/Engineer's review beyond the second submission. Illegible submittals will be rejected and returned to the Contractor.

G. Payment. There shall be no separate pay item for complying with the provisions of this section, unless a separate pay item is provided in the bid schedule.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 7329

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SUMMARY

A. Contractor shall be responsible for all cutting, fitting, and patching required to complete the work and to:

1. Make its several parts fit together properly,
2. Uncover portions of the work to provide for installation of ill-timed work,
3. Remove and replace defective work,
4. Remove and replace work not conforming to requirements of Contract Documents,
5. Provide routine penetrations of nonstructural surfaces for installation of electrical conduit, plumbing, and ductwork,
6. Remove Samples of installed work as specified for testing.

1.02 SUBMITTALS

A. Submit a written request to the Architect/Engineer two weeks in advance of executing any cutting or alteration that affects the following and is not specifically indicated on the Drawings as part of the Scope of Work:

1. Work of the City or any separate contractor,
2. The structural value or integrity of any element of the completed building,
3. The integrity or effectiveness of weather-exposed or moisture-resistant elements or systems,
4. The efficiency, operational life, maintenance, and safety of operational elements,
5. The visual qualities of sight-exposed elements.

B. The request shall include:

1. The necessity for cutting or alteration,
2. The effect on the work of the City or any separate contractor or on the structural or weatherproof integrity of the building,
3. Description of the Proposed Work:
    a. The scope of cutting, patching, alteration, or excavation,
    b. The trades who will execute the work,
    c. The products proposed to be used,
    d. The extent of refinishing to be done.
4. Alternatives to cutting and patching,
5. Cost proposal, when applicable,
6. Written permission of any separate contractor whose work will be affected.

C. Should conditions of the work or the schedule indicate a change of products from the original installation, submit a request for substitution per Section 00 6325 Substitution Request Form.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Comply with specifications and standards for each specific product involved.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine existing conditions of the Project, including elements subject to damage or to movement during cutting and patching.

B. After uncovering work, examine the conditions affecting the installation of products or performance of the Work.

C. Report unsatisfactory or questionable conditions to the Project Manager in writing. Do not proceed with the work until the Project Manager has provided further instructions.

3.02 PREPARATION

A. Provide adequate temporary support as necessary to assure the structural value or integrity of the affected portion of the work.

B. Provide devices and methods to protect other portions of the Project from damage.

C. Provide protection from the elements for that portion of the Project that may be exposed by cutting and patching work.

3.03 PERFORMANCE

A. Execute cutting and demolition by methods that will prevent damage to other work and will provide proper surfaces to receive installation of repairs.

B. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.

C. All plumbing, mechanical, and electrical system elements shall be concealed, unless indicated otherwise.

D. Restore work which has been cut or removed; install new products to provide completed work in accordance with requirements of Contract Documents.

E. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

F. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes.

1. For continuous surfaces, refinish to nearest intersection.

2. For an assembly, refinish the entire unit.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 7413

PROJECT CLEANING

PART 1 - GENERAL

1.01 SUMMARY

A. Maintain Project Site, surrounding areas and public properties free from accumulations of waste, debris, and rubbish, caused by operations.

B. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave Project Site clean and ready for occupancy.

1.02 GENERAL

A. Conduct cleaning and disposal operation in accord with legal requirements.

1. Do not burn or bury rubbish and waste materials on Project Site.
2. Do not dispose of volatile wastes in storm or sanitary drains.

B. Hazards control:

1. Store volatile wastes in covered metal containers, and remove from premises daily.
2. Prevent accumulation of wastes which create hazardous conditions.
3. Provide adequate ventilation during use of volatile or noxious substances.

Note: Care shall be taken that discharge of volatile or noxious exhaust shall be shielded from air intakes of hospital mechanical systems.

1.03 MATERIALS

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

1.04 DUST CONTROL

A. Clean interior spaces prior to start of finish painting, and continue cleaning as required until painting is completed.

1.05 DURING CONSTRUCTION

A. Execute cleaning daily to ensure Project Site, City's premises, adjacent and public properties are maintained free from accumulations of waste materials and rubbish.

B. Wet down dry materials and rubbish to control dust.

C. At reasonable intervals during progress of Work, clean Project Site and public properties, and dispose of waste materials, debris and rubbish.

D. Provide on Project Site dump containers for collection of waste materials, debris and rubbish. Hospital waste containers shall not be used for construction waste.

E. Remove waste materials, debris and rubbish from City's premises and legally dispose of off City's property.

F. Vacuum clean interior areas when ready to receive finish painting, and continue vacuum cleaning on an as-needed basis until building is ready for substantial completion or

occupancy.

G. Handle materials in a controlled manner with as few handlings as possible. Do not drop or throw materials.

H. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

1.06 FINAL CLEANING

A. Employ experienced workers, or professional cleaners for final cleaning.

B. In preparation for Substantial Completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of accessible concealed spaces.

C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed finished surfaces; polish surfaces so designated to shine finish.

D. Repair, patch and touch up marred surfaces to specified finish, and to match adjacent surfaces.

E. Broom clean paved surfaces.

F. Keep Project clean until it is occupied by the City.

G. Clean equipment and fixtures to a sanitary condition.

H. Clean or replace, if required, filters of operating equipment.

I. Clean Debris from roofs, gutters, downspouts and drainage systems.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 7419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Salvaging and recycling nonhazardous demolition and construction waste.
2. Disposing of nonhazardous demolition and construction waste.

B. Related Sections include the following:

1. Division 01 Section "Temporary Facilities and Controls" for environmental-protection measures during construction.

1.03 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 PERFORMANCE REQUIREMENTS

A. General: Develop waste management plan that results in end-of-Project rates for a minimum salvage/recycling percent by weight of total waste generated by the Work, as required by the Berkeley Municipal Code 19.37 Berkeley Green Code.

B. Salvage/Recycle Goals: Owner's goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible.

1. Demolition Waste:

a. Asphaltic concrete paving.
b. Concrete.
c. Concrete reinforcing steel.
d. Brick.
e. Concrete masonry units.

f. Wood studs.
g. Wood joists.
h. Plywood and oriented strand board.
i. Wood paneling.
j. Wood trim.
k. Structural and miscellaneous steel.
l. Rough hardware.
m. Roofing.
n. Insulation.
o. Doors and frames.
p. Door hardware.
q. Windows.
r. Glazing.
s. Metal studs.
t. Gypsum board.
u. Acoustical tile and panels.
v. Carpet.
w. Carpet pad.
x. Demountable partitions.
y. Equipment.
z. Cabinets.
aa. Plumbing fixtures.
bb. Piping.
cc. Supports and hangers.
dd. Valves.
ee. Sprinklers.
ff. Mechanical equipment.
gg. Refrigerants.
hh. Electrical conduit.
ii. Copper wiring.
jj. Lighting fixtures.
kk. Lamps.
ll. Ballasts.
mm. Electrical devices.
nn. Switchgear and panelboards.
oo. Transformers.

2. Construction Waste:

a. Site-clearing waste.
b. Masonry and CMU.
c. Lumber.
d. Wood sheet materials.
e. Wood trim.
f. Metals.
g. Roofing.
h. Insulation.
i. Carpet and pad.
j. Gypsum board.
k. Piping.
l. Electrical conduit.
m. Packaging: Regardless of salvage/recycle goal indicated above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
    1. Paper.
    2. Cardboard.
    3. Boxes.
    4. Plastic sheet and film.

5. Polystyrene packaging.
6. Wood crates.
7. Plastic pails.

1.05 SUBMITTALS

A. Waste Management Plan: Submit plan within **7** days of date established for the Notice to Proceed. The City uses Green Halo Tracking. Contractor shall be responsible for tracking construction waste through Green Halo at www.berkeley.wastetracking.com .

B. See Evaluations for example of Waste Reduction Progress Reports in paragraph below.

C. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit a copy of Green Halo reporting. Include the following information:

1. Material category.
2. Generation point of waste.
3. Total quantity of waste in tons
4. Quantity of waste salvaged, both estimated and actual in tons
5. Quantity of waste recycled, both estimated and actual in tons
6. Total quantity of waste recovered (salvaged plus recycled) in tons
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

D. Waste Reduction Calculations: Before request for Substantial Completion, submit **3** copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

E. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

F. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

G. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

H. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.06 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: Green Building Professional. Waste management coordinator may also serve as Green Building coordinator.

B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

1.07 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged,

recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

D.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by Construction Manager. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with Division 01 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

1. Distribute waste management plan to all relevant sub-contractor within 3 days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Division 01 Section "Temporary Facilities and Temporary Controls" for controlling dust and dirt, environmental protection, and noise control.

3.02 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Owner's Use:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area.
5. Protect items from damage during transport and storage.

C. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.

3.03 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Receivers and Processors: List below is provided for information only; available recycling receivers and processors include, but are not limited to, the following

The City of Berkeley Transfer Station

1201 Second Streets, Berkeley, CA

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.

1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
   a. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.04 RECYCLING DEMOLITION WASTE

A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.

B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

1. Clean and stack undamaged, whole masonry units on wood pallets.

D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

1. Treated Wood Waste: Treated wood waste is required to be managed, stored, transported, and disposed of as hazardous waste per California State regulations. Treated wood waste is required to be transported and disposed of at a Class I hazardous waste landfill by a Hazardous Waste contractor.

E. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.

2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

F. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

G. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.

H. Plumbing Fixtures: Separate by type and size.

I. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

J. Lighting Fixtures: Separate lamps by type and protect from breakage.

K. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

L. Conduit: Reduce conduit to straight lengths and store by type and size.

3.05 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.

2. Polystyrene Packaging: Separate and bag materials.

3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.

4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes: Chip brush, branches, and trees.

C. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.

2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

3. Treated Wood Waste: Treated wood waste is required to be managed, stored, transported, and disposed of as hazardous waste per California State regulations. Treated wood waste is required to be transported and disposed of at a Class I hazardous waste landfill by a Hazardous Waste contractor.

D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.

1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.06 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 7700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 SUMMARY

A. Section describes requirements and procedures for:

1. Project cleaning.
2. Testing of equipment and systems
3. Substantial Completion
4. Final Completion
5. Close Out
6. Warranties

1.02 SUBSTANTIAL COMPLETION

A. Removal of Temporary Construction Facilities and Project Cleaning.

1. Prior to Substantial Completion inspection: remove temporary materials, equipment, services, and construction; clean all areas affected by the Work; clean and repair damage caused by installation or use of temporary facilities; restore permanent facilities used during construction to specified condition.

B. Equipment and Systems.

1. Prior to Substantial Completion, Contractor shall start up, run for periods prescribed by City, operate, adjust and balance all manufactured equipment and Project systems, including but not limited to, mechanical, electrical, safety, fire, and controls.
2. Demonstrate that such equipment and systems conform to contract standards and manufacturer’s guarantees. Where applicable, use testing protocols specified, and if the contract is silent, then consistent with manufacturer’s recommendations and industry standards.

C. Procedure for Substantial Completion

1. When Contractor considers Work or designated portion of the Work as Substantially Complete, submit written notice to City, with list of items remaining to be completed or corrected and explanation of why such items do not prevent City’s beneficial use and occupancy of the Work for its intended purposes. Within reasonable time, City will inspect to determine status of completion.
2. Should City determine that Work is not Substantially Complete, City will promptly notify Contractor in writing, listing all defects and omissions. Contractor shall remedy deficiencies and send a second written notice of Substantial Completion. City will reinspect the Work. If deficiencies previously noted are not corrected on reinspection, then pay the cost of the reinspection.
3. When City concurs that Work is Substantially Complete, City will issue a written notice or certificate of Substantial Completion, accompanied by Contractor’s list of items to be completed or corrected as verified by City.
4. Manufactured units, equipment and systems that require startup must have been

started up and before a notice or certificate of Substantial Completion will be issued.

5. A punch list examination will be performed upon Substantial Completion. One follow-up review of punch list items for each discipline will be provided. If further Site visits are required to review punch list items due to incompleteness of the Work by Contractor, Contractor will reimburse City for costs associated with these visits.

1.03 FINAL COMPLETION

A. Requirements

1. Final Completion occurs when Work meets requirements for City's Final Acceptance.

B. Procedure

1. When Contractor considers Work is Finally Complete, submit written certification that:
   a. Contractor has inspected Work for compliance with Contract Documents, and all requirements for Final Acceptance have been met.
   b. Except for Contractor maintenance after Final Acceptance, Work has been completed in accordance with Contract Documents and deficiencies listed with Certificate of Substantial Completion have been corrected. Equipment and systems have been tested in the presence of City, and are operative.
   c. Project Record Documents are completed and turned over to City, and Work is complete and ready for final inspection.
2. In addition to submittals required by Contract Documents, provide submittals required by governing authorities and submit final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
3. Should City determine that Work is incomplete or Defective, City promptly will so notify Contractor, in writing, listing the incomplete or Defective items. Contractor shall promptly remedy the deficiencies and notify the City when it is ready for reinspection.

C. Final Adjustments of Accounts:

1. Submit a final statement of accounting to City, showing all adjustments to the Contract Sum and complete and execute Document 00 6530 (Agreement and Release of Claims).
2. If so required, City shall prepare a final Change Order for submittal to Contractor, showing adjustments to the Contract Sum that were not previously made into a Contract Modification.

D. Warranties

1. Execute Contractor's Submittals and assemble warranty documents, and Installation, Operation, and Maintenance Manuals, executed or supplied by Subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in 8½ inches by 11 inches three-ring binder with durable plastic cover, appropriately separated and organized. Assemble in Specification Section order.
2. Submit material prior to final Application for Payment. For equipment put into use with City's permission during construction, submit within 14 calendar days after first operation. For items of Work delayed materially beyond Date of Substantial Completion, provide updated Submittal within 14 calendar days after acceptance, listing date of acceptance as start of warranty period.
3. Warranty Forms: Submit drafts to Owner for approval prior to execution. Forms shall not detract from or confuse requirements or interpretations of Contract Documents. Warranty shall be countersigned by manufacturers. Where specified, warranty shall be countersigned by Subcontractors and installers.

4. Rejection of Warranties: Owner reserves right to reject unsolicited and coincidental product warranties that detract from or confuse requirements or interpretations of Contract Documents.
5. Term of Warranties: For materials, equipment, systems, and workmanship, warranty period shall be one year minimum from date of Final Completion of entire Work except where:
    a. Detailed Specifications for certain materials, equipment or systems require longer warranty periods.
    b. Materials, equipment or systems are put into beneficial use of City prior to Final Completion as agreed to in writing by City.

E. Warranty of Title:

1. No material, supplies, or equipment for Work under Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver premises, together with improvements and appurtenances constructed or placed thereon by Contractor, to City free from any claim, liens, security interest, or charges, and further agrees that neither Contractor nor any person, firm, or corporation furnishing any materials or labor for any Work covered by Contract shall have right to lien upon premises or improvement or appurtenances thereon. Nothing contained in this paragraph, however, shall defeat or impair right of persons furnishing materials or labor under bond given by Contractor for their protection or any rights under law permitting persons to look to funds due Contractor in hands of City.

F. Turn-In. Contract Documents will not be closed out and final payment will not be made until all keys issued to Contractor during prosecution of Work and letters from property owners, pursuant to Contract Documents, are turned in to City.

G. Release of Claims. Contract Documents will not be closed out and final payment will not be due or made until Document 00 6530 (Agreement and Release of Claims) is completed and executed by Contractor and City.

H. Fire Inspection Coordination. Coordinate fire inspection and secure sufficient notice to City to permit convenient scheduling (if applicable).

I. Building Inspection Coordination**.** Coordinate with City a final inspection for the purpose of obtaining an occupancy certificate (if applicable).

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 7800

CLOSEOUT SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY

A. This section specifies administrative and procedural requirements for Project Record Documents.

B. Project Record Documents required include:

1. Marked-up copies of Contract Drawings
2. Marked-up copies of Shop Drawings
3. Newly prepared Drawings
4. Marked-up copies of Specifications, Addenda and Change Orders
5. Marked-up Project Data submittals
6. Record Samples
7. Field records for variable and concealed conditions
8. Record information on Work that is recorded only schematically

C. Specific Project Record Documents requirements that expand requirements of this Section are included in the individual Sections of Divisions 1 through 33.

D. General Project closeout requirements are included in Section 01 7700, "Contract Closeout."

E. Maintenance of Documents and Samples:

1. Store Project Record Documents and samples in the field office apart from Contract Documents used for construction.
2. Do not permit Project Record Documents to be used for construction purposes.
3. Maintain Project Record Documents in good order, and in a clean, dry, legible condition.
4. Make documents and samples available at all times for inspection by Architect and Project Manager.

F. City will provide one set of sepias and one blueline set of the construction drawings and one project manual for the Contractor's use and copying during construction.

1.02 PROJECT RECORD DRAWINGS

A. Mark-up Procedure: During the construction period, maintain a set of blueline or blackline prints of Contract Drawings and Shop Drawings for Project Record Document purposes. Label each document (on first sheet or page) "PROJECT RECORD" in 2 in. high printed letters. Keep record documents current. Note: A reference by number to a Change Order, RFI, RFQ, Field Order or other such document is not acceptable as sufficient record information on any record document. Do not permanently conceal any Work until required information has been recorded.

1. Mark these Drawings to indicate the actual installation where the installation varies appreciably from the installation shown originally. Give particular attention to

information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:

a. Dimensional changes to the Drawings
b. Revisions to details shown on the Drawings
c. Depths of various elements of foundation in relation to main floor level or survey datum.
d. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
e. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
f. Establish locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stubouts, invert elevations, and similar items.
g. Provide actual numbering of each electrical circuit.
h. Field changes of dimension and detail.
i. Revisions to routing of piping and conduits
j. Revisions to electrical circuitry
k. Actual equipment locations
l. Duct size and routing
m. Changes made by Change Order
n. Details not on original Contract Drawings

2. Mark completely and accurately Project Record Drawing prints of Contract Drawings or Shop Drawings, whichever is the most capable of showing actual physical conditions. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.

3. Mark Project Record Drawing sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.

4. Mark important additional information which was either shown schematically or omitted from original Drawings.

5. Note construction change directive numbers; alternate numbers; Change Order numbers and similar identification.

6. Responsibility for Mark-up: Where feasible, the individual or entity who obtained Project Record Drawing data, whether the individual or entity is the installer, subcontractor, or similar entity, is required to prepare the mark-up on Project Record Drawings.

a. Accurately record information in an understandable and legible drawing technique.
b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.

B. Preparation of Transparencies: Immediately prior to inspection for Certification of Substantial Completion, review completed marked-up Project Record Drawings with the Project Manager. When authorized, prepare a full set of correct transparencies of Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on print sets. Erase, redraw, and add details and notations where applicable. Identify and date each Drawing; include the printed designation "PROJECT RECORD DRAWINGS" in a prominent location on each Drawing.

2. Refer instances of uncertainty to the Project Manager for resolution.

3. Review of Transparencies: Before copying and distributing, submit corrected

transparencies and the original marked-up prints to the Project Manager and Architect/Engineer for review.

a. Transparencies and the original marked-up prints will be returned to the Contractor for organizing into sets, printing, binding, and final submittal.

4. Copies and Distribution: After completing the preparation of transparency Project Record Drawings, print three blue-line or black-line prints of each Drawing, whether or not changes and additional information were recorded. Organize the copies into manageable sets. Bind each set with durable paper cover sheets, with appropriate identification, including titles, dates and other information on cover sheets.

a. Organize and bind original marked-up set of prints that were maintained during the construction period in the same manner.
b. Organize Project Record Drawings transparencies into sets matching the print sets. Place these sets in durable tube-type drawing containers with end caps. Mark the end cap of each container with suitable identification.

C. Distribution of Marked up Drawings and Transparencies

1. Submit the marked-up Project Record Drawings set, pdfs, transparencies, and five copy sets to the Project Manager for City's records.

D. Shop Drawings and Samples: Maintain as record documents; legibly annotate Shop Drawings and Samples to record changes made after review.

E. In addition to requirements of this Section, comply with supplemental requirements of Divisions 21 through 28 and Division 33.

1. Divisions 21 through 28 and Division33 of the specifications require the preparation of large scale, detailed Layout Drawings of the work of those divisions. These Layout Drawings are not shop drawings as defined by the General Conditions, but together with shop drawing or Layout Drawings of all other affected sections are used check, coordinate and integrate the work of the various sections

2. Include these Layout Drawings as part of the As Built Documents.

F. Delete Architect/Engineer title block and seal from documents.

G. As-Built Documents are subject to review and acceptance by the City and Architect/Engineer.

H. Submit documents to Project Manager with final Application for payment.

1.03 PROJECT RECORD SPECIFICATIONS

A. During the construction period, maintain one copy of the Project Specifications, including addenda and modifications issued, for Project Record Document purposes.

1. Mark the Project Record Specifications to indicate the actual installation where the installation varies substantially from that indicated in Specifications and Modifications issued. Note related Project Record Drawing information, where applicable. Give particular attention to substitutions, selection of product options, change order work, and information on concealed installation that would be difficult to identify or measure and record later.

a. In each Specification Section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.
b. Record the name of the manufacturer, catalog number, supplier and installer, and other information necessary to provide a record of selections made and to document coordination with Project Record Product Data submittals and maintenance manuals.

c. Note related Project Record Product Data, where applicable, for each principal product specified, indicate whether Project Record Product Data has been submitted in maintenance manual instead of submitted as Project Record Product Data.

2. Upon completion of mark-up, submit Project Record Specifications to the Project Manager for City's records.

1.04 PROJECT RECORD PRODUCT DATA

A. During the construction period, maintain one copy of each Project Record Product Data submittal for Project Record Document purposes.

1. Mark Project Record Product Data to indicate the actual product installation where the installation varies substantially from that indicated in Project Record Product Data submitted. Include significant changes in the product delivered to the site, and changes in manufacturer's instructions and recommendations for installation.

2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

3. Note related Change Orders and mark-up of Project Record Drawings, where applicable.

4. Upon completion of mark-up, submit a complete set of Project Record Product Data to the Project Manager for City's records.

5. Where Project Record Product Data is required as part of maintenance manuals, submit marked-up Project Record Product Data as an insert in the manual, instead of submittal as Project Record Product Data.

6. Each prime Contractor is responsible for mark-up and submittal of record Project Record Product Data for its own Work.

B. Material, Equipment and Finish Data

1. Provide data for primary materials, equipment and finishes as required under each specification section.

2. Submit two sets prior to final inspection, bound in 8-1/2 inches by 11 inches three-ring binders with durable plastic covers; provide typewritten table of contents for each volume.

3. Arrange by Specification division and give names, addresses, and telephone numbers of subcontractors and suppliers. List:

a. Trade names.
b. Model or type numbers.
c. Assembly diagrams.
d. Operating instructions.
e. Cleaning instructions.
f. Maintenance instructions.
g. Recommended spare parts.
h. Product data.

1.05 MISCELLANEOUS PROJECT RECORD SUBMITTALS

A. Refer to other Specification Sections for miscellaneous record keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the Project Manager for City's records. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:

1. Field records on excavations and foundations
2. Field records on underground construction and similar work
3. Survey showing locations and elevations of underground lines
4. Invert elevations of drainage piping
5. Surveys establishing building lines and levels
6. Authorized measurements utilizing unit prices or allowances
7. Records of plant treatment
8. Ambient and substrate condition tests
9. Certifications received in lieu of labels on bulk products
10. Batch mixing and bulk delivery records
11. Testing and qualification of tradespersons
12. Documented qualification of installation firms
13. Load and performance testing
14. Inspections and certifications by governing authorities
15. Leakage and water-penetration tests
16. Fire resistance and flame spread test results
17. Final inspection and correction procedures

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 RECORDING

A. Post changes and modifications to the Documents as they occur. Do not wait until the end of the Project. City may review Project Record Documents prior to each progress payment to see that the required information is being properly and faithfully recorded to assure compliance with this requirement. If Contractor has not complied with this requirement, the progress payment will be withheld until the Record Documents have been brought up to date.

3.02 SUBMITTAL

A. At completion of Project, deliver Record Documents to Project Manager.

B. Accompany submittal with transmittal letter containing:

1. Date
2. Project title and number
3. Contractor's name and address
4. Number and title of each record documents
5. Certification that each document as submitted is complete and accurate, and signature of Contractor, or his authorized representative.

END OF SECTION

This Page Intentionally Left Blank

DIVISION 2 – TECHNICAL SPECIFICATIONS

Technical Specifications Prepared By:

10.16.25

Cathy Garrett, Principal — Date

MIG | PGA

DIVISION 2 EXISTING CONDITIONS

SECTION 02 4119

DEMOLITION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. FINAL REMOVAL ACTION WORKPLAN, prepared for City of Berkeley by GSI Environmental Inc., issued October 29, 2025.

1.02 RELATED SECTIONS

A. Earthwork: Section 31 2000

1.03 SCOPE OF WORK

A. Furnish all labor, materials, tools and equipment necessary for selective site demolition as indicated on the plans and as specified herein; including components and accessories required for a complete demolition, including but not limited to the following components:

1. Removal of all on-site improvements as shown or required to accommodate new work, including but not limited to the following:

   a. Contaminated soil.
   b. Limbs pruned at existing plants.
   c. Chain link fence and wire
   d. Concrete paving
   e. Trees and stumps
   f. Clearing and grubbing
   g. Miscellaneous items as shown on plans

2. Removal of all debris and waste existing on site or caused by work of this Contract.

3. Repair of all damage to permanent construction shown or directed to remain in place.

1.04 CODES AND STANDARDS

A. Conduct demolition work in accordance with the applicable safety requirements of the California Administrative Code, Title 19, the latest construction safety orders of the Division of Industrial Safety, State of California, the Associated General Contractors' Manual of Accident Prevention in Construction, latest edition.

1.05 PERMITS AND LICENSES

A. Procure all City, County and State permits and licenses, including municipal business license, in accordance with General Conditions. Give all notices necessary and incidental to the due and lawful execution of the work.

B. Conform to all Federal, State, and local ordinances relating to the protection of the public, Contractor's personnel, and the flow of traffic.

C. Review FINAL REMOVAL ACTION WORKPLAN for additional permit and licensing requirements.

1.06 DEFINITIONS

A. The “Owner’s Representative” is the person, appointed by the Owner, to represent their interests. The Owner’s Representative will be on site frequently and regularly during

construction. Where needed, the Owner's Representative will identify the need for field visits by the landscape architect or other consultants.

PART 2 - PRODUCTS

1.07 MATERIALS

A. Fill Materials: Shall be as specified in Section 31 2000, Earthwork.

PART 3 - EXECUTION

1.08 GENERAL

A. All work to comply with FINAL REMOVAL ACTION WORKPLAN, prepared for City of Berkeley by GSI Environmental Inc., issued December 16, 2024.

B. Dust Control: During demolition work, provide effective dust control by approved means. Excessive blowing dust and debris will not be permitted at any time.

1. Follow additional Dust Control Measures outlined in FINAL REMOVAL ACTION WORKPLAN

C. Protection of Existing Work: Exercise all required precautions necessary to protect all portions of structures and exterior construction on the site. Repair or replace, to the satisfaction of the Owner's Representative, all damage to existing work caused by work under this Contract.

D. Disposal of Waste:

1. Follow all disposal measures outlined in FINAL REMOVAL ACTION WORKPLAN
2. Remove from site daily all debris and waste resulting from the work. Do not let material accumulate.
3. Dispose of all material removed (crushed stone, broken concrete, rubble and similar material) as specified in the FINAL REMOVAL ACTION WORKPLAN
4. The off-site disposal area is the responsibility of the Contractor. Arrange for and pay all fees, permits and other cost for disposal, etc.
5. Comply with all local and state laws and regulations governing hauling and the prevention of spillage on streets and adjacent areas.

E. Joints at Existing: Wherever cutting, removing or alteration of existing construction is required for connections with new work, or to otherwise meet the requirements of the Drawings and Specifications, perform such work to minimize damage to existing construction that is to remain in place.

1.09 PROTECTION

A. Protect from damage of operations under this Section adjoining properties, sidewalks, driveways, curbs, and vegetation to remain.

B. Fires and explosives will not be permitted.

C. Restore to former condition all existing roads, drives, walks, curbing, vegetation, utility poles, underground utility lines, etc., except those to be removed, which are damaged in the execution of this Contract. Restore to the satisfaction of the Owner's Representative at no additional charge.

1.10 FILL

A. Fill to comply with all requirements listed in FINAL REMOVAL ACTION WORKPLAN and Section 31 2000, Earthwork.

1.11 CLEANUP

A. Upon completion of the work, remove all barricades, tools, and equipment.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 3 CONCRETE

SECTION 03 3000

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Furnish all labor, materials, tools and equipment necessary to install cast-in-place concrete as indicated on the plans and as specified herein; including components and accessories required for a complete installation, including but not limited to the following components:

1. Reinforcement
2. Concrete materials
3. Mix design, and
4. Placement procedures.

1.02 RELATED SECTIONS

A. 31 2000 Earthwork

1.03 SUBMITTALS

A. Procedures: In accordance with Submittal Procedures: Section 01 33 00.

B. Product Data: For each manufactured material and product indicated.

C. Design Mixes: For each concrete mix indicated.

D. Shop Drawings: For steel reinforcement.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

B. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specification for Structural Concrete." Sections 1 through 5.
2. ACI 117, "Specifications for Tolerances for Concrete Constructions and Materials"
3. ACI 360R-06, "Design of Slabs on Grade"

C. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code-Reinforcing Steel"

D. Independent Testing Agency Review: Owner will engage a qualified independent testing agency to review concrete materials, concrete mix design, and procedures for concrete placement, curing and finishing.

1.05 PRODUCT HANDLING

A. Protection: Use adequate means to protect materials of this Section before, during and after installation and to protect the work and materials of other trades.

B. Replacements: In the event of damage, immediately make repairs and replacements necessary to the approval of the Owner's Representative and at no additional cost to the Owner.

1.06 INSPECTION

A. Verify that conditions are satisfactory for concrete paving work. Do not proceed with the work of the Section until unsatisfactory conditions have been corrected.

B. Notify the Owner's Representative 48 hours prior to the pouring of concrete after all reinforcing, plumbing, electrical, etc., are in place for inspection.

1.07 DEFINITIONS

A. The “Owner’s Representative” is the person, appointed by the Owner, to represent their interests. The Owner’s Representative will be on site frequently and regularly during construction. Where needed, the Owner’s Representative will identify the need for field visits by the landscape architect or other consultants.

PART 2 - PRODUCTS

2.01 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practical sizes to minimize number of joints.

1. Plywood, metal or other approved panel materials.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

2.02 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.

1. Reinforcement to be welded shall meet chemical requirements of ASTM A 706.

B. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

C. Deformed-Steel Welded Wire Fabric: ASTM A 497, flat sheet.

D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic or precast concrete according to CRSI’s “Manual of Standard Practice.”

2.03 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials of the same type, brand, and source throughout the Project:

1. Portland Cement: ASTM C 150, Type II. Supplement with the following:
   a. Fly Ash: ASTM C 618, Class F
   b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
2. Blended Hydraulic Cement: ASTM C 595, Type IS, Portland blast-furnace slag IP, Portland-pozzolan I (PM), pozzolan-modified Portland I (SM), slag-modified Portland cement.
3. Silica Fume: ASTM C 1240, amorphous silica.

B. Normal-Weight Aggregates: ASTM C 33, graded. Provide aggregates shown to have produced low-shrinkage concrete such as limestone or granite.

1. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: ASTM C 94/C 94M and potable.

D. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494, Type A.
2. Retarding Admixture: ASTM C 494, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017, Type II.

E. Air-Entraining Admixture: ASTM C 260

2.04 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq yd when dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

G. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

H. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

2.05 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.

B. Anchors:

1. Adhesive Anchors (dowels) shall use a two-part epoxy adhesive and shall have a current ICC or NER Research Report. Simpson Strong-Tie “IXP Torque Controlled Adhesive Anchors” or equal.
2. Expansion anchors shall have a current ICC or NER Research Report: Hilti, Inc. “Kwik-Bolt TZ,” Simpson Strong-Tie “Strong-Bolt Wedge Anchor” or equal.

C. Slab Construction Joint Devices: Tapered plate dowels, “Diamond Dowel System” by PNA Construction Technologies or equal.

1. Space 1/4X4-1/2X4-1/2 (in) plates at 18 inch on center.
2. Install per manufacturer’s instructions.

D. Construction Joint Devices: Integral galvanized steel; thick, formed to tongue and groove profile, knockout holes spaced at 6 inches, ribbed steel spikes with tongue to fit top screed edge.

E. Stair Tread Warning Stripe: Extruded aluminum nosing base with aluminum oxide abrasive anti-slip filler.

1. Spectra type WP24A, manufactured by Wooster Products, Inc. tel. 800-321-4936, with black filler and sure-hold anchor extruded integrally full length of section, or approved equal.

2.06 CONCRETE MIXTURES

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Footings and Below Grade Walls: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 3000 psi at 28 days when tested in accordance with ASTM C39.
2. Minimum Cement Content: ACI 302.1R, Table 6.2.4.
3. Slump Limit: 4 inches.
4. Air Content: ACI 301 Table 4.2.2.4: mild exposure.

2.07 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI’s “Manual of Standard Practice.”

2.08 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94 and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

2.09 OTHER MATERIALS

A. Materials, not specifically described but required for a complete and proper installation of the work of this Section, selected by the Contractor subject to the approval of the Owner's Representative.

PART 3 - EXECUTION

3.01 FORMWORK

A. Design, erect, shore, brace and maintain formwork according to ACI 301 to support vertical, lateral, static and dynamic loads, and construction loads that might be applied until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation and position indicated, within tolerance limits of ACI 117.

C. Chamfer exterior corners and edges of permanently exposed concrete where indicated.

3.02 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions and directions furnished with items to be embedded.

3.03 VAPOR RETARDERS

A. Sheet Vapor Retarders: Place, protect and repair sheet vapor retarder according to ASTM E 1643 and manufacturer’s written instructions.

1. Lap joints 6 inches and seal with manufacturer's recommended tape.

B. Bituminous Vapor Retarders: Place, protect and repair bituminous vapor retarder according to manufacturer's written instructions.

3.04 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
2. Weld reinforcing bars according to AWS D1.4 where indicated.
3. Install mechanical couplers according to ICC Evaluation Report where indicated.

3.05 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired at locations indicated or as approved by Architect.

1. Surfaces against which concrete will be placed and which are noted as "Roughen" on the plans shall be clean and intentionally roughened to a full amplitude of approximately ¼ inch.

3.06 PREPARATION

A. Verify that forms are clean and free of rust before applying release agent.

B. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

C. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications and where curing under humid conditions is required.

3.07 PLACING CONCRETE

A. Before placing concrete, verify that installation of formwork, reinforcement and embedded items is complete and that required inspections have been performed.

B. Cold-Weather Placement: Comply with ACI 306.1.

C. Hot-Weather Placement: Comply with ACI 301.

D. Place concrete in accordance with ACI 304R.

E. Place concrete for floor slabs in accordance with ACI 302.1R

F. Ensure reinforcement, inserts, embedded parts and formed construction joint devices will not be disturbed during concrete placement.

G. Install joint devices in accordance with manufacturer's instructions.

H. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

I. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

J. Place concrete continuously between predetermined expansion, control and construction joints.

K. Do not interrupt successive placement; do not permit cold joints to occur.

L. Place floor slabs in checkerboard or saw cut pattern indicated.

M. Screed floors level, within tolerance of ¼ inch in 10 feet and as indicated on drawings.

3.08 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lbs/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
2. Moisture-Retaining-Cover-Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practical width, with and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days.
3. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.09 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a qualified independent testing and inspecting agency to perform special inspections as specified in California Building Code (CBC), 2016, Edition, Section 1704.

1. Inspect concrete placement.
2. Test concrete in accordance with ACI 301.
3. Inspect reinforcement placement for conformance with Contract Documents.
4. Inspect installation of expansion and adhesive anchors.

3.10 CLEAN-UP

A. Keep work areas in workmanlike and safe condition so rubbish, wastes, and debris do not interfere with the work of others. Upon completion of work in this section, remove all rubbish, waste, and debris resulting from the operations. Remove all equipment and implements of service and leave entire area in a neat, clean, acceptable condition to the satisfaction of the Owner's Representative.

END OF SECTION

DIVISION 6 WOODS PLASTICS AND COMPOSITES

SECTION 06 2013

EXTERIOR FINISH CARPENTRY – WOOD FENCES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Furnish all labor, materials, tools and equipment necessary to Provide and install Exterior Finish Carpentry as indicated on the plans and as specified herein; including components and accessories required for a complete installation, including but not limited to the following components:

1. Wood Fencing
2. Wood Gates

1.02 RELATED SECTIONS

A. 03 3000 Cast-In-Place Concrete

B. 31 3000 Earthwork and Grading

1.03 REFERENCE STANDARDS

A. AWI – Architectural Woodwork Institute standards.

B. BHMA A156.9 - Hardware.

C. PS 20 - American Softwood Lumber Standard.

D. AWPA – American Wood Preservers Association.

E. WIC - Woodwork Institute of California: Manual of Millwork.

F. WWPA - Western Wood Products Association, "Grading Rules for Lumber".

1.04 SUBMITTALS

A. Shop drawings of all site work carpentry.

B. Product sheets of wood finish.

C. Certificates of compliance with standards specified.

D. Verify details and dimensions of equipment and fixtures integral with finish carpentry for proper fit and accurate alignment.

E. Coordinate details with other work supporting, adjoining, or fastening to casework.

F. Qualification Data: For firms and persons to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners and other information specified.

G. Mockup: Provide 1 entire section of fencing including 2 posts and wood finish for review an approval by landscape architect.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with AWI Custom quality.

B. Environmental Requirements: Maintain uniform moisture content of lumber at not more than 19-percent before, during, and after installation.

C. Sequencing, Scheduling: Coordinate details with other Work supporting, adjoining or fastening to rough carpentry Work.

D. Lumber shall bear grade-trademark or be accompanied by certificate of compliance of appropriate grading agency.

E. Installer Qualifications: Engage installer with minimum 5 years experience in the installation of the material specified similar in material, design, and extent to that indicated for the Project that has resulted in construction with record of successful in-service performance.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Provide proper facilities for handling and storage of materials to prevent damage to edges, ends, and surfaces.

B. Keep materials dry. Where necessary, stack materials off ground on level flat forms, fully protected from weather.

1.07 FIELD MEASUREMENTS

A. Verify measurements at job site.

B. Verify details and dimensions of equipment and fixtures integral with finish carpentry for proper fit and accurate alignment.

C. Coordinate details with other work supporting, adjoining, or fastening to casework

PART 2 - PRODUCTS

2.01 LUMBER AND TIMBER MATERIALS

A. Air- or kiln-dry to maximum 19-percent moisture content, except maximum 15-percent for 2-inch lumber at time of surfacing.

B. Finish surfaced four sides, S4S, unless otherwise noted.

C. Size to conform to rules of governing standard. Sizes shown are nominal unless otherwise noted.

D. Type: Construction heart redwood.

2.02 HARDWARE

A. Hardware: High grade hot dipped galvanized, conforming to ASTM A153 and STM A653. Except for hard-driven common nail and staples, all hardware, especially hardware not available prior to 1900, shall be hidden or not allowed. Owner’s Representative to declare what constitutes hidden.

B. Fence and Guardrail Nails: 8d hot dipped galvanized Fence nails with checkered head and Annular ring thread.

C. Miscellaneous Hardware: Provide all common screws, bolts, fastenings, washers and nuts required to complete rough carpentry Work.

2.03 FINISHES

A. Wood Coating: Micro-Seal with Graffiti Control manufactured by Rain Guard or approved equivalent.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas to receive rough carpentry Work and verify following:

1. Completion of installation of components to receive rough carpentry Work.
2. That surfaces are satisfactory to receive Work.

3. That spacing, direction, and details of supports are correct to accommodate installation of blocking, backing, stripping, furring and nailers.
4. That all anchor bolts and holdown bolts are properly installed.

3.02 INSTALLATION

A. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

B. Install components with nails, screws, bolts with blind fasteners, as detailed.

C. Install hardware in accordance with manufacturer's instructions.

D. Use common nails to attach wood panels to rails, two nails per rail attachment. All other attachments are wood screws unless otherwise indicated. Make tight connections between wood members. Install fasteners without splitting wood. Replace members that split.

E. All posts shall be plumb and straight, all boards and edges shall be level and smooth.

F. No fastenings or rough finishes to remain as hazards extending beyond a flush surface.

G. Provide holes and connections for the work of other trades and make necessary connections thereto.

H. Bolts: As necessary and as specified by Structural plans.

I. Miter corners of exposed molding or frames unless otherwise noted.

J. Accuracy of Work: fabricate all work and erect square, plumb, straight and true. Provide all supporting and anchoring means as required for proper installation.

K. Cutting: Perform all cutting, boring, and similar Work required.

L. Bolt holes to be 1/16-inch oversize. Threads shall not bear on wood. Use standard malleable iron washers against wood. Carriage bolts require washers under the nut only.

M. Screws (Wood or Lag): Screws shall be screwed and not driven into place. Screw holes shall be predrilled to the same diameter and depth of shank. Holes for threaded portion shall be predrilled less than or equal to the diameter of the root of the thread. Provide standard cut washers under head of lag screws.

3.03 SITE APPLIED WOOD TREATMENT

A. Apply per manufacturer’s recommendations.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DIVISION 31 EARTHWORK

SECTION 31 2000

EARTHWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Additional information concerning earthwork may be found in the geotechnical investigation report by ENGEO Incorporated titled "SANTA FE RIGHT-OF-WAY NEW PARK DEVELOPMENT, BERKELEY, CALIFORNIA, GEOTECHNICAL EXPLORATION," dated November 18, 2022. All requirements of this report shall be followed unless noted otherwise.

C. FINAL REMOVAL ACTION WORKPLAN, prepared for City of Berkeley by GSI Environmental Inc., issued October 29, 2025.

1.02 SUMMARY

A. Section Includes:

1. Soil Materials
2. Dewatering
3. Excavation
4. Backfilling and Compacting

B. Related Sections:

1. Demolition: Section 02 4119

C. Definitions:

1. Backfill: Material used to fill an excavation.
2. Dewatering: Removal of all standing water as well as water seeping into an excavation to maintain conditions suitable to continue the Work. Dewatering activities normally include over-excavation and placement of drain rock within an excavation to support required activities and/or equipment. The Contractor is responsible to maintain conditions suitable for the ongoing work.
3. Foundation Rock Fill: Coarse, well-draining rock used to fill over-excavated areas, particularly in soft soils or where groundwater may be present, to bring the grade up to indicated elevation. Also referred to as "Drain Rock".
4. Imported Fill: Suitable material that must be hauled in from off-site borrow areas.
5. Engineered Fill: Soil excavated from site or imported which conform to the requirements for fill material contained in geotechnical report for this project.
6. Subgrade: Top of the excavated or filled ground surface immediately below hardscape pavement sections, which include the aggregate base and/or drain rock layers underlying the surface pavement.
7. Suitable Material: Soil material that meets the required specifications for its intended purpose as described in this Specification and on the Drawings.

8. Native Backfill: Native Soil that has been excavated on-site, identified as meeting the requirements for use as a backfill material. It has had all organic material, rocks of unacceptable size, and any other deleterious material removed, and protected from contamination while being stockpiled on site.

1.03 REFERENCES

A. American Association of State Highway and Transportation Officials:

1. AASHTO T180 (2020) - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:

1. ASTM D422 (2007) - Standard Test Method for Particle-Size Analysis of Soils.
2. ASTM D698 (2012) - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3).
3. ASTM D1556 (2015) - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
4. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3).
5. ASTM D2167 (2015) - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
6. ASTM D4318 (2017) - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
7. ASTM D6938 (2017) - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.04 SUBMITTALS

A. Submittal procedure shall be as outlined in Division 1 - GENERAL REQUIREMENTS. Submittals will be required for all imported materials to be used in the prosecution of work described in this Section. No imported materials shall be brought on site prior to approval by the Landscape Architect. On-site borrow materials suitable for use on this project will be identified in the field by the Landscape Architect.

B. Samples: Submit, in air-tight containers, 10 lb sample of each type of fill to testing laboratory.

C. Materials Source: Submit name of imported fill materials suppliers.

D. Submittals for engineered fill borrow material shall consist of a representative sample of the proposed material for evaluation by the Engineer, and a certified gradation analysis.

E. Submit all field and laboratory testing to the Engineer.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with:

1. State of California Business and Transportation Agency, California Department of Transportation (CDT, Caltrans) "Standard Specifications" (Caltrans Standard Specification)
2. State of California Code of Regulations (CCR)
3. State of California Construction Safety Orders, Latest Edition (CAL/OSHA)
4. City of Berkeley Department of Public Works, Standards and Specifications and Drawings, latest edition.
5. Any other agencies having jurisdiction

B. Soil Testing:

1. A Geotechnical Engineer (licensed in the state in which the work is being performed) shall be retained by the Owner to provide compaction testing and inspection as needed to ensure proper material placement during all earthwork operations,

2. Test results will be distributed in compliance with Division 01 Specifications or Contractor's Terms and Conditions with the Owner.

C. Maintain one copy of each document on site.

1.06 DELIVERY, STORAGE, AND HANDLING

A. All Delivery, Storage and Handling of on-site excavated and imported materials shall comply with FINAL REMOVAL ACTION WORKPLAN, prepared for City of Berkeley by GSI Environmental Inc., issued December 16, 2024.

B. On-site excavated and imported materials shall be stockpiled at a location or locations designated by the Owner, so as not to damage existing improvements, landscaping, or trees, or interfere with traffic and pedestrians. All soils materials, stockpiled on site shall be protected from excessive moisture, including from rain or surface sources.

C. All soils materials stockpiled on site shall be protected from erosion and discharge to drainage structures. Soils shall also be protected from wind erosion.

D. Stockpiled materials of different types shall be maintained separately and not allowed to mix.

E. Take all means necessary to control dust and noise on and near the project site in accordance with applicable requirements of the local authority having jurisdiction.

F. Surplus Materials:

1. All excavated soil materials that are judged unsuitable for use as engineered or non-engineered fill, as well as all suitable material not needed for fill or slope modifications, shall become the property of the Contractor and be disposed of offsite.

2. All construction materials and debris encountered in preparing the project site for filling and grading shall become the property of the Contractor, who shall properly dispose of them offsite.

1.07 PROJECT CONDITIONS

A. Review the project geotechnical report for the following:

1. The material to be used for the proposed work.

2. Ground water elevations.

B. Environmental Requirements:

1. Comply with the project SWPPP.

2. When unfavorable weather conditions necessitate interrupting filling and grading operations, prepare areas by grading and surface compaction as necessary to avoid collection of water.

3. Provide adequate temporary drainage to prevent erosion.

4. After interruption, reestablish specified compaction in last layer placed before resuming work.

C. Locate active utilities within the vicinity of the proposed work and protect from damage throughout project construction.

1. Where existing utilities not shown on the Plans are encountered; support, shore, and protect them and immediately notify the Owner. Existing utilities may be interrupted only with the Owner's written approval.

2. It is the Contractor's responsibility to supplement the utility information shown on the Plans by scheduling the field location of all existing utilities by a utility locating service before beginning construction.

3. Where existing utilities conflict with or could potentially be damaged by proposed construction, Contractor shall locate by hand digging prior to performing major excavation.

D. Protections of open excavations.

1. Comply with requirements of Section 01 5200 - TEMPORARY FACILITIES .

2. It is the Contractor's responsibility to safeguard his employees and the public from hazards related to open trenches or excavations, per the requirements of Division 01.

E. Protection of Subgrade

1. Do not allow construction equipment to pump or rut prepared subgrade, stripped areas, or footing excavations. Consult Geotechnical Engineer for allowable temporary measures as needed.

F. The sequence of operations must be reviewed and approved by the Engineer prior to

1. commencement of any work by the Contractor. Coordinate operations with other construction activities, such as relocation of existing utilities.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General Requirements:

1. All imported materials shall comply with requirements listed in FINAL REMOVAL ACTION WORKPLAN, prepared for City of Berkeley by GSI Environmental Inc., issued December 16, 2024.

2. All soil materials shall be subject to acceptance by the Geotechnical Engineer.

3. Notify the Owner's Representative at least 7 days in advance of any imported fill material that requires testing from the borrow area.

B. Foundation Rock Fill: Foundation Rock Fill shall consist of Caltrans Class 2 Permeable Material.

C. Imported Fill: Imported fill shall be free of organic matter and debris, which does not exhibit excessive shrinkage or swelling behavior when subjected to changes in water content, have a maximum Plasticity Index less or equal to that of onsite soil and have at least 20 percent passing the No.200 sieve. Sample of soil shall be tested at least 72 hours prior to delivery to the site.

D. Imported Fill for Planting Areas: Imported fill for use in planting areas shall be sandy loam weed free soil. Submit analysis from certified Soil and Plant Lab.

E. Topsoil: Where the composition of imported topsoil is not specified on the Plans or in the landscape specifications, it shall consist of a uniform mix of sand, silt and viable organic matter. On-site topsoil shall consist of stockpiled material obtained from excavation of the upper 6 inches of soil within vegetated areas on the existing site.

PART 3 - EXECUTION

3.01 PREPARATION

A. Compact subgrade to density requirements for subsequent backfill materials.

B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with approved fill and compact to density equal to or greater than requirements for subsequent fill material.

C. Scarify subgrade surface to depth of 8 inch.

D. Proof roll to identify soft spots; over-excavate, fill and compact to density equal to or greater than requirements for subsequent fill material.

3.02 DEWATERING

A. Provide dewatering systems to:

1. Lower water table within areas of excavation to minimum 1 foot below bottom of excavation to permit Work to be completed on dry and stable subgrade.

2. Relieve hydrostatic pressures in confined water bearing strata below excavation to eliminate risk of uplift or other instability of excavation.

a. Prevent damage to adjacent properties, buildings, structures, utilities, and facilities from construction operations.
b. Prevent loss of fines, quick condition, or softening of foundation subgrade.
c. Maintain stability of sides and bottoms of excavations and trenches, face/walls/bottoms of tunnels, and sides and bottoms of shafts.

3.03 EXCAVATION

A. Underpin to below an imaginary line of 2H:1V projecting from bottom of the excavation adjacent structures which may be damaged by excavation work.

B. Excavate subsoil to accommodate building foundations, slabs-on-grade, paving, and site structures.

C. Slope banks with machine to 2.5H:1V or gentler until shored.

D. Do not interfere with 45 degree bearing splay of foundations.

E. Grade top perimeter of excavation to prevent surface water from draining into excavation.

F. Trim excavation. Remove loose mat.

G. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume.

H. Notify Architect of unexpected subsurface conditions.

I. Correct areas over excavated with suitable material and as directed by Owner's Representative.

J. Remove excess and unsuitable material from site.

K. Repair or replace items indicated to remain, damaged by excavation.

3.04 BACKFILLING AND COMPACTING

A. Backfill areas to contours and elevations with approved backfill material.

B. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

C. Place material in continuous layers as follows:

1. Maximum 8 inch compacted depth.

D. Employ placement method that does not disturb or damage other work.

E. Maintain optimum moisture content of backfill materials to attain required compaction density.

F. Do not backfill against unsupported foundation walls.

G. Slope grade away from building minimum 5 percent slope for minimum distance of 10 ft, unless noted otherwise.

H. Make gradual grade changes. Blend slope into level areas.

I. Remove surplus backfill materials from site.

J. Leave fill material stockpile areas free of excess fill materials.

K. Compact per the following recommendations.

Fill Location	Minimum Relative Compaction (%)	Minimum Moisture Content* (percentage points above optimum moisture content)
Approved Backfill Material (PI<30)	90	3
Caltrans Class 2 Aggregate Base	95	0
Landscape Fill (Upper 2 Feet)	85	0

*Maximum density and optimum moisture content based on ASTM D1557

3.05 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Top Surface of Subgrade: Plus or minus 1/10 foot from required elevation.

C. Compaction: After grading, compact subgrade surfaces to the depth and percentage of maximum density for each area classification.

3.08 FIELD QUALITY CONTROL

A. Section 01 4500 - TESTING AND INSPECTION, Section 01 7700 - CONTRACT CLOSEOUT and 01 7800 CLOSEOUT SUBMITTALS: Field inspecting, testing, adjusting, and balancing.

B. Perform laboratory material tests in accordance with ASTM D1557, ASTM D698, or AASHTO T180, as applicable.

C. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.

D. Perform in place compaction tests in accordance with the following:

1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D6938, whichever is applicable.

2. Moisture Tests: ASTM D6938.

E. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

F. Frequency of Tests as determined by Geotechnical Engineer:

3.09 PROTECTION

A. Section 01 7700 - CONTRACT CLOSEOUT and CLOSEOUT SUBMITTALS : Protecting finished work.

B. Protect newly graded areas from traffic and erosion. In unpaved areas without landscaping, cover with straw erosion control blanket. Follow manufacturer's recommendations for installation. Provide and place straw wattles or biodegradable fiber logs across the slope at the midpoint and along the downhill edge of site. No soil is to be left uncovered at the completion of construction. Keep free of trash and debris.

C. Reshape and re-compact fills subjected to vehicular traffic.

END OF SECTION

DIVISION 32 EXTERIOR IMPROVEMENTS

SECTION 32 3113

CHAIN LINK FENCE AND GATES

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Furnish all labor, materials, tools and equipment necessary to install al chain link fencing and gates as indicated on the plans and as specified herein; including components and accessories required for a complete installation, including but not limited to the following components:

1. Chain link fencing
2. Chain link gates

1.02 RELATED SECTIONS

A. 03 3000: Cast-In-Place Concrete

B. 31 3000: Earthwork and Grading

1.03 REFERENCES

A. ASTM A121 Specification for Metallic-Coated Carbon Steel Barbed Wire

B. ASTM A392 Specification for Zinc-Coated Steel Chain-Link Fence Fabric

C. ASTM A780 Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings

D. ASTM F552 Standard Terminology Relating to Chain Link Fencing

E. ASTM F567 Standard Practice for Installation of Chain Link Fence

F. ASTM F626 Specification for Fence Fittings

G. ASTM F900 Specification for Industrial and Commercial Swing Gates

H. ASTM F1043 Specification for Strength and Protective Coatings of Steel Industrial Chain Link Fence Framework

I. ASTM F1083 Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures

J. ASTM F1184 Specification for Industrial and Commercial Horizontal Slide Gates

K. ASTM F2200 Specification for Automated Vehicular Gate Construction

L. UL325 Automatic operators: Door, Drapery, Gate, Louver and Window

M. A653/A653M Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

N. A1008/A1008M Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High- Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable

O. A1011/A1011M Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low- Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength

P. B117 Practice for Operating Salt Spray (Fog) Apparatus

Q. D523 Test Method for Specular Gloss

R. D714 Test Method for Evaluating Degree of Blistering of Paints

S. D1654 Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments

T. D2244 Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

U. D2794 Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)

V. D3359 Test Methods for Measuring Adhesion by Tape Test

W. E4 Practices for Force Verification of Testing Machines

X. F2814 Guide for Design and Construction of Ornamental Steel Picket Fence Systems for Security Purposes

Y. F2408 Standard Specification for Ornamental Fences Employing Galvanized Steel Tubular Pickets.

1.04 SUBMITTALS

A. Submit in accordance with Section 01 33 00.

1. Product Data: Material descriptions, dimension of individual components and profiles, and finishes for the following: color, size, finish, material and method of attachment. Include the manufacturer's name and catalog number for each item where applicable. Clearly identify which portions of the information on the printed literature are applicable if more than one product is shown.

B. Shop drawings to show the following:

1. All information regarding clearances, connections, components and any miscellaneous related appurtenances.
2. Concrete footing and reinforcement information.
3. Indicate materials, dimensions, sizes, weights and finishes of components. Include plans, elevations, sections and other required installation and operational clearances, connections, components and miscellaneous related appurtenances such as locking devices.
4. Include plans, elevations, sections, gate swing direction and other required installation and operational clearances, and details of post anchorage, attachment and bracing.
5. Show required field measurements and interface with work of other Sections. provide details showing interface and anchorage of fencing and gates with adjacent construction. Show locations of step downs of fencing, all top of fencing to be level, and step downs to occur at maximum of 6” dimension unless otherwise proposed and approved by installer.
6. Details showing post anchorage, attachment and bracing. Provide setting drawings, templates, instructions, and directions for installation of anchorage devices.
7. Details of gates and hardware.
8. Welds, both shop and field, to be indicated by AWS "Symbols for Welding, Brazing and Nondestructive Examination," A2.4.

C. Material samples: Sample for each type of product specified showing finish and color, for paint finishes and vinyl provide color chip sample.

D. Provide shop drawings and engineering calculations as required for approvals if not provided. Include the foundations, footing depths, and reinforcements necessary for structural stability. Drawings to show safety zone. Drawings must be signed by a Civil Engineer or Structural Engineer registered in the State of California and must conform to the California of Division of State Architects.

E. Qualification Data: For firms and persons specified in “Quality Assurance” article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other specified information.

F. Maintenance data for fencing and gates: Include in maintenance manuals. Include Product Data for care of products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

G. Warranty information for each fence and gate type. Warranty all furnishing, components and workmanship to remain free of defects due to faulty materials or workmanship, corrosion, or deterioration for a period of 24 months after the date of completion and Final Acceptance, supplemental coverage if offered is enforced, unless otherwise stated.

1.05 QUALITY ASSURANCE

A. Except as otherwise specified, comply with Chain Link Fence Manufacturers Institute (CLFMI) Product Manual.

B. Industry Standards: Materials and installation to conform to the requirements of the Chain Link Fence Manufacturers Institute (CLFMI) "Product Manual."

C. Regulatory Requirements: Pedestrian gates and related hardware to comply with applicable codes, including provisions for accessibility required by CBC Chapters 10 and 11B, Part 2; and the Americans with Disabilities Act (ADA) Standards for Accessible Design, and California Division of State Architects (DSA).

D. Bottom 10 inches of pedestrian gates to have a smooth uninterrupted surface.

E. Installer Qualifications: An experienced installer who has completed installations of fences and gates similar in material, design, and extent to those indicated for this project and whose work has resulted in construction with a record of successful in-service performance.

F. Source Limitations for Fences and Gates: Obtain each color, grade, finish, type, and variety of components for fences and gates from one source with resources to provide fences and gates of consistent quality in appearance and physical properties.

G. Field Measurements: Verify dimensions with work of other sections that adjoins the Wire Mesh Fencing.

H. Field Measurements: Verify layout information for fences and gates shown on drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

I. If any conflicts between design and actual on-site conditions are encountered, Shop Drawings showing the nature and location of conditions shall be submitted to the Engineer for determination, prior to fabrication of Fencing and Gates

J. Shop Assembly: Insofar as practicable, fitting and assembly of work shall be done in shop.

K. Work that cannot be permanently shop assembled, shall be completely assembled, marked, and disassembled in shop before shipment to insure proper field assembly.

L. Shop fabricated items shall properly fit in the field condition. In event that shop-fabricated items do not fit the field condition, the item shall be returned to the shop for correction.

1.06 DEFINITIONS

A. The “Owner’s Representative” is the person, appointed by the Owner, to represent their interests. The Owner’s Representative will be on site frequently and regularly during construction. Where needed, the Owner’s Representative will identify the need for field visits by the landscape architect or other consultants.

1.07 DELIVERY, STORAGE AND HANDLING

A. Finished materials: Protect existing finishes and new Fencing finishes against soiling, staining or damage from scratches and abrasion. Maintain protection during construction and until Final Occupancy.

1.08 SUBSTITUTION OF PRODUCTS

A. To enable all bids to be judged equitably, they shall be based on the specified products in this document and shown on the drawings:

B. The proposal for any substitute products must identify the substitution product by its trade name along with any savings it may represent.

C. All substitutions approval requests shall be accompanied by manufacturing drawings and specifications, and they meet all specifications for design, size gauge of metal parts and fabrication.

D. Products from other qualified manufacturers: Will have ten years or more experience manufacturing steel ornamental picket fencing.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Framework, posts, rails, fabric, gates and fittings for chain link fence system: Merchants Metals, website: Tech-Info@merchantsmetals.com, telephone: (888) 260-1600

B. All materials are as stated on the Drawings and as specified in the specifications.

2.02 CHAIN LINK FABRIC

A. Galvanized Steel Chain Link Fabric: heights indicated on drawings.

B. Zinc-Coated Steel Fabric:

1. ASTM A392 hot dipped galvanized before weaving (GBW)

   a. Class 1 - 1.2 oz/ft² (366 g/m²)
   b. Class 2 - 2.0 oz/ft² (610 g/m²) <available 9 and 6 gauge>

2. Fabric Selection Table: Steel chain link mesh sizes and gauges by supplier include the following:

Mesh Size In. (mm)	6 gauge core 0.192 in.	9 gauge core 0.148 in.	11 gauge core 0.120 in.	11 1/2 gauge core 0.113 in.	12 Gauge core 0.105 in.	Notes
	4.88 mm	3.76 mm	3.05 mm	2.87 mm	2.67 mm	N/A = Not applicable for
2 (50)	yes	yes	yes	N/A	N/A	industrial/commercial
1 ¾ (44)	yes	yes	yes	N/A	N/A	applications
1 (25)	N/M	yes	yes	N/A	N/A	N/M = Not manufactured
5/8 (16)	N/M	yes	yes	yes	yes*	*12 ga. only per F668
1/2 (13)	N/M	yes	yes	yes	yes*	
3/8 (10)	N/M	N/M	yes	yes	yes*	
	2170 lbf	1290 lbf	850 lbf	750 lbf	650 lbf	Wire Break Strength

(9650 N)	(5740 N)	(3780 N)	(3340 N)	(2895 N)	

3. Fabric selvage:
   a. Standard fabric selvage for 2 in (50 mm) mesh is K&K for added safety for play and park applications

C. Zinc-Coated Steel Fabric For Priva-Max Fencing
1. ASTM A392 hot dipped galvanized before weaving (GBW) Priva-Max.
2. Class 1 - 1.2 oz. /ft² with 3 1/2" X 5" mesh, 9 gauge, with a core wire diameter of 0.148" and a break load of 1290 lb./f.
3. Fabric selvage: Standard fabric selvage knuckle finish top and bottom, K&K.

D. Color Bond Polymer Coated Steel Fabric: ASTM F668, wire gauge specified is that of the metallic coated steel core wire. Class 2b fused and adhered. Color - black in compliance with ASTM F934.

2.03 ROUND STEEL PIPE FENCE FRAMEWORK

A. Round steel pipe and rail for Galvanized Steel Pipe: Schedule 40 standard weight pipe, in accordance with ASTM F1083, 1.8 oz/ ft² (550 g/m²) hot dip galvanized zinc exterior and 1.8 oz/ft² (550 g/m²) hot dip galvanized zinc interior coating. High Strength Grade: Minimum yield strength 50,000 psi (344 MPa)

B. Colorbond Polymer Coated Pipe: Polymer coated pipe shall have a Polyester coating fused and adhered to the exterior zinc coating of the galvanized pipe in accordance with ASTM F1043. The minimum thickness of the polyester coating is 3 mils. Color to match fabric (black) per ASTM F934.

C. Framework Wind Load Caution: Fences containing windscreens or privacy slats (Priva-Max) and fences greater than 8 feet in height using, 1 in. mesh or smaller - recommend a wind load force analysis for post selection and post spacing. See Chain Link Manufactures Institute – Wind Load Guide CLFMI: WLG 2445. A interactive Wind load Fence Post Calculator is available at www.wheatland.com.

2.04 TENSION WIRE

A. For Galvanized Steel Fencing: Metallic Coated Steel Marcelled Tension Wire: 7 gauge core (0.177 in.) marcelled wire complying with ASTM A824. Type II Zinc-Coated, ASTM A817 Class 5 - 2.0 oz/ft² (610 g/m²)

B. For Colorbond Polymer Coated Steel Tension Wire: 7 gauge core (0.177 in.) wire complying with ASTM F1664. Match coating class and color to that of the chain link fabric. Class 2b, fused and adhered.

2.05 FITTINGS

A. Tension and Brace Bands: Galvanized pressed steel complying with ASTM F626, minimum steel thickness of 12 gauge (0.105 in.), minimum width of 3/4 in. and minimum zinc coating of 1.20 oz/ft². Secure bands with 5/16 in. galvanized steel carriage bolts.

B. Terminal Post Caps, Line Post Loop Tops, Rail and Brace Ends, Boulevard Clamps, Rail Sleeves: In compliance to ASTM F626, pressed steel galvanized after fabrication having a minimum zinc coating of 1.20 oz/ft² .

C. Truss Rod Assembly: In compliance with ASTM F626, 3/8 in. or 5/16” diameter steel truss rod with a pressed steel tightener, minimum zinc coating of 1.2 oz/ft² , assembly capable of withstanding a tension of 2,000 lbs.

D. Tension Bars: In compliance with ASTM F626. Galvanized steel one-piece length 2 in. less than the fabric height. Minimum zinc coating 1.2 oz. /ft² .

1. Bars for 2 in. and 1 ¾ in. mesh shall have a minimum cross section of 3/16 in. by 3/4 in.
2. Bars for 1 in. mesh shall have a cross section of 1/4 in. by 3/8 in.
3. Small mesh 3/8 in. , 1/2 in. and 5/8 in. shall be attached (sandwiched) to the terminal post using a galvanized steel strap having a minimum cross section of 2 in. by 3/16 in. with holes spaced 15 in. on center to accommodate 5/16 in. carriage bolts which are to be bolted thru the strap the mesh and thru the terminal post.

2.06 TIE WIRE and HOG RINGS

A. Basic commercial/industrial applications - specify 9 gauge core aluminum alloy ties and hog rings per ASTM F626.

B. Priva-Max slats 9 gauge core (0.148)steel Galvanized Before Weave (GBW) with preformed power fastened wire ties and preformed hog rings having minimum zinc coating 1.20 oz/ft² per ASTM F626.

2.07 SWING GATES FOR GALVANIZED STEEL FENCING

A. Swing Gates: Galvanized steel pipe welded fabrication in compliance with ASTM F900. Gate frame members 1.900 in. OD ASTM F1043 Group IC (LG-40) galvanized steel pipe. Frame members spaced no greater than 8 ft. apart vertically and horizontally. Welded joints protected by applying zinc-rich paint in accordance with ASTM Practice A780. Positive locking gate latch, pressed steel galvanized after fabrication. Galvanized malleable iron or heavy gauge pressed steel post and frame hinges. Provide lockable drop bar and gate holdbacks with double gates.

B. Gateposts: Regular Grade ASTM F1083 Schedule 40 pipe

Gate fabric height up to and including 6 ft. (1.2m)		
Gate leaf width	Post Outside Diameter	Weight
up to 4 ft. (1.2 m)	2.375 in. (60.3 mm)	3.65 lb/ft (5.4 kg/m)
over 4 ft. to 10 ft. (1.2 to 3.05 m)	2.875 in. (73.0 mm)	5.79 lb/ft (8.6 kg/m)
over 10 ft. to 18 ft. (3.05 to 5.5 m)	4.000 in. (101.6 mm)	9.11 lb/ft (13.6 kg/m)
Gate fabric height over 6 ft. to 12 ft. (1.2 to 2.4m)		
Gate leaf width		
up to 6 ft. (1.8 m)	2.875 in. (73.0 mm)	5.79 lb/ft (8.6 kg/m)
over 6 ft. to 12 ft. (1.8 to 3.7 m)	4.000 in. (101.6 mm)	9.11 lb/ft (13.6 kg/m)
over 12 ft. to 18 ft. (2.4 to 5.5 m)	6.625 in. (168.3 mm)	18.97 lb/ft (28.2 kg/m)
over 18 ft. to 24 ft. (5.5 to 7.3 m)	8.625 in. (219.1 mm)	28.58 lb/ft (42.5 kg/m)

C. Colorbond Polymer coated gate frames and gateposts; match the coating type and color to that specified for the fence framework. Moveable parts such as hinges, latches and drop rods may be field coated using a liquid polymer touch up.

D. Hinges and Locks

E. Removable Mullion: Von Duprin 9852 for exterior use, or approved equivalent

F. Hydraulic Gate Closer and Hinge: Locinox: P00009344 - Mammoth180

G. Panic bars: Locinex d00000142 - Pushbar-l

H. Trilogy lock:

1. Networx cylindrical pushbutton lock, 5000 users, 35,000 event audit trail, weatherproof, straight lever, satin chrome
2. Weldable gate box, Simplex 1000, KABA Access 100/L1000/5000, Alarm Lock Trilogy DL2700/3000/PDL3000

2.08 CONCRETE FOOTINGS

A. Concrete for post footings shall have a 28-day compressive strength of 2,500 psi.

PART 3 - EXECUTION

3.01 INSTALLATION

A. All parts and all members of the work of this section shall be the size, shape, and profile indicated by the Contract Documents and by the Manufacturer requirements.

B. Methods of fabrication, assembly and erection, unless otherwise specifically stated, shall be at the discretion of the Contractor.

C. Exposed Work: In addition to requirements specified herein or shown on drawings, all surfaces exposed to view shall be clean, and free from dirt, stains, grease, scratches, distortions, waves, dents, buckles, tool marks, burrs, and other defects which mar appearance of finished work.

D. Metal work exposed to view shall be straight and true to line or curve, smooth arises and angles as sharp as practicable without draft, miters formed in true alignment, profiles accurately intersecting, and with joints carefully matched to produce continuity of line and design.

E. Exposed fastenings, where permitted by Engineer, shall be of the same material, color, and finish as the metal to which applied, unless otherwise indicated, and shall be of the smallest practicable size.

F. Structural/ Loading Criteria: Install Fencing to provide items with capabilities to safely sustain or withstand stresses and strains to which materials and assembled work will be subjected. Comply with project loading and structural criteria and local building code authorities.

3.02 FRAMEWORK INSTALLATION

A. Posts: Posts shall be set plumb in concrete footings in accordance with ASTM F567. Minimum footing depth, 24 in. plus an additional 3 in. depth for each 1 ft. increase in the fence height over 4 ft. See structural drawings and geotechnical report for final recommendations.

B. Top of concrete footing to be as shown on the drawings, or crowned to shed water away from the post when in landscape areas or under permeable pavements.

C. Line posts installed at intervals not exceeding 10 ft. on center.

D. Top rail: When specified, install 21 ft. lengths of rail continuous thru the line post or barb arm loop top. Splice rail using top rail sleeves minimum 6 in. long. Rail shall be secured to the terminal post by a brace band and rail end. Bottom rail or intermediate rail shall be field cut and secured to the line posts using boulevard clamps or brace band with rail end.

E. Terminal posts: End, corner, pull and gate posts shall be braced and trussed for fence 6 ft. and higher and for fences 5 ft. in height not having a top rail. The horizontal brace rail and diagonal truss rod shall be installed in accordance with ASTM F567.

F. Tension wire: Shall be installed 4 in. up from the bottom of the fabric. Fences without top rail shall have a tension wire installed 4 in. down from the top of the fabric. Tension wire to be stretched taut, independently and prior to the fabric, between the terminal posts and secured to the terminal post using a brace band. Secure the tension wire to each line post with a tie wire.

3.03 CHAIN LINK FABRIC INSTALLATION

A. Chain Link Fabric: Install fabric to inside of the framework maintaining a ground clearance of no more than 2 inches. Attach fabric to the terminal post by threading the tension bar through the fabric; secure the tension bar to the terminal post with tension bands and 5/16 in. carriage bolts spaced no greater than 12 inches on center. Small mesh fabric less than 1 in., attach to terminal post by sandwiching the mesh between the post and a vertical 2 in. wide by 3/16 in. galvanized steel strap using carriage bolts, bolted thru the bar, mesh and post spaced 15 in. on center. Chain link fabric to be stretched taut free of sag.

1. Fabric to be secured to the line post with tie wires spaced no greater than 12 inches on center and to horizontal rail spaced no greater than 18 inches (457.2 mm) on center.
2. Aluminum alloy tie wire shall be installed following ASTM F567: Wrap the tie around the post or rail and attached to a fabric wire picket on each side of the post or rail by twisting the tie wire around the fabric wire picket two full turns, cut off excess wire and bend over to prevent injury.
3. Preformed 9 gauge power-fastened wire ties shall be installed following ASTM F626: Wrap the tie a full 360° around the post or rail and fabric wire picket, using a variable speed drill, twist the two ends together three full turns, cut off any excess wire and bend over to prevent injury.

B. Secure the fabric to the tension wire by crimping hogs rings around a fabric wire picket and tension wire.

3.04 GATE INSTALLATION

A. Swing Gates: Installation of swing gates and gateposts in compliance with ASTM F 567.

1. Direction of swing shall be as shown on the plans Gates shall be plumb in the closed position having a bottom clearance of 3 in., grade permitting.
2. Hinge and latch offset opening space shall be no greater than 3 in. in the closed position.
3. Double gate drop bar receivers shall be set in a concrete footing minimum 6 in. diameter 24 in. deep.
4. Gate leaf holdbacks shall be installed for all double gates.

B. Electrically operated gates must be manufactured and installed in compliance with ASTM F2200 and UL 325.

C. Provide weldable gatebox for trilogy lock. Install trilogy gate lock and program and test lock. Will require 120VAC outlet in NEMA enclosure for gateway and air access antenna.

3.05 NUTS AND BOLTS

A. Bolts: Carriage bolts used for fittings shall be installed with the head on the secure side of the fence. All bolts shall be peened over to prevent removal of the nut.

3.06 CLEAN UP

A. Clean Up: The area of the fence line shall be left neat and free of any debris caused by the installation of the fence.

END OF SECTION

APPENDIX A

City of Berkeley
Community Workforce Agreement (CWA)

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

CITY OF BERKELEY

COMMUNITY WORKFORCE AGREEMENT

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

Table of Contents

Preamble

Purpose

Recitals

Article 1 Definitions

Article 2 Scope of Agreement

Article 3 Effect of Agreement/Subcontractors

Article4 Work Stoppages, Sympathy Strikes and Lockouts

Article5 Pre-Job Conference

Article 6 No Discrimination

Article 7 Union Security

Article 8 Referral and Local Hiring Program

Article 9 Helmets to Hardhats

Article 10 Grievance Procedure

Article 11 Joint Administrative Committee

Article 12 Grievance Arbitration Procedure

Article 13 Jurisdictional Disputes

Article 14 Apprentices

Article 15 Management Rights

Article 16 Wage/ Benefits

Article 17 Modified Master Labor Agreements

Article 18 Drug and Alcohol Testing

Article 19 Savings Clause

Article 20 Entire Agreement

Article 21 Term

Signatures

Agreement to be Bound

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

COMMUNITY WORKFORCE AGREEMENT
For the
City of Berkeley

This Agreement is made and entered into retroactively from July 1, 2020, by and between the City of Berkeley ("City") together with other contractors and/or sub-contractors, who shall become parties to this Agreement by signing the "Agreement to be Bound" (Attachment A), and the Local Unions signatory hereto and the Alameda County Building & Construction Trades Council ("Council") and its affiliated local unions who have executed this Agreement.

PURPOSE

The purpose of this Agreement is to support the efforts of the City to increase employment opportunities for workers who reside in Berkeley, to help increase training and employment opportunities for Berkeley residents in the construction trades through apprenticeship and pre-apprentice programs as the students graduate from the City's schools, to promote efficiency of construction operations performed for and within the City of Berkeley and to provide for peaceful settlement of labor disputes and grievances without strikes or lockouts, thereby promoting the public interest in assuring the timely and economical completion of the projects.

RECITALS

WHEREAS, the successful completion of the City's construction projects is of the utmost importance to the City of Berkeley; and

WHEREAS, the interests of the general public, the City, the Unions and Contractor(s) would be best served if the construction work proceeded in an orderly manner without disruption because of strikes, sympathy strikes, work stoppages, picketing, lockouts, slowdowns or other interferences with work; and

WHEREAS, the Contractor(s) and the Unions desire to mutually establish and stabilize wages, hours and calendar conditions for the workers employed on construction work for and within the City of Berkeley by the Contractor(s), and further, to encourage close cooperation among the Contractor(s) and the Union(s) to the end that a satisfactory, continuous and harmonious relationship will exist among the parties to this Agreement; and

WHEREAS, contracts for construction work within the City of Berkeley will be awarded in accordance with the applicable provisions of the Charter of the City of Berkeley, the California State Public Contract Code and the Labor Code, including but not limited to requiring competitive bidding and prevailing wages; and

WHEREAS, the City of Berkeley has the absolute right to select the lowest responsive and responsible bidder for the award of the construction contracts on the Projects; and

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

WHEREAS, the parties signatory to this Agreement pledge their full good faith and trust to work towards a mutually satisfactory completion of the Projects;

NOW, THEREFORE, IT IS AGREED BETWEEN AND AMONG THE PARTIES HERETO, AS FOLLOWS:

ARTICLE 1
DEFINITIONS

1.1 "Agreement" means this Community Workforce Agreement.

1.2 "Berkeley Resident" means any individual who is a current resident of Berkeley can certify through a utility bill, or other similar means acceptable to the parties to this Agreement that the individual resides within the boundaries of the Berkeley City Limits.

1.4 "City" means the City of Berkeley.

1.5 "Completion" means that point at which the City accepts a project at issue by filing a Notice of Completion, or as otherwise provided by applicable state law. "Punch list" items and any other work within the scope of this Agreement not completed prior to commencement of revenue service shall nonetheless be included within the scope of this Agreement. It is understood by the parties that portions of the Projects may be completed in phases and Completion of any such phase may occur prior to Completion of the Projects.

1.6 "Contractor(s)" and/or "Subcontractor(s)" means any individual, firm, partnership or corporation, or combination thereof, including joint ventures, which is an independent business enterprise and has entered into a contract with the City or any of its contractors or subcontractors of any tier, with respect to the construction work necessary for any part of the Projects. This shall include subcontractors not required to be listed in the bid documents. As applicable depending on its context, "Contractor" shall refer to Contractor or Contractor and Subcontractor.

1.7 "Construction Contract(s)" means all of the contract(s) for construction of any of the Projects.

1.8 "Council" means the Alameda County Building and Construction Trades Council, AFL-CIO.

1.9 "New Apprentice" is a Berkeley Resident who is enrolled in a State of California approved apprenticeship program that is a joint labor management apprentice program for no more than twenty-four months

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

1.11 “Projects” mean any construction project of the City whose value as estimated by the City meets or exceeds $500,000 (Five hundred thousand) dollars.

1.12 “Union” or “Unions” means the Council and any other labor organization signatory to this Agreement, acting on their own behalf and on behalf of their respective affiliates and member organizations whose names are subscribed hereto and who have through their officers executed this Agreement.

1.13 “Project Manager” means the person or persons or business entity designated by the City to oversee all phases of construction on the Projects.

1.14 “Master Labor Agreement” or “MLA” shall mean the collective bargaining agreement of each craft Union that is Signatory to this Agreement

1.15 “Calendar Day” shall mean any day, relating to any day of the week including Saturday, Sunday and public holidays.

1.16 “ Apprenticeship Program” -Recognizing the need to develop adequate numbers of competent workers in the construction industry, the Contractor(s)/Employer(s) shall employ apprentices of a California State-approved Joint Apprenticeship Program in the respective crafts to perform such work as is within their capabilities and which is customarily performed by the craft in which they are indentured.

The apprentice ratios will be in compliance with the applicable provisions of the applicable “Master Labor Agreement”.

ARTICLE 2
SCOPE OF AGREEMENT

2.1 Parties: This Agreement shall apply and is limited to all Contractors and subcontractors performing Construction Contracts necessary for the Projects, the City, the Council and any other labor organization signatory to this Agreement, acting in their own behalf and behalf of their respective affiliates and member organizations whose names are subscribed hereto and who have through their officers executed this Agreement.

2.2 Project Description: This Agreement shall govern the award of all of the Construction Contracts identified by the City as part of the Projects. The City has the absolute right to combine, change, consolidate, suspend or cancel Construction Contract(s) or portions of Construction Contract(s) identified as part of the Projects. Should the City suspend or remove any contract from the Projects and thereafter authorize that construction work be commenced on such contract, then such contract shall be performed under the terms of this Agreement. Once a Construction Contract is completed it is no longer covered by this Agreement except when a Contractor is directed to engage in repairs, warranty work or modifications required by its

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

Construction Contract with the City. For the purposes of this Agreement, a Construction Contract shall be considered Completed as set forth in Section 1.5 of this Agreement.

2.3 Covered work:

2.3.1 This Agreement covers, without limitation, all on-site construction, demolition, alteration, painting or repair of buildings, structures, landscaping, temporary fencing and other works and related activities for the Projects that is within the craft jurisdiction of one of the Unions and that is part of the Projects, including, without limitation, pipelines, site preparation, survey work, demolition of existing structures and all construction, demolition or improvements required to be performed as a condition of approval by any public agency. This scope of work includes all soils and materials testing and inspection where such testing and inspection is a classification in which a prevailing wage determination has been published.

2.3.2 The Projects include work necessary for the Projects and/or in temporary yards or areas adjacent to and dedicated to the Projects, and at any on-site batch plant(s) constructed solely to supply materials to the Projects, when those sites are dedicated exclusively to the Projects. This Agreement covers all on-site fabrication work over which the City, Contractor(s) or subcontractor(s) possess the right of control (including work done for the Projects in any temporary yard or area established for the Projects.)

2.3.3 The furnishing of supplies, equipment or materials which are stockpiled for later use shall in no case be considered subcontracting. Construction trucking work, such as the delivery of ready-mix, asphalt, aggregate, sand or other fill material which are directly incorporated into the construction process as well as the off-hauling of debris and excess fill material and/or mud, shall be covered by the terms and conditions of this Agreement, to the fullest extent provided by law and by prevailing wage determinations of the California Department of Industrial Relations. Employers, including brokers, of persons providing construction trucking work shall provide certified payroll records to the City within ten (10) calendar days of written request or as required by bid specifications.

2.4 Exclusions: The following shall be excluded from the scope of this Agreement:

2.4.1 This Agreement is not intended to, and shall not affect or govern the award of public works contracts by the City which are outside the identified scope of work of the Projects.

2.4.2 This Agreement is not intended to, and shall not affect the current or anticipated operation, maintenance, access or use of any of the City's buildings or facilities, whether or not such facilities are identified in Section 1.7 above.

2.4.3 This Agreement shall not apply to a Contractor or subcontractor’s executives, managerial employees, engineering employees, design employees, supervisors (except

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

those covered by existing building and construction trades collective bargaining agreements), office and clerical employees.

2.4.4 This Agreement shall not apply to any work performed on or near or leading to the site of work covered by this Agreement that is undertaken by state, county or other governmental bodies or their contractors; or by public or private utilities or their contractors; or by the City or its contractors for work not part of the scope of the Projects. Parties performing work shall notify in writing, The Council and The District of any work being performed near or leading to the site work that is not covered by this agreement. Further, this Agreement shall not be construed to prohibit or restrict the City or its employees from performing work on or around the Project construction sites or from entering the sites for any purposes deemed necessary or appropriate by the City.

2.4.5 This Agreement shall not apply to the off-site maintenance of leased equipment or the on-site supervision of such work.

2.4.6 This Agreement shall not apply to any start-up, calibration, performance testing, repair, maintenance, operational revisions to systems and/or subsystems performed after Completion.

2.5 Termination, Suspension and/or Delay of Work: It is understood and agreed that the City, at its sole option, may change, terminate, delay and/or suspend any and all portions of the covered work at any time. Further, the City may prohibit some or all work on certain days or during certain hours of the day to comply with applicable codes, laws or regulations, permits or to accommodate the ongoing operations of the City's facilities and/or to mitigate the effect of the ongoing Projects' work on the businesses and residents in the neighborhood of the Project sites; and/or require such other operational or schedule changes that it may be deemed necessary, in its sole judgment, to effectively maintain the primary purpose of the City's facilities and to remain a good neighbor to the residents and businesses in the area of any Projects. In order to permit the Contractors and Unions to make appropriate scheduling plans, the City will provide the affected Contractor and Union(s) with reasonable notice of any changes it requires pursuant to this Section.

2.6 Work covered by this Agreement within the following craft jurisdictions shall be performed under the terms of their National Agreements as follows: the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, and the National Agreement of Elevator Constructors, and any instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Technicians, with the exception that Articles 4, 8,12 and 13 of this Agreement shall apply to such work.

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

ARTICLE 3
EFFECT OF AGREEMENT/SUBCONTRACTORS

3.1 By executing this Agreement, the Unions and the City agree to be bound by each and every provision of this Agreement.

3.2 By accepting the award of a Construction Contract for the Projects, whether as contractor or subcontractor at any tier, the Contractor/Subcontractor agrees to be bound by each and every provision of this Agreement.

3.3 This Agreement shall only be binding on the signatory parties hereto and shall not apply to the parents, affiliates, subsidiaries, or other ventures of any other party.

3.4 It is understood that this Agreement, together with the referenced MLA , constitute an integrated, self-contained, stand-alone agreement, and that by virtue of having become bound to this Agreement, the Contractor will not be obligated to sign any other local, area, or national agreement as a condition of performing work within the scope of this Agreement. In addition, it is understood and agreed that all grievances and disputes involving the interpretation or application of this Agreement, including the MLA, shall be resolved according to the procedures set forth in Article 12 of this Agreement; provided, however, that should a dispute involve a single MLA and a Contractor signatory thereto, and not involve interpretation or application of this Agreement, then such dispute shall be processed and resolved pursuant to the grievance provisions of that MLA. Should there be a dispute in the first instance as to whether the provisions of Article 12 of this Agreement or the grievance procedures of a MLA apply, the dispute shall be presented initially to arbitrator Judge William Cahill or, if unavailable, arbitrator Earnest Brown, for resolution as to the applicable procedure. Such referral of a dispute as to the applicable procedures shall be done by an immediate conference call among the parties and the arbitrator, and heard and decided within three (3) calendar days. Should the arbitrator hold that Article 12 applies, the parties may, by mutual agreement, submit the issue to the same arbitrator pursuant to the provisions of Article 12, or, absent mutual agreement, commence processing the dispute at Step 1 of that Article.

3.5 Subcontractors. At the time that any Contractor enters into a subcontract with any subcontractor of any tier for the performance of construction or construction trucking work within the scope of this Agreement, the Contractor shall provide a copy of this Agreement, as it may from time to time be modified by the negotiating parties, to said subcontractor and shall require the subcontractor as a part of accepting an award of a construction subcontract to agree to be bound by each and every provision of the Agreement prior to the commencement of work.

3.5.1 Each Contractor and Subcontractor shall evidence their agreement to be bound to this Agreement by executing the Agreement To Be Bound form attached hereto as Appendix A. A copy of the Agreement To Be Bound executed by the Contractors and Subcontractors shall be submitted to the Union(s) prior to both the commencement of work and the Pre-Job Conference and will be a required submittal within the City's bid packages. If the Contractor or Subcontractor refuses to execute the Agreement To Be

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

Bound, then such Contractor or Subcontractor shall not be awarded a Construction Contract to perform work on the Projects. A Contractor or Subcontractor who executes the Agreement to Be Bound shall be considered a signatory party to this Agreement.

3.6 It is understood that the liability of each Contractor and Subcontractor and the liability of each Union under this Agreement shall be several and not joint. The Unions agree that this Agreement does not have the effect of creating any joint employment status between or among the City and/or any Contractor or Subcontractor.

3.7 With regard to any Contractor or subcontractor that is independently signed to any MLA, this Agreement shall in no way supersede or prevent the enforcement of any subcontracting clause contained in such MLA, except as specifically set forth in section 3.7.1 of this Agreement. Any such subcontracting clause in a MLA shall remain and be fully enforceable between each craft union and its signatory employers and no provision of this Agreement shall be interpreted and/or applied in any manner that would give this Agreement precedence over subcontracting obligations and restrictions that exist between craft Unions and their respective signatory employers under a MLA, except as specifically set forth in section 3.7.1 in this Agreement. To the extent that the provisions of this Agreement are inconsistent with any other provisions contained in a MLA, the provisions of this Agreement shall prevail

3.7.1 If a craft Union ("Aggrieved Union") believes that an assignment of work on this Project has been made improperly by a Contractor or subcontractor, even if that assignment was as a result of another craft Union's successful enforcement of the subcontracting clause in its MLA, as permitted by section 3.7 of this Agreement, the Aggrieved Union may submit a claim under the jurisdictional dispute resolution procedure contained in Article 13 of this Agreement and the decision rendered as part of that process shall be enforceable to require the Contractor or subcontractor that made the work assignment to assign that work prospectively to the Aggrieved Union. An award made to a craft Union under the subcontracting clause of its MLA, as permitted under section 3.7 of this Agreement, shall be valid and fully enforceable by that craft Union unless it conflicts with a jurisdictional award made pursuant to Article 12 of this Agreement. If the award made under MLA conflicts with the jurisdictional award, the award of any damages under the former shall be null and void *ab initio.*

ARTICLE 4
WORK STOPPAGES, STRIKES, SYMPATHY STRIKES, JURISDICTIONAL DISPUTES AND LOCKOUTS

4.1 The Unions, City and Contractor agree that for the duration of the Projects:

4.1.1 There shall be no strikes, sympathy strikes, work stoppages, picketing, hand-billing or otherwise advising the public that a labor dispute exists, or slowdowns of any kind, for any reason, by the Unions or construction persons employed on the Projects, at a job site of the Projects or at any other facility of the City because of a dispute on the Projects. Nor shall the Unions or construction persons employed on the Projects participate in any strikes, sympathy strikes, work stoppages, picketing, hand billing,

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

slowdowns, or otherwise advising the public that a labor dispute exists at a Project jobsite because of a dispute between Unions and Contractor(s) on any other project.

4.1.2 As to construction persons employed on the Projects, there shall be no lockout of any kind by a Contractor covered by this Agreement. It shall not be a violation of this Article if a Contractor or Subcontractor (1) suspends or terminates a portion of the Project work or (2) discharges an employee for just cause.

4.1.3 If a MLA between a Contractor and the Union expires before the Contractor completes the performance of a Construction Contract and the Union or Contractor gives notice of demand for a new or modified MLA, the Union agrees that it will not strike, picket, hand-bill, slowdown or engage in any other disruptive activity against the Contractor and the Contractor will not lockout construction persons of the Union on said Construction Contract for work covered under this Agreement and the Union and the Contractor agree that the expired MLA shall continue in full force and effect for work covered under this Agreement until a new or modified MLA is reached between the Union and Contractor. If the new or modified MLA reached between the Union and Contractor provides that any terms of the new MLA shall be retroactive, the Contractor agrees to comply with any retroactive terms of the new or modified MLA which are applicable to construction persons employed on the Projects within seven (7) calendar days.

4.2 A party to this Agreement shall institute the following procedure, prior to invoking any other action at law or equity when a breach of this Article 4 is alleged to have occurred:

4.2.1 A party invoking this procedure shall notify, by the most expeditious means available, with notice by facsimile, electronic mail or telephone to the City, to the party alleged to be in violation, to the Council and to the involved local Union if a Union is alleged to be in violation.

4.2.2 Upon receipt of said notice, the City will contact the designated permanent arbitrator, Judge William Cahill, or if unavailable, his alternate Ernest Brown, who shall attempt to convene a hearing within twenty-four (24) hours if it is contended that the violation still exists.

4.2.3 The Arbitrator shall notify the parties by facsimile, electronic mail or telephone of the place and time for the hearing. Said hearing shall be completed in one session, which, with appropriate recesses at the arbitrator's discretion, shall not exceed twenty-four (24) hours unless otherwise agreed upon by all parties. A failure of any party to attend said hearings shall not delay the hearing of evidence or the issuance of any award by the arbitrator.

4.2.4 The sole issue at the hearing shall be whether or not a violation of Article 4, Section 4.1 of this Agreement has occurred. The arbitrator shall have no authority to consider any matter of justification, explanation or mitigation of such violation or to

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

award damages, which issue is reserved for court proceedings, if any. The award shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one shall be issued within fifteen (15) calendar days, but its issuance shall not delay compliance with or enforcement of the award. The arbitrator may order cessation of the violation of this Article 4 and other appropriate relief and such award shall be served on all parties by hand or registered mail upon issuance.

4.2.5 Such award may be enforced by any Court of competent jurisdiction upon the filing of this Agreement and all other relevant documents referred to above in the following manner. Written notice of the filing of such enforcement proceedings shall be given to the other party. In the proceeding to obtain a temporary order enforcing the arbitrator's award as issued under Section 4.2.4 of this Article 4, all parties waive the right to a hearing and agree that such proceedings may be ex parte. Such agreement does not waive any party's right to participate in a hearing for a final order or enforcement. The Court's order or orders enforcing the arbitrator's award shall be served on all parties by hand or delivered by certified mail.

4.2.6 Any rights created by statute or law governing arbitration proceedings inconsistent with the above procedure or which interfere with compliance are waived by the parties.

4.2.7 The fees and expenses of the arbitrator shall be divided equally between the party instituting the arbitration proceedings provided in this Article and the party alleged to be in breach of its obligations under this article.

4.3 Liquidated Damages. If the arbitrator determines that a violation of Section 4.1 has occurred, the breaching party shall, within eight (8) hours of the issuance of the decision take all steps necessary to immediately cease such activities and return to work. If the breaching party involved does not cease such activities by the beginning of the next regularly scheduled shift following the expiration of the eight (8) hour period after the arbitrator's issuance of the decision, then the breaching party shall pay the sum of ten thousand dollars ($10,000) as liquidated damages to the City per shift until the breach is remedied. The arbitrator shall retain jurisdiction for the sole purpose of determining compliance with this obligation and determining the amount of liquidated damages, if any; but such retention shall not prevent the moving party from seeking judicial enforcement of the initial decision.

ARTICLE 5
PRE-JOB CONFERENCE

5.1 A mandatory pre-job conference shall be held prior to the commencement of each Construction Contract. Such conference shall be attended by a representative each from the participating Contractor(s) and Union(s) and the Project Manager. All efforts will be made to hold the pre-job conference in sufficient time to ensure all parties the ability to properly raise and resolve any issue that may arise out of such meeting, with a

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

goal that such conferences will be held at least 21 work days before the work commences.

ARTICLE 6
NO DISCRIMINATION

6.1 The Contractors and Unions agree not to engage in any form of discrimination on the ground of or because of race, color, creed, national origin, ancestry, age, religious or political affiliation, gender, sexual orientation or disability against any person, or applicant for employment on the Projects.

ARTICLE 7
UNION SECURITY

7.1 The Contractors recognize the Union(s) as the sole bargaining representative of all construction persons working within the scope of this Agreement.

7.2 All construction persons who are employed by the Contractor(s) shall, as a condition of employment, on or before the eighth (8th) day of consecutive or cumulative employment on the Projects, be responsible for the payment of the applicable monthly working dues and any associated fees uniformly required for union membership in the applicable local union which is signatory to this Agreement. Further, there is nothing in this Agreement that would prevent non-union construction persons from joining the local union.

ARTICLE 8
REFERRAL AND LOCAL HIRE PROGRAM

8.1 Referral

8.1.1 Contractor (s) performing construction work on the Projects described in the Agreement shall, in filling craft job requirements, utilize and be bound by the registration facilities and referral systems established or authorized by the Unions signatory hereto ("Job Referral System"). Such Job Referral System will be operated in a non-discriminatory manner and in full compliance with all federal, state, and local laws and regulations, including those which require equal employment opportunities and nondiscrimination.

8.1.2 The Contractor(s) shall have the right to reject any applicant referred by the Union(s), in accordance with the applicable Master Agreement.

8.1.3 The Contractor(s) shall have the unqualified right to select and hire directly all supervisors above general foreman it considers necessary and desirable, without such persons being referred by the Unions(s).

8.1.4 In the event that referral facilities maintained by the Union(s) are unable to fill the requisition of a Contractor(s) for employees within a seventy-two (72) hour period after

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

such requisition is made by the Contractor(s), the Contractor(s) shall be free to obtain employees from any source. Contactor(s) shall promptly notify the Union(s) of any applicants hired from other sources. This provision does NOT affect core employees as defined below.

8.1.5 Unions shall exert their utmost efforts to recruit sufficient numbers of skilled craft persons to fulfill the requirements of the Contractor(s).

8.1.6 Core Employees

All parties agree to make a good faith effort to refer on a priority basis, consistent with the non-discriminatory referral procedures of the hall, qualified and available, and bona-fide Berkeley Residents for Project work.

8.1.7 The parties also recognize and support the City's commitment to provide opportunities for participation on the Projects to Berkeley Residents who are regular, experienced employees ("Core" employees) of contractors and subcontractors awarded work on the Projects and who do not traditionally work under a local collective bargaining agreement(s). In furtherance of this commitment, the parties agree that such contractors and subcontractors awarded work on the Projects may request by name, and the local will honor, referral of persons who have applied to the local union for Project work and who demonstrate the following qualifications:

(1) Possess any license required by state or federal law for the Project work to be performed;

(2) Have worked a total of at least one thousand (1,000) hours in the construction craft during the prior three (3) years;

(3) Were on the Contractor's active payroll for at least sixty (60) out of the one hundred and eighty (180) calendar days prior to the contract award;

(4) Have the ability to perform safely the basic functions of the applicable trade, and

(5) Are Berkeley residents.

The Union will refer to such Contractor one journeyman employee from the hiring hall out-of-work list for the affected trade or craft, and will then refer one of such Contractor's "core" employees as a journeyman and shall repeat the process, one and one, until such Contractor's crew requirements are met or until such Contractor has hired five (5) "core" employees, whichever occurs first. Thereafter, all additional employees in the affected trade or craft shall be hired exclusively from the hiring hall out-of-work list(s). For the duration of the Contractor's work the ratio shall be maintained and when the Contractor's workforce is reduced, employees shall be reduced in the same ratio of core employees to hiring hall referrals as was applied in the initial hiring.

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

8.1.8 The Contractor shall notify the appropriate Union of the name and social security number of each direct hire and each direct hire shall register with the Union's hiring hall before commencing Project work. If there is any question regarding an employee's eligibility under this Subsection 8.2.1, the City Representative, at a Union's request, shall obtain satisfactory proof of such from the Contractor.

8.2 Local Hire

8.2.1 To the extent allowed by law and consistent with the non-discriminatory referral procedures of the Union hiring halls, the Parties agree to a goal that Berkeley Residents will perform a minimum of 20% of the hours worked, on a craft by craft basis for the Projects. The Contractor(s) shall make good faith efforts to reach this goal through the utilization of the Unions' hiring hall procedures. The Unions shall exercise their best efforts in their recruiting and training of Berkeley Resident workers and in their hiring hall procedures to facilitate this 20% goal on the Projects. In the event that referral facilities maintained by the Union(s) are unable to fulfill the 20% local hire requirement, paragraph 8.2.2 of this Article shall not apply. Contractors shall document all efforts to hire locally and provide such documents to the City of Berkeley. The Council will provide an annual census of Berkeley residents, in each of the crafts party to this agreement, to the City of Berkeley. This report will be provided by August 1 of each year of this agreement.

.

8.2.2 Should any of the contractors performing work on the Projects fail to meet this 20% goal and fail to demonstrate efforts to do so, through a specific submittal process to be included in their contractual requirements and enforced by the grievance procedure. The contract's 10% retention will be held until such time that this failure is remedied, but not longer than sixty (60) calendar days after the date of substantial completion of the Projects or as required by law, in addition to the breach of contract remedies available to the parties for non-performance under this Agreement.

8.2.3 Apprenticeship & Workforce Development

A) Consistent with the requirements of California Labor Code §§ 1776, 1777.5 and 1777.6, Contractor(s) will be required to hire 1 New Apprentice Berkeley resident as for every $500,000 dollars or more of total construction bid amount. The New Apprentice(s) must work a minimum of 10% of the projects work hours. The contractor may deploy the apprentice to work on another concurrent project in order to meet the minimum hours, and those hours will be counted towards the total hours of the craft on the Berkeley project. Certified Payroll must reflect the hours worked.

Contractor must fully document efforts to hire a New Apprentice, through the following steps: 1) requesting New Apprentices through the Union dispatch procedure, 2) contacting a minimum of three MC3-approved pre-apprenticeship training programs for referral of Berkeley residents. Unions shall provide written documentation to the contractor in response to dispatch requests to fulfill the New Apprentice requirement, the next tier of residents will come from the Green Corridor.

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

B) There can be no more than 1 entry-level New Apprentices for each craft, provided said crafts have apprenticeship openings and the general contractor will be able to include New Apprentices hired by their subcontractor to meet this requirement. Unions will agree to cooperate with Contractor(s) in furnishing apprentices as requested and the hiring of the apprentices will be in accordance to the Apprenticeship provisions listed in the Master Agreements and or the union agreements with the division of apprenticeship standards, and the apprentices shall be properly supervised and paid in accordance with provisions contained within the MLA'S. The Unions and Contractors will agree to cooperate with local pre-apprenticeship programs to ensure Berkeley residents have the opportunity to apply for and enter the into the apprenticeship programs.

C) The intent of this provision is to utilize Berkeley Resident New Apprentices to the fullest extent permissible by state law and the MLA. Failure of Contractor(s) and their subcontractors to maintain qualified apprentices on the job will be subject to further penalties as determined by the Grievance Committee as identified in Article 12.

8.11 Enforcement, Compliance & Reporting.

Contractors will be required to submit Certified Weekly Payrolls to the City along with monthly workforce utilization reports documenting the Contractor's compliance with the requirements described in this article. At a minimum the monthly reports must include 1) data on Berkeley Resident's work hour utilization on a craft by craft basis, 2) number of New Apprentices hired and the hours they have worked, 3) documentation showing any requests made to the union dispatchers for Berkeley Residents and the Union's response to the request. Enforcement of this article shall be according to the Grievance and Arbitration procedure outlined in Article 12.

ARTICLE 9
HELMETS TO HARDHATS

9.1 The parties recognize a desire to facilitate the entry into the Building and Construction Trade Union(s) of Veterans who are interested in careers in the building and construction industry. The parties agree to utilize the services of the Center for Military Recruitment, Assessment and Veteran's Employment ("Center") and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

9.2 The Union(s) and Contractor(s) agree to coordinate with the Center to participate in an integrated database of Veterans interested in working on this Project and of apprenticeship and employment opportunities for this Project. To the extent permitted by law, the Union(s) will give credit to such Veterans for bona fide, provable past experience.

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

ARTICLE 10
GRIEVANCE PROCEDURE

10.1 Any Contractor which is not otherwise bound through an agreement with a Union to a grievance procedure which confers jurisdiction to consider and resolve disputes over the imposition of discipline or dismissal of its construction persons working on this Project shall be bound to the arbitration procedure contained in the MLA of the craft representing the employee(s) involved in the dispute. For the purposes of this Article, such grievance procedure shall be limited to disputes regarding the imposition of discipline or dismissal arising from work covered by the Agreement. Such Contractor shall not impose discipline or dismissal on its construction persons covered by this Agreement without just cause.

ARTICLE 11
JOINT ADMINISTRATIVE COMMITTEE

11.1 The parties to this Agreement shall establish a five (5) person Joint Administrative Committee comprised of at least one and up to two (2) representatives representing the City; two (2) representatives of the signatory Unions and The Council; and one industry representative, mutually selected by the City and The Council. Each representative shall designate an alternate who shall serve in his or her absence for any purpose contemplated by this Agreement.

11.2 The Joint Administrative Committee shall meet at the request of either party, but not less than once each quarter, to review the implementation of the Agreement and the progress of the Projects including, but not limited to, compliance with Article 8, prevailing wage, safety, Workforce development and Industry trends. Requests for certified payroll made by a Joint Labor/Management Committee to which the Union(s) signatory to this Agreement are a party shall be provided as allowed by law.

ARTICLE 12
GRIEVANCE ARBITRATION PROCEDURE

12.1 The parties understand and agree that in the event any dispute arises out of the meaning, interpretation or application of the provisions of this Agreement, the same shall be settled by means of the procedures set out herein. No grievance shall be recognized unless the grieving party provides notice in writing to the signatory party with whom it has a dispute within seven (7) calendar days after becoming aware of the dispute, but in no event more than thirty (30) calendar days after it reasonably should have become aware of the event giving to the dispute. The time limits in this Article 12 may be extended by mutual written agreement of the parties.

12.2 Grievances shall be settled according to the following procedures:

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

Step 1: Within seven (7) calendar days after the receipt of the written notice of grievance, the Business Representative of the involved Local Union, the City's authorized representative, representative of the construction person, and the representative of the involved Contractor shall confer and attempt to resolve the grievance.

Step 2: In the event that the representatives are unable to resolve the dispute within seven (7) calendar days after its referral to Step 1, either involved party may submit it within three (3) calendar days to Grievance Committee. The Grievance Committee shall consist of one (1) person selected by the City and one (1) person selected by the Council, which shall meet within seven (7) calendar days after such referral (or such longer time as mutually agreed upon by all representatives of the subcommittee), to confer in an attempt to resolve the grievance. The decision of the Grievance Committee shall be legal, final and binding. If the dispute is not resolved within such time seven (7) calendar days after its referral or such longer time as mutually agreed upon) it may be referred within seven (7) calendar days by either party to Step 3.

Step 3: Within seven (7) seven calendar days after referral of a dispute to Step 3, the representatives shall submit the matter to the designated permanent Arbitrator, Judge William Cahill.

12.3 In the event that Judge Cahill is unavailable, the arbitrator shall be Earnest Brown.

12.4 The Arbitrator shall arrange for a hearing no later than fourteen days (14) calendar days after the matter has been submitted to arbitration. A decision shall be given to the parties within five (5) calendar days after completion of the hearing unless such time is extended by mutual agreement. A written opinion may be requested by a party from the Arbitrator. The time limits specified in any step of the Grievance Procedure set forth in Section 12.1 may be extended by mutual agreement of the parties initiated by the written request of one party to the other, at the appropriate step of the Grievance Procedure. However, failure to process a grievance, or failure to respond in writing within the time limits provided above, without the request for an extension of time, shall be deemed a waiver of such grievance without prejudice, or without precedent to the processing of and/or resolution of like or similar grievances or disputes.

12.5 The decision of the Arbitrator shall be binding by all parties. The Arbitrator shall not have authority to change, amend, add, or detract from any of the provisions of the Agreement. The expense of the Arbitrator shall be borne equally by both parties.

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

12.6 In order to encourage the resolution of disputes and grievances at Step 1 and 2 of this Grievance Procedure, the parties agree that such settlements shall not be precedent-setting.

ARTICLE 13
JURISDICTIONAL DISPUTES

13.1 The assignment of Covered Work will be solely the responsibility of the Contractor/Employer(s) performing the work involved; and such work assignments will be in accordance with the Plan for the Settlement of Jurisdictional Disputes in the Construction Industry (the "Plan") or any successor Plan.

13.2 All jurisdictional disputes on this Project between or among the Union(s) and the Contractor/Employer(s), parties to this Agreement, shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department, or any other plan or method of procedure that may be adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the Contractor/Employer(s) and Union(s) parties to this Agreement.

13.2.1 If a dispute arising under this Article involves the Northern California Carpenters Regional Council or any of its subordinate bodies, an Arbitrator shall be chosen by the procedures specified in Article V, Section 5, of the Plan from a list composed of John Kagel, Thomas Angelo, Robert Hirsch and Thomas Pagan and the Arbitrator's hearing on the dispute shall be held at the offices of the California State Building and Construction Trades Council in Sacramento, California, within fourteen (14) calendar days of the selection of the Arbitrator. All other procedures shall be as specified in the Plan.

13.3 All jurisdictional disputes shall be resolved without the occurrence of any strike, work stoppage, or slow-down of any nature, and the Contractor/Employer(s)' assignment shall be adhered to until the dispute is resolved. Individuals violating this Section shall be subject to immediate discharge.

13.4 Each Contractor/Employer(s) shall conduct a Pre-Job Conference with the Council prior to commencing Covered Work. The Primary Employer, Coordinator and the District will be advised in advance of all such conferences and may participate if they wish. Pre-job conferences for different Contractor(s) may be held together.

ARTICLE 14
APPRENTICES

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

14.1 Recognizing the need to maintain continuing support of programs designed to develop adequate numbers of competent workers in the construction industry, the Contractor (s) shall employ apprentices in the respective crafts to perform such work as is within their capabilities and which is customarily performed by the craft in which they are indentured.

14.2 The apprentice ratios will be in compliance with the applicable provisions of the California Labor Code and Prevailing Wage Rate Determination.

14.3 There shall be no restrictions on the utilization of apprentices in performing the work of their craft provided they are properly supervised.

14.4 All Apprentices will come from a State approved Labor Management Apprenticeship program.

ARTICLE 15
MANAGEMENT RIGHTS

15.1 The Contractor shall retain full and exclusive authority for the management of their operations, including the right to direct their work force in their sole discretion with regard to the following: the hiring, promotion, transfer, layoff, corrective action or discharge for just cause of its employees (in accordance with Article 9); the determination of the number of employees needed for the Project work; the selection/hiring of foremen and supervisors; the assignment and schedule of work; the requirement of overtime work, the determination of when it will be worked, and the number of employees engaged in such work, except as otherwise limited by the terms of this Agreement and/or the MLA. No rules, customs or practices shall be permitted or observed which limit or restrict production, or limit or restrict the working efforts of construction persons except that the lawful manning provisions of the MLA shall be recognized.

ARTICLE 16
WAGES/BENEFITS

16.1 **Wages.** All construction persons covered by this Agreement shall be classified in accordance with work performed and paid the hourly wage rates for those classifications in the applicable MLA for such craft work and in compliance with the applicable prevailing wage rate determination.

16.2 **Benefits.** Contractor agrees to pay contributions into established construction person benefit funds in the amounts designated in the appropriate MLA; provided, however, that each Contractor and Union agree that only such bona fide construction person benefits as included in the prevailing wage determination shall be included in this requirement and required to be paid by the Contractor under this Agreement; provided further, however, that this provision does not relieve Contractors signatory to a local collective bargaining agreement with a signatory Union which would be applicable to the Projects from making

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

any other fund contributions (including, but not limited to, those for contract administration), required by such local agreement. Contractor shall not be required to pay contributions to any other trust funds to satisfy their obligation under this Article. By signing this Agreement, the Contractors adopt and agree to be bound by the written terms of the legally established Trust Agreements, specifying the detailed basis on which the payments are to be made into, and the benefits paid out of, such Trust Funds.

16.3 **Compliance.** It shall be the responsibility of the Contractor(s) and Unions to investigate and monitor compliance with the provisions of the agreement contained in Article 15. Nothing in this agreement shall be construed to interfere with or supersede the usual and customary legal remedies available to the Unions and/or employee benefit Trust Funds to collect delinquent Trust Fund contributions from Contractors on the Project.

ARTICLE 17
MODIFIED MASTER LABOR AGREEMENTS

17.1 Certain Provisions Shall Not Apply. Provisions negotiated into the new or modified MLA which are less favorable to the Contractor than those uniformly required of employers for construction work normally covered by those agreements or which may be construed to apply exclusively or predominately to work covered by this Agreement shall not apply to work covered by this Agreement. Any disagreement between the parties regarding the application of the provisions of any new or modified collective bargaining agreement to work covered by this Agreement shall be resolved under the dispute and grievance arbitration procedures set forth in Article 12 hereof.

ARTICLE 18
DRUG and ALCOHOL TESTING

18.1 The use, sale, transfer, purchase and/or possession of a controlled substance, alcohol and/or firearms at any time during the work day is prohibited.

18.2 Employer shall be allowed to utilize employment drug screens. All personnel are subject to random alcohol and drug/alcohol testing at any time, except, the following changes will apply. Employer shall follow said Unions Master Labor Agreement drug polices, regulations and limits. Body fluid tests will utilize urine and saliva specimens. Employer may also selectively require an employee to undergo alcohol or drug/alcohol testing if Employer has reasonable cause to believe that an employee's ability to work safely may be impaired. All requirements and activities of the Employer with regard to drug/alcohol testing shall comply with the provisions of State law.

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

ARTICLE 19
SAVINGS CLAUSE

19.1 The parties agree that in the event any article, provision, clause, sentence or word of this Agreement is determined to be illegal or void as being in contravention of any applicable law, by a court of competent jurisdiction the remainder of the Agreement shall remain in full force and effect. The parties further agree that if any article, provision, clause, sentence or word of the Agreement is determined to be illegal or void, by the court of competent jurisdiction, the parties shall substitute, by mutual agreement, in its place and stead, an article, provision, clause, sentence or word which will meet the objections to its validity and which will be in accordance with the intent and purpose of the article, provision, clause, sentence or word in question.

19.2 The parties also agree that in the event that a decision of a court of competent jurisdiction materially alters the terms of this Agreement such that the intent of the parties is defeated, then the entire Agreement shall be null and void.

ARTICLE 20
ENTIRE AGREEMENT

20.1 This Agreement represents the complete understanding of the parties. The provisions of this Agreement, including the MLA, shall apply to the work covered by this Agreement. Where a subject covered by the provisions of this Agreement is also covered by a MLA, the provisions of this Agreement shall prevail. Where a subject is covered by the provisions of a MLA and is not covered by this Agreement, the provisions of the MLA shall prevail. Nothing contained in a MLA, working rule, by-laws, constitution or other similar document of the Unions shall in any way affect, modify or add to this Agreement unless otherwise specifically set forth in this Agreement or mutually agreed to in writing executed by the parties.

20.2 The parties agree that this Agreement covers all matters affecting wages, hours, and other terms and conditions of employment and that during the term of this Agreement the parties will not be required to negotiate on any further matters affecting these or any other subject not specifically set forth in this Agreement except by mutual agreement of the parties.

20.3 This Agreement may be executed in counterparts, such that original signatures may appear on separate pages and when bound together all necessary signatures shall constitute an original. Facsimile signature pages transmitted to other parties to this Agreement shall be deemed the equivalent to original signatures.

ARTICLE 21
TERM

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

21.1 The Agreement shall be included as a condition of the award of the Construction Contracts.

21.2 The Agreement shall continue in full force and effect for a term of three years from the Effective Date of June 30, 2020 through June 30, 2023 and shall be applicable to all Projects until completion that are advertised for bidding during the term.

21.3 This Agreement shall continue in full force and effect until Completion of the Project. The parties may mutually agree to extend and/or amend this Agreement.

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

SIGNATURES

City of Berkeley

By: Dee Williams-Ridley

Dee Williams-Ridley, City of Berkeley City Manager

Date: 2/10/21

Alameda County Building & Construction Trades Council, AFL-CIO

DocuSigned by:
Andreas Cluver
By: 5C9F6AE6571848E...

Andreas Cluver, Secretary-Treasurer for the Building Trades Council of Alameda County on behalf of the Signatory Unions

Date: 1/26/2021

Signatory Unions

Asbestos Workers, Local 16 Boilermakers, Local 549

Bricklayers & Allied Craftsmen

Local 3 Cement Masons, Local 300

Electrical Workers, Local 595

Elevator Constructors, Local 8

Hod Carriers, Local 166

Iron Workers, Local 378

Laborers, Local 67

Laborers, Local 304

Operating Engineers,

Local 3 Plasterers, Local 66

Roofers, Local 81

Sheet Metal Workers, Local 104

Sign Display, Local 510

Sprinkler Fitters, Local 483

DocuSign Envelope ID: B525D8F2-6AA3-43B6-AFCB-0D4F95F7E6BE

Teamsters, Local 853

United Association of Journeymen and Apprentices Fitting Industry, Underground Utility & Landscape, Local 355

United Association of Steamfitters, Ironworkers City and the RDA Council of Pipefitters, Plumbers, & Gas California Fitters, Local 342

Council No. 16 Northern California

International Union of Laborers
Painters & Allied Trades (On behalf of Painters, Local 3; Carpet & Linoleum Layers, Local 12; Glass Workers, Local 169; Auto& Marine Painters, Local 1176)

Northern California Carpenters
Regional Council (on behalf of Carpenters, Local 713; Carpenters, Local 2236; Lathers, Local 68L; Millwrights, Local 102; Pile Drivers, Local 34)

APPENDIX B

Pre-Demolition Survey Report for 1410 Parker Street

ACUMEN
INDUSTRIAL HYGIENE INC
1032 IRVING STREET #922 SAN FRANCISCO CA 94122
TEL 415 242 6060 FAX 415 242 6006
WWW.ACUMEN-IH.COM

Pre-Demolition Survey Report

Asbestos, Lead, and Other Hazardous Building Materials Investigation

1410 Parker Street
Berkeley, CA

June 2025

Acumen Project No. COB 2547

Prepared for:

City of Berkeley
Parks, Recreation & Waterfront Department
1947 Center Street, 5th Floor
Berkeley, CA 94704

Prepared by:

Tam Pham, CAC (June 10, 2025)
Certified Asbestos Consultant #13-5033
CDPH Lead Accredited #LRC-00004523

Reviewed by:

Paul M. Spillane, CIH, CAC (June 10, 2025)
Certified Asbestos Consultant #10-4630
CDPH Lead Accredited #LRC-00004523

This report, in digital or printed form is the proprietary data of Acumen Industrial Hygiene, Inc. (Acumen). All rights are reserved. No part of this report may be altered or used to create derivative works, in whole or in part, in any manner without the express written permission of Acumen. Unauthorized duplication or use of this report is prohibited. Acumen reserves the right to seek all remedies available by law and in equity for such violations.

Table of Contents

Pre-Demolition Survey Report
1410 Parker Street
Berkeley, CA

June 2025

1.0 INTRODUCTION **1**

2.0 SUMMARY OF INVESTIGATION **2**

2.1 Asbestos Survey Methods 2
2.2 Lead-Containing Materials and Paint Survey Methods 2
2.3 Other Hazardous Building Material Survey Methods 2

3.0 NARRATIVE SUMMARY OF FINDINGS **2**

4.0 DETAILED FINDINGS AND DISCUSSION **3**

4.1 Asbestos Findings and Discussion 3
4.1.1 Friable Asbestos Containing Materials *3*
4.1.2 Non-Friable Asbestos Containing Materials *3*
4.1.3 Regulated Asbestos Containing Materials *3*
4.1.4 Non-Asbestos Containing Materials *3*
4.2 Detailed Lead Findings and Discussion 3
4.2.1 Lead-Based Paint *4*
4.2.2 Lead-Containing Paint *4*
4.3 Universal Hazardous Waste Findings and Discussion 4

5.0 RECOMMENDATIONS **5**

5.1 ACMs/LCMs During Building Demolition or Renovations 5

6.0 CONCLUSIONS **5**

7.0 LIMITATIONS **5**

TABLES

Table 1 Summary of Non-Asbestos-Containing Materials
Table 2 Summary of Lead Paint Sample Results
Table 3 Summary of Lead TTLC Sample Results

APPENDICES

Appendix A Laboratory Reports
Appendix B Sample Location Floor Plans
Appendix C Photographs

1.0 Introduction

The purpose of this report is to present and discuss the findings of an asbestos, lead, and other hazardous building materials investigation that Acumen Industrial Hygiene, Inc. (Acumen) conducted for the City of Berkeley, the Client, at the residential garage and shed (Site). The Site is located at 1410 Parker Street in Berkeley, California. Acumen's representative, Mr. Tam Pham, a registered California Asbestos Consultant (CAC) and Lead Inspector/Assessor (I/A), conducted this investigation on May 20, 2025.

We understand the purpose of this survey is for structural demolition at the Site, which encroaches on City property. At the time of the survey the garage and shed are being used as storage. Our inspection was also limited to accessible areas of the Site. Destructive sampling of the Site's roofs were conducted during this investigation.

The objectives of this investigation were as follows:

- To identify regulated asbestos containing materials (RACMs), defined by Bay Area Air District (BAAD). RACMs and Category I and II materials that will be rendered friable need to be removed if they are to be impacted by building renovation and before the building can be demolished.
- To identify asbestos containing materials (ACM) that would require compliance with California Department of Industrial Relations – Division of Occupational Safety and Health (Cal/OSHA) asbestos regulations and waste disposal. ACM is a manufactured construction material with an asbestos content that is greater than 1% by weight.
- To identify asbestos containing construction materials (ACCM) that would require compliance with Cal/OSHA asbestos regulations. ACCM is a manufactured construction material with an asbestos content that is greater than 0.1% by weight.
- To identify primarily deteriorated lead-based paints (LBPs) that would need stabilization/removal before building demolition or renovation to comply with California Environmental Protection Agency (EPA) hazardous waste disposal regulations regulated by the California Department of Toxic Substances Control (DTSC). The handling of LBPs would also require compliance with Cal/OSHA lead regulations (8CCR1532.1). The evaluation of paints was not intended to be either a lead inspection or a lead hazard evaluation as defined by Title 17 CCR 35001 *et seq*. Lead-based paint inspections in public or residential buildings are subject to California Department of Public Health (CDPH) regulations.
- To identify lead-containing materials (LCMs) primarily in ceramic tiles that would need to be removed before demolition or renovation for compliance with Cal/OSHA and DTSC regulations. The evaluation was not intended to be either a lead inspection or a lead hazard evaluation as defined by California Department of Public Health (17CCR35001 et seq).
- To visually identify other potential hazardous building materials that would require removal prior to demolition or renovation to comply with Cal-EPA DTSC hazardous waste disposal regulations. The handling of universal hazardous wastes also requires compliance with Cal/OSHA regulations. These universal hazardous wastes may include polychlorinated biphenyls (PCBs), mercury and Freon.
- Based on the type of buildings (wood-framed), representative sampling of "PCB priority building materials" is not required.

2.0 Summary of Investigation

2.1 Asbestos Survey Methods

The asbestos inspection consisted of a walkthrough of the Site to identify and sample suspect ACM. Acumen noted significant factors of the suspect ACM, including the friability of suspect materials. Friability describes the ability of a material to be crushed or crumbled, when dry, into a powder using hand pressure.

Where suspect ACMs were noted, bulk samples were collected and submitted with our chain of custody forms to Micro Analytical Laboratories, Inc. (Emeryville, CA) for analysis. This laboratory is accredited by the National Institute of Standards and Technology (NIST), National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for asbestos. This laboratory also holds certification from the American Industrial Hygiene Association (AIHA). The asbestos laboratory results are shown in Appendix A.

Acumen collected fourteen (14) asbestos samples at the Site. The suspect asbestos samples collected were analyzed by polarized light microscopy (PLM). The asbestos laboratory reports are shown in Appendix A. This method identifies the type(s) of asbestos present in the sample and its corresponding percent concentration(s). The reliable limit of quantification of this method is 1% asbestos.

2.2 Lead-Containing Materials and Paint Survey Methods

The lead inspection consisted of a walkthrough of the Site to identify deteriorated surface coatings and suspect LCMs. Paints that were in deteriorated condition (peeling, chipping, powdering, etc.) and ceramic tiles were sampled, noting the location, color, substrate, and extent of deterioration. Intact paints were also sampled, for Cal/OSHA compliance purposes.

We collected two (2) discrete paint samples and two (2) paint bulk samples for lead analysis. The discrete paint samples were analyzed by flame atomic absorption (FLAA) spectrometry using Method 7420. The paint bulk sample was analyzed for total lead content by Total Threshold Limit Concentration (TTLC) method, U.S. EPA Method SW-846. The limit of quantification depends on the mass of the sample. Lead bulk materials (ceramic tiles) were not observed during this investigation.

Lead paint samples were submitted to Micro Analytical Laboratories, Inc. (Emeryville, CA) for analysis. This laboratory is accredited by the AIHA under the Environmental Lead Laboratory Accreditation Program (ELLAP) for selected lead analysis methods. When a result is noted to be less than (<) on the lead sample report, it should be interpreted as meaning below analytical detection limit. The lead laboratory results are also shown in Appendix A.

2.3 Other Hazardous Building Material Survey Methods

During the inspection, we visually checked for suspected hazardous building materials and did not observe any fluorescent light tubes or ballasts at the Site.

3.0 Narrative Summary of Findings

The residential garage was built as a wooden framed structure on concrete slab (Photo 1). The interior (Photo 2) has wooden studs with concrete floor. We sampled deteriorated exterior paint on wood siding and found it does not contain asbestos but has high lead concentrations of up to 17,000 parts per million (ppm). Stucco and roof were also found not to contain asbestos.

The standalone wooden shed (Photo 3) was found not to contain asbestos based on bulk samples collected. The interior (Photo 4) has wooden studs with plywood floor. We tested deteriorated exterior paint on a wood door and found it has lead concentrations of 2,700 ppm. Intact paint on wood siding has 63 ppm lead but it doesn't contain asbestos.

4.0 Detailed Findings and Discussion

4.1 Asbestos Findings and Discussion

Table 1 shows the sample results for those materials that did not contain detectable amounts of asbestos. The laboratory analytical results are included in Appendix A. Asbestos sample locations are illustrated on the Sample Location Maps provided in Appendix B. The diagrams indicate where the samples were taken, but locations of these materials are not limited to the areas sampled. Representative photographs of materials that have been identified are provided in Appendix C.

4.1.1 Friable Asbestos Containing Materials

During our investigation, we did not find friable asbestos containing material based on bulk samples collected at the building.

4.1.2 Non-Friable Asbestos Containing Materials

During our investigation, we did not find non-friable asbestos containing material based on bulk sample collected at the building.

4.1.3 Regulated Asbestos Containing Materials

BAAQMD regulates air emissions from building demolition and renovation projects. This agency requires that materials with an asbestos content greater than 1% be removed before building demolition or renovation if they are either friable or the work will damage or otherwise render them friable. We did not find any RACMs.

4.1.4 Non-Asbestos Containing Materials

Refer to Table 1 for materials sampled that do not contain asbestos for the Site.

4.2 Detailed Lead Findings and Discussion

The result of this investigation determined that lead-based paint and lead-containing paint is present at the Site. Intact lead paints do not require paint stabilization. However, deteriorated (loose and flaking) lead paints must be stabilized prior to demolition or renovation. Where inspected, we observe deteriorated exterior paints at the Site. As shown on Table 2 and Table 3, we representatively sampled paints to comply with Cal/OSHA and DTSC waste disposal regulations during construction.

Paints that contain more than 5,000 ppm lead are considered "lead-based paint" and if deteriorated are considered a "lead-hazard" by the CDPH. Paint chip wastes or material that contains more than 1,000 ppm lead would be classified as California hazardous wastes. Deteriorated paint wastes or materials that contain more than 50 ppm lead, but less than 1,000 ppm lead would need to be re-analyzed by the Soluble Threshold Limit Concentration (STLC) to determine soluble lead content and by the US EPA Total Concentration for Leachable Pollutants (TCLP) test to determine whether the paint or material is either a California or a Federal hazardous waste. If the soluble test(s) exceed 5.0 mg/L, then the waste would be characterized as "hazardous waste" (either California, federal or both). If ceramic tile contains greater than 50 ppm, then it should also be removed and tested for leachable lead per the STLC/TCLP methods, prior to demolition or renovation.

Construction work that disturbs lead-based or lead-containing materials (including demolition) will need to be conducted in accordance with Cal/OSHA's lead in construction regulations (8CCR1532.1). These regulations apply paints and materials that contains any detectable amounts of lead. In theory, this should not pose a significant problem as this regulation has been in effect since 1992. Lead containing materials may require separate disposal if they contain more than 50 ppm lead. This rule does not apply for intact paint.

Cal/OSHA's lead in construction standard (8CCR1532.1) requires a contractor whose work involves disturbing leaded materials to develop and implement a lead compliance plan. The written lead compliance plan would essentially acknowledge the presence of lead and would describe procedures to minimize airborne lead exposures (e.g., use of dust control, clean up debris daily with a HEPA vacuum, and use good personal hygiene procedures, etc.) consistent with either assumed or known airborne lead exposures. Additionally, if the paint is disturbed (e.g., sanding or chipping), contractor is required to conduct employee exposure assessment to determine appropriate protective measures, including medical surveillance and personal hygiene facilities, and to provide employee training on the hazards of lead related work. Note that lead related work in public buildings that exceeds Cal/OSHA's permissible exposure limit requires that the training be accredited lead worker training under the California Department of Public Health (CDPH).

4.2.1 Lead-Based Paint

During our investigation, we found lead-based paints based on bulk samples collected.

- Garage: Exterior beige paint on wood siding and garage door contains up to 17,000 ppm lead. (samples COB2547-G-PB01 and COB2547-G-PB02, Photo 5). There are approximately 5 square feet of this deteriorated (loose and flaking) paint present throughout the exterior, which will require paint stabilization and disposed as hazardous waste.

4.2.2 Lead-Containing Paint

During our investigation, we found deteriorated lead-containing paint based on bulk samples collected.

- Shed: Exterior beige paint on wood door contains 2,700 ppm lead (sample COB2547-S-PB01, Photo 6). There are approximately 5 square feet of this deteriorated (loose and flaking) paint present throughout on the door, which will require paint stabilization and disposed as hazardous waste.
- Shed: Exterior brown paint on wood siding contains 63 ppm lead (sample COB2547-S-PB02). This paint is intact and does not require paint stabilization.

4.3 Universal Hazardous Waste Findings and Discussion

DTSC has adopted regulations (SB 20 Electronic Waste Recycling Act) for the handling of universal waste or E-Waste. This category is a subset under all hazardous wastes. Universal wastes encompass a variety of electronic devices (including fluorescent lamps, light emitting diode (LED) lights, high-intensity discharge (HID) lamps, light ballasts, smoke detectors and emergency exit signs, mercury thermostats, cathode ray tubes, batteries, etc.) that usually contain mercury, lead, cadmium, chromium, and copper. These materials are considered toxic and are banned from landfill disposal. These materials must be collected and recycled prior to their disturbance during demolition or renovation. Fluorescent light tubes and mercury thermostats should be carefully removed without breaking and packaged for recycling.

During our investigation, Acumen visually assessed the Site and did not find fluorescent light fixtures, mercury containing thermostats, smoke detectors and exit signs.

5.0 Recommendations

5.1 ACMs/LCMs During Building Demolition or Renovations

1. Notify potential renovation or demolition contractors that asbestos was not discovered at the Site.
2. Notify potential demolition or renovation contractors of the presence of deteriorated lead-based and lead-containing paints. Deteriorated lead paints would need to be stabilized. Disturbance of the lead paints requires compliance with Cal/OSHA's lead in construction regulation.
3. If additional suspect materials were discovered during demolition or renovation, these materials should be sampled to confirm that they do not contain asbestos or lead prior to their removal.
4. Prior to submitting bids to perform paint stabilization, abatement contractors should field verify all the estimated quantity of deteriorated paints stated in this report.
5. Although there is no regulatory requirement for it, it would be advisable to develop either a work plan or specification for the handling of lead during paint stabilization.

6.0 Conclusions

Our investigation did not discover asbestos containing material based on bulk samples tested. Deteriorated lead-based and lead-containing paints are present and require paint stabilization prior to demolition or renovation. Work that disturbs lead is regulated by Cal/OSHA and requires measures to prevent lead exposure.

7.0 Limitations

Reasonable effort was made by Acumen personnel to locate, and sample suspect hazardous building materials. However, for any facility or building, the existence of unique or concealed ACM or lead-containing materials, other hazardous building materials and debris is a possibility. Acumen does not warrant, guarantee, or profess to have the ability to locate or identify all ACM or other hazardous materials at this facility. The intent of this report is for use in planning, for demolition or renovation purposes. All quantities of materials identified in this report should be field verified by contractors prior to submitting bids to perform abatement work. Additional confirmatory sampling and detailed quantification may be required if the renovation work uncovers additional suspect materials. The report is not intended as a CDPH or HUD defined "lead hazard evaluation" or "lead inspection".

Acumen provided these services consistent with the level and skill ordinarily exercised by members of the profession currently providing similar services under similar circumstances at the time the services were provided. This statement is in lieu of other statements either expressed or implied. This report is intended for the sole use of the named client and their designees. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of certain other users, and use or re-use of this document, the findings, conclusions, or recommendations is at the risk of said user.

As with all such assessments, the results of the sampling represent conditions found on the date of the survey and may not represent conditions found at other times. Additionally, this assessment was limited with respect to the specific parameters indicated above and should not be construed to be a comprehensive evaluation or a definitive representation of all conditions within the facility. The information presented in this report is intended to be used as a guide to evaluate the need for materials removal, further investigation or the need for modifications to the processes or procedures surveyed.

The client should recognize that all testing and remediation methods have reliability limitations, no method or number of sampling locations can guarantee that a condition will be discovered within the performance of the services as authorized by the client. Additionally, the passage of time may result in a change in the environmental characteristics at this site. This report does not warrant against future operations or conditions that could affect the recommendations made. The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were observed during Acumen's inspection of the site.

Table 1

Non-Asbestos Containing Materials
1410 Parker Street
Berkeley, CA

May 20, 2025

Suite	Location	Material	Results[1]	Sample No.
Garage	Exterior - North	Stucco	Gray Stucco: ND Paint: ND	COB2547-G-01A
Garage	Exterior - East	Stucco	Gray Stucco: ND Paint: ND	COB2547-G-01B
Garage	Exterior - North	Exterior Beige Paint on Wood Garage Door	White Paint: ND	COB2547-G-02A
Garage	Exterior - South	Exterior Beige Paint on Wood Siding	White Paint/Gray/Brown Wood: ND	COB2547-G-02B
Garage	Roof - South	Roll Up Roof Field Core	Black Gravel: ND Black Tar: ND Black Felt: ND	COB2547-G-03A
Garage	Roof - North	Roll Up Roof Field Core	Black Gravel: ND Black Tar: ND Black Felt: ND	COB2547-G-03B
Shed	Roof - East	Shingle Pitch Roof Field Core	Black Tar: ND Black Cellulose Felt: ND Black Fiberglass Felt: ND Gravel: ND	COB2547-S-01A
Shed	Roof - West	Shingle Pitch Roof Field Core	Black Tar: ND Black Cellulose Felt: ND Black Fiberglass Felt: ND Gravel: ND	COB2547-S-01B
Shed	First Floor - North	Wall Felt Paper	Felt Paper: ND	COB2547-S-02A
Shed	First Floor - South	Wall Felt Paper	Felt Paper: ND	COB2547-S-02B
Shed	Exterior - East	Exterior Beige Paint on Wood Door	Beige Paint: ND	COB2547-S-03A
Shed	Exterior - East	Exterior Beige Paint on Wood Trim	Beige Paint: ND	COB2547-S-03B

Table 1 (continued)

Non-Asbestos Containing Materials
1410 Parker Street
Berkeley, CA

May 20, 2025

Suite	Location	Material	Results[1]	Sample No.
Shed	Exterior - North	Exterior Brown Paint on Wood Siding	Brown Paint: ND	COB2547-S-04A
Shed	Exterior - South	Exterior Brown Paint on Wood Siding	Brown Paint: ND	COB2547-S-04B

Footnote

1. Samples were analyzed by polarized light microscopy (PLM) and reported as not containing detectable amounts of asbestos. ND indicates that asbestos was not detected.

Table 2

Summary of Lead Paint Sample Results
1410 Parker Street
Berkeley, CA

May 20, 2025

Suite	Location	Material	Result[1]	Condition[2]	EQ[3]	Sample No.
Garage	Exterior - South	Exterior Beige Paint on Wood Siding	17,000	Deteriorated	5 SF	COB2547-G-PB02
Shed	Exterior - East	Exterior Beige Paint on Wood Door	2,700	Deteriorated	5 SF	COB2547-S-PB01

Footnote

1. Samples are analyzed by Flame Atomic Absorption Spectrometry (AAS). U.S. EPA SW-846 Method 7420 is used for the instrumental analysis. Nitric acid and hydrogen peroxide digestion procedures are based on U.S. EPA SW-846, 3rd edition. Results reported in milligram per kilogram (mg/kg) or parts per million (ppm). The "<" sign means below analytical detection limit.
2. Intact paint requires no lead-stabilization; deteriorated paint with greater than 50 ppm lead must be stabilized prior to demolition or renovation.
3. EQ means estimated quantity in square feet (SF). Estimated quantities should be confirmed by an abatement contractor prior to bid or removal. N/A = Lead-stabilization is not required.

Table 3

Summary of Lead TTLC Sample Results
1410 Parker Street
Berkeley, CA

May 20, 2025

Suite	Location	Material	Result[1]	EQ[2]	Sample No.
Garage	Exterior - South	Exterior Beige Paint on Wood Garage Door	3,700	See COB2547-G-PB02	COB2547-G-PB01
Shed	Exterior - North	Exterior Brown Paint on Wood Siding	63	N/A	COB2547-S-PB02

Footnote

1. Samples are analyzed by Total Threshold Limit Concentration (TTLC) in accordance with EPA Methods 3050B for Acid Digestion (SW 846, 3rd edition, 2007) and 7420 for Analysis (SW-846, 3rd edition, 2007). Results reported in milligram per kilogram (mg/kg) or parts per million (ppm). The "<" sign means below analytical detection limit.
2. EQ means estimated quantity either in square feet (SF). Ceramic tile contains more than 1,000 ppm lead would be classified as California hazardous wastes. If ceramic tile or other material contains greater than 50 ppm lead but less than 1,000 ppm lead, then it should also be removed and tested for leachable lead per the STLC/TCLP methods, prior to demolition or renovation. Estimated quantities should be confirmed by an abatement contractor prior to bid or removal. N/A = Removal is not required.

ACUMEN
INDUSTRIAL HYGIENE INC
1032 IRVING STREET #922 SAN FRANCISCO CA 94122
TEL 415 242 6060 FAX 415 242 6006
WWW.ACUMEN-IH.COM

Appendix A

Laboratory Reports

1410 Parker Street
Berkeley, CA

June 2025

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1092
Paul Spillane
Acumen Industrial Hygiene, Inc.
1032 Irving Street, #922
San Francisco, CA 94122-2216

PROJECT:
PROJECT NO. OB 2547
1410 PARKER ST (GARAGE)
BERKELEY, CA

Micro Log In	**330462**
Total Samples	6
Date Sampled	05/20/2025
Date Received	05/20/2025
Date Analyzed	05/20/2025

SAMPLE IDENTIFICATION	ASBESTOS QUANTITY (AREA %) / TYPES / LAYERS Note: "ND" = No Asbestos Detected	DOMINANT OTHER MATERIALS
Client #: COB2547-G-01A Micro #: 330462-01 Analyst: DP EXT - NORTH - STUCCO	STUCCO (GRAY): ND PAINT: ND	5 % CELLULOSE NFM: ROCK FRAGMENTS, CARBONATE, BINDER
Client #: COB2547-G-01B Micro #: 330462-02 Analyst: DP EXT - EAST - STUCCO	STUCCO (GRAY): ND PAINT: ND	5 % CELLULOSE NFM: ROCK FRAGMENTS, CARBONATE, BINDER
Client #: COB2547-G-02A Micro #: 330462-03 Analyst: DP BK EXT - NORTH - EXT BEIGE PAINT ON WOOD GARAGE DOOR	PAINT (WHITE): ND	5 % CELLULOSE NFM: OPAQUES
Client #: COB2547-G-02B Micro #: 330462-04 Analyst: DP EXT - SOUTH - EXT BEIGE PAINT ON WOOD SIDING	PAINT (WHITE) / WOOD (GRAY / BROWN): ND	5 % CELLULOSE NFM: OPAQUES
Client #: COB2547-G-03A Micro #: 330462-05 Analyst: DP ROOF - SOUTH ROLL UP ROOF FIELD CORE	GRAVEL (BLACK): ND TAR (BLACK): ND FELT (BLACK): ND	5 % CELLULOSE 50 % FIBROUS GLASS NFM: TAR/ASPHALT, BINDER

Technical Supervisor: _____ 5/21/2025
Baojia Ke, Ph.D. Date Reported

NVLAP Lab Code 101872-0 (TESTING). Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 µm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM).Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties.Tremolite-asbestos or actinolite- asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in a layer of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. NFM = Non-fibrous materials.

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1092
Paul Spillane
Acumen Industrial Hygiene, Inc.
1032 Irving Street, #922
San Francisco, CA 94122-2216

PROJECT:
PROJECT NO. OB 2547
1410 PARKER ST (GARAGE)
BERKELEY, CA

Micro Log In	**330462**
Total Samples	6
Date Sampled	05/20/2025
Date Received	05/20/2025
Date Analyzed	05/20/2025

SAMPLE IDENTIFICATION	ASBESTOS QUANTITY (AREA %) / TYPES / LAYERS Note: "ND" = No Asbestos Detected	DOMINANT OTHER MATERIALS
Client #: COB2547-G-03B Micro #: 330462-06 Analyst: DP **ROOF - NORTH** **ROLL UP ROOF FIELD CORE**	**GRAVEL (BLACK): ND** **TAR (BLACK): ND** **FELT (BLACK): ND**	5 % CELLULOSE 50 % FIBROUS GLASS NFM: TAR/ASPHALT, BINDER

Technical Supervisor: _____ 5/21/2025

Baojia Ke, Ph.D. Date Reported

NVLAP Lab Code 101872-0 (TESTING). Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 µm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM).Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties.Tremolite-asbestos or actinolite- asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in a layer of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. NFM = Non-fibrous materials.

(PLM) 330462

ACUMEN
INDUSTRIAL HYGIENE INC
1032 IRVING STREET #922 SAN FRANCISCO CA 94122-2216
TEL 415 242 6060 FAX 415 242 6006
WWW.ACUMEN-IH.COM

BULK CHAIN OF CUSTODY FORM

Project No. COB 2547

Location: 1410 Parker Street - Garage
Address: Berkeley, CA
Sampling Date: 5/20/2025

Laboratory: Micro Analytical Laboratories, Inc.
Turnaround: ☒ Normal ☐ 24 Hour ☐ Rush
Collection By: Tam Pham

	Sample No.	Floor	Location	Description	Method
1	COB2547-G-01A	EXT	North	Stucco	PLM Asbestos
2	01B		East		
3	02A		North	EXT beige paint on wood garage door	
4	02B		South	EXT beige paint on wood siding	
5	03A	Roof	South	Roll up Roof field core	
6	03B		North		
	PbO1	EXT	North	EXT beige paint on wood garage door	TTLC LEAD
	PbO2		South	siding	FLAA LEAD

Other Instructions: Email results to lab@acumen-ih.com.

Please sign this form below acknowledging sample receipt and return executed form with laboratory reports.

Sent By:	Received By: LV
Date Submitted: ~~5/20~~ 5/20/2025	Date Received: 5/20/25 1330

Sample(s) Submitted Via: ☒ Hand Delivered ☐ Federal Express (Air Bill #_____) ☐ Other: _____

☐ NT ☐ WTE

MICRO ANALYTICAL LABORATORIES, INC.

LEAD IN PAINT - FLAME AAS (SW846)

1092
Paul Spillane
Acumen Industrial Hygiene, Inc.
1032 Irving Street, #922
San Francisco, CA 94122-2216

PROJECT:
PROJECT NO. COB 2547
1410 PARKER ST - GARAGE
BERKELEY, CA

Micro Log In 330463
Total Samples 1
Date Sampled 05/20/2025
Date Received 05/20/2025
Date Analyzed 05/21/2025

Lead Concentration

Sample ID	Weight Percent	mg/kg (ppm)	RDL
Client: COB2547-G-PB02 Lab: 330463-01 EXT - SOUTH - EXT BEIGE PAINT PAINT ON WOOD SIDING	1.7 %	17000	0.2000 % 2,000 mg/kg

Technical Supervisor: _____ 5/21/2025 Analyst: RN
Long T. Nguyen, Chemistry Supervisor Date Reported

AIHA-LAP, LLC Accredited Laboratory, ID #101768. Samples are analyzed by Flame Atomic Absorption Spectrometry (FLAAS) using SOP 23-Paint. This SOP is based on U.S. EPA SW-846 Method 7420 for Instrumental analysis, and on ASTM E-1645-21 for nitric acid and hydrogen peroxide digestion Unless otherwise indicated on this report, all required Quality Control samples have been determined to be in control prior to releasing these analytical results. Unless otherwise stated in this report, all samples were received in acceptable condition for analysis. Note: due to software limitations, the number of reported significant figures does not necessarily reflect the uncertainty of the analysis. If the amount of sample available for analysis is lower than advisable for this method, detection limits and uncertainty will be higher. This report must not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. Unit explanations: mg = milligrams; kg = kilograms; ppm = parts per million. N/A = Not Applicable. RDL = Report Detection Limit.

(paint) 330463

ACUMEN

INDUSTRIAL HYGIENE INC

1032 IRVING STREET #922 SAN FRANCISCO CA 94122-2216

TEL 415 242 6060 FAX 415 242 6005

WWW.ACUMEN-IH.COM

BULK CHAIN OF CUSTODY FORM

Project No. COB 2547

Location: 1410 Parker Street - Garage

Address: Berkeley, CA

Sampling Date: 5/20/2025

Laboratory: Micro Analytical Laboratories, Inc.

Turnaround: ☒ Normal ☐ 24 Hour ☐ Rush

Collection By: Tam Pham

Sample No.	Floor	Location	Description	Method
COB2547-G-01A	EXT	North	Stucco	PLM Asbestos
01B		~~EXT~~		
02A		North	EXT beige paint on wood garage door	
02B		South	EXT beige paint on wood siding	
03A	Roof	South	Roll up Roof field core	
03B		North		
Pb01	EXT	North	EXT beige paint on wood garage door	TTLC LEAD
Pb02		South	siding	FLAA LEAD

Other Instructions: Email results to lab@acumen-ih.com.

Please sign this form below acknowledging sample receipt and return executed form with laboratory reports.

Sent By:	Received By: LV
Date Submitted: ~~5/20~~ 5/20/2025	Date Received: 5/20/25 1330

Sample(s) Submitted Via: ☒ Hand Delivered ☐ Federal Express (Air Bill #_____) ☐ Other: _____

☐ NT ☐ WTE

MICRO ANALYTICAL LABORATORIES, INC.

EPA SW-846 LEAD-TTLC

1092
Paul Spillane
Acumen Industrial Hygiene, Inc.
1032 Irving Street, #922
San Francisco, CA 94122-2216

PROJECT:

PROJECT NO. COB 2547
1410 PARKER ST - GARAGE
BERKELEY, CA

Micro Log In	330464
Total Samples	1
Date Sampled	05/20/2025
Date Received	05/20/2025
Date Analyzed	05/21/2025

Sample ID	Lead Concentration, ppm	RDL, ppm	Comments
Client: COB2547-G-PB01 Micro: 330464-01 EXT - SOUTH - EXT BEIGE PAINT ON WOOD GARAGE DOOR	3700	500	

Technical Supervisor: _____ 5/21/2025 Analyst: RN
Long T. Nguyen, Chemistry Supervisor — Date Reported

Samples are analyzed by Flame Atomic Absorption Spectrometry (FLAAS) using SOP 23-Soil (in accordance with EPA Methods 3050B for Acid Digestion (SW 846, 3rd edition, 2007) and 7420 for Analysis (SW-846, 3rd edition, 2007)). NOTE: Water samples are analyzed by FLAA in accordance with Method 3111B (Standard Methods for the Examination of Water and Wastewater, 18th edition). Unless otherwise indicated on this report, all required Quality Control samples have been determined to be in control prior to releasing these analytical results. Unless otherwise stated in this report, all samples were received in acceptable condition for analysis. Note: due to software limitations, the number of reported significant figures does not necessarily reflect the uncertainty of the analysis. This report must not be reproduced except in full without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. Unit explanations: mg = milligrams; kg = kilograms; ppm = parts per million. TTLC = TOTAL THRESHOLD LIMIT CONCENTRATION. L = liters. RDL = Report Detection Limit. Note: mg / Kg is the same as ppm for solids, and mg/L is the same as ppm for water.

(TTLC) 330464

ACUMEN

BULK CHAIN OF CUSTODY FORM

INDUSTRIAL HYGIENE INC

1032 IRVING STREET #922 SAN FRANCISCO CA 94122-2216

TEL 415 242 6060 FAX 415 242 6006

WWW.ACUMEN-IH.COM

Project No. COB 2547

Location: 1410 Parker Street - Garage

Address: Berkeley, CA

Sampling Date: 5/20/2025

Laboratory: Micro Analytical Laboratories, Inc.

Turnaround: ☒ Normal ☐ 24 Hour ☐ Rush

Collection By: Tam Pham

Sample No.	Floor	Location	Description	Method
COB2547-G-01A	EXT	North	Stucco	PLM Asbestos
01B		East		
02A		North	EXT beige paint on wood garage door	
02B		South	EXT beige paint on wood siding	
03A	Roof	South	Roll up Roof field core	
03B		North		
Pb01	EXT	North	EXT beige paint on wood garage door	TTLC LEAD
Pb02		South	siding	FLAA LEAD

Other Instructions: Email results to lab@acumen-ih.com.

Please sign this form below acknowledging sample receipt and return executed form with laboratory reports.

Sent By:	Received By: LV
Date Submitted: 5/20/2025	Date Received: 5/20/25 1330

Sample(s) Submitted Via: ☒ Hand Delivered ☐ Federal Express (Air Bill #_____) ☐ Other: _____

☐ NT ☐ WTE

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1092
Paul Spillane
Acumen Industrial Hygiene, Inc.
1032 Irving Street, #922
San Francisco, CA 94122-2216

PROJECT:
PROJECT NO. COB 2547
1410 PARKER ST - SHED
BERKELEY, CA

Micro Log In	**330465**
Total Samples	8
Date Sampled	05/20/2025
Date Received	05/20/2025
Date Analyzed	05/20/2025

SAMPLE IDENTIFICATION	ASBESTOS QUANTITY (AREA %) / TYPES / LAYERS Note: "ND" = No Asbestos Detected	DOMINANT OTHER MATERIALS
Client #: COB2547-S-01A Micro #: 330465-01 Analyst: CR ROOF - EAST SHINGLE PITCH ROOF FIELD CORE	BLACK TAR: ND BLACK CELLULOSE FELT: ND BLACK FIBERGLASS FELT: ND GRAVEL: ND	25 % CELLULOSE 25 % FIBROUS GLASS NFM: TAR/ASPHALT, BINDER
Client #: COB2547-S-01B Micro #: 330465-02 Analyst: CR ROOF - WEST SHINGLE PITCH ROOF FIELD CORE	BLACK TAR: ND BLACK CELLULOSE FELT: ND BLACK FIBERGLASS FELT: ND GRAVEL: ND	25 % CELLULOSE 25 % FIBROUS GLASS NFM: TAR/ASPHALT, BINDER
Client #: COB2547-S-02A Micro #: 330465-03 Analyst: CR 1ST - NORTH WALL FELT PAPER	FELT PAPER: ND	80 % CELLULOSE NFM: MISCELLANEOUS PARTICLES
Client #: COB2547-S-02B Micro #: 330465-04 Analyst: CR 1ST - SOUTH WALL FELT PAPER	FELT PAPER: ND	80 % CELLULOSE NFM: MISCELLANEOUS PARTICLES
Client #: COB2547-S-03A Micro #: 330465-05 Analyst: CR BK EXT - EAST EXT BEIGE PAINT ON WOOD DOOR	BEIGE PAINT: ND	NFM: OPAQUES

Technical Supervisor: _____ 5/20/2025
Baojia Ke, Ph.D. Date Reported

NVLAP Lab Code 101872-0 (TESTING). Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 µm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM).Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties.Tremolite-asbestos or actinolite- asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in a layer of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. NFM = Non-fibrous materials.

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1092
Paul Spillane
Acumen Industrial Hygiene, Inc.
1032 Irving Street, #922
San Francisco, CA 94122-2216

PROJECT:
PROJECT NO. COB 2547
1410 PARKER ST - SHED
BERKELEY, CA

Micro Log In	**330465**
Total Samples	8
Date Sampled	05/20/2025
Date Received	05/20/2025
Date Analyzed	05/20/2025

SAMPLE IDENTIFICATION	ASBESTOS QUANTITY (AREA %) / TYPES / LAYERS Note: "ND" = No Asbestos Detected	DOMINANT OTHER MATERIALS
Client #: COB2547-S-03B Micro #: 330465-06 Analyst: KG **EXT - EAST** **EXT BEIGE PAINT ON WOOD TRIM**	**BEIGE PAINT: ND**	NFM: OPAQUES
Client #: COB2547-S-04A Micro #: 330465-07 Analyst: KG **EXT - NORTH** **EXT BROWN PAINT ON WOOD SIDING**	**BROWN PAINT: ND**	NFM: OPAQUES
Client #: COB2547-S-04B Micro #: 330465-08 Analyst: KG **EXT - SOUTH** **EXT BROWN PAINT ON WOOD SIDING**	**BROWN PAINT: ND**	NFM: OPAQUES

Technical Supervisor: _____ 5/20/2025
Baojia Ke, Ph.D. Date Reported

NVLAP Lab Code 101872-0 (TESTING). Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 µm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM).Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties.Tremolite-asbestos or actinolite- asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in a layer of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. NFM = Non-fibrous materials.

(AM) 330465

ACUMEN

INDUSTRIAL HYGIENE INC

1032 IRVING STREET #922 SAN FRANCISCO CA 94122-2216

TEL 415 242 6060 FAX 415 242 6066

WWW.ACUMEN-IH.COM

BULK CHAIN OF CUSTODY FORM

Project No. COB 2547

Location: 1410 Parker Street - Shed

Address: Berkeley, CA

Sampling Date: 5/20/2025

Laboratory: Micro Analytical Laboratories, Inc.

Turnaround: ☒ Normal ☐ 24 Hour ☐ Rush

Collection By: Tam Pham

	Sample No.	Floor	Location	Description	Method
1	COB2547-S-01A	Roof	East	Shingle pitch Roof field core	PLM Asbestos
2	01B		West		
3	02A	1st	North	wall felt paper	
4	02B	1st	South		
5	03A	Ext	East	Ext beige paint on wood door	
6	03B			wood trim	
7	04A		North	Ext brown paint on wood siding	
8	04B		South		
	PB01		East	Ext beige paint on wood door	PLM & LEAD
	PB02		North	~~Ext~~ brown paint on wood siding	TTLC LEAD

Other Instructions: Email results to lab@acumen-ih.com.

Please sign this form below acknowledging sample receipt and return executed form with laboratory reports.

Sent By:	Received By: LV
Date Submitted: 5/20/2025	Date Received: 5/2025 1330

Sample(s) Submitted Via: ☒ Hand Delivered ☐ Federal Express (Air Bill #_____) ☐ Other: _____

Rev 08/01

☐ NT ☐ WTE

MICRO ANALYTICAL LABORATORIES, INC.

LEAD IN PAINT - FLAME AAS (SW846)

1092
Paul Spillane
Acumen Industrial Hygiene, Inc.
1032 Irving Street, #922
San Francisco, CA 94122-2216

PROJECT:
PROJECT NO. COB 2547
1410 PARKER ST - SHED
BERKELEY, CA

Micro Log In 330466
Total Samples 1
Date Sampled 05/20/2025
Date Received 05/20/2025
Date Analyzed 05/21/2025

Sample ID	Lead Concentration Weight Percent	mg/kg (ppm)	RDL
Client: PB01 Lab: 330466-01 BROWN PAINT ON WOOD DOOR	0.27 %	2700	0.0390 % 390 mg/kg

Technical Supervisor: _____ 5/21/2025 Analyst: RN
Long T. Nguyen, Chemistry Supervisor Date Reported

AIHA-LAP, LLC Accredited Laboratory, ID #101768. Samples are analyzed by Flame Atomic Absorption Spectrometry (FLAAS) using SOP 23-Paint. This SOP is based on U.S. EPA SW-846 Method 7420 for instrumental analysis, and on ASTM E-1645-21 for nitric acid and hydrogen peroxide digestion Unless otherwise indicated on this report, all required Quality Control samples have been determined to be in control prior to releasing these analytical results. Unless otherwise stated in this report, all samples were received in acceptable condition for analysis. Note: due to software limitations, the number of reported significant figures does not necessarily reflect the uncertainty of the analysis. If the amount of sample available for analysis is lower than advisable for this method, detection limits and uncertainty will be higher. This report must not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. Unit explanations: mg = milligrams; kg = kilograms; ppm = parts per million. N/A = Not Applicable. RDL = Report Detection Limit.

(paint) 330466

ACUMEN

INDUSTRIAL HYGIENE INC

1032 IRVING STREET #922 SAN FRANCISCO CA 94122-2216

TEL 415 242 6060 FAX 415 242 6006

WWW.ACUMEN-IH.COM

BULK CHAIN OF CUSTODY FORM

Project No. COB 2547

Location: 1410 Parker Street - Shed

Address: Berkeley, CA

Sampling Date: 5/20/2025

Laboratory: Micro Analytical Laboratories, Inc.

Turnaround: ☒ Normal ☐ 24 Hour ☐ Rush

Collection By: Tam Pham

Sample No.	Floor	Location	Description	Method
COB2547-S-01A	Roof	East	Shingle pitch Roof field core	PLM Asbestos
01B		West		
02A	1st	North	wall felt paper	
02B	1st	South		
03A	Ext	East	Ext beige paint on wood door	
03B			wood trim	
04A		North	Ext brown paint on wood siding	
04B		South		
PB01		East	Ext beige paint on wood door	PLM & LEAD
PB02		North	~~Ex~~ brown paint on wood siding	TTLC LEAD

Other Instructions: Email results to lab@acumen-ih.com.

Please sign this form below acknowledging sample receipt and return executed form with laboratory reports.

Sent By:	Received By: LV
Date Submitted: 5/20/2025	Date Received: 5/20/25 1330

Sample(s) Submitted Via: ☒ Hand Delivered ☐ Federal Express (Air Bill #_____) ☐ Other: _____

Rev 08/01

☐ NT ☐ WTE

MICRO ANALYTICAL LABORATORIES, INC.

EPA SW-846 LEAD-TTLC

1092
Paul Spillane
Acumen Industrial Hygiene, Inc.
1032 Irving Street, #922
San Francisco, CA 94122-2216

PROJECT:

PROJECT NO. COB 2547
1410 PARKER ST - SHED
BERKELEY, CA

Micro Log In	330467
Total Samples	1
Date Sampled	05/20/2025
Date Received	05/20/2025
Date Analyzed	05/21/2025

Sample ID	Lead Concentration, ppm	RDL, ppm	Comments
Client PB02 Micro 330467-01 BROWN PAINT ON WOOD SIDING	63	10	

Technical Supervisor: _____ 5/21/2025 Analyst: RN
Long T. Nguyen, Chemistry Supervisor Date Reported

Samples are analyzed by Flame Atomic Absorption Spectrometry (FLAAS) using SOP 23-Soil (In accordance with EPA Methods 3050B for Acid Digestion (SW 846, 3rd edition, 2007) and 7420 for Analysis (SW-846, 3rd edition, 2007)). NOTE: Water samples are analyzed by FLAA In accordance with Method 3111B (Standard Methods for the Examination of Water and Wastewater, 18th edition). Unless otherwise indicated on this report, all required Quality Control samples have been determined to be in control prior to releasing these analytical results. Unless otherwise stated in this report, all samples were received in acceptable condition for analysis. Note: due to software limitations, the number of reported significant figures does not necessarily reflect the uncertainty of the analysis. This report must not be reproduced except in full without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed as received. Unit explanations: mg = milligrams; kg = kilograms; ppm = parts per million. TTLC = TOTAL THRESHOLD LIMIT CONCENTRATION. L = liters. RDL = Report Detection Limit. Note: mg / Kg is the same as ppm for solids, and mg/L is the same as ppm for water.

(TTLC) 330467

ACUMEN

INDUSTRIAL HYGIENE INC

1032 IRVING STREET #922 SAN FRANCISCO CA 94122-2216

TEL 415 242 6060 FAX 415 242 6006

WWW.ACUMEN-IH.COM

BULK CHAIN OF CUSTODY FORM

Project No. COB 2547

Location: 1410 Parker Street - Shed

Address: Berkeley, CA

Sampling Date: 5/20/2025

Laboratory: Micro Analytical Laboratories, Inc.

Turnaround: ☒ Normal ☐ 24 Hour ☐ Rush

Collection By: Tam Pham

Sample No.	Floor	Location	Description	Method
COB2547-S-01A	Roof	East	Shingle pitch Roof field core	PLM Asbestos
01B		West		
02A	1st	North	wall felt paper	
02B	1st	South		
03A	Ext	East	Ext beige paint on wood door	
03B			wood trim	
04A		North	Ext brown paint on wood siding	
04B		South		
Pb01		East	Ext beige paint on wood door	PLM & LEAD
Pb02		North	~~Ex~~ brown paint on wood siding	TTLC LEAD

Other Instructions: Email results to lab@acumen-ih.com.

Please sign this form below acknowledging sample receipt and return executed form with laboratory reports.

Sent By: [signature]	Received By: LV
Date Submitted: 5/20/2025	Date Received: 5/20/25 1330

Sample(s) Submitted Via: ☒ Hand Delivered ☐ Federal Express (Air Bill #_____) ☐ Other: _____

☐ NT ☐ WTE

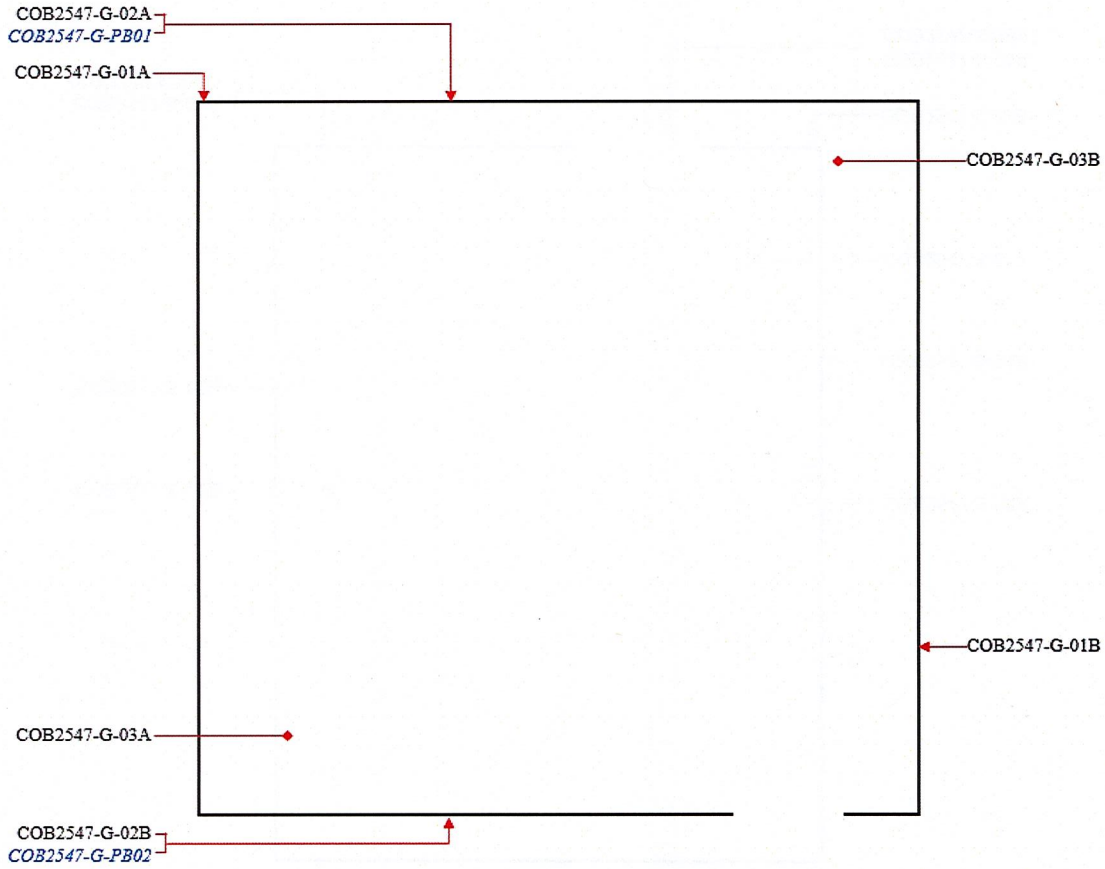
ACUMEN
INDUSTRIAL HYGIENE INC
1032 IRVING STREET #922 SAN FRANCISCO CA 94122
TEL 415 242 6060 FAX 415 242 6006
WWW.ACUMEN-IH.COM

Appendix B

Sample Location Floor Plans

1410 Parker Street
Berkeley, CA

June 2025



Vertical Sample
Floor Sample
Ceiling Sample
Red Asbestos Containing Material
Blue Lead Sample
* Floor plan is not to scale.

N

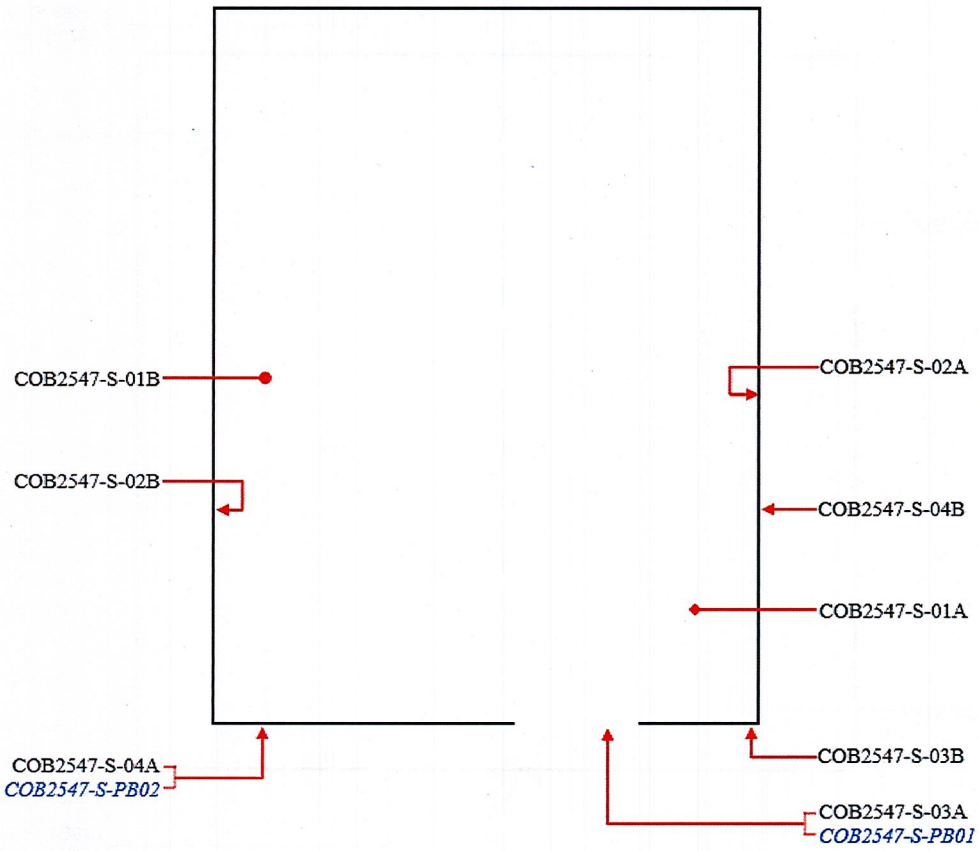
ACUMEN
INDUSTRIAL HYGIENE INC
1032 IRVING STREET #922
SAN FRANCISCO CA 94122
415 242 6060
WWW.ACUMEN-IH.COM

Project
1410 Parker Street
Berkeley, CA

Project No.	Date
COB 2547	05/20/2025

Location
Garage

Level
-



A

ACUMEN

INDUSTRIAL HYGIENE INC

1032 IRVING STREET #922

SAN FRANCISCO CA 94122

415 242 6060

WWW.ACUMEN-IH.COM

Project

1410 Parker Street

Berkeley, CA

Project No.	Date
COB 2547	05/20/2025

Location

Shed

Level

-

ACUMEN
INDUSTRIAL HYGIENE INC
1032 IRVING STREET #922 SAN FRANCISCO CA 94122
TEL 415 242 6060 FAX 415 242 6006
WWW.ACUMEN-IH.COM

Appendix C

Photographs

1410 Parker Street
Berkeley, CA

June 2025

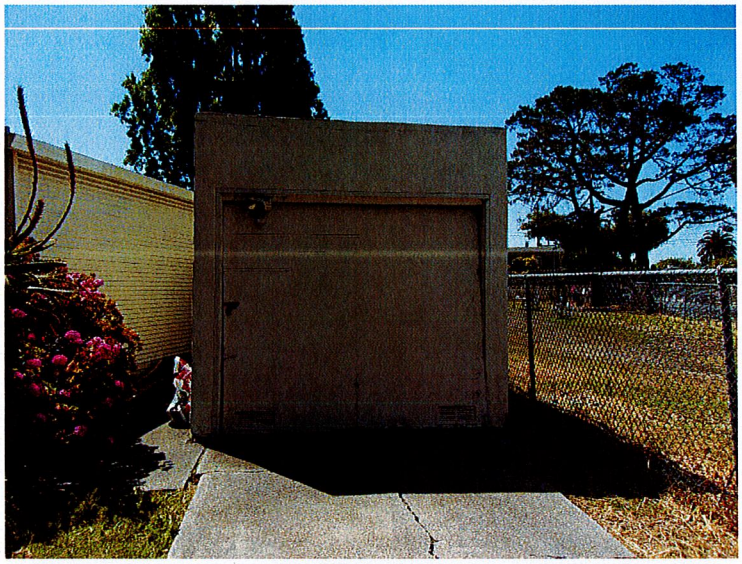


Photo 1
Residential garage.

Photo 2
Interior of the garage.

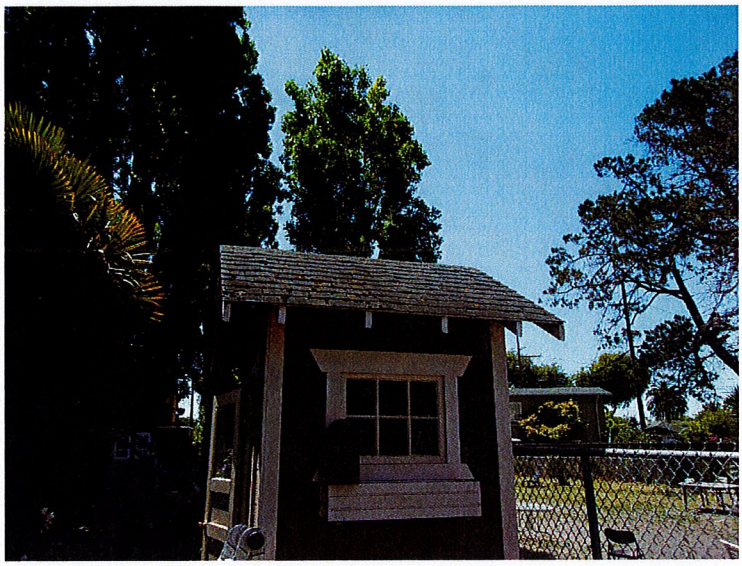


Photo 3
Standalone shed.

Photo 4
Interior of the shed.

Photo 5

Garage: Deteriorated exterior beige paint on wood siding and garage door contains up to 17,000 ppm lead, which will require paint stabilization and disposed as hazardous waste.

Photo 6

Shed: Deteriorated exterior beige paint on wood door contains 2,700 ppm lead, which will require paint stabilization and disposed as hazardous waste

APPENDIX C

Final Removal Action Workplan Santa Fe Trackbed to Park Berkeley, CA

FINAL REMOVAL ACTION WORKPLAN

SANTA FE TRACKBED TO PARK

Berkeley, California

Prepared for:
CITY OF BERKELEY
Department of Parks, Recreation, and Waterfront
1947 Center Street, 5th Floor
Berkeley, California 94704

Prepared by:
GSI ENVIRONMENTAL INC.
2000 Powell Street, Suite 820
Emeryville, California 94608
Phone: 510.463.8484
www.gsienv.com

GSI Job No: 6272
Issued: October 29, 2025

FINAL REMOVAL ACTION WORKPLAN

SANTA FE TRACKBED TO PARK
Berkeley, California

This Final Removal Action Workplan was prepared by the staff of GSI Environmental Inc., under the supervision of the Engineer(s) and/or Geologist(s) whose signatures appear hereon.

The findings, recommendations, specifications, or professional opinions were prepared in accordance with generally accepted professional engineering and/or geologic practice. No warranty is expressed or implied.

Issued: October 29, 2025

Jennifer P. Duffield, PE
Principal Engineer

Keith Imler
Environmental Engineer

Jake Wilhelm
Environmental Scientist, Certified Ecologist (ESA)

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

EXECUTIVE SUMMARY **1**

1.0 INTRODUCTION **3**

1.1 Regulatory Basis for the RAW 3

1.1.1 Regulatory Basis for the RAW 3
1.1.2 Objectives of the RAW 4
1.1.3 Elements of the RAW 4

1.2 Site Description 4
1.3 Site Owner 5
1.4 Purpose 5

2.0 SITE CHARACTERIZATION **5**

2.1 Summary of Previous Investigations 5

2.1.1 Site Geology and Hydrogeology 6
2.1.2 Background Concentrations 6

2.2 Nature and Extent of Contamination by Parcel 7

2.2.1 Parcel 1 7
2.2.2 Parcel 2 7
2.2.3 Parcel 3 7
2.2.4 Parcel 4 8
2.2.5 Conceptual Site Model 9

2.3 Human Health Risk Assessment 10

2.3.1 Conceptual Site Exposure Model 10
2.3.2 Soil Exposure Point Concentrations 12
2.3.3 Soil Risk-Based Screening Levels 13
2.3.4 Risk Characterization 14
2.3.5 SLRE Summary and Conclusions 23

2.4 Ecological Risks to Threatened and Endangered Species 24

3.0 REMOVAL ACTION GOALS AND OBJECTIVES **24**

3.1 Removal Action Objectives 25
3.2 Applicable and Appropriate Requirements 25
3.3 Removal Goals 25

4.0 ALTERNATIVES EVALUATION **26**

4.1 Response Actions and Technologies 26

4.1.1 Alternative 1 - No Further Action 26
4.1.2 Alternative 2 - Soil Excavation and Off-Site Disposal 26

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

4.1.3 Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment 27
4.1.4 Alternative 4 - Capping in Place 28
4.2 Evaluation Criteria 28
4.2.1 Effectiveness 28
4.2.2 Implementability 29
4.2.3 Cost 29
4.3 Analysis of Removal Action Alternatives 29
4.3.1 Alternative 1 – No Further Action 29
4.3.2 Alternative 2 – Soil Excavation and Off-Site Disposal 29
4.3.3 Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment 30
4.3.4 Alternative 4 – Capping in Place 31
4.4 Comparative Analysis of Removal Action Alternatives 32
4.4.1 Effectiveness 32
4.4.2 Implementability 32
4.4.3 Cost Effectiveness 32
4.5 Recommended Removal Action Alternative 33
5.0 REMOVAL ACTION IMPLEMENTATION PLAN 34
5.1 Selecting Excavation Locations 34
5.2 Permitting and Site Preparation 34
5.2.1 Engineering Permit 34
5.2.2 Construction General Permit (CGP) for Stormwater Runoff 35
5.2.3 Shoring Plan 35
5.2.4 Pre-excavation Site Preparation 35
5.3 Excavation and Backfilling Methodology 35
5.3.1 Soil Excavation 35
5.3.2 Backfilling 36
5.3.3 Dust Control 37
5.3.4 Decontamination of Off-Haul Vehicles and Equipment Cleaning 37
5.3.5 Community Air Monitoring Plan (CAMP) 37
5.3.6 Field Variances 40
6.0 TRANSPORTATION PLAN 40
6.1 Waste Characterization and Hazardous Waste Management 40
6.2 Characteristic and Destination of Soil to be Transported 40
6.3 Transportation Mode 41
6.4 Truck Route 41

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

6.5 Site Traffic Control 42
6.6 Spill Prevention and Emergency Response 42
6.7 Record Keeping 42

7.0 CULTURAL AND TRIBAL CULTURAL RESOURCES 43

7.1 Inadvertent Discovery of Archeaological Resources and Tribal Cultural Resources 44
7.2 Inadvertent Discovery of Human Remains 44

8.0 HEALTH AND SAFETY PLAN 45

9.0 PUBLIC PARTICIPATION 45

10.0 CEQA DOCUMENTATION 46

11.0 REFERENCES 47

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

TABLES

Table 1. Sampling and Analysis Summary
Table 2. Metals in Soil
Table 3. Polycyclic Aromatic Hydrocarbons in Soil
Table 4. Pesticides in Soil
Table 5. Total Petroleum Hydrocarbons in Soil
Table 6. Summary of ARARs and TBCs
Table 7. Cost Comparison of Removal Action Alternatives
Table 8. Action Levels for Dust in Ambient Air at The Site Perimeter
Table 9. Summary of Screening Levels for Dust in Work Zone Air

FIGURES

Figure 1. Site Location Map
Figure 2. Site Overview
Figure 3a. Vertical Delineation of Affected Soil – Parcel 1
Figure 3b. Soil Sampling Results – Metals, Parcel 1
Figure 3c. Soil Sampling Results – PAHs, Parcel 1
Figure 4a. Vertical Delineation of Affected Soil – Parcel 2
Figure 4b. Soil Sampling Results – Metals, Parcel 2
Figure 4c. Soil Sampling Results – PAHs, Parcel 2
Figure 5a. Vertical Delineation of Affected Soil – Parcel 3
Figure 5b. Soil Sampling Results – Metals, Parcel 3
Figure 5c. Soil Sampling Results – PAHs, Parcel 3
Figure 5d. Soil Sampling Results – Targeted Samples, Parcel 3
Figure 6a. Vertical Delineation of Affected Soil – Parcel 4
Figure 6b. Soil Sampling Results – Metals, Parcel 4
Figure 6c. Soil Sampling Results – PAHs, Parcel 4
Figure 7. Conceptual Site Exposure Model
Figure 8. Typical Air Monitoring Station Locations and Sensitive Receptors
Figure 9a. Primary Truck Route
Figure 9b. Alternate Truck Route

APPENDICES

Appendix A. Conceptual Site Redevelopment Plans
Appendix B. Selection of Exposure Point Concentrations and Screening Levels
Appendix C. Screening Level Risk Assessment Calculations
Appendix D. Ecological Risk Assessment Supporting Documentation
Appendix E. Site-Specific Health and Safety Plan
Appendix F. Administrative Record
Appendix G. Air Quality Analysis

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

EXECUTIVE SUMMARY

This Removal Action Work Plan (RAW) is being submitted on behalf of the City of Berkeley Department of Parks, Recreation, and Waterfront (the City) for the Santa Fe Trackbed to Park Conversion project site located in Berkeley, California (Figure 1). The RAW has been prepared to comply with Task 5 of the Voluntary Cleanup Agreement between the City and the California Department of Toxic Substances Control (DTSC). The Site consists of four vacant noncontiguous parcels identified by Alameda County Assessor's Office Assessor Parcel Numbers 54-1790-28, 54-1794-28, 54-1793-27, and 54-1735-20. The 1.32-acre Site is shown on Figure 2.

The Site is currently vacant land that was historically the Santa Fe Railroad right-of-way (ROW). The Site is located within a residential area, there are no buildings associated with the Site, and the Site surfaces consist of mostly uncovered soils. The City plans to develop the Site into a community asset, which will include a community garden, dog park, children's play area, and teaching garden.

Beginning in 2022, several environmental investigations have been conducted at the Site. Based on a comparison with screening levels, a large portion of the Site contains soil that is chemically impacted with arsenic, lead, polycyclic aromatic hydrocarbons (PAHs), and mercury (collectively the constituents of potential concern [COPCs]); these impacts are attributed to the historical use of the Site by the Sante Fe Railroad. Impacts to soil are limited primarily to shallow soil (upper 2 feet) but extend to 5.5 feet in some areas. The total volume of impacted soil is estimated to be approximately 4,640 cubic yards. No impacts to groundwater or soil vapor have been detected at the Site.

The overarching removal action objective for the Site is to remove arsenic-, mercury- and PAH-impacted soil such that there are no future restrictions on development and Site use. As such, the following cleanup goals have been selected:

- Arsenic – background concentration of 11 milligrams per kilogram (mg/kg)
- Lead – default residential screening level of 80 mg/kg developed by the DTSC
- Mercury – default residential screening level of 0.67 mg/kg developed by the DTSC
- PAHs – regional ambient level of 0.9 mg/kg benzo(a)pyrene equivalency (BaPe; DTSC, 2009)

To meet the removal action objectives (RAOs), four potential response actions are identified and evaluated herein based on their effectiveness, implementability, and cost; these alternatives are:

- Alternative 1 – No Further Action
- Alternative 2 – Soil Excavation and Off-Site Disposal
- Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment
- Alternative 4 – Capping in Place

Based on the comparative analysis of these response actions described in Section 4.4, Alternative 2 (Excavation and Off-Site Disposal) is the preferred and recommended response action to meet the RAOs. This alternative was selected because:

- Alternative 1 (No Further Action) does not address the RAOs for the Site and it is unlikely to receive regulatory and community acceptance.
- Alternative 3 (Soil Excavation, Off-Site Disposal, and On-Site Containment) requires a land use restriction and long-term operation and maintenance plan. Given the long-term stewardship requirement, implementation of Alternative 3 will not achieve the RAO of unrestricted Site use. Additionally, Alternative 3 will not satisfy the RAO of removing the COPCs from the Site and is, therefore, not anticipated to be accepted by both the State and the community.
- Alternative 4 (Capping in Place) requires a land use restriction, long-term operation and maintenance plan. Given the long-term stewardship requirement, implementation of Alternative 4 will not achieve the RAO of unrestricted Site use. Additionally, Alternative 4 will not satisfy the RAO of removing the COPCs from the Site and is, therefore, not anticipated to be accepted by both the State and the community.

Only Alternative 2 satisfies the evaluation criteria and meets the RAOs for the Site. It is easily implementable with conventional grading equipment and likely to obtain regulatory and community approval.

The excavation footprint and depths required to satisfy the RAOs are shown on Figures 3a, 4a, 5a, and 6a. The removal action will be implemented in accordance with all applicable federal, state and local regulations.

After the response action is completed, the Site will be backfilled to the existing grade. The final disposition of all soil removed from the Site will be reported in a Removal Action Completion Report (Task 9 of the VCA; DTSC, 2023) that will include waste manifests and disposal tickets.

The public can participate in the response action selection process by submitting public comments on this RAW during the 30-day public review period. A public meeting or workshop will be held if there is sufficient community interest. Site documents will be available in electronic format on DTSC's publicly accessible EnviroStor database.

Once the public comment period is completed, DTSC will review and respond to the comments received. The RAW will be revised, as necessary, to address the comments received. If significant changes to the RAW are required, the RAW will be revised and resubmitted for public review and comment. If significant changes are not required to the RAW, the RAW will be modified and DTSC will approve the modified RAW for implementation.

FINAL REMOVAL ACTION WORKPLAN
Santa Fe Trackbed to Park
Berkeley, California

1.0 INTRODUCTION

GSI Environmental Inc. (GSI) has prepared this Removal Action Workplan (RAW) on behalf of the City of Berkeley Department of Parks, Recreation, and Waterfront (the City) to provide an evaluation and selection of remediation alternatives at the Santa Fe Trackbed to Park Conversion project site (the Site; Figures 1 and 2) in Berkeley, California. The Site consists of four vacant noncontiguous parcels identified by Alameda County Assessor's Office Assessor Parcel Numbers 54-1790-28, 54-1794-28, 54-1793-27, and 54-1735-20.

The City has entered into a voluntary cleanup agreement with the California Department of Toxic Substances Control (DTSC) to oversee environmental characterization and remediation of the Site. This RAW has been prepared to comply with Task 5 of the Voluntary Cleanup Agreement (VCA) between the City and the DTSC (2023).

A RAW is one of two remedy selection documents that may be prepared for a hazardous substance release site pursuant to California Health and Safety Code (HSC) Sections 78130, 79020-79035, 79260-79275, and 79195-79240; and is appropriate for removal actions that are projected to cost less than $2,000,000. This RAW has been prepared in compliance with the Site VCA Docket No. HSA-FY22/23-069, California Health and Safety Code sections 78130, 79020-79035, 79260-79275, and 79195-79240 and the California Environmental Protection Agency (CalEPA), DTSC September 23, 1998 guidance memorandum entitled *Removal Action Workplans – Senate Bill 1706.*

The purpose of this RAW is to assess and select an appropriate response action to mitigate potential risks to visitors from areas of elevated arsenic, lead, mercury, and polycyclic aromatic hydrocarbons (PAHs) (collectively the constituents of potential concern [COPCs]) identified in soil in support of the City's plans to redevelop the Site into a community asset, which will include a community garden, dog park, children's play area, and teaching garden. Conceptual site redevelopment plans are included in Appendix A.

This RAW describes the Site background and characterization, removal action goals and objectives, alternative evaluation, removal action implementation plan, sampling and analysis plan, transportation plan, health and safety plan, public participation opportunities, and CEQA determination.

1.1 Regulatory Basis for the RAW

The RAW process, including the regulatory background and the RAW objectives, is described in the following sections.

1.1.1 Regulatory Basis for the RAW

In California HSC 78130, a RAW is defined as "a workplan prepared or approved by the Department (DTSC) or a California Regional Water Quality Control Board (RWQCB) which is developed to carry out a removal action, in an effective manner, that is protective of the public health and safety and the environment." As mentioned previously, a RAW is appropriate when the estimated cost of the removal action is less than $2,000,000. If the estimated capital cost of implementing the chosen action will exceed $2,000,000, a Removal Action Plan should be prepared.

The estimated cost of the selected removal alternative recommended in this RAW is estimated to be less than $2,000,000.

1.1.2 Objectives of the RAW

The objectives of this RAW are to:

- present and evaluate existing site conditions;
- establish appropriate removal action objectives (RAOs) for protection of human health and the environment; and
- evaluate alternatives and identify a final recommendation for a removal action at the site that is protective of human health and the environment.

1.1.3 Elements of the RAW

To accomplish the objectives stated in the preceding section, and satisfy regulatory requirements, this RAW includes the following elements:

- a description of the nature and extent of the COPCs at the Site;
- the goals to be achieved by the removal action;
- an analysis of the alternatives considered and rejected, and the basis for the rejection, including a discussion of effectiveness, implementability, and cost of each alternative; and
- a description of the recommended alternative and an implementation plan.

1.2 Site Description

The Site extends north-to-south between Blake Street and Ward Street and east-to-west between Sacramento Street and Mabel Street and includes four parcels, shown on Figure 2:

- Parcel 1 – located between Blake and Parker Streets (APN: 54-1790-28)
- Parcel 2 – located between Parker and Carleton Streets (APN: 54-1794-28)
- Parcel 3 – located between Carleton and Derby Streets (APN: 54-1793-27)
- Parcel 4 – located between Derby and Ward Streets (APN: 54-1735-20)

Collectively, the area of these parcels is approximately 1.32 acres. The Site is currently vacant land that was historically the Santa Fe Railroad Right-of-Way (ROW). The Site is located within a residential neighborhood and adjacent to residential properties. The nearest school site is Longfellow Middle School, located at 1500 Derby Street in Berkeley, California, approximately 0.2 miles east of the Site. This Longfellow Middle School site is currently closed for construction and school sessions are being held at 1701 San Pablo Street, approximately 1.3 miles northwest of the Site. The Longfellow Middle School site at 1500 Derby Street will be closed for at least the 2024-25 and 2025-26 school years Therefore, the nearest active school is currently Malcom X Elementary School, located at 1731 Prince Street in Berkeley, California, approximately 0.5 miles southeast of the Site. The following day care facilities were identified within 1000 feet of the Site: Kidsland Channing, Rosemarie's Motivational Preschool, Dwight Way Wonderschool, Kidsland Berkeley, and Lucesitas (Maria Gonzales) Daycare. One martial arts school, Pitt's Martial Arts Academy, and the San Pablo Park are located within 0.5 mile southwest of the Site. There are no buildings associated with the Site, however, two residential structures, a detached garage, and a small shed partially encroach on the Site. The Site surfaces consist of mostly uncovered soils.

There are two adjacent properties where the main dwelling structure encroaches onto City-owned property at Parcels 2 and 4. To resolve these encroachments, the City and the adjacent property

owners plan to execute a lot line adjustment whereby certain square footage currently owned by the City will be deeded to the property owner, and an equal amount of square footage owned by the private entity will be deeded to the City. The boundaries of these lot line adjustments are shown on Figures 4a and Figure 6a.

1.3 Site Owner

The Site is currently owned by the City of Berkeley. The Atchison, Topeka and Santa Fe Railway Company previously owned the Site and transferred ownership to the City of Berkeley in 1980.

1.4 Purpose

Based on the information developed during the site characterization activities (Section 2.0), the DTSC has determined that further action is required at the site due to elevated concentrations of arsenic, lead, mercury, and PAHs detected in soil samples collected from the site. A previous version of this RAW was submitted to DTSC on June 17, 2025. A public comment period was conducted from August 18, 2025 to September 16, 2025 (Section 9.0). Following completion of the public comment period, DTSC reviewed and responded to the comments received in a letter dated October 28, 2025. The RAW has been revised, as necessary, in response to the comments received. Since significant changes were not required, DTSC can approve the RAW for implementation. When the remedy has been implemented, a removal action completion report will be submitted to DTSC for review and certification.

2.0 SITE CHARACTERIZATION

Characterization of the site was conducted between 2022 and 2024. A summary of the activities and results is provided in the sections below.

2.1 Summary of Previous Investigations

A Phase II Environmental Site Assessment was conducted by GSI in July 2022 to evaluate whether historical activities within the former Santa Fe Railroad ROW impacted shallow soil with metals, PAHs, organochlorine pesticides (OCPs), and/or total petroleum hydrocarbons (TPH). Results of the initial soil investigation are available in the Santa Fe Right-of-Way Phase II Environmental Site Assessment – Report of Findings (GSI, 2022) and are summarized below.

Soil samples were collected from 15 soil borings. TPH and OCPs were not detected at concentrations exceeding human health screening criteria in any samples. Arsenic was detected in samples collected from 1.0 foot and 2.5 feet below ground surface (bgs) at concentrations exceeding background at various locations across the site with no discernable source area. Arsenic was also detected in samples collected at 4.0 feet bgs at two locations (P2-1 at Parcel 2 and P3-4 at Parcel 3). Lead, mercury, and PAHs were detected at concentrations exceeding the human health screening criteria in samples collected at 1.0 foot bgs at a limited number of boring locations. Based on the results of the initial soil investigation the City entered into a voluntary cleanup agreement with the DTSC to oversee environmental characterization and cleanup of the Site.

The DTSC requested additional delineation of the Site COPCs and GSI conducted an additional investigation between January 8 and 11, 2024 in accordance with the DTSC-approved Additional Soil Sampling Work Plan (GSI, 2023). To assess the extent of soil removal that would be required to remediate Parcels 1 through 4 for unrestricted use a gridded soil sampling strategy was implemented. A 30-foot by 30-foot grid was overlain on Parcel 1 through 4 (Figures 3a, 4a, 5a, and 6a) and soil samples were collected from each grid cell. The data collected in January 2024

indicated the vertical extent of arsenic was not delineated in some grid cells on Parcels 1, 2, and 3.

GSI submitted the Addendum to the Additional Soil Sampling Work Plan (GSI, 2024b) to DTSC which proposed additional soil sampling to delineate the vertical extent of arsenic in grid cells where it was not yet delineated. The investigation activities described in the Addendum to the Additional Soil Sampling Work Plan were completed in April 2024. Results of the January 2024 and April 2024 investigations are described in the Final Additional Soil Investigation Report (GSI, 2024b). The investigation confirmed the vertical and horizontal extents of the Site COPCs at Parcels 1 through 4 (Figures 3a, 4a, 5a, and 6a). A soil sampling and analysis summary is presented in Table 1. A visual summary of the results of the soil investigations is shown on Figures 3a through 6d and the analytical results from these investigations are presented in Tables 2 through 5.

Impacts to soil at the Site are limited primarily to shallow soil but extend to 5.5 feet in some areas. The total volume of impacted soil is estimated to be about 4,640 cubic yards. No impacts to groundwater or soil vapor were detected at the Site.

2.1.1 Site Geology and Hydrogeology

The soil at the Site generally consists of dark grayish brown poorly graded sand with silt or silty sand underlain by very dark brown lean clay. Coarse gravel was observed in most grid cells on the eastern side of Parcel 2. Water was encountered between 2.0 and 4.0 feet bgs in seven grid cells on the eastern side of Parcel 2 during the January 2024 investigation. Water was not encountered on the western side of Parcel 2 or on any other parcels, therefore, the water that was encountered on the eastern side of Parcel 2 was likely perched water from recent rain events and not groundwater.

Fill materials including small amounts of glass fragments and brick fragments were noted on the eastern side of Parcels 2, 3 and 4. Pieces of asphalt-like material were noted in grid cells P1-B4 and P4-A8. No staining or odors were observed at any of the soil boring locations during sampling activities.

2.1.2 Background Concentrations

Metals occur naturally in soil. EPA and DTSC guidance indicate that risk evaluations for metals are only necessary when the laboratory analytical results exceed naturally occurring background concentrations (DTSC, 2008). Each of the COPCs was compared to published regional background concentrations. The background concentrations for arsenic and PAHs in soils at the Site are above the conservative risk-based screening criterion. The background concentrations for arsenic and PAHs are provided below.

- The background concentration of 11 milligrams per kilogram (mg/kg) was established for arsenic in urbanized flatland soils within the San Francisco Bay Area in an evaluation completed at San Francisco State University in coordination with staff of the San Francisco Bay Regional Water Quality Control Board (Duverge, 2011).
- Carcinogenic benzo(a)pyrene-like PAHs are evaluated by calculating the benzo(a)pyrene equivalency (BaPe) using equivalency factors recommended by DTSC (2015), with non-detect values represented as the detection limit. The regional ambient level of 0.9 mg/kg was established for BaPe in soil by the DTSC (2009).

2.2 Nature and Extent of Contamination by Parcel

All data collected during the 2022 and 2024 soil investigations were compared to residential screening levels (Section 3.0) to determine the extent of affected soil that may require remediation to allow for unrestricted use of the Site. A description of screening level exceedances and a summary of the vertical extent of impacts by grid cell for each parcel is provided below. Analytical results are presented in Tables 2 through 5. A visual summary of the screening levels exceedances on each parcel is included in Figures 3a through 6d.

A Conceptual Site Model (CSM) was previously developed and presented in the Final Additional Soil Investigation Report (GSI, 2024c). An updated CSM is included below.

2.2.1 Parcel 1

Arsenic was the only metal detected at concentrations exceeding its screening level at Parcel 1. The vertical extent of affected soil at Parcel 1 is shown on Figure 3a and a visual summary of the sampling results is presented on Figures 3b through 3d. Arsenic was detected above the background concentration in the samples collected from 1.0 and 2.5 feet bgs at boring P1-2 and P1-3 and in several samples collected between 2.0 and 5.0 feet bgs at grid cells P1-B2, P1-B3, P1-B4, P1-B5, P1-B6, and P1-B7.

One individual PAH, benzo(a)pyrene, was detected above its screening criterion in the sample collected at P1-3 at 1.0 foot bgs. The calculated BaPe for this sample was below the screening threshold of 0.9 mg/kg.

2.2.2 Parcel 2

At Parcel 2 arsenic, lead, and mercury were detected above screening levels. The vertical extent of affected soil at Parcel 2 is shown on Figure 4a and a visual summary of the sampling results is presented on Figures 4b through 4d. Arsenic was detected above its screening criterion in the sample collected at 1.0 foot bgs from borings P2-1 through P2-4. Arsenic was also detected above screening criterion in the samples collected from 2.5 and 4.0 feet bgs at boring P2-1, the sample collected at 2.5 feet bgs at boring P2-2, and the sample collected at 5.0 feet in P2-1D. In the grid cell samples, arsenic was detected above its screening criterion in samples collected between 2.0 and 5.0 in grid cells and P2-B1 through P2-B10.

Lead was detected above its screening criterion in the samples collected at 1.0 foot at borings P2-1, P2-2, and P2-3. Lead was detected above its screening criterion in the samples collected at 2.0 feet in grid cell samples P2-A8, P2-A9, P2-B1, P2-B10 and the sample collected from 3.0 feet in grid cell P2-B10. Mercury was detected above its screening criterion in the sample collected at 1.0 foot in boring P2-4 and in the sample collected from 2.0 feet in grid cell sampleP2-B7.

One individual PAH, benzo(a)pyrene, was detected above its screening criterion in the sample collected at 1.0 foot bgs in grid cell P2-2. The calculated BaPe for this sample was below the screening threshold of 0.9 mg/kg.

2.2.3 Parcel 3

At Parcel 3 arsenic, lead, and mercury were detected above screening levels. The vertical extent of affected soil at Parcel 3 is shown on Figure 5a and a visual summary of the sampling results is presented on Figures 5b through 5d. Arsenic, lead and/or mercury were detected above screening criteria in the sample collected at 1.0 foot bgs from borings P3-1 through P3-4, P3-T1-1.0, and P3-T4-1.0. Arsenic was also detected above its screening criteria in the samples collected

from 2.5 feet bgs at boring P3-2 and at 2.5 and 4.0 feet bgs at boring P3-4. In the grid cell samples, arsenic was detected above its screening criteria in samples collected between 2.0 and 5.0 feet at locations P3-A1, P3-A2, P3-A4, P3-A5, P3-A7, P3-A9, and P3-B1 through P3-B10.

Lead was also detected above its screening criteria in the samples collected at 1.0 foot bgs in the sample collected from boring P3-3 and at 1.0, 1.5, and 2.0 feet bgs from boring P3-T4. In the Lead was also detected above its screening criteria in the samples collected at 1.0 foot bgs in the sample collected from boring P3-3 and at 1.0, 1.5, and 2.0 feet bgs from boring P3-T4. In the grid cell samples, lead was detected above its screening criteria in samples collected between 2.0 and 3.0 feet in grid cells P3-A1, P3-A4, P3-A7, P3-A9, P3-B1, P3-B4, P3-B6, P3-B7, P3-B8, and P3-B9.

Mercury was detected above its screening criterion in the samples collected from 1.0 and 2.5 feet bgs in boring P3-2, and from 2.0 and 3.0 feet bgs in grid cell sample P3-A1, from 2.0 feet bgs in grid cell P3-B4, and from 3.0 feet bgs in grid cell P3-B7 and P3-B8. Note that the residential screening level for mercury was revised from 1.0 mg/kg to 0.67 mg/kg in April 2025. Based on the revised screening level, the vertical extent of mercury was not defined in boring P3-2. However, boring P3-2 is located within grid cell P3-B4 and the sample collected at 3.0 feet bgs from grid cell P3-B4 did not contain mercury greater than the screening criterion. Therefore, the vertical extent of mercury is defined in grid cell P3-B4. Based on the revised screening level, the vertical extent of mercury-affected soil has not been defined in grid cells P3-B7 and P3-B8.

One individual PAH, benzo(a)pyrene, was detected above its screening criterion in the sample collected at 1.0 foot bgs from boring P3-2. The calculated BaPe for this sample was below the screening criterion of 0.9 mg/kg.

2.2.4 Parcel 4

At Parcel 4, arsenic, lead, mercury, and PAHs were detected above screening criteria. The vertical extent of affected soil at Parcel 4 is shown on Figure 6a and a visual summary of the sampling results is presented on Figures 6b through 6d. Arsenic was detected above screening criteria in the sample collected at 1.0 foot bgs from boring P4-1 through P4-4 and in the samples collected from 2.5 feet bgs in borings P4-1 and P4-4. Lead and mercury were also detected above screening criteria in the sample collected at 1.0 foot bgs from boring P4-1. Mercury also was detected above the screening criteria in the sample collected at 1.0 foot bgs from boring P4-4. Based on the revised screening level, the vertical extent of mercury was not defined in boring P4-4. However, boring P4-4 is located within grid cell P4-B9 and mercury was not detected in the samples collected at 2.0 and 3.0 feet bgs from grid cell P4-B9. Therefore, the vertical extent of mercury is defined in grid cell P4-B9.

In the grid cell samples, arsenic was detected above screening criteria in the samples collected from between 2.0 and 3.0 feet in grid cells P4-A1, P4-A2, P-4-A7, P4-A8, and P4-B2 through P4-B10. Lead and mercury were detected in the sample collected at 2.0 feet bgs at grid cell P4-B10.

Individual PAHs were detected above their screening criteria at the sample collected from 1.0 foot bgs at boring P4-1 (benzo(a)pyrene), the samples collected from 1.0 and 2.5 feet bgs at boring P4-4 and the sample collected at 2.0 feet bgs from grid cell P4-B10. The calculated value of BaPe for carcinogenic PAHs exceeded its screening threshold of 0.9 mg/kg in the sample collected at 1.0 foot bgs at boring P4-4.

2.2.5 Conceptual Site Model

Based on a comparison with screening levels, analytical data collected by GSI indicate that only Site soil is impacted. The source of the impacted soil appears to be the former railroad. The CSM regarding the source, nature and extent of COPCs in soil, and the potential for human receptors to contact COPCs in soil follows:

- Historical Operations and Source of COPCs
  - The Site is a former railroad corridor within a residential neighborhood. No buildings are associated with the Site, however, two residential structures, one detached garage, and one small shed partially encroach on the Site. The Site surfaces consist of mostly uncovered soils.
  - Typical environmental impacts on railroad corridors include deposition of petroleum-related constituents, metals, and weed control chemicals to shallow soil. Soil sampling has identified arsenic, lead, mercury, and PAHs as COPCs.
  - There is no record of industrial activities at the Site based on available Site history documentation.
- Nature and Extent of COPCs
  - The COPCs are not mobile in soil, and the impacts are typically limited to surficial soils.
  - Soil assessments have demonstrated that COPC impacts are primarily limited to depths less than 5 feet bgs.
  - Groundwater has not been encountered during investigation activities, which have extended to a maximum depth of 10 feet bgs. Site COPCs are only present in the vadose zone, are not mobile in soil, and have low solubility. As such, mobilization of COPCs to groundwater does not represent a complete exposure pathway.
  - Chlorinated volatile organic chemicals (VOCs) petroleum-based solvents, and gasoline are not associated with historical Site use. Heavy-end petroleum hydrocarbons (TPH-d and TPH-mo) may be associated with historical Site use and these constituents have a limited volatile component. Previous soil sampling results indicate TPH-d and TPH-mo are only present in Site soils at low concentrations. Therefore, VOCs are not considered Site COPCs and vapor intrusion is not identified as a complete exposure pathway.
- Conceptual Site Exposure Model
  - Under current conditions, access to the Site is restricted with chain link fencing and limited to workers involved in environmental characterization of the Site or construction work. Soil removal actions will be completed as described in this RAW, under regulatory oversight of DTSC.
  - The planned future use of the Site is a community garden, dog park, children's play area, and teaching garden. The community garden is currently planned to have edible produce for human consumption in both in-ground and raised planters. The receptors and associated exposure pathways are discussed in Section 2.3.1.

2.3 Human Health Risk Assessment

The screening level human health risk evaluation (SLRE) assessed the potential for human health impacts from chemicals released due to past activities at the Site. Potential human health risks associated with current and future receptor exposures to contaminated environmental media (i.e., surface and subsurface soil) were considered. Specifically, concentrations of Site COPCs reported in soil samples collected during two sampling events in July 2022 and January 2024 were evaluated by estimating theoretical cancer risks and non-cancer hazard indices using both default and Site-specific risk-based screening levels (RBSLs), where applicable.

The methodology used in this SLRE follows guidelines for the evaluation of risk provided by DTSC and USEPA in the following documents:

- Preliminary Endangerment Assessment Guidance Manual (DTSC, 2015)
- Human Health Risk Assessment (HHRA) Note 1, Default Human Health Exposure Factors (DTSC, 2019a)
- HHRA Note 3, DTSC-modified Screening Levels (DTSC-SLs; DTSC, 2025)
- HHRA Note 4, Screening Level Human Health Risk Assessments (DTSC, 2022)
- HHRA Note 10, Toxicity Criteria (DTSC, 2019b)
- USEPA Regional Screening Levels (RSLs), Generic Tables, November 2024 (USEPA, 2024a)
- USEPA RSL Calculator (USEPA, 2024b)

The results of this SLRE, along with an assessment of the potential for contaminated environmental media to impact environmental receptors, if applicable, were used to provide the basis for the planned soil removal at the Site. For risk management planning purposes, a post-remediation SLRE was also conducted assuming implementation of Alternative 2 (Soil Excavation and Off-Site Disposal) described in Section 4.1.2. The following sections describe the exposure assessment and how the SLRE was conducted.

2.3.1 Conceptual Site Exposure Model

The SLRE includes a conceptual site exposure model (CSEM), shown in Figure 7. The CSEM considers the source of contamination and fate and transport properties of the COPCs within the surrounding environment to identify possible exposure pathways that are appropriate and potentially complete for each hypothetical human receptor and corresponding exposure scenarios. Exposure was evaluated for both potential current and future receptors where applicable to allow for an evaluation of long-term risk management options. An exposure pathway typically includes the following elements:

1. A source of chemical (contaminant) and mechanism of chemical release;
2. An environmental retention or transport medium (e.g., air, groundwater);
3. A point of contact by the receptor with the environmental medium (in this case, soil); and,
4. A route of human intake (e.g., absorption, inhalation, ingestion).

Each of these elements must generally be present for an exposure pathway to be complete, although it is not necessary that environmental transport occurs when assessing exposure from direct contact (such as incidental ingestion and dermal contact with surface soil). This subsection presents a description of the CSEM for potentially exposed populations (also called receptors)

and potentially complete exposure pathways for this Site. The potentially complete exposure pathways and receptors determine the environmental media (e.g., soil) and associated screening levels (e.g., residential) used in the SLRE. Potentially exposed populations were based on current and planned future Site use, as it is currently understood. Receptors were assessed based on anticipated activity patterns that may put them at a higher potential for exposure to Site COPCs.

Based on the environmental investigations conducted at the Site to-date, COPCs are not mobile in Site soils, and impacts from historical Site operations are limited to surface and shallow subsurface soil 0-6 feet below ground surface. Historical Site use is described in Section 2.1, and current Site soil conditions are summarized in Section 2.2.

At present, no buildings are associated with the Site and each of the Site parcels consist of uncovered soils. Access to the Site is currently restricted with chain link fencing and limited to workers involved in environmental characterization of the Site or construction work. The planned future use of the four Site parcels following the planned soil removal action includes a community garden, dog park, children's play area, and teaching garden. The community garden is currently planned to have edible produce for human consumption in both in-ground and raised planters. Five potential exposure scenarios were identified in the SLRE and are outlined in the CSEM shown in Figure 7:

1. Hypothetical future child and adult recreational user – this scenario evaluates potential exposures by a future child and adult receptor that may utilize the Site for recreational activities following the planned soil removal.
2. Hypothetical future maintenance worker – this scenario evaluates potential exposures by a future maintenance worker that may perform cleaning, landscaping, or other general Site maintenance following the planned soil removal.
3. Hypothetical future docent – this scenario evaluates potential exposures by a future docent that may be present at the Site for instructional activities associated with the teaching garden following the planned soil removal.
4. Hypothetical current and future resident –
    a. The hypothetical current resident scenario assumes no remediation/mitigation of Site parcel soils and is not informed by the planned soil removal. This scenario is considered a baseline scenario for the SLRE.
    b. The hypothetical future resident scenario assumes completion of the planned soil removal. This scenario evaluates potential exposures to a hypothetical Site resident following the planned soil removal to support an evaluation of the need for future land use restrictions.
5. Hypothetical current and future construction worker – construction workers may be present at the Site for intrusive activities in surface and subsurface soil.
    a. The hypothetical current construction worker scenario assumes no remediation/mitigation of Site parcel soils and is not informed by the planned soil removal. This scenario is considered a baseline scenario for the SLRE.
    b. The hypothetical future construction worker scenario assumes completion of the planned soil removal and evaluates potential exposures by a construction worker following Site remediation and redevelopment.

The Site receptors identified in the CSEM may be exposed to COPCs in soil via direct contact pathways (i.e., incidental ingestion, inhalation of particulates and volatile compounds, and dermal

absorption) following the completion of the planned soil removal and Site redevelopment activities. The hypothetical current/future resident and hypothetical current/future construction worker exposure scenarios are considered protective of hypothetical future recreational users, hypothetical future maintenance workers, and hypothetical future docents based on anticipated activity patterns, conservative exposure factors (e.g., exposure duration), and USEPA and DTSC guidance regarding sensitive receptor exposure assumptions. Therefore, the hypothetical current/future resident and hypothetical current/future construction worker receptors were selected for quantitative assessment in the SLRE.

2.3.2 Soil Exposure Point Concentrations

Exposure scenarios are evaluated quantitatively by calculating the magnitude, frequency, and duration of exposure. A key component of estimating exposure is the calculation of medium-specific exposure point concentrations (EPCs). USEPA defines the Reasonable Maximum Exposure (RME) as the highest exposure that is reasonably expected to occur at a Site (USEPA, 1989). At the request of DTSC, the maximum reported concentrations of COPCs in soil samples collected at depths of 0 to 6 feet bgs were selected as soil EPCs for the baseline scenario. If all samples for a given COPC were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value. Thus, an RME approach was not applied to select EPCs in this SLRE, and a more conservative approach was applied.

An exposure unit (EU) is an area throughout which a particular receptor may encounter an environmental medium (USEPA, 2002). EUs are the spatial constructs over which risk to receptors are estimated. For this SLRE, EUs for Site receptors were defined as individual Site parcels, given that each parcel will be developed for a separate use and potential receptors are unlikely to visit all four parcels. For current receptors, the maximum reported concentrations of COPCs in soil samples were selected as the EPCs within each EU (i.e., parcel).

To estimate potential exposures by hypothetical future receptors following the completion of the planned soil removal, EPCs were selected based on soil samples that are representative of “left in place” concentrations following the planned soil removal. That is, only “left in place” soil samples were considered for the selection of EPCs for the hypothetical future resident and hypothetical future construction worker receptors in the SLRE. For COPCs that were not detected in “left in place” soil samples within an individual EU, the maximum laboratory reporting limit was selected as the surrogate EPC, if available.

For some grid cells within EUs, the soil samples that define the depth of the planned excavation (i.e., the extent of Site characterization) were not analyzed for every metal COPC because the deepest soil sample was only analyzed for arsenic, lead, and mercury, consistent with the Additional Soil Sampling Work Plan (GSI, 2023). Due to this Site assessment approach, an EPC cannot be selected for certain metal COPCs from “left in place” soil samples to estimate exposures by hypothetical future receptors; only EPCs for metals COPCs arsenic, lead, and mercury were available for the hypothetical future receptor evaluation, based on the deepest soil sample that was analyzed as a COPC.

BaPe concentrations were calculated to present the analytical results for the following carcinogenic PAHs as a single concentration: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. BaPe concentrations are presented to provide context to the analytical results for carcinogenic PAHs. The “benzo(a)pyrene-like” carcinogenic PAHs were individually evaluated in the quantitative assessment. Therefore, BaPe was not quantitatively evaluated as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs. BaPe concentrations

are presented for soil collected at each Site parcel in Table 3. EPCs were selected for the individual PAHs for the evaluation of carcinogenic risks and non-carcinogenic hazards, and BaPe background levels were used to compare BaPe and arsenic concentrations with naturally occurring ambient conditions.

The EPCs selected for hypothetical current receptors are summarized in Appendix B Tables B-1 through B-4, and EPCs selected for hypothetical future receptors are summarized in Appendix B Tables B-5 through B-8.

2.3.3 Soil Risk-Based Screening Levels

Soil screening levels recommended by DTSC were used to evaluate potential exposures by a hypothetical current/future resident. In accordance with the DTSC Toxicity Criteria Rule for Human Health Risk Assessments, analytical results for soil samples were evaluated by comparison to residential screening levels published by DTSC in HHRA Note 3, which are referred to as "DTSC-SLs" (DTSC, 2025). For constituents that are not listed in HHRA Note 3, the analytical results were compared to the Regional Screening Levels (RSLs) published by the USEPA. The applicable DTSC-SLs and USEPA RSLs are collectively referred to hereinafter as "screening levels" or "SLs". The SLs are derived by USEPA and DTSC using standard default exposure assumptions that represent RME conditions and USEPA or DTSC-recommended toxicity values.

DTSC-SLs and USEPA RSLs are not published for a construction worker. Therefore, construction worker risk-based screening levels (RBSLs) were calculated using the USEPA RSL Calculator (USEPA, 2024b), DTSC-recommended exposure parameters for a construction worker (DTSC, 2019a), and toxicity criteria recommended by DTSC (DTSC, 2019b). The DTSC-required toxicity criteria for a subset of Site COPCs are presented in Appendix B Table B-9. The USEPA RSL calculator input values incorporating DTSC-required toxicity criteria used to calculate construction worker RBSLs for this subset of Site COPCs are presented in Appendix B Table B-10, and output summary spreadsheets are presented in Appendix B Table B-11. For COPCs that did not have DTSC-required toxicity criteria, the USEPA RSL calculator input values used to calculate construction worker RBSLs are presented in Appendix B Table B-12, and the RSL calculator output summary spreadsheets are presented in Appendix B Table B-13.

Construction worker RBSLs are not available with the USEPA RSL calculator for lead. Therefore, potential exposures to lead by a construction worker were evaluated using a construction worker DTSC-SL for lead in soil, which was estimated using DTSC's LeadSpread-9 blood-lead model (DTSC, 2022c) with a soil adherence rate consistent with DTSC's recommendation for a construction worker (DTSC, 2014). The LeadSpread-9 spreadsheet is included in Appendix B Table B-14.

DTSC-SLs and USEPA RSLs are not available for total petroleum hydrocarbon (TPH) mixtures. Therefore, analytical results for TPH as diesel (TPH-d) and TPH as motor oil (TPH-mo) are evaluated by comparison to Environmental Screening Levels (ESLs) published by the San Francisco Bay Regional Water Quality Control Board (Water Board, 2019). The USEPA RSLs, DTSC-SLs, and Water Board ESLs are collectively referred to as risk-based screening levels (RBSLs) in this SLRE.

The residential RBSLs are considered protective of potential exposures by a recreational user and docent, since a resident is expected to come into contact with soil more frequently than a recreational user or docent. Specifically, the resident RBSLs incorporate an exposure frequency of 350 days per year for 26 years (20 adult years and 6 child years). Similarly, the construction worker RBSLs are considered protective of potential exposures by a maintenance worker, since

a construction worker is expected to come into contact with soil 250 days per year for 1 year with an intensity that is consistent with intensive, soil disturbing activities.

The soil RBSLs selected to evaluate carcinogenic risks and noncarcinogenic hazards within each Site parcel are presented in Appendix C Tables C-1 through C-4 for the hypothetical current resident and Tables C-5 through C-8 for the hypothetical current construction worker.

Potential Exposures to Lead in Soil

The potential for human health effects caused by lead is uniquely measured based on estimated blood-lead concentrations. In this SLRE, the potential human health effects caused by lead were evaluated by comparison to the DTSC soil SL of 80 mg/kg for hypothetical current/future residents, and the Site-specific LeadSpread-9 calculated soil RBSL of 136 mg/kg (see Appendix B Table B-14) for hypothetical current/future construction workers:

- *Hypothetical Current/Future Resident:* The maximum detected concentration for lead in soil is 280 mg/kg, which exceeds the residential DTSC-SL of 80 mg/kg.
- *Hypothetical Current/Future Construction Worker:* The maximum detected concentration for lead in soil is 280 mg/kg, which exceeds the construction worker RBSL of 136 mg/kg.

Background Evaluation

As described above, arsenic and PAHs are naturally occurring in soil at concentrations exceeding risk-based screening criteria. Therefore, as part of this SLRE and consistent with DTSC guidance (DTSC2022), concentrations of arsenic and benzo(a)pyrene-like carcinogenic PAHs also were evaluated by comparison to background conditions:

- Arsenic concentrations are evaluated by comparison to an evaluation of background concentrations in urbanized flatland soils within the San Francisco Bay Area, completed at San Francisco State University in coordination with California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) staff, that established an upper-limit background concentration of 11 mg/kg (Duvergé, 2011). The value of 11 mg/kg is selected as the estimated background level.
- PAHs are typically found at higher ambient concentrations in urban areas, near heavily traveled roadways, in areas that have experienced longer human occupation, and areas downwind of urban areas (Wang et al., 2008 and Nam et al., 2008 in DTSC, 2009). For BaPe, an estimate of 0.9 mg/kg for the “ambient” concentration for BaPe was established for northern California by DTSC (2009); this value was selected as the representative BaPe background level. DTSC guidance states that “the 0.9 mg/kg BaP equivalent value does not represent the final remedial goal. Rather, completion of the remedy is based on demonstration that the residual soil concentrations are ‘ambient-like’.”

For this SLRE, the quantitative risk calculation was performed with and without naturally occurring concentrations of arsenic and BaPe to provide Site-related and total risk estimates.

2.3.4 Risk Characterization

Potential human health risks associated with estimated exposures to COPCs in soil are quantified using the comparison of exposure point concentrations to RBSLs. Theoretical excess lifetime cancer risks (ELCRs) and noncancer hazard quotients (HQs) for each COPC were quantified by multiplying each ratio of chemical concentration to carcinogenic or noncarcinogenic screening level by the target risk level or HQ used in the development of the RBSL (i.e., cancer risk target level of one-in-one million or 1×10^{-6}; HQ of 1).

Potential exposures to COPCs in soil were evaluated with current exposure scenarios that assume no remediation is performed to provide a baseline evaluation in support of remediation decision-making. In addition, a background evaluation of current exposure scenarios was performed to provide total risk estimates excluding background (i.e., non-Site related) COPC contributions. Finally, potential exposures to COPCs in soil were evaluated under hypothetical future exposure scenarios to evaluate the planned soil excavation.

2.3.4.1 Carcinogenic Health Risks

Theoretical carcinogenic health risks are defined in terms of the increased probability of an individual developing cancer as the result of exposure to a given chemical at a given concentration. Theoretical ELCRs were estimated for the COPCs in soil using the following general relationship (the calculation presented below is specific for exposure to soil):

$$\text{ELCR} = \frac{C_{soil}}{RBSL_{soil-cancer}} \times TR$$

Where:

ELCR	=	Theoretical excess lifetime cancer risk
C_{soil}	=	Soil concentration (mg/kg); represented as the EPC
RBSL	=	Soil RBSL, carcinogenic risk (mg/kg)
TR	=	Target Risk (1×10^{-6})

The cumulative ELCR associated with COPCs detected in a specific media is estimated by summing the ELCRs for each chemical.

USEPA and DTSC have defined an acceptable level of risk in slightly different ways. USEPA considers one-in-one million (1×10^{-6}) to one-in-ten thousand (1×10^{-4}) to be the target range for acceptable risks at sites where remediation is considered (USEPA, 1990a, 1990b). Estimates of ELCR of less than 1×10^{-6} are considered so low as to warrant no further investigation or analysis (USEPA, 1990a). DTSC has established 1×10^{-6} as the "point of departure" for risk management decisions. In general, further action is not warranted if cumulative ELCRs are below the 1×10^{-6} cancer risk target level.

Hypothetical Current Receptors - Baseline Scenario (Carcinogenic Health Risk)

The ELCR for each COPC was estimated using the maximum detected COPC concentrations selected as the EPC. ELCRs estimated for potential exposures to COPCs in soil under the baseline scenario (hypothetical current resident, hypothetical current construction worker) for each Site parcel are presented in Appendix C Tables C-1 through C-8 and summarized below:

- *Hypothetical Current Resident, Baseline Scenario*: The cumulative ELCRs for a hypothetical current resident associated with potential exposures to COPCs detected in soil samples were $4\text{x}10^{-3}$ to 1×10^{-2}. The cumulative ELCRs at all four parcels exceed DTSC's "point of departure" (i.e., 1×10^{-6}). The primary COPC contributor to cumulative ELCR exceedances at each parcel is arsenic. These results suggest that current Site conditions may present unacceptable ELCRs to hypothetical current residents under the baseline scenario.
    - Arsenic is associated with an ELCR that individually exceeds the DTSC's "point of departure" at each parcel, and the arsenic EPCs exceed the background level of 11 mg/kg.

- Benzo(a)pyrene is associated with an ELCR that individually exceeds the DTSC's "point of departure" at each parcel. At Parcels 1, 2, and 3, the maximum BaPe concentrations are below the background level of 0.9 mg/kg, indicating BaPe concentrations are consistent with background conditions at these Site parcels. At Parcel 4, the maximum BaPe concentration exceeds the background level of 0.9 mg/kg, indicating that BaPe concentrations at Parcel 4 exceed the background level.

- Hypothetical Current Construction Worker, Baseline Scenario: The cumulative ELCRs for construction workers associated with potential exposures to COPCs detected in soil samples were 5×10^{-5} to 1×10^{-4}. The ELCRs at all four parcels exceed DTSC's "point of departure" (i.e., 1×10^{-6}). The primary contributor to ELCRs at each parcel is arsenic. These results indicate that current Site conditions may present unacceptable ELCRs to hypothetical current construction workers under the baseline scenario. For each parcel, arsenic is the only COPC associated with an ELCR that individually exceeds the DTSC's "point of departure."
  - Arsenic is associated with an ELCR that individually exceeds the DTSC's "point of departure" at each parcel, and the arsenic EPCs exceed the background level of 11 mg/kg.

The cumulative ELCRs for a hypothetical current resident and hypothetical current construction worker are summarized below:

Exposure Unit	ELCR	
	Hypothetical Current Resident	Hypothetical Current Construction Worker
Parcel 1	$5x10^{-3}$	$6x10^{-5}$
Parcel 2	$1x10^{-2}$	$1x10^{-4}$
Parcel 3	$4x10^{-3}$	$5x10^{-5}$
Parcel 4	$4x10^{-3}$	$6x10^{-5}$

Individually, the only COPCs associated with ELCRs for a hypothetical current resident or hypothetical current construction worker are arsenic and BaPe.

Hypothetical Future Receptors – Planned Soil Removal Scenario (Carcinogenic Health Risk)

To support remediation planning, ELCRs were estimated using EPCs selected to estimate potential receptor exposures following the planned soil removal (Section 2.3.2). ELCRs estimated for potential exposures to COPCs in soil following the planned soil removal for a hypothetical future resident and a hypothetical future construction worker are presented in Appendix C Tables C-9 through C-16 and summarized below. Given that a hypothetical future resident is expected to come into direct contact with soil more frequently than a hypothetical future recreational user, the evaluation of a hypothetical future resident is considered protective of a hypothetical future recreational user. Similarly, since a hypothetical future construction worker is expected to come into direct contact with soil more frequently than a hypothetical future maintenance worker and a hypothetical future docent, the evaluation of a hypothetical future construction worker is considered protective of a hypothetical future maintenance worker and a hypothetical future docent.

The results of the ELCR evaluation under the planned soil removal scenario for hypothetical future residents and hypothetical future construction workers are presented in Appendix C Tables C-9 through C-16 and summarized below.

- *Hypothetical Future Resident, Planned Soil Removal Scenario:* The cumulative ELCRs in all parcels for a hypothetical future resident associated with potential exposures to COPCs in soil samples following the planned soil removal range from 3×10^{-4} to 4×10^{-4}. The ELCRs in all four parcels exceed DTSC's "point of departure" (i.e., 1×10^{-6}). The only detected COPC to individually contribute an ELCR exceeding 1×10^{-6} for a hypothetical future resident is arsenic.
  - Arsenic concentrations in soil following the planned soil removal are expected to be consistent with background conditions. That is, the EPCs for arsenic are less than or equal to the background level of 11 mg/kg. Excluding arsenic concentrations that are consistent with background conditions, the cumulative ELCRs for a hypothetical future resident associated with potential exposures to COPCs in soil samples following the planned soil removal are 1×10^{-6}.
  - The maximum BaPe concentrations are below the background level of 0.9 mg/kg, indicating BaPe concentrations are consistent with background conditions at these Site parcels.
  - These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable ELCRs to hypothetical future residents or less-sensitive Site receptors, including hypothetical future recreators.

Exposure Unit	Hypothetical Future Resident ELCR	
	Planned Soil Removal Scenario, Including COPCs Consistent with Background	Planned Soil Removal Scenario, Excluding COPCs Consistent with Background and Non-detect Pesticide Results
Parcel 1	$3x10^{-4}$	$3x10^{-7}$
Parcel 2	$3x10^{-4}$	$3x10^{-7}$
Parcel 3	$4x10^{-4}$	$1x10^{-6}$
Parcel 4	$3x10^{-4}$	$3x10^{-7}$

- *Hypothetical Future Construction Worker, Planned Soil Removal Scenario:* The cumulative ELCRs for a hypothetical future construction worker associated with potential exposures to COPCs in soil samples following the planned soil removal are 4×10^{-6} to 5×10^{-6}. The ELCR in all four parcels exceeds DTSC's "point of departure" (i.e., 1×10^{-6}). The only COPC to individually contribute an ELCR exceeding 1×10^{-6} for a hypothetical future construction worker is arsenic.
  - Arsenic concentrations in soil following the planned soil removal are expected to be consistent with background conditions. That is, the EPCs for arsenic are less than or equal to the background level of 11 mg/kg. Excluding arsenic concentrations that are consistent with background conditions, the ELCRs for a hypothetical future construction worker associated with potential exposures to COPCs in soil samples following the planned soil removal are 8×10^{-7} to 3×10^{-8}.

- These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable ELCRs to hypothetical future construction workers or less-sensitive Site receptors, including hypothetical future maintenance workers and hypothetical future docents.

Exposure Unit	Hypothetical Future Construction Worker ELCR	
	Planned Soil Removal Scenario, Including COPCs Consistent with Background	Planned Soil Removal Scenario, Excluding COPCs Consistent with Background
Parcel 1	$5x10^{-6}$	$8x10^{-7}$
Parcel 2	$4x10^{-6}$	$3x10^{-8}$
Parcel 3	$5x10^{-6}$	$2x10^{-7}$
Parcel 4	$5x10^{-6}$	$3x10^{-8}$

The cumulative ELCRs for a hypothetical future resident and hypothetical future construction worker under the planned soil removal scenario are summarized below, with and without the contribution of arsenic and BaPe at naturally occurring concentrations and/or concentrations consistent with the urban environment:

Exposure Unit	ELCR			
	Hypothetical Future Resident, Planned Soil Removal Scenario		Hypothetical Future Construction Worker, Planned Soil Removal Scenario	
	Including COPCs Consistent with Background	Excluding COPCs Consistent with Background	Including COPCs Consistent with Background	Excluding COPCs Consistent with Background
Parcel 1	$3x10^{-4}$	$3x10^{-7}$	$5x10^{-6}$	$8x10^{-7}$
Parcel 2	$3x10^{-4}$	$3x10^{-7}$	$4x10^{-6}$	$3x10^{-8}$
Parcel 3	$4x10^{-4}$	$1x10^{-6}$	$5x10^{-6}$	$2x10^{-7}$
Parcel 4	$3x10^{-4}$	$3x10^{-7}$	$5x10^{-6}$	$3x10^{-8}$

2.3.4.2 Non-Carcinogenic Health Risks

Potential adverse noncarcinogenic health effects were evaluated using the hazard index approach (HI) and soil EPCs of COPCs using the following general relationship:

$$\text{Hazard Quotient} = \frac{C_{soil}}{RBSL_{soil-noncancer}} \times THQ$$

Where:

C_{soil} = Soil concentration (mg/kg); represented as the EPC
RBSLs = Soil RBSL, noncarcinogenic hazard (mg/kg)
THQ = Target Hazard Quotient (1)

The HI associated with COPCs detected in soil is estimated by summing the hazard quotient (HQ) for each chemical. DTSC has established a HI of 1 as the "point of departure" for risk management decisions. HIs below 1 will be interpreted to mean that adverse non-cancer effects are unlikely, and generally do not warrant further action (DTSC, 2011). HIs less than 1.5 are rounded down to 1, and HIs greater than or equal to 1.5 are rounded up to 2, consistent with USEPA guidance and standard risk assessment practice. HQ or HI values greater than 1 (i.e., rounded HQs or HIs ≥ 2) are interpreted to mean that there may be a concern for potential adverse non-cancer effects due to an exceedance of the risk target level, and closer evaluation of conservatism in the risk characterization may be necessary to better derive a predictive hazard estimate.

Hypothetical Current Receptors - Baseline Scenario (Non-Carcinogenic Health Risk)

The HQ for each COPC was estimated using the maximum detected COPC concentrations selected as the EPC. Cumulative HIs estimated for potential exposures to COPCs in soil under the baseline scenario (hypothetical current resident, hypothetical current construction worker) for each Site parcel are presented in Appendix C Tables C-1 through C-8 and summarized below:

- *Hypothetical Current Resident, Baseline Scenario:* The HIs for a hypothetical current resident associated with potential exposures to COPCs in soil samples were 332 to 777. The cumulative HIs at all four Site parcels exceed DTSC's "point of departure" (i.e., 1). The primary COPC contributor to cumulative HI exceedances at each parcel is arsenic. These results indicate that current Site conditions may present unacceptable non-cancer risks to hypothetical current residents.
    - Arsenic is associated with an HQ that individually exceeds DTSC's "point of departure" at each parcel, and the arsenic EPCs exceed the background level of 11 mg/kg.
    - Thallium is associated with an HQ that individually exceeds DTSC's "point of departure" at Site Parcels 1, 3 and 4. However, these exceedances are a result of maximum laboratory reporting limit concentrations used as surrogate EPC values for non-detections of thallium in soil samples and likely overestimate potential non-cancer hazards.
    - Mercury is associated with an HQ that individually exceeds DTSC's "point of departure" in Parcels 2, 3, and 4.
    - Delta-BHC is associated with an HQ that individually exceeds DTSC's "point of departure" in Parcels 1, 2, 3, and 4. However, delta-BHC was not detected in any soil samples collected at the Site. These HQ exceedances are a result of maximum laboratory reporting limit concentrations used as surrogate EPC values for non-detections of delta-BHC in soil samples and likely overestimate potential non-cancer hazards.
    - 1-Methylnaphthalene is associated with an HQ that individually exceeds DTSC's "point of departure" in Parcel 3. This HQ exceedance is a result of using the maximum laboratory reporting limit concentration as a surrogate EPC value for non-detections of 1-methylnaphthalene in all Parcel 3 soil samples, and likely overestimates potential non-cancer hazards. 1-Methylnaphthalene was not detected in any soil samples in Parcels 2, 3, or 4, and the only detection of 1-methylnapthalene at Parcel 1 was below the DTSC-SL.
- *Hypothetical Current Construction Worker, Baseline Scenario:* The HIs for a hypothetical current construction worker associated with potential exposures to COPCs in soil samples were 107 to 273. The cumulative HIs at all four Site parcels exceed DTSC's "point of

departure" (i.e., 1). The only COPC contributor to cumulative HI exceedances at each parcel is arsenic. These results indicate that current Site conditions may present unacceptable non-cancer risks to hypothetical current construction workers.

- Arsenic is associated with an HQ that individually exceeds DTSC's "point of departure" at each parcel, and the arsenic EPCs exceed the background level of 11 mg/kg.

The cumulative HIs for a hypothetical current resident and hypothetical current construction worker are summarized below:

Exposure Unit	Hypothetical Current Resident Non-Cancer HI	Hypothetical Current Construction Worker Non-Cancer HI
Parcel 1	374	132
Parcel 2	777	273
Parcel 3	332	107
Parcel 4	363	124

Individually, the only COPC associated with HI exceedances for a hypothetical current resident or hypothetical current construction worker is arsenic.

Hypothetical Future Receptors – Planned Soil Removal Scenario (Non-Carcinogenic Health Risk)

To support remediation planning, HIs were estimated using EPCs selected to estimate potential receptor exposures following the planned soil removal (Section 2.3.2). HIs estimated for potential exposures to COPCs in soil following the planned soil removal for a hypothetical future resident and a hypothetical future construction worker are presented in Appendix C Tables C-9 through C-16 and summarized below. Given that a hypothetical future resident is expected to come into direct contact with soil more frequently than a hypothetical future recreational user, the evaluation of a hypothetical future resident is considered protective of a hypothetical future recreational user. Similarly, since a hypothetical future construction worker is expected to come into direct contact with soil more frequently than a hypothetical future maintenance worker and a hypothetical future docent, the evaluation of a hypothetical future construction worker is considered protective of a hypothetical future maintenance worker and a hypothetical future docent.

The results of the non-cancer hazard evaluation for a hypothetical future resident and a hypothetical future construction worker under the planned soil removal scenario is presented in Appendix C Tables C-9 through C-16 and summarized below:

- *Hypothetical Future Resident, Planned Soil Removal Scenario:* The cumulative HIs for a hypothetical future resident associated with potential exposures to COPCs in soil samples following the planned soil removal range from 26 to 36, which includes the summed HQs for non-detected COPCs where the maximum laboratory reporting limit was selected as the surrogate EPC. The HIs in all parcels exceed DTSC's "point of departure" (i.e., 1). The primary COPCs contributing to the HI exceedances of 1 for a hypothetical future resident are arsenic, delta-BHC, cobalt, thallium, and 1-methylnaphthalene.
  - Arsenic concentrations in soil following the planned soil removal are expected to be consistent with background conditions. That is, the EPCs for arsenic are less than or equal to the background level of 11 mg/kg.

- The inclusion of pesticides that were not reported in at least one soil sample collected at the Site likely overestimates the estimates of potential non-cancer hazards. For example, delta-BHC is an industrial grade organochlorine pesticide that is typically part of a mixture of several isomers, including alpha-BHC, beta-BHC, and gamma-BHC (ATSDR, 2021). Neither delta-BHC nor any of its associated isomers were detected in any of the 27 soil samples collected at the Site during the 2022 and 2024 soil sampling events. These lines of evidence suggest delta-BHC is likely not present at the Site at concentrations that would present unacceptable risk to human health. The inclusion of the HQ for non-detect pesticide results represents an overestimate of potential non-cancer hazards.
- At Parcel 1, cobalt concentrations in soil following the planned soil removal are expected to be consistent with background conditions. Based on Diamond et al. (2009), the upper estimate for regional background levels of cobalt is 23 mg/kg in the Berkeley/Oakland Hills of Alameda County, California, which suggests the cobalt concentration measured at the Site is consistent with regional background levels. Additionally, this cobalt concentration was not replicated in the duplicate soil sample collected at the same depth and Parcel 1 location [sample ID P1-A8-1.0]). These lines of evidence suggest cobalt is likely not present at the Site at concentrations that would present unacceptable risk to human health. The inclusion of the HQ for cobalt likely represents an overestimate of potential non-cancer hazards.
- At Parcel 1, the maximum laboratory reporting limit for thallium was selected as the surrogate EPC, and associated HI is 4. However, thallium was not detected in soil samples at the Site, and the inclusion of the HQ for thallium likely represents an overestimate of potential non-cancer hazards.
- At Parcel 3, 1-methylnaphthalene was not detected in any soil samples collected at Parcel 3, and the maximum laboratory reporting limit was selected as the EPC. The inclusion of the HQ based on the maximum reporting limit for 1-methylnaphthalene likely represents an overestimate of potential non-cancer hazards.
- Excluding arsenic, cobalt, thallium, pesticides that were not detected in any soil samples, and 1-methylnaphthalene (at Parcel 3 only), the HIs estimated for Site are below DTSC's "point of departure". These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable non-cancer hazards to hypothetical future residents, or less-sensitive Site receptors, including hypothetical future recreators.

Exposure Unit	Hypothetical Future Resident HIs	
	Planned Soil Removal Scenario, Including COPCs Consistent with Background	Planned Soil Removal Scenario, Excluding pesticides that were not detected in any soil samples and metals consistent with background
Parcel 1	26	0.9
Parcel 2	27	0.8
Parcel 3	36	0.8 #
Parcel 4	29	0.7

Note: # Parcel 3 HI also excludes non-detect results for 1-methylnaphthalene, which was not detected in soil samples at Parcel 3.

- *Hypothetical Future Construction Worker, Planned Soil Removal Scenario:* The cumulative HIs for a hypothetical future construction worker associated with potential exposures to COPCs in soil samples following the planned soil removal range from 9 to 10. The HIs in all four parcels exceed DTSC's "point of departure" (i.e., 1). The primary COPC to individually contribute an HI exceeding 1 for a hypothetical future construction worker is arsenic.
  - Arsenic concentrations in soil following the planned soil removal are expected to be consistent with background conditions. That is, the EPCs for arsenic are less than or equal to the background level of 11 mg/kg. Excluding arsenic concentrations that are consistent with background conditions, the cumulative HIs for a hypothetical future construction worker associated with potential exposures to COPCs in soil samples following the planned soil removal range from 0.8 to 0.06.
  - These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable non-cancer hazards to hypothetical future construction workers, or less-sensitive Site receptors, including hypothetical future maintenance workers and hypothetical future docents.

Exposure Unit	Hypothetical Future Construction Worker HIs	
	Planned Soil Removal Scenario, Including COPCs Consistent with Background	Planned Soil Removal Scenario, Excluding COPCs Consistent with Background
Parcel 1	10	0.8
Parcel 2	9	0.06
Parcel 3	10	0.4
Parcel 4	10	0.06

The cumulative HIs for a hypothetical future resident and hypothetical future construction worker under the planned soil removal scenario are summarized below, with and without the contribution of arsenic at naturally occurring concentrations and/or concentrations consistent with the urban environment:

Exposure Unit	Hazard Index			
	Hypothetical Future Resident, Planned Soil Removal Scenario		Hypothetical Future Construction Worker, Planned Soil Removal Scenario	
	Including COPCs Consistent with Background	Excluding pesticides that were ND in any soil samples, and COPCs consistent with background	Including COPCs Consistent with Background	Excluding COPCs Consistent with Background
Parcel 1	26	0.9	10	0.8
Parcel 2	27	0.8	9	0.06
Parcel 3	36	0.8[#]	10	0.4
Parcel 4	29	0.7	10	0.06

Note: [#] Parcel 3 HI also excludes non-detect results for 1-methylnaphthalene, which was not detected in soil samples at Parcel 3.

Potential Lead Exposure

The potential for human health effects caused by lead is uniquely measured based on estimated blood-lead concentrations. In this SLRE, the potential human health effects caused by lead were evaluated by comparison to the DTSC-modified screening level of 80 mg/kg for residential soil, and the construction worker soil RBSL of 136 mg/kg calculated using the DTSC LeadSpread-9 worksheet (see Appendix B Table B-14). The maximum detected concentration for lead in soil samples under the baseline scenario is 490 mg/kg, which indicates current Site conditions may present unacceptable risks to a hypothetical current resident and hypothetical current construction worker. However, under the planned soil removal scenario, the maximum detected concentration for lead in soil samples is 71 mg/kg. These results indicate that future Site conditions under the planned soil removal scenario do not present unacceptable increase in blood lead levels to a hypothetical future resident and hypothetical future construction worker. These results also are protective of a hypothetical future recreator, hypothetical future docent, and hypothetical future maintenance worker.

2.3.5 SLRE Summary and Conclusions

Potential human health risks related to exposures to COPCs detected in soil were evaluated with respect to the maximum concentrations detected in soil. Cumulative ELCRs and HIs were calculated under the baseline scenario to estimate potential cancer risks and non-cancer hazards to hypothetical current residents and hypothetical current construction workers prior to the planned soil removal. The results of the SLRE indicate arsenic and BaPe are the only contaminants of concern (COCs) driving unacceptable cancer risks and non-cancer hazards to hypothetical current residents and hypothetical current construction workers under the baseline scenario.

To support remediation planning, cumulative ELCRs and HIs were estimated using EPCs selected to estimate hypothetical future resident and hypothetical future construction worker exposures following the planned soil removal, with and without the contribution of arsenic, cobalt, BaPe at background levels, and COPCs that were non-detect (e.g., delta-BHC, 1-methylnaphthalene, thallium). Following remediation under the planned soil removal scenario, arsenic is less than or equal to the background level of 11 mg/kg. The planned soil removal also addresses BaPe concentrations that exceed the background level (and contributed to an estimated ELCR exceeding the risk target level). Following the planned soil removal scenario, future Site conditions do not present an unacceptable cancer risk or non-cancer hazard to a hypothetical future resident and hypothetical future construction worker. The results of this evaluation also are protective of a hypothetical future recreator, hypothetical future maintenance worker, and hypothetical future docent, since the hypothetical future resident and hypothetical future construction worker are expected to contact soil more frequently than a hypothetical future recreational user, docent, or maintenance worker.

2.4 Ecological Risks to Threatened and Endangered Species

The potential for Threatened and Endangered (T&E) species to be adversely impacted by Site activities related to remedial actions under the planned soil removal was evaluated using the U.S. Fish and Wildlife Service online IPaC tool. The tool allows users to search the USFWS database for potential Threatened and Endangered species residing in a geographic area, which may be affected by anthropogenic activities, as well as identify known critical habitats (e.g., wetlands) that may be present.

Given the upland urban location and lack of permanent and ephemeral waterbodies at the Site, the following T&E species were identified using the IPaC tool as species which may be affected by future Site remediation and redevelopment activities (see Appendix D):

- Salt marsh harvest mouse (*Reithrodontomys raviventris*) – Endangered
- California least tern (*Sternula antillarum browni*) – Endangered
- California ridgway's rail (*Rallus obsoletus obsoletus*) – Endangered
- Western snowy plover (*Charadrius nivosus nivosus*) – Threatened
- Alameda whipsnake (*Masticophis lateralis euryxanthus*) – Threatened
- Monarch butterfly (*Danaus plexippus*) – Candidate
- Santa Cruz tarplant (*Holocarpha macradenia*) – Threatened

GSI staff will monitor for these T&E species during future Site remediation and redevelopment activities to ensure no adverse effects to sensitive ecological receptors result from the planned soil removal. Appendix D includes pictures and descriptions of the T&E species listed above and will serve as a field guide for GSI staff during on-Site activities. If a T&E species is observed on-Site during remediation and redevelopment activities, GSI staff will promptly notify DTSC.

3.0 REMOVAL ACTION GOALS AND OBJECTIVES

The results of the Site characterization activities have indicated the presence of arsenic and, to a lesser extent lead, mercury, and PAHs, in shallow soil at concentrations greater than residential screening levels. This section presents removal action objectives that are established to be protective of human health and the environment. Additionally, this section includes the findings of a review of pertinent laws, regulations and other criteria that was performed to identify applicable or relevant and appropriate requirements (ARARs) and other criteria to be considered for remediating the Site.

3.1 Removal Action Objectives

RAOs have been established that are protective of human health and the environment and reduce the potential for exposure to the COPCs in soil encountered at the Site. The RAOs are presented below.

- Provide for a Site that can be redeveloped with no future restrictions on development or Site use.
- Remove COPC impacted soil that exceeds the Regional Screening Levels (RSLs) published by the U.S. Environmental Protection Agency (USEPA) for residential soil (USEPA, 2024), as endorsed or modified by DTSC (2022), or the background concentration, where the RSLs are lower than background.

The selected response action and removal goals developed and adopted for impacted soil at the Site will be responsive to these RAOs.

3.2 Applicable and Appropriate Requirements

Applicable or relevant and appropriate requirements or ARARs are federal and state environmental statutes, regulations, and standards. Applicable requirements are federal or state laws or regulations that specifically address a hazardous substance, pollutant, contaminant, removal action, or location. Relevant and appropriate requirements are requirements that, while not "applicable," address problems or situations sufficiently similar to those encountered that their use is well suited to the particular site. State requirements are ARARs only if they are more stringent than federal requirements.

In addition to ARARs, this analysis includes an evaluation of To-Be-Considered criteria ("TBCs"). TBCs are advisories, criteria, or guidance that may be considered for a particular action or specific issue, as appropriate. TBCs are not ARARs because they are neither promulgated nor enforceable.

The ARARs or TBCs may be: 1) chemical; 2) location; or 3) activity specific. Chemical-specific ARARs or TBCs are usually health- or risk-based numerical values or methodologies used to determine acceptable concentrations of chemicals that may be found in the environment. Location-specific ARARs or TBCs restrict actions or contaminant concentrations in certain environmentally sensitive areas. Examples of areas regulated under various federal laws include locations where endangered species or historically significant resources are present. Action-specific ARARs or TBCs are usually technology- or activity-based requirements or limitations on actions or conditions involving specific chemicals of concern. See Table 6 for a listing of ARARs and TBCs for the Site.

3.3 Removal Goals

Risk-based cleanup levels were selected for the Site based upon the RSLs published by the USEPA for residential soil (USEPA, 2024), as endorsed or modified by DTSC (2022), and background concentrations. The RSL, or the background concentration when it exceeds the RSL, is the removal goal for the Site. The cleanup goals for Site COPCs are as follows.

- The cleanup goal for arsenic is a maximum concentration of 11 mg/kg (regional background; Section 2.2.2).
- The cleanup goal for lead is a maximum concentration of 80 mg/kg (the default residential screening level developed by DTSC).

- The cleanup goal for mercury is a maximum concentration of 0.67 mg/kg (the default residential screening level developed by DTSC).
- The cleanup goal for PAHs is a maximum BaPe of 0.9 mg/kg (regional ambient level; Section 2.2.2).

4.0 ALTERNATIVES EVALUATION

The purpose of this Section of the RAW is to identify and screen possible removal action alternatives which may best achieve the RAOs discussed in Section 3.0. Removal action alternatives are screened and evaluated on the basis of their effectiveness, implementability, and cost.

4.1 Response Actions and Technologies

Typical remedies for sites where heavy metals and/or PAHs have been identified in soil include excavation and offsite disposal, excavation and onsite containment, capping in-place, and institutional controls. A No Further Action alternative and each of these four response actions have been assembled into candidate removal alternatives for the Site and are developed with respect to the above criteria and RAOs in the following sections. The candidate removal alternatives are:

- Alternative 1 – No Further Action
- Alternative 2 – Soil Excavation and Off-Site Disposal
- Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment
- Alternative 4 – Capping in Place

4.1.1 Alternative 1 - No Further Action

As required by the DTSC, the No Further Action alternative has been included to provide a baseline for comparisons among other removal alternatives. The No Further Action alternative would not require implementing any remedial actions at the Site and no costs would be incurred. Site access would continue to be limited by the permanent chain link fencing. The restricted access would continue to prevent Site soil from being disturbed and no short-term risks to on-Site workers or the community would result from this alternative.

4.1.2 Alternative 2 - Soil Excavation and Off-Site Disposal

The Soil Excavation and Off-Site Disposal alternative would consist of removing and transporting impacted soil to an appropriate, permitted off-site facility for disposal. This alternative involves excavating chemically impacted soil with conventional grading equipment, such as loaders, backhoes, and/or other appropriate equipment. Excavation operations will generate dust emissions. Suppressants, water spray, and other forms of dust control may be required during excavation, and workers may be required to use personal protective equipment to reduce exposure to COPCs. It is anticipated that soil will be pre-characterized for waste disposal purposes and excavated soil will be directly loaded into trucks for transportation to an off-Site disposal facility.

To achieve the RAOs, soil at 19 grid cells within Parcels 1, 2 and 3 requires removal to depths of 5 feet bgs or greater (see Figure 3a, 4a, and 5a). These grid cells will require sloping of the sidewalls or an excavation support system to prevent impacting adjoining properties. Sloping may limit the volume of soil that can be removed along the edges of the property at these locations. Therefore, excavations at these areas may be accomplished using limited excavation support

systems, such as soldier-piles and lagging. Excavated soil will be hauled off-site to a disposal facility that is permitted to accept the characterized waste stream.

The depth of excavation in each grid cell will be determined based on the sampling conducted to date. Soil would be excavated to the depth corresponding to the deepest sample that did not contain concentrations of COPCs above cleanup goals. Previous site results will remain representative at the end of excavation activities because no earthmoving that would change the depth or re-distribute contamination will be performed and this will be verified by field personnel prior to backfilling. Therefore, with the exception of grid cells P3-B7 and P3-B8, confirmation soil sampling will not be necessary. Based on the April 2025 DTSC-SL for mercury, the vertical extent of mercury has not been delineated in grid cells P3-B7 and P3-B8. Therefore, one confirmation bottom sample would be collected from each of these grid cells for mercury analysis. Mercury concentrations in the additional soil samples would be evaluated by comparison to the residential DTSC-SL (0.67 mg/kg). If mercury is reported at concentrations exceeding the residential DTSC-SL, additional soil excavation and confirmation sampling would be performed in coordination with DTSC. If unanticipated subsurface conditions such as visible petroleum products or odorous soils are encountered during excavation activities lateral and vertical contingency confirmation samples will be collected for laboratory analysis.

The excavation area would include the area currently owned by the City and the area that will be deeded to the City after the lot line adjustments. The total volume of soil removed from the Site would be approximately 4,640 cubic yards and a similar volume of clean backfill would need to be imported.

4.1.3 Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment

This alternative involves a combination of capping chemically impacted soils in place and removing chemically impacted soils. Under this alternative, soil in areas beneath hardscape (asphalt or concrete) in the planned Site redevelopment would be capped in place. Chemically impacted soil at areas which will not be hardscaped (e.g., landscaped areas, planting beds) will be excavated and transported to a permitted off-Site disposal facility. It is anticipated that less than 25 percent of the Site will be hardscaped (Appendix A).

Capping in place involves placing a barrier over chemically impacted soil such that direct human exposure is mitigated; the ongoing integrity of the barrier would be managed via a long-term risk management plan. A cap could consist of a combination of asphalt, and/or concrete paving.

In areas that are not planned to be hardscaped, chemically impacted soils would be excavated with conventional grading equipment, such as loaders, backhoes, and/or other appropriate equipment. Excavation operations will generate dust emissions. Suppressants, water spray, and other forms of dust control may be required during excavation, and workers may be required to use personal protective equipment to reduce exposure to COPCs. It is anticipated that soil will be pre-characterized for waste disposal purposes and excavated soil will be directly loaded into trucks for transportation to an off-Site disposal facility.

Excavation depths in non-hardscaped areas will be determined by the results of the previous grid cell sampling as described in Section 4.1.2. Soil in non-hardscaped areas would be excavated to the depth corresponding to the deepest sample in the corresponding grid cell that did not contain concentrations of COPCs above cleanup goals. Therefore, with the exception of grid cells P3-B7 and P3-B8, confirmation soil sampling will not be necessary. Based on the April 2025 DTSC-SL for mercury, the vertical extent of mercury has not been delineated in grid cells P3-B7 and P3-B8. If grid cells P3-B7 and P3-B8 are non-hardscaped areas, one confirmation bottom sample would be collected from each of these grid cells for mercury analysis. Mercury concentrations in the

additional soil samples would be evaluated by comparison to the residential DTSC-SL (0.67 mg/kg). If mercury is reported at concentrations exceeding the residential DTSC-SL, additional soil excavation and confirmation sampling would be performed in coordination with DTSC. The excavation area would include non-hardscaped portions of the area currently owned by the City and the area that will be deeded to the City after the lot line adjustments.

Backfilling would be required at areas where soils are excavated. The total volume of soil removed from the Site would be approximately 25 percent less than Alternative 2, or 3,480 cubic yards. Approximately 3,480 cubic yards of clean backfill would need to be imported.

A land use restriction would be required between DTSC and the property owner to ensure that the cap is operated and maintained and that future uses of the property are consistent with operation and maintenance of the cap. An operation and maintenance agreement signed with DTSC specifying the operation and maintenance requirements and providing financial assurance for future operation and maintenance of the cap, would also be required.

4.1.4 Alternative 4 - Capping in Place

This alternative involves placing a barrier over chemically impacted soil such that direct human exposure is mitigated; the ongoing integrity of the barrier would be managed via a long-term risk management plan. Under this alternative, no soil would be excavated and the entire Site would be capped. A cap could consist of a combination of 2-foot engineered soil cover, asphalt, and/or concrete paving. To achieve the RAOs, the entire 1.32-acre Site requires capping (see Figures 3a, 4a, 5a, and 6a).

A land use restriction would be required and executed between DTSC and the property owner to ensure that the cap is operated and maintained and that future uses of the property are consistent with operation and maintenance of the cap. An operation and maintenance agreement signed with DTSC specifying the operation and maintenance requirements and providing financial assurance for future operation and maintenance of the cap would also be required.

4.2 Evaluation Criteria

Each removal action alternative selected in Section 4.1 is evaluated based on its effectiveness, implementability, and cost according to the definitions in Sections 4.2.1 through 4.2.3 (evaluation criteria).

The evaluation criteria are first applied to each alternative independently, without consideration to the other alternatives (Section 4.3); and then applied relative to each other alternative (Section 4.4).

4.2.1 Effectiveness

In the effectiveness evaluation, the following factors are considered:

- Overall Protection of Human Health and the Environment - This criterion evaluates whether the removal alternative provides adequate protection to human health and the environment and is able to meet the Site's RAOs.
- Compliance with ARARs/TBCs - This criterion evaluates the ability of the removal alternative to comply with ARARs and TBCs.
- Short-Term Effectiveness - This criterion evaluates the effects of the removal alternative during the construction and implementation phase until removal objectives are met. It

accounts for the protection of workers and the community during removal activities and environmental impacts from implementing the removal action.

- Long-Term Effectiveness and Permanence - This criterion addresses issues related to the management of residual risk remaining on site after a removal action has been performed and has met its objectives. The primary focus is on the controls that may be required to manage risk posed by treatment residuals and/or untreated wastes.
- Reduction of Toxicity, Mobility, or Volume - This criterion evaluates whether the removal alternative results in significant reduction in toxicity, mobility, or volume of the hazardous substances.

4.2.2 Implementability

This criterion evaluates the technical and administrative feasibility of implementing the alternative, as well as the availability of the necessary equipment and services. This includes the ability to design and perform a removal alternative, ability to obtain services and equipment, ability to monitor the performance and effectiveness of technologies, and the ability to obtain necessary permits and approvals from agencies, and acceptance by the State and the community.

4.2.3 Cost

This criterion assesses the relative cost of each alternative based on estimated fixed capital for construction or initial implementation and ongoing operational and maintenance costs. The actual costs will depend on true labor and material cost, competitive market conditions, final project scope, and the implementation schedule.

4.3 Analysis of Removal Action Alternatives

Each of the four alternatives are independently evaluated for effectiveness, implementability, and cost in the following sections.

4.3.1 Alternative 1 – No Further Action

The No Further Action alternative has been included to provide a baseline for comparisons among other removal alternatives. The No Further Action alternative would not require implementing any measures at the Site and no costs would be incurred. This alternative includes no institutional controls, removal, consolidation, or treatment of soil, and no long-term monitoring. Under the No Further Action alternative, soil impacted by the COPCs would not be addressed and there would be no reduction in the potential risks at the Site.

The No Further Action alternative would prevent the proposed development of the Site into a community asset, with a community garden, dog park, children's play area, and teaching garden and the RAOs would not be achieved. This alternative, therefore, does not meet the effectiveness criterion and acceptance by the State and the community would be unobtainable.

4.3.2 Alternative 2 – Soil Excavation and Off-Site Disposal

The second alternative consists of remediating the Site to unrestricted use by removing chemically impacted soil and transporting it to an appropriate, permitted off-Site landfill for disposal.

Effectiveness

Potential short-term risks to on-site workers, public health, and the environment could result from dust or particulates that may be generated during excavation and soil handling activities. These risks could be mitigated using personal protective equipment for on-site workers. Engineering controls, such as dust suppression and traffic and equipment operating procedures which limit dust generation could also be used to mitigate these risks, protect the surrounding community, and meet all ARARs. Over the long-term, excavation and disposal of impacted Site soil would remove the COPCs from the Site and satisfy the RAOs by eliminating the long-term human health and environmental risks.

Off-site land disposal does not result in the reduction of toxicity or volume of the COPC. However, the mobility of the COPCs will be reduced and managed by placing impacted soil in an engineered landfill suitable for receiving the characterized waste stream.

Implementability

Excavation and off-Site disposal is a readily implementable technology that is a common method for remediating impacted soil. Implementation is a relatively simple, uncomplicated process, with proven results. The equipment and labor required to implement this alternative are readily available and the shallow depths of the identified contamination make excavation routine.

It is anticipated that regulatory approval for this alternative would be granted since it is a proven and permanent technology which will remove impacted soil and allow for future unrestricted Site use. Acceptance by the State and the community for this alternative is considered high.

Cost

The estimated cost for excavation, transportation, and disposal of the impacted soil; and import, backfill, and compaction of quarry-sourced fill material is approximately $264 per cubic yard. The total cost for implementation of Alternative 2 is an estimated $1,226,000. This estimate includes permitting, health and safety measures including dust control, excavation, transport, sampling/reporting for disposal profiling, and other associated costs.

4.3.3 Alternative 3 – Soil Excavation, Off-Site Disposal, and On-Site Containment

The third alternative consists of a combination of capping chemically impacted soils in place in areas covered by hardscape and excavation and off-Site disposal of chemically impacted soils in areas not covered by hardscape.

Effectiveness

Potential short-term risks to on-Site workers, public health, and the environment could result from dust or particulates that may be generated during excavation and soil handling activities. These risks could be mitigated using personal protective equipment for on-site workers. Engineering controls, such as dust suppression and traffic and equipment operating procedures which limit dust generation could also be used to mitigate these risks, protect the surrounding community, and meet ARARs. Over the long-term, when paired with a land use restriction and operation and maintenance requirements, Alternative 3 would effectively eliminate the human health and environmental risks from the COPCs at the Site.

Excavation, off-Site disposal, and on-Site containment eliminates some impacted soil at the Site, and the mobility of the remaining COPCs are reduced and may be managed.

Implementability

Soil excavation, off-Site disposal, and on-Site containment is a readily implementable technology that is a common method for cleaning up contaminated sites. Implementation is a relatively simple, uncomplicated process, with proven results. The equipment and labor required to implement this alternative are readily available and the shallow depths of the identified contamination make excavation routine. This alternative would likely result in a similar level of noise and dust generation as Alternative 2.

As COPCs would remain on Site, obtaining permits and regulatory approval may be difficult. Community acceptance is also anticipated to be more difficult to achieve since the COPCs would remain on Site. Land use would need to be restricted to manage the encapsulation areas and long-term (30-year) maintenance of the hardscaped areas would be required. Inspections and reporting would be conducted yearly, and a Five-Year Review report would be prepared.

Cost

The estimated cost for soil excavation, off-Site disposal, and on-Site containment of the impacted soil is approximately $270 per cubic yard. This estimate includes permitting, excavation/stockpiling, reporting, backfill, encapsulation, and other associated costs. The present value of operational and maintenance costs are estimated to be $7,500 annually for the life cycle of the project (30 years). The estimated cost of Alternative 3 is $1,256,000 (Table 7).

4.3.4 Alternative 4 – Capping in Place

The fourth alternative consists of capping chemically impacted soil in place with clean soil, asphalt, or concrete.

Effectiveness

The containment/capping-in-place alternative would involve little disturbance of the impacted soil. Therefore, there would be very little exposure to the COPC and the short-term risks would be low. The installation of a surface cap would require long-term inspection and maintenance to meet ARARs and provide long-term effectiveness.

Periodic inspections would be required for settlement, cracking, ponding of liquids, erosion, and naturally occurring invasion by deep-rooted vegetation. Additionally, precautions would have to be taken to ensure that the integrity of the cap is not compromised by land use activities.

Containment through surface capping would not lessen toxicity/volume of the COPC or meet the RAOs but would limit mobility of the COPC by preventing contact.

Implementability

Containment is a relatively simple technology that is easily implemented and can be quickly installed. As COPCs would remain on site, obtaining permits and regulatory approval can be difficult. In addition, community acceptance for this alternative may be more difficult since the COPC would remain on site. Land use would need to be restricted to manage the cap and long-term (30-year) maintenance of the cap would be required. Inspections and reporting would be conducted yearly, and a Five-Year Review report would be prepared.

Cost

Containment technologies typically involve low to moderate costs. Industry costs are approximately $177,000 per acre for asphalt, and approximately $350,000 per acre for concrete. This cost estimate assumes the cap would be constructed from asphalt. The present value of

operational and maintenance costs are estimated to be $11,000 annually for the life cycle of the project (30 years). The estimated cost of Alternative 3 is $822,000 (Table 7).

4.4 Comparative Analysis of Removal Action Alternatives

A comparative analysis was conducted to identify the advantages and disadvantages of each removal alternative. The comparative analysis of the removal alternatives was conducted based on the evaluation criteria listed in Section 4.2.

4.4.1 Effectiveness

Under the No Action alternative, the impacts associated with the site-specific COPCs would not be addressed. Consequently, there would be no reduction in the potential risks and the RAOs would not be achieved.

The Capping in Place alternative (Alternative 4) would only disturb impacted surface soils at the Site. Therefore, there would be little to no short-term risks to on-site workers or the community as a result of implementing the alternative.

The Excavation and Off-Site Disposal alternative and the Excavation, Off-Site Disposal, And On-Site Containment alternative (Alternative 2 and 3, respectively) require removing, handling, and transporting the impacted soil, resulting in higher short-term exposure risks. However, it is expected that these risks can be sufficiently mitigated through Site control measures.

Excavation and Off-Site Disposal (Alternative 2), Excavation, Off-Site Disposal, and On-Site Containment (Alternative 3) and Capping in Place (Alternative 4) reduce or eliminate potential exposure to COPCs. However, Alternatives 3 and 4 would not completely remove the COPCs from the Site and would therefore not satisfy the RAOs.

Additionally, once implemented both Alternatives 3 and 4 would require land use restrictions and long-term monitoring to ensure their effectiveness. Therefore, neither alternative would satisfy the unrestricted Site use RAO.

Excavation and Off-Site Disposal (Alternative 2) would remove all COPCs from the Site and would not require any further management or Site controls, thereby satisfying both RAOs. Based upon this evaluation, Alternative 2 is favored under this criterion.

4.4.2 Implementability

No measures would be implemented for the No Further Action alternative. The Soil Excavation and Off-Site Disposal (Alternative 2); Excavation, Off-Site Disposal, and On-Site Containment (Alternative 3); and Capping in Place (Alternative 4) alternatives are each well-proven, readily implementable technologies. However, only Alternative 2 would remove the COPCs from the Site and is, therefore, anticipated to be accepted by both the State and the community. Accordingly, Alternative 2 is favored by this criterion.

4.4.3 Cost Effectiveness

A summary of estimated costs to implement the proposed alternatives is presented in the following table and additional cost estimating information is included in Table 7. Costs are based on:

- Alternative 2: excavation and off-Site disposal of 4,640 cubic yards of soil,
- Alternative 3: excavation and off-site disposal of 3,480 cubic yards of soil and capping in-place of approximately one-quarter of the Site,

- Alternative 4: capping in place of 1.32 acres of soil.

Removal Action Alternative		Estimated Total Cost
1	No Further Action	$ 0
2	Soil Excavation and Off-Site Disposal	$ 1,226,000
3	Soil Excavation, Off-Site Disposal, and On-Site Containment	$ 1,256,000
4	Capping in Place	$ 822,000

No costs would be incurred for the No Further Action alternative. Alternatives 2, 3, and 4 would cost $1,226,000, $1,256,000, and $822,000, respectively. Alternative 2 is cost competitive with the other identified alternatives and is the only removal action alternative that would remove the COPCs from the Site to meet the RAO for unrestricted Site usage. Accordingly, Alternative 2 is favored by this criterion.

4.5 Recommended Removal Action Alternative

Based on the comparative analysis described in Section 4.4, Alternative 2 (Excavation and Off-Site Disposal) is the preferred and recommended removal action alternative for addressing the Site. This alternative was selected because:

- Alternative 1 (No Further Action) does not address the RAOs for the Site and it is unlikely to receive regulatory and community acceptance.
- Alternative 3 (Soil Excavation, Off-Site Disposal, and On-Site Containment) requires a land use restriction and long-term operation and maintenance plan. Given the long-term stewardship requirement, implementation of Alternative 3 will not achieve the RAO of unrestricted Site use, as certain development restrictions (e.g., cap maintenance and limitations regarding subsurface intrusion) would be in place. Additionally, Alternative 3 will not satisfy the RAO of removing the COPCs from the Site and is, therefore, not anticipated to be accepted by both the State and the community.
- Alternative 4 (Capping in Place) requires a land use restriction, long-term operation and maintenance plan. Given the long-term stewardship requirement, implementation of Alternative 4 will not achieve the RAO of unrestricted Site use, as certain development restrictions (e.g., cap maintenance and limitations regarding subsurface intrusion) would be in place. Additionally, Alternative 4 will not satisfy the RAO of removing the COPCs from the Site and is, therefore, not anticipated to be accepted by both the State and the community.

Only Alternative 2 satisfies the evaluation criteria and meets the RAOs for the Site. It is easily implementable with conventional grading equipment and likely to obtain regulatory and community approval.

5.0 REMOVAL ACTION IMPLEMENTATION PLAN

Implementation of the removal action consists of a series of separate tasks. The following sections discuss each task, including selecting excavation locations (Section 5.1); permits and site preparation (Section 5.2); and excavation and backfilling methodology (Section 5.3).

5.1 Selecting Excavation Locations

Based on the analytical laboratory results for soil samples collected during Site characterization activities in 2022 and 2024 (Section 2.0), impacts to soil at the Site extend to depths of up to 5.5 feet bgs. To remediate the Site to unrestricted use soil will be excavated in each cell to a depth corresponding to the deepest sample within the cell exhibiting COPC concentrations below cleanup goals. Therefore, soil confirmation sampling will not be necessary, with the exception of mercury confirmation sampling in grid cells P3-B7 and P3-B8 at Parcel 3. For example, in cell B2 on Parcel 1 (P1-B2), concentrations of one or more COPC exceeded cleanup goals in the sample collected at 2.0 feet bgs, but the sample collected at 3.0 feet bgs did not contain COPC concentrations exceeding cleanup goals. Therefore, soil within cell B2 on Parcel 1 will be excavated to a depth of 3 feet bgs. The COPC driving the excavation at each grid cell is presented on Figures 3b through 3c for Parcel 1, Figures 4b through 4c for Parcel 2, Figures 5b through 5d for Parcel 3, and Figures 6b through 6c for Parcel 4. The depth each grid cell will be excavated to remove detected COPCs in exceedance of the cleanup goal is presented in Figures 3a, 4a, 5a, and 6a. The excavation area would include the area currently owned by the City and the area that will be deeded to the City after the lot line adjustments. The areas to be deeded to the City will be excavated to the same depth as the adjacent on-Site cell as shown on Figures 4a and 6a.

Based on the April 2025 revised DTSC-SL for mercury, the vertical extent of mercury has not been delineated in grid cells P3-B7 and P3-B8, however, the excavation depth in these cells will extend beyond the mercury exceedance based on concentrations of other COPCs. To confirm removal of mercury exceeding cleanup goals, one confirmation bottom confirmation soil sample will be collected from each of these grid cells for mercury analysis. Mercury concentrations in the additional soil samples will be evaluated by comparison to the residential DTSC-SL (0.67 mg/kg). If mercury is reported at concentrations exceeding the residential DTSC-SL, additional soil excavation and confirmation sampling will be performed in coordination with DTSC.

The total estimated volume of soil requiring removal to achieve the RAOs is approximately 4,640 cubic yards or 6,495 tons. Excavated soil is likely to primarily be classified as non-hazardous for disposal purposes.

5.2 Permitting and Site Preparation

Prior to beginning excavation activities, the following preparation activities will be undertaken:

5.2.1 Engineering Permit

An engineering permit (or exemption) is required for work in the right-of-way in the City of Berkeley. Contractor will be responsible for obtaining an Engineering Permit, if necessary.

5.2.2 Construction General Permit (CGP) for Stormwater Runoff

The soil removal activities will disturb more than 1 acre of land. Accordingly, these activities are subject to the State Water Resources Control Board Water Quality Order 2022-0057-DWQ for the National Pollutant Discharge Elimination System (NPDES) Discharges of Storm Water Associated with Construction Activity (Construction General Permit). The contractor will make the appropriate notifications for the remediation work and prepare a storm water pollution prevention plan (SWPPP) that outlines best management practices (BMPs) related to Site grading and soil removal activities.

5.2.3 Shoring Plan and Building Permit

Soil at 19 grid cells within Parcels 1, 2 and 3 requires removal to depths of 5 feet bgs or greater (see Figure 3a, 4a, and 5a). These grid cells will require an excavation support system, such as soldier-piles and lagging, to prevent impacting adjoining properties. The selected contractor will be required to submit a shoring plan to the City prior to commencing work. The shoring plan will be submitted to the DTSC for review. Upon approval of the shoring plan submittal, the contractor shall be responsible for obtaining the necessary City Building Permit.

5.2.4 Pre-excavation Site Preparation

Prior to excavation activities, all existing trees will be removed from the Site, including two coast live oak trees located along Parcel 3. While coast live oak trees are protected tree species in the City of Berkeley, the City Arborist reviewed the excavation extents required for remediation and concluded the excavation would cause extreme stress to the trees and would be a public safety hazard. As such, the City will be moving forward with the City Arborist's recommendation to remove all trees prior to excavation. Additionally, one detached garage and a small shed that encroach on the Site will be demolished. Proposed excavation activity on Site is expected to extend to a depth of up to 6 feet bgs in some areas. In order to avoid encountering utilities during excavation activities, Underground Service Alert (USA) North will be notified a minimum of 72 hours prior to any subsurface disturbance activity on the Site. Overhead utility lines, if any, will be identified and avoided during the investigation.

The excavation areal extents will be staked and surveyed by a licensed surveyor. Areas where deeper excavation is planned will be identified with color-coded flagging tape and with x and y coordinates; these coordinates will be correlated with GPS equipment so that the deeper excavation areas can be readily identified during the soil removal activities.

Prior to commencing shoring installation or excavation activities, the City will conduct inspections of neighboring structures near the excavation limits to document pre-construction conditions. The City will notify DTSC at least 5 days in advance of the pre-construction inspection so that DTSC staff may be present at their discretion.

5.3 Excavation and Backfilling Methodology

5.3.1 Soil Excavation

Excavation work will be conducted by a licensed grading contractor with current hazardous material certifications. Sitework will be conducted on weekdays between 7:00AM and 5:00PM, unless otherwise required by a permit. It is anticipated that excavations at most grid cells can be accomplished using open-cut methods, however open cut methods are locally infeasible at 19 grid cells (including partial cells) (Section 4.1.2). Excavations at these locations can be accomplished using limited excavation support systems, such as soldier-piles and lagging.

Soil will be excavated in each cell to a depth corresponding to the deepest sample within the cell exhibiting COPC concentrations below cleanup goals based on the investigation conducted to date. Therefore, soil confirmation sampling will not be conducted. Previous site results will remain representative at the end of excavation activities because no earthmoving that would change the depth or re-distribute contamination will be performed and this will be verified by field personnel prior to backfilling.

Soil will only be excavated beyond the planned limits if unanticipated conditions, such as identification of stained soil, soil with strong or noticeably pungent odor, or buried railroad or other metallic debris are encountered. If unanticipated soil conditions are encountered, DTSC will be notified. Based on the nature of the unanticipated condition observed, additional soil removal may be conducted and confirmation samples will be collected. If unanticipated conditions are encountered, field staff will use an X-Ray Fluorescence (XRF) analyzer to measure estimated metals concentrations via in-situ soil measurements to inform the extent of over excavation with respect to metal-impacted soil. The number and confirmatory soil grab samples and specific laboratory analyses required will be based on the nature of the observed conditions with concurrence from DTSC. Finally, bottom soil samples will be collected at cells P3-B7 and P3-B8, and analyzed for mercury. The residential DTSC-SL for mercury was lowered from 1 to 0.67 mg/kg in April 2025 (DTSC, 2025), and additional soil data is needed to delineate mercury concentrations vertically in soil at these cells. Previously, mercury was reported in the deepest soil sample analyzed for mercury at these cells at concentrations between 0.67 and 1 mg/kg.

The excavations will not extend below the groundwater table. Therefore, temporary dewatering and associated groundwater disposal will not be required as part of the work. Surface water runoff, if any, will be handled in accordance with the Construction General Permit.

The COPC-impacted soils will be managed in accordance with all applicable provisions of the State of California and/or federal law (Table 6). For example, excavation of soil will require dust control measures in accordance with California Division of Occupational Safety and Health (Cal OSHA) and the Bay Area Air Quality Management District (BAAQMD) requirements.

Due to space limitations, it is anticipated that soil will be pre-characterized for waste disposal purposes and directly loaded into trucks for off-Site transport and disposal during excavation activities. Once a contractor and potential landfill have been selected, the City will work with them to determine waste profiling requirements. If the existing data is not sufficient for profiling purposes, a soil boring program will be conducted to collect additional soil samples at the Site. The City will work with the contractor and selected landfill to determine the required analyses and sample frequency required for waste profiling. At a minimum, soil samples will be analyzed for Title 22 metals and PAHs for waste characterization purposes.

If it is necessary to temporarily stockpile soil during excavation activities, all stockpiled soil will be placed on plastic sheeting and appropriately bermed in accordance with BMPs described in the Construction General Permit. Stockpiled soil will be covered at the end of each workday or in the event of rain. However, the method of covering will be determined based on the anticipated time that the stockpiles will be left in place, weather conditions, regulatory requirements (i.e., BMPs and SWPPP provisions), and other practical factors such as the size of the stockpiles. The stockpiled soil will be fenced or otherwise secured.

5.3.2 Backfilling

It is anticipated that quarry-sourced fill material will be imported to the Site to backfill excavations. Soil import will meet the minimum requirements for soil sampling and analysis as designated by the DTSC in its advisory for import of clean fill material (DTSC, 2001) to avoid the placement of

chemically impacted soil on Site. The analytical list for clean import fill will be based on the fill source site history.

Potential import soil analytical results will be evaluated by comparison to DTSC-SLs as presented in HHRA Note 3. For constituents that are not listed in HHRA Note 3, the analytical results were compared to the RSLs published by the USEPA, Region 9, for residential soil. Arsenic concentrations in import soil will be evaluated by comparison to the Site-specific background concentrations of 11 mg/kg. Import soil analytical results will be provided to DTSC for approval prior to placing soil on Site. Information such as the source(s) of import fill and any laboratory analytical reports for import fill will be included in a Removal Action Completion Report.

5.3.3 Dust Control

When earthwork activities occur, dust control measures will be implemented to minimize dust generation. General dust control measures recommended by the Bay Area Air Quality Management District include, but are not limited to:

- Application of water as needed to maintain soil moisture and minimize dust generation daily;
- For trucks hauling impacted soil within the Site, cover the soil or maintain at least 2 feet of freeboard;
- Limit vehicle speeds to 15 miles per hour on unpaved portions of the Site;
- Minimize drop heights while loading transportation vehicles; and
- Cover exposed soil or stockpiles and secure with temporary fencing or other means.

Air monitoring will be conducted according to the Community Air Monitoring Plan (CAMP) described in Section 5.3.5.

5.3.4 Decontamination of Off-Haul Vehicles and Equipment Cleaning

Track out of soil from the Site will be prohibited. Soil or other materials adhered to the vehicles will be removed via brushing or washing before exiting the Site. Water generated from the cleaning processes will be collected and contained on the Site. Sampling may be needed prior to disposal in compliance with any receiving facility requirements or sewer discharge permit(s). Sampling and compliance will be performed by the contractor.

5.3.5 Community Air Monitoring Plan (CAMP)

A CAMP is required at response sites under DTSC's oversight whenever remediation or removal activities may release compounds of concern (COCs) into the air (DTSC, 2020). A CAMP describes air monitoring protocols that must be performed during soil activities when fugitive emissions could be released. These protocols are designed to protect the community and ensure that Site workers react quickly to make appropriate changes to emission control measures, as needed. The CAMP for the Site is presented below and generally follows the DTSC CAMP Guidance (DTSC, 2020).

5.3.5.1 Monitoring Objective and Scope

Fugitive emissions may contain COPCs. The objective of the CAMP is to protect community health and ensure compliance with regulatory standards by minimizing the amount of fugitive emissions (i.e. dust) released during the removal action.

5.3.5.2 Monitoring Program, Location, and Equipment

Continuous real-time perimeter air monitoring data for dust using direct-reading instruments will be conducted during removal of impacted soil. The direct-reading instruments will be battery-powered so there are no added emissions from the monitoring program. The dust monitoring locations will be established each day that soil activities are to be performed, and monitors will be placed at or near the property line in the daily work area. At least one upwind and two downwind sampling stations will be set up at the Site for continuous perimeter dust monitoring at the daily work area. A meteorological station will also be set up at the Site to document wind direction and speed during the duration of excavation activities.

The site operator will utilize National Weather Service forecasts and review current conditions and recent trends from the on-site meteorological station to position the air monitoring equipment each morning prior to the start of any demolition or excavation activities. The upwind and downwind monitoring locations may be moved during the workday when wind direction or the work location changes. The downwind measurements will be compared to the upwind measurements to determine if on-Site soil activities are contributing to community exposure.

The Site is in a residential area and sensitive receptors in the vicinity of the Site include adjoining and nearby residences. Additional sensitive receptors identified within 0.25 miles of the Site include five daycares, a martial arts school, and a park. The anticipated placement of the upwind and downwind sampling stations relative to these sensitive receptors and the prevailing wind direction is provided on Figure 8.

At each air monitoring station, dust monitoring devices will be set with the air intake set to approximately 4 to 5 feet off the ground to monitor air representative of the breathing zone. Monitoring locations will be recorded in field notes and on-Site plans. Air monitoring will be conducted using direct-reading instruments (e.g., a TSI DustTrak or similar) for measurement of total dust. Electronic data logs of real-time measurements will be used to determine the maximum and average dust concentrations at upwind and downwind perimeter monitoring locations.

5.3.5.3 Action Levels and Response Protocols

Action levels for dust in perimeter air will be used to determine when to employ additional dust control methods or stop work based on the real-time perimeter monitoring data. DTSC-SLs for residential air for non-cancer health effects were selected to develop chemical-specific dust action levels. If a DTSC-SL was not available, the USEPA RSLs for non-cancer health effects (USEPA, 2024) were used. Resident air cancer endpoint DTSC-SLs and USEPA RSLs are only applicable to long-term (i.e., chronic) potential exposures and are not appropriate for short-term (i.e., acute and sub-acute) potential exposure. The chemical-specific dust action levels were derived using the maximum detected concentration in soil and RSL as follows:

$$Dust\ Action\ Level\ \left(\frac{mg}{m^3}\right) = \frac{Chemical\ Specific\ Action\ Level\ \left(\frac{mg}{m^3}\right) \times 10^6 \left(\frac{mg}{kg}\right) \times Exposure\ Adjustment\ Factor}{Maximum\ Soil\ Concentration\ \left(\frac{mg}{kg}\right)}$$

The resulting chemical-specific dust action levels are presented in Table 8. The chemical-specific dust action levels conservatively represent the concentration of dust that is equivalent to the chemical-specific screening level, if the dust contained the highest concentration of that chemical previously detected in soil samples collected at the Site. Thus, the chemical-specific dust action levels are protective of potential exposures to dust associated with the planned soil remediation. In addition, the California Air Resources Board (CARB) specifies an ambient air quality standard of 0.05 milligrams per cubic meter (mg/m^3) for a 24-hour period for particulate matter with a

diameter of less than 10 micrometers (PM_{10}; CARB, 2023). As presented in Table 8, the CARB ambient air quality standard of 0.05 mg/m^3 is at least an order of magnitude more conservative (i.e., lower) than each chemical-specific dust action level. Therefore, the CARB ambient air quality standard is protective of human health and is selected as the action level for perimeter dust monitoring.

If this action level is exceeded, additional engineering controls will be implemented according to the following response protocol to further reduce dust concentrations:

- Increased dust control measures will commence, including the application of additional water to maintain soil moisture and minimize dust generation. Water will be applied to excavator buckets and excavation surfaces during excavation and dumping.
- Stop specific dust-generating activities until wind directions and/or wind speeds are more conducive to reduced dust levels. This may include stopping vehicle traffic on Site, stopping loading, or stopping excavation activities, as needed.
- Temporary Site-wide work stoppage to identify and rectify the source of the dust generation or wait for wind speeds to reduce.

Work will be stopped if engineering controls cannot limit dust emissions to acceptable levels. Finally, no visible dust should be observed leaving the Site. If visible dust is observed leaving the Site, the response protocol described above will be employed immediately to reduce dust emissions. If, after monitoring for 2 weeks, no dust action levels are exceeded, the Consultant in consultation with the Owner and the DTSC may elect to discontinue the air monitoring program.

Chemical-specific action levels for dust in work zone air also were developed using Permissible Exposure Limits (PEL) published by the California Division of Occupational Safety and Health (Cal-OSHA; 2019). The resulting chemical-specific, work zone action levels are presented in Table 9. As presented in Table 9, the PEL for the respirable fraction of particulates (5 mg/m^3) is more conservative (i.e., lower) than every chemical-specific action levels for work zone air.

5.3.5.4 Data Management and Documentation

Electronic data logs of real-time measurements will be used to determine the maximum and average dust concentrations at upwind and downwind perimeter monitoring locations.

Periodic reports which summarize the daily air monitoring results and include meteorological data summaries (wind speed and direction, ext.) will be submitted to the DTSC project manager for review. These reports will include a summary of the 15-minute running average air monitoring results for each air monitoring location and instrument and the 15-minute block average meteorological data.

If the action level is exceeded the DTSC project manager for the Site will be notified via email immediately. Information provided via email will include the monitoring threshold and 15-minute and hourly data collected during the period of elevated dust concentrations. The email report will also describe on-Site activities and unusual off-Site activities which occurred during the time the action level was exceeded. The email report will note any corrective actions taken to mitigate the release and any proposed changes to operating procedures to prevent future releases.

A project summary report of the data provided in all periodic reports will be submitted to DTSC approximately 30 days after the end of project activities. The project summary report will contain the following information in electronic format:

- A report narrative

- All air monitoring data, in electronic format, for the full project
- Calculated percentage data recovery for all parameters monitored
- A summary of exceedances over the action level and of the maximum and average daily values for PM10 at each air monitoring location
- All meteorological data, in electronic format, for both 15-minute and one-hour intervals, for the full project
- A wind rose chart of wind speed and direction, by stability class, for the entire project

5.3.5.5 Quality Assurance/Quality Control Requirements

Quality assurance and quality control measures will be implemented to ensure the data collected under the CAMP is reliable and will include the following critical features:

- Periodic instrument calibration and daily instrument performance checks: Instrument calibration will be performed in accordance with the manufacturer's instructions at the beginning of each workday. All instrument calibration and maintenance activities, as well as calibration results, will be documented in the field logs.
- Operator training: All persons responsible for calibrating, handling, or interpreting the air monitoring meters or meter/sampling output data will have sufficient prior experience with such work.

5.3.6 Field Variances

Variances from the RAW will be discussed with DTSC prior to any action being taken except for emergencies (when an immediate response is required). The DTSC will be notified if an emergency response is implemented. The field variances will be documented in the Removal Action Completion Report prepared for the project.

6.0 TRANSPORTATION PLAN

The purpose of the transportation plan is to minimize potential health safety, and environmental risks resulting from the movement of material and/or equipment during Site remediation. The Transportation Plan for the Site is presented below and follows the DTSC Transportation Plan Guidance (DTSC, 1994).

6.1 Waste Characterization and Hazardous Waste Management

Waste characterization and hazardous waste management are discussed in Section 5.3.1.

6.2 Characteristic and Destination of Soil to be Transported

Elevated levels of arsenic, lead, mercury, and PAHs have been detected in Site soil. Based on the available data, the excavated soil is anticipated to be categorized as RCRA hazardous waste, non-RCRA California hazardous waste, and/or non-hazardous waste.

If waste characterization sampling indicates that waste soil is RCRA hazardous waste or non-RCRA California hazardous waste, the City of Berkeley will secure an EPA Identification Number from DTSC for proper management of the hazardous waste. The DTSC requirements regarding hazardous waste generation, temporary on-Site storage, transportation, and disposal will be followed. Any shipment of hazardous waste in California will be transported by a registered hazardous waste hauler under a uniform hazardous waste manifest. Land ban requirements

will also be followed, as necessary. Any shipment of non-hazardous waste in California will be transported under a non-hazardous waste manifest or bill-of-lading.

Soil classified as non-hazardous waste can be transported to a licensed Class II landfill. Soil classified as non-hazardous waste will be transported to a Class II landfill facility. Vasco Road Landfill or Altamont Landfill, located at the following addresses, are examples of nearby Class II landfills:

Vasco Road Sanitary Landfill Republic Services of California I, LLC
4001 Vasco Road
Livermore, CA 94550
EPA ID#: FRS 110009544671
Telephone: (925) 447-0491

Altamont Landfill & Resource Recovery
10840 Altamont Pass Road
Livermore CA, 94550
EPA ID #: FRS 110000831404
Telephone: (925) 449-6349

Soil classified as non-RCRA California hazardous waste or RCRA hazardous waste will likely be transported to one of the following Class I facilities:

Waste Management Inc. - Kettleman 35251 Old Skyline Road
Kettleman City, California 93239
EPA ID #CAT00064611
Telephone: (866) 909-4458

Clean Harbors Buttonwillow, LLC
2500 W Lokern Road
Buttonwillow, California 93206
EPA ID # FRC 110000500912
Telephone: (661)-762-6200

The disposal facility will be selected by the City based on the waste characterization results. Soil will be disposed of under waste manifest at the selected facility to ensure the safe and legal transportation and disposal of hazardous materials from the point of generation to the final disposal facility. The final disposition of the soil will be reported in a Removal Action Completion Report (Task 9 of the VCA; DTSC, 2023) which will include waste manifests and disposal tickets.

6.3 Transportation Mode

It is anticipated that work will require approximately 3 to 5 weeks for completion. Up to 4,640 cubic yards (6,495 tons) of soil will be removed from the Site. Assuming each truck carries 18 tons, up to 357 truckloads will be required to transport the impacted soil. All permitted disposal facilities operate a certified weight station at their facility. As such, each truck will be weighed before offloading its payload. Weight tickets or bills of lading will be provided by the removal action subcontractor after all the soil has been shipped off Site. Truck routes will be approved by the City of Berkeley prior to work activities, as necessary.

Before leaving the site, each truck driver will be instructed to notify the Site manager. Each truck driver will be provided with a Uniform Hazardous Waste Manifest, Non-Hazardous Waste Manifest, or bill-of-lading, and the cellular phone number for the Site manager. It will be the responsibility of the Site manager to notify DTSC and the City of Berkeley of any unforeseen incidents. Each truck driver will be instructed to use a cellular telephone, and/or their radio dispatch system to call for roadside assistance, if needed, and report roadside emergencies.

6.4 Truck Route

A primary and alternate truck route plan from the Site to Ashby Avenue (Highway 13) are included in Figures 9a and 9b. The direction travelled once trucks reach Highway 13 will be dependent on the selected disposal facility. The truck route was selected in coordination with the City to minimize

impacts on local traffic and sensitive receptors (e.g., schools, residential areas). Note that Longfellow Middle School located at 1500 Derby Street is currently closed for construction and will not reopen until at least July 2026. The City anticipates remediation to occur before Longfellow Middle School plans to reopen at their 1500 Derby Street site. The removal action subcontractor will coordinate with local authorities to ensure compliance with traffic regulations.

6.5 Site Traffic Control

During soil transport activities, trucks will enter the Site via the road designated by the Site manager. The roads used for soil transport activities will vary based on which parcel soil is being excavated from and which road is nearest to the active work area. A flag person will be located at the site to assist the truck drivers to safely enter the Site. A Site trucking coordinator will be designated to maintain communication with on-Site trucks and coordinate transportation. In addition, all vehicles will be required to maintain slow speeds (i.e., less than 5 mph) for safety and for dust control purposes.

Prior to exiting the Site, vehicles will be swept to remove any extra soil from areas not covered or protected. Prior to the off-Site transport, the Site manager will be responsible for inspecting each truck to ensure that the payloads are adequately covered, the trucks are cleaned of excess soil and properly placarded, and that the truck's manifest has been completed and signed by the generator (or its agent) and the transporter. As the trucks leave the Site, the flag person will assist the truck drivers so that they can safely merge with traffic.

6.6 Spill Prevention and Emergency Response

As required by the DTSC Transportation Plan Guidance, the removal action contractor will provide training for drivers and site personnel on spill response procedures. The removal action contractor will ensure that all trucks carrying hazardous waste are equipped with spill kits and that drivers are trained in spill containment and cleanup. A Spill Prevention and Emergency Response Plan will be developed by the removal action contractor prior to conducting soil remediation activities at the Site.

6.7 Record Keeping

The removal action contractor will be responsible for maintaining a field logbook, which will serve to document observations, personnel on site, equipment arrival and departure times, and other important project information. Logbook entries will be complete and accurate enough to allow reconstruction of field activities. Logbooks will be bound, with consecutively numbered pages and each page will indicate the date and time of the entry. All entries will be legible, written in black or blue ink, and signed by the author. Language will be factual and objective. 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.

Because some portion of the excavated soil may be profiled as hazardous waste under California or EPA regulations, the Uniform Hazardous Waste Manifest (hazardous waste manifest) form will be used to track the movement of soil from the point of generation to the point of ultimate disposition. The hazardous waste manifests, if any, will include the following information:

- Name and address of the generator, transporter, and the destination facility
- United States Department of Transportation description of the waste being transported and any associated hazards
- Waste quantity

- Name and phone number of a contact in case of an emergency
- EPA Hazardous Waste Generator Number
- Other information required either by the EPA and/or the DTSC

Any soil that is profiled as non-hazardous and sent off site for disposal will be documented using a Non-Hazardous Waste Manifest or Bill-of-Lading form. At a minimum, this form will include the following information:

- Generator name and address
- Transportation company
- Accepting facility name and address
- Waste shipping name and description
- Quantity shipped

Prior to transporting the excavated soil off-Site, an authorized representative of the City of Berkeley will sign each hazardous and/or non-hazardous waste manifest. The removal action site manager will maintain one copy of all hazardous and/or non-hazardous waste manifests on site. All waste manifests, weight tickets, and analytical reports will be maintained and available for inspection by DTSC.

7.0 CULTURAL AND TRIBAL CULTURAL RESOURCES

Ground disturbing activities could potentially uncover previously unknown cultural resources or Tribal Cultural Resources (TCRs). The possibility of encountering human remains, though unlikely, cannot be entirely ruled out. DTSC staff from the Environmental Justice and Tribal Affairs office should be notified immediately in the event of any inadvertent discoveries of either potential cultural (archaeological) resources, Tribal Cultural Resources, or human remains.

During the environmental review process, DTSC completed a record search at Northwest Information Center (NWIC) of the California Historical Resources Information System. Results were completed on July 16, 2025 (NWIC File #: 24-1998). The review included the project area and a ¼-mile radius. Previous studies were accessed. The purpose of the record search was to determine whether known cultural resources have been previously recorded within the vicinity and assess the likelihood of unrecorded cultural resources to be present based on historical references and the distribution of nearby sites.

DTSC's Environmental Justice and Tribal Affairs Manager contacted the State of California's Native American Heritage Commission (NAHC) to conduct a search of the Sacred Land File (SLF) and to obtain a list of Native American Tribes (Tribes) who may have knowledge of cultural resources within the project area. The results of the SLF were positive. Tribal outreach letters were emailed to several Tribal groups. Several respondents asked for more information about the project. Consultations are ongoing. If a Tribal Cultural Monitor is needed to monitor ground disturbing activities, one will be retained by the contractor prior to ground disturbing activities. DTSC will provide the Tribe with contact information of the party that will set up a payment contract with the Tribe. DTSC will provide fieldwork dates for ground disturbing activities at least 14 days in advance to allow for logistical planning.

7.1 Inadvertent Discovery of Archeaological Resources and Tribal Cultural Resources

If suspected archaeological resources or Tribal Cultural Resources are encountered, all ground disturbing activities within 100 feet shall halt and the City of Berkeley, DTSC, and representatives from California Native American Tribes consulting on this project shall be notified.

An archaeologist who meets the Secretary of the Interior (SOI) Professional Qualification Standards for Archaeology or is a Registered Professional Archaeology (RPA) shall inspect the findings within 24 hours of discovery. The archaeologist will stake the area of discovery, placing stakes no more than 10 feet apart, forming a circle having a radius of no less than 100 feet from the point of discovery. If it is determined that the project could damage a Tribal Cultural Resource, a historical resource, a unique archaeological resource (as defined pursuant to the CEQA Guidelines), mitigation shall be implemented in accordance with California Public Resources Code (PRC) Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist shall reference the detailed treatment plan that was created prior to ground-disturbing activities, in consultation with the City of Berkeley and representatives from California Native American Tribes consulting on this project.

Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of (but would not be limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the project.

Treatment of Tribal Cultural Resources should include input from representatives of California Native American Tribes consulting on this project. Treatment of TCRs may include, but are not limited to, protecting the cultural character and integrity of the resource, protecting traditional use of the resources, protecting the confidentiality of the resources or heritage recovery.

The treatment plan shall include provisions for Tribal consultation, analysis of data in a regional context, and reporting of results within a timely manner. Any documentation and recordation of archaeological resources shall be submitted to the Northwest Information Center (NWIC).

7.2 Inadvertent Discovery of Human Remains

If human remains are encountered, all ground disturbing activities within 100 feet of the find shall halt, and the Alameda County Coroner and DTSC shall be notified immediately. Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined whether or not the remains are subject to the coroner's authority. A qualified archaeologist shall also be contacted to evaluate the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. Pursuant to Section 5097.98 of the Public Resources Code, the Native American Heritage Commission will identify a Native American Most Likely Descendent (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated funerary objects.

There shall be no pictures taken or testing done on the Native American human remains. All bone, if not identifiable as human or animal, shall be treated as human remains and the appropriate protocols followed.

The archaeologist may recover scientifically valuable information, as appropriate and in accordance with the recommendations of the MLD and/or Tribal representatives. Upon completion of the archaeologist's assessment, a report should be prepared documenting methods and results, as well as recommendations regarding the treatment of the human remains and any associated archaeological material. The reports should be submitted to the City of Berkeley, DTSC, the NWIC, and representatives from the consulting Tribes. Tribal representatives will rebury the Native American human remains and associated funerary objects with the appropriate dignity either in accordance with the recommendations of the MLD, if available, or in the project vicinity at a location agreed upon between the Tribes and the consultant, where the reburial would be accessible to Tribal members in perpetuity and would not be subject to further disturbance. The discovery and reburial is to be kept confidential and secure to prevent any further disturbance.

8.0 HEALTH AND SAFETY PLAN

All contractors will be responsible for operating in accordance with the most current requirements of State and Federal Standards for Hazardous Waste Operations and Emergency Response (Cal. Code Regs., tit. 8, section 5192; 29 CFR 1910.120). Onsite personnel are responsible for operating in accordance with all applicable regulations of the Occupational Safety and Health Administration (OSHA) outlined in the State General Industry and Construction Safety Orders (Cal. Code Regs., tit. 8) and Federal Construction Industry Standards (29 CFR 1910 and 29 CFR 1926), as well as other applicable federal, state and local laws and regulations. All personnel shall operate in compliance with all Cal OSHA requirements. In addition, Cal OSHA's Construction Safety Orders (especially Cal. Code Regs., tit. 8, sections 1539 and 1541) will be followed.

A Site-Specific Health and Safety Plan (HASP) is included in Appendix E. The HASP specifies minimum health and safety protocol to be followed during implementation of project work by all site personnel under the direction of the City, including employees, contractors, and subcontractors. All personnel are required to comply with this HASP

The provisions of the HASP are mandatory for all personnel at the Site. The contractor and its subcontractors doing fieldwork in association with this RAW will either adopt and abide by the HASP or shall develop their own safety plans which, at a minimum, meet the requirements of the HASP. All onsite personnel shall read the HASP and sign the "Plan Acceptance Form" before starting Site activities.

9.0 PUBLIC PARTICIPATION

The public participation requirements for the RAW process include: (1) the development of a community profile, (2) publishing a notice of the availability of the Removal Action Workplan for public review and comment, (3) making the RAW and other supporting documents available at DTSC's office and in the local information repository, and (4) responding to public comments received on the Removal Action Workplan and CEQA documents. In accordance with the community profile prepared for this site, the following additional activities were conducted:

- A community update was sent out to the site mailing list describing the site and the proposed removal action on August 13, 2025.

- A notice of the availability of the Removal Action Work Plan for public review and comment was published in the Berkeley Voice section of the East Bay Times and the Mercury News and Vision Hispana newspapers on August 15, 2025.
- Site documents were made available in electronic format on DTSC's publicly accessible EnviroStor database.
- Site documents were made available in hard copy format at the DTSC Sacramento Regional Office and Berkeley Public Library – Tarea Hall Pittman South Branch.

The length of the public review and comment period was 30 days (August 18, 2025 to September 16, 2025). An administrative record is included in Appendix F. All of the documents listed in the administrative record were made available for public review.

Once the public comment period was completed, DTSC reviewed and responded to the comments received in a letter dated October 28, 2025. The RAW has been revised, as necessary, to address the comments received. Significant changes to the RAW were not required, therefore, additional public review and comment is not required.

DTSC approval is expected by the end of October 2025. This will allow for contractor bid solicitation and selection by February 2026 and initiation of remediation activities Spring 2026.

10.0 CEQA DOCUMENTATION

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 project is a project that has a potential for resulting in a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. CEQA applies to all discretionary projects proposed to be carried out or approved by California public agencies, unless an exemption applies.

As part of the grant application process for the park project, the City of Berkeley previously filed a CEQA Notice of Exemption encompassing development of the proposed park facilities. For the site remediation activities covered by the RAW, DTSC (acting as the CEQA lead agency) has prepared a Notice of Exemption pursuant to Section 15061(b)(3). As part of this determination, GSI performed emissions modeling using the California Emissions Estimator Model (CalEEMod), the results of which are presented in Appendix G. Upon approval of the RAW, the Notice of Exemption will be filed with the Office of Land Use and Climate Innovation's CEQA State Clearinghouse.

.

11.0 REFERENCES

Agency for Toxic Substances and Disease Registry (ATSDR), 2021, Hexachlorocyclohexane (HCH). Available online at https://wwwn.cdc.gov/tsp/substances/ToxSubstance.aspx?toxid=138.

California Air Resources Control Board (CARB), 2023. Particulate Matter and Health Fact Sheet, March.

California Department of Toxic Substances Control (DTSC), 1998, Memorandum: Removal Action
Workplans (RAWs), September 23.

California Division of Occupational Safety and Health (Cal/OSHA), 2019. Table AC-1, Permissible Exposure Limits (PELs), in California Code of Regulations (CCR) Title 8 Section 5155. October 2.

Department of Toxic Substances Control (DTSC), 1994, Transportation Plan Preparation Guidance for Site Remediation, May.

DTSC, 2025, Responsiveness Summary for Public Comments Received on the Draft Removal Action Workplan (RAW), Santa Fe Trackbed to Park, Berkeley, Alameda County, CA, October 28.

Diamond, D., Baskin, D., Brown, D., Lund, L., Najita, J., and Javandel, I, 2009, Analysis of Background Distributions of Metals in the Soil at Lawrence Berkeley National Laboratory, April.

Duvergé, D. J., 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.

DTSC, 2001, Information Advisory: Clean Imported Fill Material, October.

DTSC, 2008, Removal Action Workplan DTSC Guidance Template, February 13.

DTSC, 2009, Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process, July 1.

DTSC, 2015, Preliminary Endangerment Assessment Guidance Manual, October.

DTSC, 2019a, Human Health Risk Assessment Note 1, Default Human Health Exposure Factors, April.

DTSC, 2019b, Human Health Risk Assessment Note 10, Toxicity Criteria, February 25.

DTSC, 2020, Community Air Monitoring Plan Guidance, January.

DTSC, 2022, Human Health Risk Assessment Note 4, Guidance for Screening Level Human Health Risk Assessments, March 29.

DTSC, 2025, Human Health Risk Assessment Note 3 – DTSC-Modified Screening Levels (DTSC SLs), April.

DTSC, 2023, Docket Number HAS-FY22/23-069 Standard Voluntary Agreement, March.

Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.

Environmental Protection Agency (EPA), 2024. Regional Screening Level (RSL) Resident Ambient Air Table (TR=1E-06, HQ=1). May.

GSI, 2022. Santa Fe Right-of-Way Phase II Environmental Site Assessment – Report of Findings. Historic Santa Fe Right-of-Way, Berkeley, California. November 22.

GSI, 2023. Additional Soil Sampling Work Plan. Santa Fe Trackbed to Park, Berkeley, California. December 7.

GSI, 2024a. Additional Soil Investigation Report. Santa Fe Trackbed to Park, Berkeley, California. June 21.

GSI, 2024b. Addendum to the Additional Soil Sampling Work Plan. Santa Fe Trackbed to Park, Berkeley, California. April 9.

GSI, 2024c. Final Additional Soil Investigation Report. Santa Fe Trackbed to Park, Berkeley, California. September 9.

United States Environmental Protection Agency (USEPA), 2002. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10. Washington, DC. December: U.S. Environmental Protection Agency Office of Emergency and Remedial Response. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100CYCE.PDF?Dockey=P100CYCE.PDF.

USEPA, 2024a, Regional Screening Level Calculator, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, May.

USEPA, 2024b, Regional Screening Levels Calculator, https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search, July 24.

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

TABLES

Table 1. Sampling and Analysis Summary
Table 2. Metals in Soil
Table 3. Polycyclic Aromatic Hydrocarbons in Soil
Table 4. Pesticides in Soil
Table 5. Total Petroleum Hydrocarbons in Soil
Table 6. Summary of ARARs and TBCs
Table 7. Cost Comparison of Removal Action Alternatives
Table 8. Action Levels for Dust in Ambient Air at The Site Perimeter
Table 9. Summary of Screening Levels for Dust in Work Zone Air

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
1	P1-A2	Grid Cell A2	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	DUP-01-01112024
1	P1-A3	Grid Cell A3	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A4	Grid Cell A4	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A5	Grid Cell A5	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A6	Grid Cell A6	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A7	Grid Cell A7 & Encroachment Area Sampling	0.5-1.0	X	--	--	X	X	X	X	--
			2.0-2.5	X	--	--	X	X	X	X	--
			3.5-4.0	NA	--	--	NA	NA	NA	NA	--
	P1-A7d		5.0-5.5	--	--	--	NA	NA	NA	NA	--
1	P1-A8	Grid Cell A8 & Encroachment Area Sampling	0.5-1.0	--	--	--	X	X	X	X	DUP-02-01112024
			2.0-2.5	--	--	--	X	X	X	X	--
			3.5-4.0	--	--	--	NA	NA	NA	NA	--
	P1-A8d		5.0-5.5	--	--	--	NA	NA	NA	NA	--
1	P1-A9	Grid Cell A9	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-A10	Grid Cell A10	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-B2	Grid Cell B2	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-B3	Grid Cell B3	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	NA	--	--	--	--	--	--	--
1	P1-B4	Grid Cell B4	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	X	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
1	P1-B5	Grid Cell B5	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	X	--	--	--	--	--	--	--
	P1-B5d		4.5-5.0	X	--	--	--	--	--	--	DUP-2-240419
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
1	P1-B6	Grid Cell B6	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
1	P1-B6	Grid Cell B6	3.5-4.0	X	--	--	--	--	--	--	--
	P1-B6d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
1	P1-B7	Grid Cell B7	1.5-2.0	X	--	--	--	--	--	--	--
			2.5-3.0	X	--	--	--	--	--	--	--
			3.5-4.0	X	--	--	--	--	--	--	--
2	P2-A4	Grid Cell A4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A5	Grid Cell A5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A6	Grid Cell A6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A7	Grid Cell A7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A8	Grid Cell A8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A9	Grid Cell A9	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
2	P2-A10	Grid Cell A10	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
2	P2-B1	Grid Cell B1	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B1d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-1d	Vertical Delineation (deeper sample depth at P2-1)	4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
2	P2-B3	Grid Cell B3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
2	P2-B4	Grid Cell B4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B4d		4.5-5.0	X	--	--	--	--	--	--	--
2	P2-B4d	Grid Cell B4	5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-B5	Grid Cell B5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
2	P2-B6	Grid Cell B6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	DUP-02-01082024
	P2-B6d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-B7	Grid Cell B7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B7d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-B8	Grid Cell B8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
2	P2-B9	Grid Cell B9	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B9d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
2	P2-B10	Grid Cell B10	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P2-B10d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-A1	Grid Cell A1	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	X	--	--	--	--	--
3	P3-A2	Grid Cell A2	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
3	P3-A3	Grid Cell A3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A4	Grid Cell A4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A5	Grid Cell A5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A6	Grid Cell A6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A7	Grid Cell A7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	DUP-02-01092024
3	P3-A8	Grid Cell A8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-A9	Grid Cell A9	1.5-2.0	X	X	X	--	--	--	--	DUP-03-01092024
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
3	P3-A10	Grid Cell A10	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
3	P3-B1	Grid Cell B1	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B1d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B2	Grid Cell B2	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	DUP-01-01092024
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B2d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B3	Grid Cell B3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B3d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B4	Grid Cell B4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	X	NA	--	--	--	--	--
	P3-B4d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B5	Grid Cell B5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B5d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
3	P3-B6	Grid Cell B6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B6d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B7	Grid Cell B7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B7d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B8	Grid Cell B8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	X	NA	--	--	--	--	--
	P3-B8d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-4d	Vertical Delineation (deeper sample depth at P3-4)	4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	X	--	--	--	--	--	--	--
			6.5-7.0	NA	--	--	--	--	--	--	--
3	P3-B9	Grid Cell B9	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
	P3-B9d		4.5-5.0	X	--	--	--	--	--	--	--
			5.5-6.0	NA	--	--	--	--	--	--	--
3	P3-B9d	Grid Cell B9	6.5-7.0	NA	--	--	--	--	--	--	--
			7.5-8.0	NA	--	--	--	--	--	--	--
			9.5-10.0	NA	--	--	--	--	--	--	--
3	P3-B10	Grid Cell B10	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
3	P3-T1	Characterization Near Protected Tree	0.5-1.0	X	X	X	--	--	--	X	DUP-3-240418
			1.0-1.5	X	NA	NA	--	--	--	NA	--
			1.5-2.0	X	NA	NA	--	--	--	NA	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
3	P3-T2	Characterization Near Protected Tree	0.5-1.0	X	X	X	--	--	--	X	--
			1.0-1.5	NA	NA	NA	--	--	--	NA	--
			1.5-2.0	NA	NA	NA	--	--	--	NA	--
3	P3-T3	Characterization Near Protected Tree	0.5-1.0	X	X	X	--	--	--	X	--
			1.0-1.5	NA	NA	NA	--	--	--	NA	--
			1.5-2.0	NA	NA	NA	--	--	--	NA	--
3	P3-T4	Characterization Near Protected Tree	0.5-1.0	X	X	X	--	--	--	X	--
			1.0-1.5	NA	X	NA	--	--	--	NA	--
			1.5-2.0	NA	X	NA	--	--	--	NA	--
4	P4-A1	Grid Cell A1	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A2	Grid Cell A2	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A3	Grid Cell A3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A4	Grid Cell A4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A5	Grid Cell A5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A6	Grid Cell A6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A7	Grid Cell A7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-A8	Grid Cell A8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	DUP-01-01122024
			3.5-4.0	X	NA	NA	--	--	--	--	--
4	P4-A9	Grid Cell A9; PAH Step-out sampling	1.5-2.0	X	X	X	--	--	--	X	--
			2.5-3.0	X	X	X	--	--	--	X	--
			3.5-4.0	NA	NA	NA	--	--	--	NA	--
4	P4-B2	Grid Cell B2	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	DUP-01-01102024
4	P4-B3	Grid Cell B3	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-B4	Grid Cell B4	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 1: SOIL SAMPLING AND ANALYSIS SUMMARY

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Sample ID	Description	Sample Depth (feet bgs)	Analytes and Analytical Methods							Duplicate Sample ID [1]
				Arsenic	Lead	Mercury	Title 22 Metals	OCPs	TPHd/ TPHmo	PAHs	
				EPA 6010B	EPA 6010B	EPA 7471A	EPA 6010B/7471A	EPA 8081A	EPA 8015M	EPA 8270C SIM	
4	P4-B5	Grid Cell B5	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	DUP-02-01102024
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-B6	Grid Cell B6	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	X	NA	NA	--	--	--	--	--
4	P4-B7	Grid Cell B7	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-B8	Grid Cell B8	1.5-2.0	X	X	X	--	--	--	--	--
			2.5-3.0	X	X	X	--	--	--	--	--
			3.5-4.0	NA	NA	NA	--	--	--	--	--
4	P4-B9	Grid Cell B9; PAH Step-out sampling	1.5-2.0	X	X	X	--	--	--	X	--
			2.5-3.0	X	X	X	--	--	--	X	--
			3.5-4.0	NA	NA	NA	--	--	--	NA	--
4	P4-B10	Grid Cell A10; PAH Step-out sampling	1.5-2.0	X	X	X	--	--	--	X	--
			2.5-3.0	X	X	X	--	--	--	X	--
			3.5-4.0	NA	NA	NA	--	--	--	NA	--

Notes:

1. Duplicate samples were analyzed for the same constituents as the primary sample.

Abbreviations:

bgs = Below ground surface
EPA = Environmental Protection Agency
ID = Identifier
NA = Sample was placed on hold and not analyzed
OCPs = Organochlorine pesticides
PAHs = Polycyclic aromatic hydrocarbons
SIM = Selective ion monitoring
TPHd = Total petroleum hydrocarbons quantified as diesel
TPHmo = Total petroleum hydrocarbons quantified as motor oil
X = Sample was analyzed
-- = Not applicable

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
	2022 Soil Investigation																				
	P1-1	P1-1-1.0	7/13/2022	1.0	**0.91**	**9.3**	**180**	**0.56**	<0.50	**62**	**15**	**37**	**34**	**0.30**	**0.78**	**57**	**1.2**	<0.50	<0.50	**72**	**100**
		P1-1-2.5	7/13/2022	2.5	<0.5	**8.4**	**200**	**0.65**	<0.5	**69**	**17**	**33**	**9**	<0.050	**0.9**	**67**	**1.3**	<0.5	<0.5	**74**	**72**
		P1-1-4.0	7/13/2022	4.0	<0.5	**6.1**	**180**	**0.63**	<0.5	**70**	**12**	**29**	**6.8**	<0.050	<0.5	**58**	**1.2**	<0.5	<0.5	**71**	**59**
	P1-2	P1-2-1.0	7/13/2022	1.0	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-2-2.5	7/13/2022	2.5	**1.3**	**12**	**300**	**0.73**	<0.5	**37**	**16**	**28**	**13**	**0.079**	**1.3**	**53**	**1.3**	<0.5	<0.5	**40**	**66**
		P1-2-4.0	7/13/2022	4.0	--	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-3	P1-3-1.0	7/13/2022	1.0	**2.7**	**83**	**190**	**0.5**	<0.5	**33**	**19**	**32**	**34**	**0.23**	**1.0**	**48**	**1.1**	<0.5	<0.5	**42**	**74**
		P1-3-2.5	7/13/2022	2.5	--	**35**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-3-4.0	7/13/2022	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P1-A2	P1-A2-2.0	1/11/2024	2.0	--	**8.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A2-3.0	1/11/2024	3.0	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A3	P1-A3-2.0	1/11/2024	2.0	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A3-3.0	1/11/2024	3.0	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A4	P1-A4-2.0	1/11/2024	2.0	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A4-3.0	1/11/2024	3.0	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A5	P1-A5-2.0	1/11/2024	2.0	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A5-3.0	1/11/2024	3.0	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A6	P1-A6-2.0	1/11/2024	2.0	--	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A6-3.0	1/11/2024	3.0	--	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1	P1-A7	P1-A7-1.0	1/11/2024	1.0	<2.9 UJ	**8.0**	**160**	<0.48	<0.48	**50**	**12**	**31**	**34**	<0.16	<1.1	**45**	<2.9	<0.48	<2.9	**58**	**81**
		P1-A7-2.5	1/11/2024	2.5	<2.9 UJ	**4.1**	**130**	<0.49	<0.49	**46**	**11**	**20**	**6**	<0.16	<1.1	**41**	<2.9	<0.49	<2.9	**55**	**40**
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	<2.9 UJ	**6.1**	**170**	<0.48	<0.48	**48**	**14**	**33**	**47**	<0.16	<1	**46**	<2.9	<0.48	<2.9	**58**	**95**
		P1-A8-1.0	1/11/2024	1.0	<2.9 UJ	**7.5**	**200**	**0.49**	**0.71**	**47**	**23**	**35**	**54**	<0.16	<1	**52**	<2.9	<0.48	<2.9	**63**	**100**
		P1-A8-2.5	1/11/2024	2.5	<2.9 UJ	**5.5**	**140**	<0.49	<0.49	**40**	**11**	**21**	**9.5**	<0.16	**1.5**	**40**	<2.9	**0.51**	<2.9	**57**	**41**
	P1-A9	P1-A9-2.0	1/11/2024	2.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A9-3.0	1/11/2024	3.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A10	P1-A10-2.0	1/11/2024	2.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A10-3.0	1/11/2024	3.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B2	P1-B2-2.0	1/11/2024	2.0	--	**40**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B2-3.0	1/11/2024	3.0	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B3	P1-B3-2.0	1/11/2024	2.0	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B3-3.0	1/11/2024	3.0	--	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B4	P1-B4-2.0	1/11/2024	2.0	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-3.0	1/11/2024	3.0	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-4.0	1/11/2024	4.0	--	**9.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B5	P1-B5-2.0	1/11/2024	2.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-3.0	1/11/2024	3.0	--	**150**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-4.0	1/11/2024	4.0	--	**130**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5D-5.0	4/19/2024	5.0	--	**5.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		DUP-2-240419	4/19/2024	5.0	--	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
1	P1-B6	P1-B6-2.0	1/11/2024	2.0	--	41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-3.0	1/11/2024	3.0	--	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-4.0	1/11/2024	4.0	--	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-5.0	4/19/2024	5.0	--	23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-6.0	4/19/2024	6.0	--	6.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B7	P1-B7-2.0	1/11/2024	2.0	--	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-3.0	1/11/2024	3.0	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-4.0	1/11/2024	4.0	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	***2022 Soil Investigation***																				
	P2-1	P2-1-1.0	7/13/2022	1.0	--	28	--	--	--	--	--	--	210	--	--	--	--	--	--	--	--
		P2-1-2.5	7/13/2022	2.5	1.4	26	150	<0.5	<0.5	46	12	29	63	0.65	<0.5	37	0.93	<0.5	<0.5	55	180
		P2-1-4.0	7/13/2022	4.0	--	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-2	P2-2-1.0	7/13/2022	1.0	1.8	37	170	<0.5	<0.5	34	12	42	200	0.43	<0.5	38	1.6	<0.5	<0.5	73	150
		P2-2-2.5	7/13/2022	1.0	--	41	--	--	--	--	--	--	10	--	--	--	--	--	--	--	--
		P2-2-4.0	7/13/2022	4.0	--	3.4	--	--	--	--	--	--	6.9	--	--	--	--	--	--	--	--
	P2-3	P2-3-1.0	7/13/2022	1.0	1.5	32	180	<0.5	<0.5	59	14	81	140	0.48	0.72	61	1.1	<0.5	<0.5	53	190
		P2-3-2.5	7/13/2022	2.5	<0.5	6.7	190	0.73	<0.5	73	13	32	7.6	<0.050	<0.5	55	1.2	<0.5	<0.5	71	61
	P2-4	P2-4-1.0	7/13/2022	1.0	3.6	220	280	0.57	<0.5	46	9.8	60	56	2.1	<0.5	83	0.91	<0.5	<0.5	34	62
		P2-4-2.5	7/13/2022	2.5	--	8.9	--	--	--	--	--	--	12	<0.16 R	--	--	--	--	--	--	--
		P2-4-4.0	7/13/2022	4.0	--	4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P2-A4	P2-A4-2.0	1/8/2024	2.0	--	4.7	--	--	--	--	--	--	6.6	<0.16	--	--	--	--	--	--	--
		P2-A4-3.0	1/8/2024	3.0	--	4.0	--	--	--	--	--	--	5.6	<0.15	--	--	--	--	--	--	--
	P2-A5	P2-A5-2.0	1/8/2024	2.0	--	4.4	--	--	--	--	--	--	6.0	<0.16	--	--	--	--	--	--	--
		P2-A5-3.0	1/8/2024	3.0	--	4.1	--	--	--	--	--	--	8.3	<0.16	--	--	--	--	--	--	--
	P2-A6	P2-A6-2.0	1/8/2024	2.0	--	6.1	--	--	--	--	--	--	71	<0.15	--	--	--	--	--	--	--
		P2-A6-3.0	1/8/2024	3.0	--	5.1	--	--	--	--	--	--	12	<0.14	--	--	--	--	--	--	--
	P2-A7	P2-A7-2.0	1/8/2024	2.0	--	5.9	--	--	--	--	--	--	12	<0.15	--	--	--	--	--	--	--
		P2-A7-3.0	1/8/2024	3.0	--	4.2	--	--	--	--	--	--	6.3	<0.15	--	--	--	--	--	--	--
	P2-A8	P2-A8-2.0	1/8/2024	2.0	--	9.6	--	--	--	--	--	--	110	<0.15	--	--	--	--	--	--	--
		P2-A8-3.0	1/8/2024	3.0	--	4.6	--	--	--	--	--	--	5.3	<0.15	--	--	--	--	--	--	--
	P2-A9	P2-A9-2.0	1/8/2024	2.0	--	9.9	--	--	--	--	--	--	44	<0.14	--	--	--	--	--	--	--
		P2-A9-2.0(DUP)	1/8/2024	2.0	--	11	--	--	--	--	--	--	94	<0.16	--	--	--	--	--	--	--
		P2-A9-3.0	1/8/2024	3.0	--	4.6	--	--	--	--	--	--	5.3	<0.16	--	--	--	--	--	--	--
	P2-A10	P2-A10-2.0	1/8/2024	2.0	--	6.2	--	--	--	--	--	--	35	0.46	--	--	--	--	--	--	--
		P2-A10-3.0	1/8/2024	3.0	--	4.4	--	--	--	--	--	--	5.3	<0.16	--	--	--	--	--	--	--
	P2-B1	P2-B1-2.0	1/8/2024	2.0	--	36	--	--	--	--	--	--	180	0.42	--	--	--	--	--	--	--
		P2-B1-3.0(DUP)	1/8/2024	3.0	--	20	--	--	--	--	--	--	7.3	<0.15	--	--	--	--	--	--	--
		P2-B1-3.0	1/8/2024	3.0	--	33	--	--	--	--	--	--	9.2	<0.15	--	--	--	--	--	--	--
		P2-B1-4.0	1/8/2024	4.0	--	18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B1D-5.0	4/19/2024	5.0	--	4.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-1D	P2-1D-5.0	1/8/2024	5.0	--	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-1D-6.0	1/8/2024	6.0	--	5.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B3	P2-B3-2.0	1/8/2024	2.0	--	21	--	--	--	--	--	--	6.2	<0.14	--	--	--	--	--	--	--
		P2-B3-3.0	1/8/2024	3.0	--	13	--	--	--	--	--	--	13	<0.14	--	--	--	--	--	--	--
		P2-B3-4.0	1/8/2024	4.0	--	5.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
2	P2-B4	P2-B4-2.0	1/8/2024	2.0	--	**24**	--	--	--	--	--	--	**51**	**0.27**	--	--	--	--	--	--	--
		P2-B4-3.0	1/8/2024	3.0	--	**53**	--	--	--	--	--	--	**7.3**	<0.14	--	--	--	--	--	--	--
		P2-B4-4.0	1/8/2024	4.0	--	**74**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B4D-5.0	4/19/2024	5.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B5	P2-B5-2.0	1/8/2024	2.0	--	**120**	--	--	--	--	--	--	**24**	**0.27**	--	--	--	--	--	--	--
		P2-B5-3.0	1/8/2024	3.0	--	**23**	--	--	--	--	--	--	**10**	<0.14	--	--	--	--	--	--	--
		P2-B5-4.0	1/8/2024	4.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B6	P2-B6-2.0	1/8/2024	2.0	--	**310**	--	--	--	--	--	--	**66**	**0.49**	--	--	--	--	--	--	--
		P2-B6-3.0	1/8/2024	3.0	--	**53**	--	--	--	--	--	--	**14**	<0.14	--	--	--	--	--	--	--
		P2-B6-4.0	1/8/2024	4.0	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6-4.0(DUP)	1/8/2024	4.0	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6D-5.0	4/19/2024	5.0	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B7	P2-B7-2.0	1/8/2024	2.0	--	**210**	--	--	--	--	--	--	**78**	**11**	--	--	--	--	--	--	--
		P2-B7-3.0	1/8/2024	3.0	--	**72**	--	--	--	--	--	--	**14**	**0.32**	--	--	--	--	--	--	--
		P2-B7-4.0	1/8/2024	4.0	--	**38**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B7D-5.0	4/19/2024	5.0	--	**6.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B8	P2-B8-2.0	1/8/2024	2.0	--	**100**	--	--	--	--	--	--	**68**	**0.5**	--	--	--	--	--	--	--
		P2-B8-3.0	1/8/2024	3.0	--	**91**	--	--	--	--	--	--	**16**	<0.14	--	--	--	--	--	--	--
		P2-B8-4.0	1/8/2024	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B9	P2-B9-2.0	1/8/2024	2.0	--	**19**	--	--	--	--	--	--	**24**	**0.24**	--	--	--	--	--	--	--
		P2-B9-3.0	1/8/2024	3.0	--	**59**	--	--	--	--	--	--	**25**	**0.18**	--	--	--	--	--	--	--
		P2-B9-4.0	1/8/2024	4.0	--	**29**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-5.0	4/19/2024	5.0	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-6.0	4/19/2024	6.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B10	P2-B10-2.0	1/8/2024	2.0	--	**130**	--	--	--	--	--	--	**140**	**0.39**	--	--	--	--	--	--	--
		P2-B10-3.0	1/8/2024	3.0	--	**46**	--	--	--	--	--	--	**87**	**0.36**	--	--	--	--	--	--	--
		P2-B10-4.0	1/8/2024	4.0	--	**33**	--	--	--	--	--	--	**14**	--	--	--	--	--	--	--	--
		P2-B10D-5.0	4/19/2024	5.0	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B10D-6.0	4/19/2024	6.0	--	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	***2022 Soil Investigation***																				
	P3-1	P3-1-1.0	7/14/2022	1.0	--	**63**	--	--	--	--	--	--	**15**	<0.15 R	--	--	--	--	--	--	--
		P3-1-2.5	7/14/2022	2.5	<2.7	**6.5**	**190**	**0.56**	**0.59**	**46**	**10**	**26**	**11**	<0.17	<0.91	**45**	<2.7	<0.45	<2.7	**43**	**56**
	P3-2	P3-2-1.0	7/14/2022	1.0	<2.8	**120**	**66**	<0.47	**0.65**	**35**	**7.3**	**42**	**66**	**1.7**	<0.94	**41**	<2.8	<0.47	<2.8	**35**	**96**
		P3-2-2.5	7/14/2022	2.5	<2.7 R	**67**	**130**	<0.45	**0.57**	**56**	**13**	**60**	**22**	**0.96**	<0.89	**65**	<2.7	<0.45	<2.7	**39**	**110**
		P3-2-4.0	7/14/2022	4.0	--	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-3	P3-3-1.0	7/14/2022	1.0	<2.7	**12**	**180**	<0.44	**0.72**	**41**	**9.5**	**32**	**84**	**0.21**	<0.88	**39**	<2.7	<0.44	<2.7	**41**	**150**
		P3-3-2.5	7/14/2022	2.5	<3.0 UJ	**7.8**	**160**	<0.50	**0.69**	**37**	**12**	**30**	**68**	**0.20**	<0.99	**40**	<3.0	**0.56**	<3.0	**36**	**140**
	P3-4	P3-4-1.0	7/14/2022	1.0	<2.8	**13**	**130**	<0.47	**0.57**	**45**	**15**	**34**	**43**	<0.15	<0.94	**45**	<2.8	<0.47	<2.8	**50**	**73**
		P3-4-2.5	7/14/2022	2.5	--	**47**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4-4.0	7/14/2022	4.0	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P3-A1	P3-A1-2.0	1/9/2024	2.0	--	**12**	--	--	--	--	--	--	**94**	**16 J**	--	--	--	--	--	--	--
		P3-A1-3.0	1/9/2024	3.0	--	**6.8**	--	--	--	--	--	--	**22**	**4.5 J**	--	--	--	--	--	--	--
		P3-A1-4.0	1/9/2024	4.0	--	**4.5**	--	--	--	--	--	--	--	**0.52**	--	--	--	--	--	--	--
	P3-A2	P3-A2-2.0	1/9/2024	2.0	--	**6.7**	--	--	--	--	--	--	**17**	**0.21 J**	--	--	--	--	--	--	--
		P3-A2-3.0	1/9/2024	3.0	--	**13**	--	--	--	--	--	--	**46**	**0.47 J**	--	--	--	--	--	--	--
		P3-A2-4.0	1/9/2024	4.0	--	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
3	P3-A3	P3-A3-2.0	1/9/2024	2.0	--	**7.8**	--	--	--	--	--	--	**21**	<0.15 UJ	--	--	--	--	--	--	--
		P3-A3-3.0	1/9/2024	3.0	--	**6.6**	--	--	--	--	--	--	**18**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A4	P3-A4-2.0	1/9/2024	2.0	--	**21**	--	--	--	--	--	--	**92**	**0.32 J**	--	--	--	--	--	--	--
		P3-A4-3.0	1/9/2024	3.0	--	**3.1**	--	--	--	--	--	--	**6.4**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A5	P3-A5-2.0	1/9/2024	2.0	--	**15**	--	--	--	--	--	--	**32**	**0.17 J**	--	--	--	--	--	--	--
		P3-A5-3.0	1/9/2024	3.0	--	**8.6**	--	--	--	--	--	--	**60**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A6	P3-A6-2.0	1/9/2024	2.0	--	**6.1**	--	--	--	--	--	--	**22**	<0.14 UJ	--	--	--	--	--	--	--
		P3-A6-3.0	1/9/2024	3.0	--	**3.8**	--	--	--	--	--	--	**6.7**	<0.16 UJ	--	--	--	--	--	--	--
	P3-A7	P3-A7-2.0	1/9/2024	2.0	--	**33**	--	--	--	--	--	--	**99**	**0.65**	--	--	--	--	--	--	--
		P3-A7-3.0	1/9/2024	3.0	--	**35**	--	--	--	--	--	--	**78**	**0.36**	--	--	--	--	--	--	--
		P3-A7-4.0*	1/9/2024	4.0	--	**6.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-A7-4.0	1/9/2024	4.0	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A8	P3-A8-2.0	1/9/2024	2.0	--	**5.6**	--	--	--	--	--	--	**9.0**	<0.14	--	--	--	--	--	--	--
		P3-A8-3.0	1/9/2024	3.0	--	**10**	--	--	--	--	--	--	**16**	<0.16	--	--	--	--	--	--	--
	P3-A9	P3-A9-2.0	1/9/2024	2.0	--	**15**	--	--	--	--	--	--	**88**	<0.16	--	--	--	--	--	--	--
		P3-A9-2.0(DUP)	1/9/2024	2.0	--	**6.1**	--	--	--	--	--	--	**44**	<0.15	--	--	--	--	--	--	--
		P3-A9-3.0	1/9/2024	3.0	--	**3.6**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P3-A10	P3-A10-2.0	1/9/2024	2.0	--	**10**	--	--	--	--	--	--	**25**	<0.16	--	--	--	--	--	--	--
		P3-A10-3.0	1/9/2024	3.0	--	**11**	--	--	--	--	--	--	**32**	<0.17	--	--	--	--	--	--	--
	P3-B1	P3-B1-2.0	1/9/2024	2.0	--	**69**	--	--	--	--	--	--	**98**	**0.5**	--	--	--	--	--	--	--
		P3-B1-3.0	1/9/2024	3.0	--	**39**	--	--	--	--	--	--	**75**	**0.32**	--	--	--	--	--	--	--
		P3-B1-4.0	1/9/2024	4.0	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-5.0	4/18/2024	5.0	--	**90**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-6.0	4/18/2024	6.0	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B2	P3-B2-2.0	1/9/2024	2.0	--	**44**	--	--	--	--	--	--	**50**	**0.38**	--	--	--	--	--	--	--
		P3-B2-3.0	1/9/2024	3.0	--	**14**	--	--	--	--	--	--	**44**	**0.35**	--	--	--	--	--	--	--
		P3-B2-3.0(DUP)	1/9/2024	3.0	--	**12**	--	--	--	--	--	--	**56**	**0.29**	--	--	--	--	--	--	--
		P3-B2-4.0	1/9/2024	4.0	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B2D-5.0	4/18/2024	5.0	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B3	P3-B3-2.0	1/9/2024	2.0	--	**32**	--	--	--	--	--	--	**59**	**0.25**	--	--	--	--	--	--	--
		P3-B3-3.0	1/9/2024	3.0	--	**18**	--	--	--	--	--	--	**38**	**0.28**	--	--	--	--	--	--	--
		P3-B3-4.0	1/9/2024	4.0	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B3D-5.0	4/18/2024	5.0	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B4	P3-B4-2.0	1/9/2024	2.0	--	**35**	--	--	--	--	--	--	**72**	**0.85**	--	--	--	--	--	--	--
		P3-B4-3.0	1/9/2024	3.0	--	**88**	--	--	--	--	--	--	**140**	**0.32**	--	--	--	--	--	--	--
		P3-B4-4.0	1/9/2024	4.0	--	**38**	--	--	--	--	--	--	**45**	--	--	--	--	--	--	--	--
		P3-B4D-5.0	4/18/2024	5.0	--	**8.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B5	P3-B5-2.0	1/9/2024	2.0	--	**85**	--	--	--	--	--	--	**71**	**0.48**	--	--	--	--	--	--	--
		P3-B5-3.0	1/9/2024	3.0	--	**120**	--	--	--	--	--	--	**27**	**0.17**	--	--	--	--	--	--	--
		P3-B5-4.0	1/9/2024	4.0	--	**120**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B5D-5.0	4/18/2024	5.0	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B6	P3-B6-2.0	1/9/2024	2.0	--	**79**	--	--	--	--	--	--	**94**	**0.44**	--	--	--	--	--	--	--
		P3-B6-3.0	1/9/2024	3.0	--	**28**	--	--	--	--	--	--	**64**	**0.27 J**	--	--	--	--	--	--	--
		P3-B6-4.0	1/9/2024	4.0	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B6D-5.0	4/18/2024	5.0	--	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
3	P3-B7	P3-B7-2.0	1/9/2024	2.0	--	**73**	--	--	--	--	--	--	**98**	**0.40 J**	--	--	--	--	--	--	--
		P3-B7-3.0	1/9/2024	3.0	--	**38**	--	--	--	--	--	--	**52**	**0.68 J**	--	--	--	--	--	--	--
		P3-B7-4.0	1/9/2024	4.0	--	**21**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-5.0	4/18/2024	5.0	--	**51**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-6.0	4/18/2024	6.0	--	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B8	P3-B8-2.0	1/9/2024	2.0	--	**23**	--	--	--	--	--	--	**94**	**0.38 J**	--	--	--	--	--	--	--
		P3-B8-3.0	1/9/2024	3.0	--	**57**	--	--	--	--	--	--	**120**	**0.80 J**	--	--	--	--	--	--	--
		P3-B8-4.0	1/9/2024	4.0	--	**120**	--	--	--	--	--	--	**19**	--	--	--	--	--	--	--	--
		P3-B8D-5.0	4/18/2024	5.0	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-4D	P3-4D-5.0	1/9/2024	5.0	--	**6.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4D-6.0	1/9/2024	6.0	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B9	P3-B9-2.0	1/9/2024	2.0	--	**67**	--	--	--	--	--	--	**94**	**0.59 J**	--	--	--	--	--	--	--
		P3-B9-3.0	1/9/2024	3.0	--	**53**	--	--	--	--	--	--	**77**	**0.45 J**	--	--	--	--	--	--	--
		P3-B9-4.0	1/9/2024	4.0	--	**17**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B9D-5.0	4/18/2024	5.0	--	**9.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B10	P3-B10-2.0	1/9/2024	2.0	--	**13**	--	--	--	--	--	--	**33**	<0.15 UJ	--	--	--	--	--	--	--
		P3-B10-3.0	1/9/2024	3.0	--	**23**	--	--	--	--	--	--	**45**	<0.16	--	--	--	--	--	--	--
		P3-B10-4.0	1/9/2024	4.0	--	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T1	P3-T1-1.0	4/18/2024	1.0	--	**46**	--	--	--	--	--	--	**50 J**	**0.28**	--	--	--	--	--	--	--
		DUP-3-240418	4/18/2024	1.0	--	**27**	--	--	--	--	--	--	**46**	**0.20**	--	--	--	--	--	--	--
		P3-T1-1.5	4/18/2024	1.5	--	**7.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-T1-2.0	4/18/2024	2.0	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T2	P3-T2-1.0	4/18/2024	1.0	--	**5.9**	--	--	--	--	--	--	**52**	**0.16**	--	--	--	--	--	--	--
	P3-T3	P3-T3-1.0	4/18/2024	1.0	--	**7.5**	--	--	--	--	--	--	**43**	<0.16	--	--	--	--	--	--	--
	P3-T4	P3-T4-1.0	4/18/2024	1.0	--	**11**	--	--	--	--	--	--	**490**	**0.17**	--	--	--	--	--	--	--
		P3-T4-1.5	4/18/2024	1.5	--	--	--	--	--	--	--	--	**88**	--	--	--	--	--	--	--	--
		P3-T4-2.0	4/18/2024	2.0	--	--	--	--	--	--	--	--	**170**	--	--	--	--	--	--	--	--
4	***2022 Soil Investigation***																				
	P4-1	P4-1-1.0	7/14/2022	1.0	<3.0	**140**	**190**	<0.50	**1.9**	**75**	**14**	**81**	**280**	**2.1**	<1.0	**120**	<3.0	<0.50	<3.0	**37**	**440**
		P4-1-2.5	7/14/2022	2.5	<2.8	**88**	**160**	<0.47	**0.47**	**26**	**17**	**28**	**21**	**0.25**	<0.93	**47**	<2.8	<0.47	<2.8	**24**	**60**
		P4-1-4.0	7/14/2022	4.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-2	P4-2-1.0	7/14/2022	1.0	<2.8	**23**	**100**	<0.46	<0.46	**19**	**9.6**	**23**	**13**	<0.16	<0.92	**31**	<2.8	<0.46	<2.8	**23**	**44**
		P4-2-2.5	7/14/2022	2.5	<3.1	**4.2**	**200**	<0.52	**0.55**	**44**	**14**	**27**	**11**	<0.16	<1.0	**21**	<3.1	<0.52	<3.1	**42**	**44**
	P4-3	P4-3-1.0	7/14/2022	1.0	--	**29**	--	--	--	--	--	--	**22**	<0.16 R	--	--	--	--	--	--	--
		P4-3-2.5	7/14/2022	2.5	<2.7	**8.2**	**180**	<0.45	<0.45	**25**	**9.8**	**21**	**12**	<0.14	<0.91	**34**	<2.7	<0.45	<2.7	**26**	**62**
	P4-4	P4-4-1.0	7/14/2022	1.0	<2.7	**51**	**85**	<0.45	<0.45	**16**	**5.3**	**36**	**42**	**0.81**	<0.89	**20**	<2.7	<0.45	<2.7	**24**	**190**
		P4-4-2.5	7/14/2022	2.5	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P4-4-4.0	7/14/2022	4.0	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
	2024 Soil Investigation																				
4	P4-A1	P4-A1-2.0	1/10/2024	2.0	--	**21**	--	--	--	--	--	--	**53**	**0.19**	--	--	--	--	--	--	--
		P4-A1-3.0	1/10/2024	3.0	--	**4.5**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A2	P4-A2-2.0	1/10/2024	2.0	--	**16**	--	--	--	--	--	--	**46**	<0.14	--	--	--	--	--	--	--
		P4-A2-3.0	1/10/2024	3.0	--	**3.3**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A3	P4-A3-2.0	1/10/2024	2.0	--	**5.1**	--	--	--	--	--	--	**5.7**	<0.16	--	--	--	--	--	--	--
		P4-A3-3.0	1/10/2024	3.0	--	**4.6**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-A4	P4-A4-2.0	1/10/2024	2.0	--	**5.0**	--	--	--	--	--	--	**7.5**	<0.16	--	--	--	--	--	--	--
		P4-A4-3.0	1/10/2024	3.0	--	**2.8**	--	--	--	--	--	--	**5.8**	<0.14	--	--	--	--	--	--	--
	P4-A5	P4-A5-2.0	1/10/2024	2.0	--	**6.9**	--	--	--	--	--	--	**9.1**	<0.15	--	--	--	--	--	--	--
		P4-A5-3.0	1/10/2024	3.0	--	**4.5**	--	--	--	--	--	--	**7.6**	<0.16	--	--	--	--	--	--	--
	P4-A6	P4-A6-2.0	1/12/2024	2.0	--	**8.3**	--	--	--	--	--	--	**23**	<0.14	--	--	--	--	--	--	--
		P4-A6-3.0	1/12/2024	3.0	--	**4.5**	--	--	--	--	--	--	**5.3**	<0.14	--	--	--	--	--	--	--
	P4-A7	P4-A7-2.0	1/12/2024	2.0	--	**78**	--	--	--	--	--	--	**31**	**0.37**	--	--	--	--	--	--	--
		P4-A7-3.0	1/12/2024	3.0	--	**8.1**	--	--	--	--	--	--	**5.3**	<0.17	--	--	--	--	--	--	--
	P4-A8	P4-A8-2.0	1/12/2024	2.0	--	**110**	--	--	--	--	--	--	**17**	<0.16	--	--	--	--	--	--	--
		P4-A8-3.0	1/12/2024	3.0	--	**85**	--	--	--	--	--	--	**23**	**0.22**	--	--	--	--	--	--	--
		P4-A8-3.0(DUP)	1/12/2024	3.0	--	**69**	--	--	--	--	--	--	**20**	**0.18**	--	--	--	--	--	--	--
		P4-A8-4.0	1/12/2024	4.0	--	**4.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-A9	P4-A9-2.0	1/12/2024	2.0	--	**7.0**	--	--	--	--	--	--	**6.1**	<0.16	--	--	--	--	--	--	--
		P4-A9-3.0	1/12/2024	3.0	--	**5.0**	--	--	--	--	--	--	**5.8**	<0.16	--	--	--	--	--	--	--
	P4-B2	P4-B2-2.0	1/10/2024	2.0	--	**63**	--	--	--	--	--	--	**15**	<0.16	--	--	--	--	--	--	--
		P4-B2-3.0	1/10/2024	3.0	--	**11**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P4-B3	P4-B3-2.0	1/10/2024	2.0	--	**68**	--	--	--	--	--	--	**10**	<0.15	--	--	--	--	--	--	--
		P4-B3-3.0	1/10/2024	3.0	--	**8.1**	--	--	--	--	--	--	**6.3**	<0.14	--	--	--	--	--	--	--
	P4-B4	P4-B4-2.0	1/10/2024	2.0	--	**120**	--	--	--	--	--	--	**14**	<0.16	--	--	--	--	--	--	--
		P4-B4-3.0	1/10/2024	3.0	--	**5.0**	--	--	--	--	--	--	**6.6**	**0.44**	--	--	--	--	--	--	--
	P4-B5	P4-B5-2.0	1/10/2024	2.0	--	**130**	--	--	--	--	--	--	**18**	**0.28**	--	--	--	--	--	--	--
		P4-B5-2.0(DUP)	1/10/2024	2.0	--	**89**	--	--	--	--	--	--	**12**	**0.29**	--	--	--	--	--	--	--
		P4-B5-3.0	1/10/2024	3.0	--	**2.2**	--	--	--	--	--	--	**5.4**	<0.14	--	--	--	--	--	--	--
	P4-B6	P4-B6-2.0	1/10/2024	2.0	--	**75**	--	--	--	--	--	--	**13**	<0.15	--	--	--	--	--	--	--
		P4-B6-3.0	1/10/2024	3.0	--	**30**	--	--	--	--	--	--	**9.4**	<0.16	--	--	--	--	--	--	--
		P4-B6-4.0	1/10/2024	4.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-B7	P4-B7-2.0	1/10/2024	2.0	--	**73**	--	--	--	--	--	--	**9.5**	<0.16	--	--	--	--	--	--	--
		P4-B7-3.0	1/10/2024	3.0	--	**6.1**	--	--	--	--	--	--	**6.0**	**0.18**	--	--	--	--	--	--	--
	P4-B8	P4-B8-2.0	1/10/2024	2.0	--	**38**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P4-B8-3.0	1/10/2024	3.0	--	**8.7**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-B9	P4-B9-2.0	1/10/2024	2.0	--	**16**	--	--	--	--	--	--	**13**	<0.16	--	--	--	--	--	--	--
		P4-B9-3.0	1/10/2024	3.0	--	**5.4**	--	--	--	--	--	--	**6.4**	<0.15	--	--	--	--	--	--	--
	P4-B10	P4-B10-2.0	1/10/2024	2.0	--	**21**	--	--	--	--	--	--	**180**	**4.8**	--	--	--	--	--	--	--
		P4-B10-3.0	1/10/2024	3.0	--	**6.1**	--	--	--	--	--	--	**7.2**	**0.41**	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

TABLE 2: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
Screening Criteria																					
Residential DTSC-SLs[2]					31	11[3]	15000	16	7.1	85000[7]	23	3100	80	0.67	390	820	390	390	0.78	390	23000
Commercial/Industrial DTSC-SLs[2]					470	11[3]	220000	230	79	360000[7]	350	47000	500	2.9	5800	11000	5800	5800	12	5800	350000
Total Threshold Limit Concentration[4]					500	500	10000	75	100	2500	8000	2500	1000	20	3500	2000	100	500	700	2400	5000
10 x Soluble Threshold Leaching Criteria[5]					150	50	1000	7.5	10	50	800	250	50	2	3500	200	10	50	70	240	2500
20x Toxicity Criteria[6]					None	100	2000	None	20	100	None	None	100	4	None	None	20	100	None	None	None

Notes:

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical using United States Environmental Protection Agency (USEPA) Methods 6010B and 7471A (for mercury).

Select samples were analyzed by McCampbell Analytical for metals using USEPA Method 6020. Shaded concentrations exceed residential screening criteria.

2. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).

3. Analytical results for arsenic in soil are compared to the 99th percentile of background arsenic concentrations as presented by Duvergé (2011).

4. Total Threshold Limit Concentration, as presented in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

5. Ten times the Soluble Threshold Limit Concentration, as presented in CCR, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

6. Twenty times the Toxicity Criteria, as presented in the Code of Federal Regulations (CFR), Title 40, Part 261, Subpart C, Section 261.24.

7. The USEPA residential and commercial/industrial RSLs for chromium(III) were selected as surrogate SLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations:

< = Analyte not detected above the reporting limit shown
-- = Not analyzed
bgs = Below ground surface
bold = Analyte detected above the reporting limit
DUP = Duplicate sample
DTSC = Department of Toxic Substances Control
J = The value is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications.
mg/kg = Milligrams per kilogram
R = The data are rejected because the MS/MSD results are outside specifications or the holding time was exceeded
SL = Screening Level
UJ = The non-detected data is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications

References:

DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

GSI ENVIRONMENTAL

TABLE 3: POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Polycyclic Aromatic Hydrocarbons[1]																	
					Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs	*mg/kg*																	
1	***2022 Soil Investigation***																					
	P1-1	P1-1-1.0	7/13/2022	1.0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
		P1-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P1-1-4.0	7/13/2022	4.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	NA
	P1-2	P1-2-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P1-3	P1-3-1.0	7/13/2022	1.00	**0.015**	<0.0099	**0.029**	**0.14**	**0.19**	**0.15**	**0.11**	**0.15**	**0.17**	**0.027**	**0.15**	<0.0099	**0.15**	**0.022**	**0.032**	**0.05**	**0.071**	**0.19**	**0.26**
	2024 Soil Investigation																					
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A7	P1-A7-2.5	1/11/2024	2.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	NA
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-2.5	1/11/2024	2.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
2	***2022 Soil Investigation***																					
	P2-1	P2-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	**0.018**	**0.028**	**0.024**	**0.025**	**0.02**	**0.022**	<0.01	**0.036**	<0.01	**0.028**	<0.01	<0.01	<0.01	**0.024**	**0.041**	**0.045**
	P2-2	P2-2-1.0	7/13/2022	1.0	<0.04	<0.04	<0.04	**0.13**	**0.24**	**0.18**	**0.21**	**0.18**	**0.14**	<0.04	**0.12**	<0.04	**0.25**	<0.04	<0.04	<0.04	<0.04	**0.16**	**0.34**
	P2-3	P2-3-1.0	7/13/2022	1.0	<0.04	<0.04	<0.04	**0.047**	**0.064**	**0.063**	**0.059**	**0.044**	**0.059**	<0.04	**0.061**	<0.04	**0.058**	<0.04	<0.04	<0.04	**0.051**	**0.068**	**0.12**
		P2-3-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P2-4	P2-4-1.0	7/13/2022	1.0	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
3	***2022 Soil Investigation***																					
	P3-1	P3-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P3-2	P3-2-1.0	7/13/2022	1.0	<0.1	<0.1	<0.1	**0.16**	**0.28**	**0.28**	**0.22**	**0.24**	**0.22**	<0.1	**0.16**	<0.1	**0.27**	<0.1	<0.1	<0.1	<0.1	**0.19**	**0.45**
		P3-2-2.5	7/13/2022	2.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	P3-3	P3-3-1.0	7/13/2022	1.0	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	NA
		P3-3-2.5	7/13/2022	2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	NA
	P3-4	P3-4-1.0	7/13/2022	1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA
	2024 Soil Investigation																					
	P3-T1	P3-T1-1.0	4/18/2024	1.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
		DUP-3-240418	4/18/2024	1.0	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T2	P3-T2-1.0	4/18/2024	1.0	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T3	P3-T3-1.0	4/18/2024	1.0	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	NA
	P3-T4	P3-T4-1.0	4/18/2024	1.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
4	***2022 Soil Investigation***																					
	P4-1	P4-1-1.0	7/13/2022	1.0	<0.25	<0.25	<0.25	<0.25	**0.31**	**0.29**	**0.25**	**0.27**	**0.26**	<0.25	<0.25	<0.25	**0.29**	<0.25	<0.25	<0.25	<0.25	**0.26**	0.65
		P4-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-2	P4-2-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P4-2-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-3	P4-3-1.0	7/13/2022	1.0	<0.01 R	<0.01 R	**0.014 J**	**0.036 J**	**0.066 J**	**0.042 J**	**0.036 J**	**0.047 J**	**0.045 J**	<0.01 R	**0.04 J**	<0.01 R	**0.039 J**	<0.01 R	<0.01 R	<0.01 R	**0.019 J**	**0.048 J**	**0.088**
		P4-3-2.5	7/13/2022	2.5	**0.012**	<0.01	**0.048**	**0.079**	**0.066**	**0.049**	**0.033**	**0.049**	**0.064**	<0.01	**0.17**	**0.021**	**0.042**	<0.01	<0.01	<0.01	**0.21**	**0.16**	**0.094**
	P4-4	P4-4-1.0	7/13/2022	1.0	<0.2	<0.2	<0.2	**1.7**	**3.5**	**2.4**	**2.3**	**2.4**	**1.8**	**0.54**	**1.1**	<0.2	**3.1**	<0.2	<0.2	<0.2	**0.26**	**1.5**	**4.79**
		P4-4-2.5	7/13/2022	2.5	<0.01 R	<0.01 R	**0.013 J**	**0.2 J**	**0.39 J**	**0.26 J**	**0.25 J**	**0.27 J**	**0.19 J**	**0.079 J**	**0.14 J**	<0.01 R	**0.35 J**	<0.01 R	<0.01 R	<0.01 R	**0.046 J**	**0.18 J**	**0.55**
		P4-4-4.0	7/13/2022	4.0	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	NA
	2024 Soil Investigation																					
	P4-B9	P4-B9-2.0	1/10/2024	2.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
		P4-B9-3.0	1/10/2024	3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P4-B10	P4-B10-2.0	1/10/2024	2.0	<0.250	<0.250	<0.250	0.140 J	**0.270**	**0.260**	**0.220 J**	**0.093 J**	**0.180 J**	<0.250	**0.280**	<0.250	**0.220 J**	<0.250	<0.250	<0.250	**0.110 J**	**0.340**	**0.58**
		P4-B10-3.0	1/10/2024	3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA

GSI ENVIRONMENTAL

TABLE 3: POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Polycyclic Aromatic Hydrocarbons[1]																	
					Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs	*mg/kg*																	
Screening Criteria [2]																						
Residential Risk-Based Screening Levels[3]					3600	None	18000	1.1	0.11	1.1	None	11	110	0.028	2400	2400	1.1	0.18	190	2	None	1800	0.9 [4]
Commercial/Industrial Risk-Based Screening Levels[3]					29000	None	170000	16	1.7	17	None	170	1700	0.41	24000	21000	17	0.77	1500	7.6	None	18000	0.9 [4]
Total Threshold Limit Concentration[5]					None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
10x Soluble Threshold Limit Concentration[6]					None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
20x Toxicity Criteria[7]					None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None

Notes:

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for polycyclic aromatic hydrocarbons (PAHs) using United States Environmental Protection Agency (USEPA) Method 8270C with selective ion monitoring (SIM). Shaded concentrations exceed residential screening criteria.

2. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs.

3. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).

4. BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).

5. Total Threshold Limit Concentration, as presented in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

6. Ten times the Soluble Threshold Limit Concentration, as presented in CCR, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

7. Twenty times the Toxicity Criteria, as presented in the Code of Federal Regulations (CFR), Title 40, Part 261, Subpart C, Section 261.24.

Abbreviations:

< = Analyte not detected above the reporting limit shown
BaPe = Benzo(a)pyrene equivalent value
bgs = Below ground surface
bold = Analyte detected above the reporting limit
DUP = Duplicate sample
J = The detected result is estimated.
mg/kg = Milligrams per kilogram
NA = Not applicable; PAHs were not detected; therefore, a BaPe was not calculated
R = The non-detected result is rejected because the holding time was exceeded.

References:

California Department of Toxic Substances Control (DTSC), 2009, Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process, July 1.
DTSC, 2015, Preliminary Endangerment Assessment Guidance Manual, October.
DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

GSI ENVIRONMENTAL

TABLE 4: PESTICIDES IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Organochlorine Pesticides																		
					Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC	Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxy-chlor	Toxa-phene
				feet bgs	mg/kg																		
1	***2022 Soil Investigation***																						
	P1-1	P1-1-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P1-1-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P1-1-4.0	7/13/2022	4.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P1-2	P1-2-2.5	7/13/2022	2.5	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
	P1-3	P1-3-1.0	7/13/2022	1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	2024 Soil Investigation																						
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
		P1-A7-2.5	1/11/2024	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.100
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	**0.057**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
		P1-A8-1.0(DUP)	1/11/2024	1.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.010	<0.100
		P1-A8-2.5	1/11/2024	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
2	***2022 Soil Investigation***																						
	P2-1	P2-1-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-2	P2-2-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	**0.012 C J**	**0.015**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	P2-3	P2-3-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	**0.025**	**0.024**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P2-3-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-4	P2-4-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
3	***2022 Soil Investigation***																						
	P3-1	P3-1-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-2	P3-2-1.0	7/13/2022	1.0	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.098	<0.0098	**0.011 C**	**0.04**	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.02	<0.2
		P3-2-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-3	P3-3-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	**0.01**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P3-3-2.5	7/13/2022	2.5	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.049	<0.49
	P3-4	P3-4-1.0	7/13/2022	1.0	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
4	***2022 Soil Investigation***																						
	P4-1	P4-1-1.0	7/13/2022	1.0	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	**0.037**	**0.14**	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
		P4-1-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P4-2	P4-2-1.0	7/13/2022	1.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P4-2-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	P4-3	P4-3-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P4-4	P4-4-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
Screening Criteria																							
Residential Risk-Based Screening Levels[2]					0.039	0.086	0.3	0.0038	0.057	1.7	2.3	2.0	1.9	0.034	470	470 [6]	380	19	19 [7]	19 [7]	0.13	0.07	320	0.45
Commercial/Industrial Risk-Based Screening Levels[2]					0.18	0.3	1.1	0.049	0.8	7.7	7.9	9.3	8.5	0.12	6000	6000 [6]	4100	200	200 [7]	200 [7]	0.63	0.33	3400	1.6
Total Threshold Limit Concentration [3]					1.4	None	None	None	4.0	2.5	1.0	1.0	1.0	8.0	None	None	None	0.2	None	None	4.7	4.7	100	5.0
10x Soluble Threshold Limit Concentration [4]					1.4	None	None	None	4.0	2.5	1.0	1.0	1.0	8.0	None	None	None	0.2	None	None	4.7	4.7	100	5.0
20x Toxicity Criteria[5]					None	None	None	None	None	0.6	None	None	None	None	None	None	None	0.4	None	None	0.16	0.16	200	10

Notes:

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for organochlorine pesticides using United States Environmental Protection Agency (USEPA) Method 8081A.
2. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).
3. Total Threshold Limit Concentration, as presented in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.
4. Ten times the Soluble Threshold Limit Concentration, as presented in CCR, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.
5. Twenty times the Toxicity Criteria, as presented in the Code of Federal Regulations (CFR), Title 40, Part 261, Subpart C, Section 261.24.
6. The residential and commercial/industrial soil DTSC screening levels for endosulfan were used as surrogate SLs for endosulfan II.
7. The residential and commercial/industrial soil DTSC screening levels for endrin were used as surrogate SLs for endrin aldehyde and endrin ketone.

Abbreviations:

< = Analyte not detected above the reporting limit shown
bold = Analyte detected above the reporting limit
bgs = Below ground surface
C = Presence confirmed, but the Relative Percent Difference (RPD) between columns exceeds 40%
DUP = Duplicate sample
J = The detected result is an estimate
mg/kg = Milligrams per kilogram

References:

DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

GSI ENVIRONMENTAL

TABLE 5: TOTAL PETROLEUM HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Total Petroleum Hydrocarbons	
					TPH-d	TPH-mo
				feet bgs	mg/kg	
1	***2022 Soil Investigation***					
	P1-1	P1-1-1.0	7/13/2022	1.0	<10	<20
		P1-1-2.5	7/13/2022	2.5	<10	<20
		P1-1-4.0	7/13/2022	4.0	<10	<20
	P1-2	P1-2-2.5	7/13/2022	2.5	<10	<20
	P1-3	P1-3-1.0	7/13/2022	1.0	**14**	**22**
	2024 Soil Investigation					
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<10	<20
		P1-A7-2.5	1/11/2024	2.5	<10	<20
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<10	<20
		P1-A8-1.0(DUP)	1/11/2024	1.0	**11**	<20
		P1-A8-2.5	1/11/2024	2.5	<9.9	<20
2	***2022 Soil Investigation***					
	P2-1	P2-1-2.5	7/13/2022	2.5	<10	<20
	P2-2	P2-2-1.0	7/13/2022	1.0	**20**	**51**
	P2-3	P2-3-1.0	7/13/2022	1.0	**25**	**61**
		P2-3-2.5	7/13/2022	2.5	<10	<20
	P2-4	P2-4-1.0	7/13/2022	1.0	**47**	**89**
3	***2022 Soil Investigation***					
	P3-1	P3-1-2.5	7/13/2022	2.5	<10	<20
	P3-2	P3-2-1.0	7/13/2022	1.0	<50	<100
		P3-2-2.5	7/13/2022	2.5	<10	<20
	P3-3	P3-3-1.0	7/13/2022	1.0	**120**	**87**
		P3-3-2.5	7/13/2022	2.5	**160**	**490**
	P3-4	P3-4-1.0	7/13/2022	1.0	**65**	**210**
4	***2022 Soil Investigation***					
	P4-1	P4-1-1.0	7/13/2022	1.0	<50	<100
		P4-1-2.5	7/13/2022	2.5	<10	<20
	P4-2	P4-2-1.0	7/13/2022	1.0	<10	<20
		P4-2-2.5	7/13/2022	2.5	<10	<20
	P4-3	P4-3-2.5	7/13/2022	2.5	<10	<20
	P4-4	P4-4-1.0	7/13/2022	1.0	**45**	**76**
Screening Criteria						
				Residential Risk-Based Screening Levels [2]	260	12,000
				Commercial/Industrial Risk-Based Screening Levels[2]	1,200	180,000
				Total Threshold Limit Concentration [3]	None	None
				10x Soluble Threshold Limit Concentration [4]	None	None
				20x Toxicity Criteria [5]	None	None

Notes:

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical for TPH using United States Environmental Protection Agency (USEPA) Method 8015M.

2. Direct exposure environmental screening levels for human health published by the San Francisco Bay Regional Water Quality Control Board (Water Board, 2019).

3. Total Threshold Limit Concentration, as presented in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

4. Ten times the Soluble Threshold Limit Concentration, as presented in CCR, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24.

5. Twenty times the Toxicity Criteria, as presented in the Code of Federal Regulations (CFR), Title 40, Part 261, Subpart C, Section 261.24.

Abbreviations:

< = Analyte not detected above the reporting limit shown

bold = Analyte detected above the reporting limit

bgs = Below ground surface

DUP = Duplicate sample

mg/kg = Milligrams per kilogram

TPH = Total petroleum hydrocarbons

TPHd = TPH quantified as diesel (diesel range orgnics [DRO] C10-C28)

TPHmo = TPH quantified as motor oil (oil range organics [ORO] C28-C44)

References:

San Francisco Bay Regional Water Quality Control Board (Water Board), 2019, Environmental Screening Levels, Summary Tables, January (Rev. 2).

GSI ENVIRONMENTAL

TABLE 6: SUMMARY OF ARARS AND TBCS

Santa Fe Trackbed to Park

Berkeley, California

Requirement	Description	Comment
Potentially Applicable / Relevant and Appropriate		
Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments (40 CFR 260 to 299, 42 USC 7401-7642)	Federal act that classifies and regulates hazardous waste and facilities that treat, store and dispose of hazardous waste.	Applicable for determining whether chemically impacted media is a hazardous waste.
40 CFR Part 261(Identification and Listing of Hazardous Wastes)	Establishes criteria for identifying hazardous wastes subject to Subtitle C treatment, storage, and disposal requirements.	Applicable for determining whether excavated soils are to be classified as a hazardous waste.
40 CFR Part 262	Standards for generators of hazardous waste when the removal action constitutes treatment, storage, or disposal of hazardous waste.	Applicable if the removal action involves generation and off-site transportation of hazardous waste.
40 CFR 263	Standards applicable to transporters of hazardous waste.	Applicable if the removal action involves generation and off-site transportation of hazardous waste.
40 CFR 263	Standards applicable to transporters of hazardous waste.	Applicable if the removal action involves generation and off-site transportation of hazardous waste.
Clean Water Act (CWA), §402; 40 CFR Part 122	Section 402(p) of the CWA establishes a framework for regulating industrial storm water discharges under the NPDES program. Discharges of stormwater from soil disturbance must be regulated and covered under a National Pollutant Discharge Elimination System (NPDES) permit.	Applicable for construction activities, including demolition, clearing, grading, excavation, soil stockpiling, material storing, onsite staging, offsite staging, and other land disturbance activities.
NPDES Permit	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 disturbances.	This would be applicable for construction activities, including demolition, clearing, grading, excavation, soil stockpiling, material storing, onsite staging, offsite staging, and other land disturbance activities.
Clean Air Act (42 USC 7401-7642, 40 CFR 50 – 69)	Identifies categories of industrial sources and treatment standards. Establishes primary and secondary ambient air standards. States develop implementation plans for attainment of the standards.	May be applicable or relevant and appropriate depending upon the response action being considered. Impacts to air quality, if any, under local air district jurisdiction may result from the implementation of some of the removal actions.
Occupational Safety and Health Act (29 CFR 1910.120 et seq.)	Identifies permissible exposure limits (PELs) for inhalation or dermal exposure of workers to chemicals. When PELs are exceeded, OSHA requires the use of personal protective equipment or other methods to block exposure.	Applicable for determining worker health and safety requirements during implementation of the removal action.
Endangered Species Act of 1973	Established to conserve endangered or threatened species.	Endangered and/or threatened species may be present at the Site.
Hazardous Waste Control Act (HSC, Chapter 6.5, section 25100 et seq., 22 CCR 66260.1 et seq.)	Establishes criteria for determining waste classification for the purposes of transportation and land disposal of wastes in California. Regulates treatment, storage, transportation and disposal of substances identified as hazardous.	Applicable for determining whether chemically-impacted media is a hazardouswaste.
Hazardous Waste Generator Requirements (22 CCR 66262.1 et seq.)	Establishes standards applicable to generators of hazardous waste.	Applicable for determining whether excavated soils are to be classified as ahazardous waste.
Land Disposal Restrictions (22 CCR 66268.7 et seq.)	Establishes standards for treatment and land disposal of hazardous waste.	Applicable for determining appropriate disposal facilities for soil to be removed from the Site.
Toxicity Criteria Rule (22 CCR §69021)	Establishes toxicity criteria for use in human health risk assessments, risk-based screening levels, and risk-based remediation goals for hazardous waste and hazardous substance cleanup sites in California.	Applicable for determining appropriate cancer and non-cancer toxicity criteria for each COPC.
Stockpiling Requirements for Contaminated Soil (HSC section 25123.3(a)(2)	Establishes standards for stockpiling of non-RCRA contaminated soil	Applicable for stockpiling chemicallyimpacted soil.
Hazardous Waste Haulers Act (22 CCR Chapter 30)	Governs transportation of hazardous materials in California.	Applicable for off-Site disposal of hazardous waste.
Safe Drinking Water and Toxic Enforcement Act (Proposition 65) (22 CCR section 12000 et seq.)	Requires public warnings of potential exposure to suspected carcinogens and reproductive toxins.	May be applicable or relevant and appropriate for notification of construction workers who may be engaged in a removal action at the Site or for future Site users should chemically-impacted soil remain in place.
California Occupational Health and Safety (8 CCR 5192)	Requires workers involved in hazardous substance operations associated with cleanup of sites perform the cleanup operations in accordance with Cal OSHA health and safety requirements.	Applicable requirement for all workers who can come into contact with contaminated media at the Site
Local noise ordinance	Limits the amount of noise generated during certain times of day.	Applicable for implementation of removal action for which heavy equipment or other noise-generating apparatus are in use.
To be Considered		

TABLE 6: SUMMARY OF ARARS AND TBCS

Santa Fe Trackbed to Park

Berkeley, California

Requirement	Description	Comment
Potentially Applicable / Relevant and Appropriate		
U.S. Environmental Protection Agency, Region 9 Regional Screening Levels (RSLs) (“Regional Screening Levels for Chemical Contaminants at Superfund Sites”)	Provides human health screening levels using toxicity values and standard default parameters to initially assess potential risk for residential and commercial/industrial exposures to chemically impacted soil, air, and tapwater (drinking water).	Applicable for initial assessment of chemical impacts at a site. Exceedance of an RSL does not indicate that an adverse human health risk exists, but indicates that initial evaluation of the potential risk is warranted.
DTSC Note 3	DTSC recommended methodology for use of U.S. EPA Regional Screening Levels (RSLs) in the Human Health Risk Assessment process at hazardous waste sites and permitted facilities.	Applicable for initial assessment of chemical impacts at a site. Based on an evaluation of RSLs relative to updated or more conservative toxicity values, screening levels established under this guidance may be less than, and would supersede RSLs.
DTSC Information Advisory: “Clean ImportedFill Material” (2001)	This advisory provides guidance for evaluating fill material for use at school sites, including initial source identification, sampling frequency, chemical testing, and data evaluation.	This advisory may be applicable in evaluating potential fill sources for the Site.

GSI ENVIRONMENTAL

TABLE 7: COST COMPARISON OF REMOVAL ACTION ALTERNATIVES

Santa Fe Trackbed to Park

Berkeley, California

SUMMARY OF ESTIMATED COSTS[1,2]				
Costs	**Removal Action Alternative**			
	Alternative 1	**Alternative 2**	**Alternative 3**	**Alternative 4**
	No Further Action	**Excavation and Off-Site Disposal**	**Excavation and On-Site Containment**	**Capping in Place**
Direct Capital Costs				
Mobilization and Demobilization	$0	$33,900	$33,900	$33,900
Excavation	$0	$92,800	$69,600	$0
Loading, Disposal, & Transport Costs	$0	$454,700	$341,000	$0
Asphalt Mobilization and Installation	$0	$0	$0	$230,000
Backfill & Compaction Costs	$0	$301,600	$226,200	$0
Shoring	$0	$19,100	$19,100	$0
Filed Oversight and Reporting	$0	$47,000	$47,000	$42,000
Indirect Capital Costs				
Engineering and Design Expenses	$0	$25,000	$25,000	$10,000
License and Permit Costs	$0	$10,000	$10,000	$10,000
Construction Management	$0	$45,500	$36,700	$23,500
Bid and Scope Contigencies	$0	$196,800	$182,800	$102,200
Post Removal Action Site Control Costs				
Operation and Maintenance Plan	$0	$0	$10,000	$10,000
Risk Management Plan	$0	$0	$10,000	$10,000
Land Use Covenant	$0	$0	$20,000	$20,000
Annual Inspection and Reporting (30 years)	$0	$0	$75,000	$90,000
Annual Maintenance (30 years)	$0	$0	$150,000	$240,000
Total	**$0**	**$1,226,000**	**$1,256,000**	**$822,000**

Notes and Assumptions:

1. Costs shown are preliminary and are not based on actual contractor quotes.

2. No costs are included for general grading or hardscaping required for Site redevelopment. These items are considered design elements and are included in the redevelopment project costs.

GSI ENVIRONMENTAL

TABLE 8: ACTION LEVELS FOR DUST IN AMBIENT AIR AT THE SITE PERIMETER

Santa Fe Trackbed to Park

Berkeley, California

Chemical [1]	Maximum Detected Concentration (mg/kg)	Resident Air Screening Level[2] (mg/m^3)	Reference	Exposure Adjustment Factor[3] (EAF)	Chemical-specific, Dust Action Level (mg/m^3)
Metals					
Antimony	3.6	0.00031	Noncancer RSL	6	517
Arsenic	310	0.000016	Noncancer RSL	6	0.31
Barium	300	0.00052	Noncancer RSL	6	10
Beryllium	0.73	0.000007	Noncancer RSL	6	60
Cadmium	1.9	0.000010	Noncancer DTSC-SL	6	32
Chromium (Total)	75	0.000063	Noncancer RSL[4]	6	5.0
Cobalt	23	0.000006	Noncancer RSL	6	1.6
Copper	81	NP	--	--	--
Lead	490	0.00015	Noncancer RSL	6	1.8
Mercury	11	0.00003	Noncancer DTSC-SL	6	17
Molybdenum	1.5	0.0021	Noncancer RSL	6	8,400
Nickel	120	0.000015	Noncancer DTSC-SL	6	0.8
Selenium	1.6	0.021	Noncancer RSL	6	78,750
Silver	0.56	NP	--	--	--
Vanadium	74	0.00010	Noncancer RSL	6	8.1
Zinc	440	NP	--	--	--
Polynuclear Aromatic Hydrocarbons [5]					
Benzo(a)anthracene	1.7	NP	--	--	--
Benzo(a)pyrene	3.5	0.0000021	Noncancer DTSC-SL	6	3.6
Benzo(b)fluoranthene	2.4	NP	--	--	--
Dibenz(a,h)anthracene	0.54	NP	--	--	--
Indeno(1,2,3-cd)pyrene	3.1	NP	--	--	--
California Air Resources Board Ambient Air Quality Standard [6] ***:***					**0.05**

Equation:

$$Action\ Level\ \left(\frac{mg}{m^3}\right) = \frac{Chemical\ Specific\ Action\ Level\ \left(\frac{mg}{m^3}\right) \times 10^6 \left(\frac{mg}{kg}\right) \times Exposure\ Adjustment\ Factor}{Maximum\ Soil\ Concentration\ \left(\frac{mg}{kg}\right)}$$

Notes:

1. All chemicals detected in at least one soil sample above the laboratory analytical detection limit were evaluated for perimeter air monitoring.

2. If available, the DTSC-SLs (DTSC, 2025) for residential air for non-cancer health effects were selected for the chemical-specific action level. If a DTSC-SL was not available, the USEPA Regional Screening Levels (RSLs) for residential air for non-cancer health effects (U.S. EPA, 2024) were selected. Resident air cancer endpoint DTSC-SLs and USEPA RSLs are only applicable to long-term (i.e., chronic) potential exposures and are not appropriate for short-term (i.e., acute and sub-acute) potential exposure.

3. The noncancer RSLs are developed based on an exposure time of 12 months. Since subsurface work is conservatively anticipated to require approximately 2 months to complete, the noncancer RSLs were adjusted by a factor of 6.

4. The noncancer RSL for chromium(III) (soluble compounds) was used as a surrogate for chromium (total).

5. Individual PAHs that exceeded resident soil SLs in Table 3 are included. However, with the exception of benzo(a)pyrene, there are currently no published non-cancer resident air DTSC-SLs or USEPA RSLs for these PAHs.

6.California Air Resources Control Board (CARB), 2023. Particulate Matter and Health Fact Sheet, March.

Abbreviations:

-- = Not applicable
mg/m^3 = milligrams per cubic meter
mg/kg = milligrams per kilogram
ND = not detected
NP = Not published
RSL = Regional Screening Level

GSI ENVIRONMENTAL

TABLE 9: SUMMARY OF SCREENING LEVELS FOR DUST IN WORK ZONE AIR

Santa Fe Trackbed to Park

Berkeley, California

Chemical [1]	Maximum Detected Concentration (mg/kg)	Permissible Exposure Limit (mg/m^3)	Dust Action Level (mg/m^3)
Metals [2]			
Antimony	3.6	0.5	138,900
Arsenic	310	0.01	32
Barium	300	0.5	1,670
Beryllium	0.73	0.0002	270
Cadmium	1.9	0.005	2,630
Chromium (Total)	75	0.005	67
Cobalt	23	0.02	870
Copper	81	1	12,350
Lead	490	0.05	102
Mercury	11	0.025	2,270
Molybdenum	1.5	0.5	333,330
Nickel	120	0.5	4,170
Selenium	1.6	0.2	125,000
Silver	0.56	0.01	17,860
Vanadium	74	0.05	680
Zinc	440	5	11,360
PAHs [3]			
Polynuclear Aromatic Hydrocarbons (PAHs)	4.79	0.2	41,750
Particulates [4]			
Respirable Fraction of Particulates	--	5	**5**

Equation:

$$Action\ Level\ \left(\frac{mg}{m^3}\right) = \frac{Permissible\ Exposure\ Limit\ \left(\frac{mg}{m^3}\right) \times 10^6 \left(\frac{mg}{kg}\right)}{Maximum\ Soil\ Concentration\ \left(\frac{mg}{kg}\right)}$$

Notes:

1. All chemicals detected in at least one soil sample above the laboratory analytical detection limit were evaluated for work zone air monitoring.

2. California Division of Occupational Safety and Health (Cal/OSHA) Table AC-1, Permissible Exposure Limits (PELs), in California Code of Regulations (CCR) Title 8 Section 5155, October 2, 2019. Viewable at: http://www.dir.ca.gov/title8/5155table_ac1.html.

3. Permissible Exposure Limits for PAH as coal tar pitch volatiles published by California Division of Occupational Safety and Health, https://www.osha.gov/dsg/annotated-pels/tablez-1.html

4. Permissible Exposure Limits for Particulates not Otherwise Regulated published by California Division of Occupational Safety and Health, https://www.osha.gov/chemicaldata/801

Abbreviations:

-- = not applicable

mg/kg = milligrams per kilogram

mg/m^3 = milligrams per cubic meter

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

FIGURES

Figure 1. Site Location Map
Figure 2. Site Overview
Figure 3a. Vertical Delineation of Affected Soil – Parcel 1
Figure 3b. Soil Sampling Results – Metals, Parcel 1
Figure 3c. Soil Sampling Results – PAHs, Parcel 1
Figure 4a. Vertical Delineation of Affected Soil – Parcel 2
Figure 4b. Soil Sampling Results – Metals, Parcel 2
Figure 4c. Soil Sampling Results – PAHs, Parcel 2
Figure 5a. Vertical Delineation of Affected Soil – Parcel 3
Figure 5b. Soil Sampling Results – Metals, Parcel 3
Figure 5c. Soil Sampling Results – PAHs, Parcel 3
Figure 5d. Soil Sampling Results – Targeted Samples, Parcel 3
Figure 6a. Vertical Delineation of Affected Soil – Parcel 4
Figure 6b. Soil Sampling Results – Metals, Parcel 4
Figure 6c. Soil Sampling Results – PAHs, Parcel 4
Figure 7. Conceptual Site Exposure Model
Figure 8: Typical Air Monitoring Station Locations and Sensitive Receptors
Figure 9a Primary Truck Route
Figure 9b Alternate Truck Route

GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	AV
Issued:	5-Oct-2023	Chk'd By:	TRK
		Appv'd By:	JPD
Map ID:	SFROW_SiteLocMap	**FIGURE 1**	

SITE LOCATION MAP

Santa Fe Trackbed to Park
Berkeley, California

GSI ENVIRONMENTAL	GSI job No. 6272	Drawn By: AV	SITE OVERVIEW
	Issued: 5-Oct-2023	Chk'd By: TRK	
		Appv'd By: JPD	Santa Fe Trackbed to Park Berkeley, California
	Map ID: SFROW_SiteOverview	FIGURE 2	

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs). SLs and analytical results for each COPC are presented on Figures 5b-5d.

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)

Feet
0 10 20

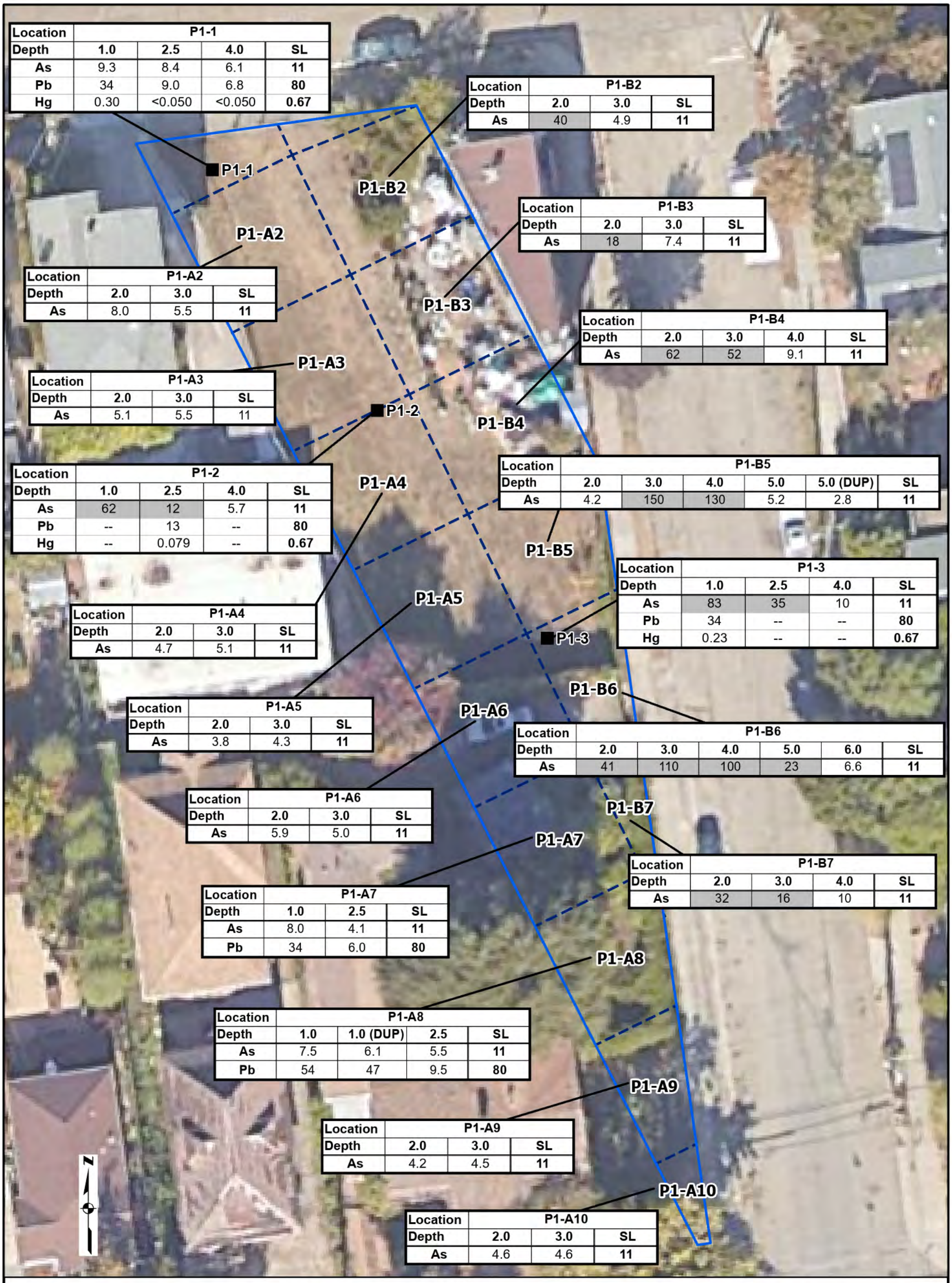
Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P1_AllResults		
Issued: 16-Oct-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, California

FIGURE 3a



Location	P1-1			
Depth	1.0	2.5	4.0	SL
As	9.3	8.4	6.1	11
Pb	34	9.0	6.8	80
Hg	0.30	<0.050	<0.050	0.67

Location	P1-B2		
Depth	2.0	3.0	SL
As	40	4.9	11

Location	P1-B3		
Depth	2.0	3.0	SL
As	18	7.4	11

Location	P1-A2		
Depth	2.0	3.0	SL
As	8.0	5.5	11

Location	P1-B4			
Depth	2.0	3.0	4.0	SL
As	62	52	9.1	11

Location	P1-A3		
Depth	2.0	3.0	SL
As	5.1	5.5	11

Location	P1-2			
Depth	1.0	2.5	4.0	SL
As	62	12	5.7	11
Pb	--	13	--	80
Hg	--	0.079	--	0.67

Location	P1-B5					
Depth	2.0	3.0	4.0	5.0	5.0 (DUP)	SL
As	4.2	150	130	5.2	2.8	11

Location	P1-A4		
Depth	2.0	3.0	SL
As	4.7	5.1	11

Location	P1-3			
Depth	1.0	2.5	4.0	SL
As	83	35	10	11
Pb	34	--	--	80
Hg	0.23	--	--	0.67

Location	P1-A5		
Depth	2.0	3.0	SL
As	3.8	4.3	11

Location	P1-B6					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	41	110	100	23	6.6	11

Location	P1-A6		
Depth	2.0	3.0	SL
As	5.9	5.0	11

Location	P1-B7			
Depth	2.0	3.0	4.0	SL
As	32	16	10	11

Location	P1-A7		
Depth	1.0	2.5	SL
As	8.0	4.1	11
Pb	34	6.0	80

Location	P1-A8			
Depth	1.0	1.0 (DUP)	2.5	SL
As	7.5	6.1	5.5	11
Pb	54	47	9.5	80

Location	P1-A9		
Depth	2.0	3.0	SL
As	4.2	4.5	11

Location	P1-A10		
Depth	2.0	3.0	SL
As	4.6	4.6	11

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, -- = not analyzed.
5) Data is shown for arsenic, lead, and mercury at locations with one or more detections. See Table 2 for complete analytical results for metals.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P1_Metals	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- SELECT METALS
PARCEL 1

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 3b

Location	P1-3	
Depth	1.0	SL
Acenaphthene	0.015	3600
Anthracene	0.029	18000
Benzo(a) anthracene	0.14	1.1
Benzo(a) pyrene	0.19	0.11
Benzo(b) fluoranthene	0.15	1.1
Benzo(g,h,i) perylene	0.11	None
Benzo(k) fluoranthene	0.15	11
Chrysene	0.17	110
Dibenz(a,h) anthracene	0.027	0.028
Fluoranthene	0.15	2400
Indeno (1,2,3-cd) pyrene	0.15	1.1
1-Methylnaphthalene	0.022	5.6
2-Methylnaphthalene	0.032	190
Naphthalene	0.05	2
Phenanthrene	0.071	None
Pyrene	0.19	1800
BaPe	0.26	0.9

Location	P1-A8			
Depth	1.0	1.0 (DUP)	2.5	SL
Fluoranthene	<0.010	0.013	<0.010	2400
Pyrene	<0.010	0.013	<0.010	1800
BaPe	NA	NA	NA	0.9

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, PAHs = Polyaromatic Hydrocarbons, BaPe = benzo(a)pyrene equivalent value, NA = not applicable, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

BaPe: BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).
All other PAHs: DTSC screening levels for residential soil (DTSC-SLs) as published in DTSC, HERO, HHRA Note 3 (April 2025) or US Environmental Protection Agency Regional Screening Levels (November 2024), if no DTSC-SL is published.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P1_PAHs	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- PAHs
PARCEL 1

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 3c

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs). SLs and analytical results for each COPC are presented on Figures 5b-5d.

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)
- Planned City of Berkeley Property Gain
- Planned City of Berkeley Property Reduction

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

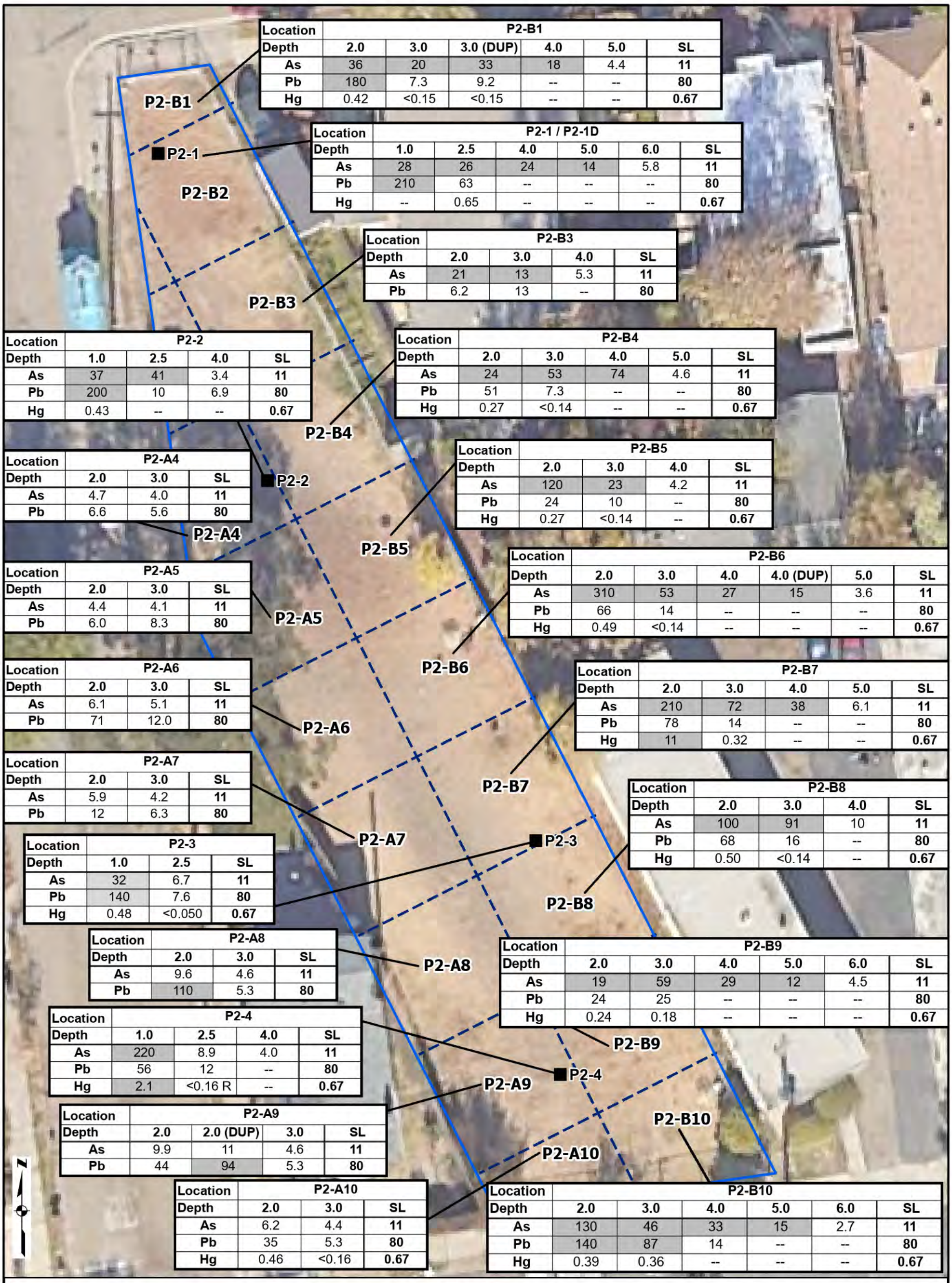
GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P2_ResultsLotLines		
Issued: 22-Nov-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS
PARCEL 2

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 4a



Location	P2-B1					
Depth	2.0	3.0	3.0 (DUP)	4.0	5.0	SL
As	36	20	33	18	4.4	11
Pb	180	7.3	9.2	--	--	80
Hg	0.42	<0.15	<0.15	--	--	0.67

Location	P2-1 / P2-1D					
Depth	1.0	2.5	4.0	5.0	6.0	SL
As	28	26	24	14	5.8	11
Pb	210	63	--	--	--	80
Hg	--	0.65	--	--	--	0.67

Location	P2-B3			
Depth	2.0	3.0	4.0	SL
As	21	13	5.3	11
Pb	6.2	13	--	80

Location	P2-2			
Depth	1.0	2.5	4.0	SL
As	37	41	3.4	11
Pb	200	10	6.9	80
Hg	0.43	--	--	0.67

Location	P2-B4				
Depth	2.0	3.0	4.0	5.0	SL
As	24	53	74	4.6	11
Pb	51	7.3	--	--	80
Hg	0.27	<0.14	--	--	0.67

Location	P2-A4		
Depth	2.0	3.0	SL
As	4.7	4.0	11
Pb	6.6	5.6	80

Location	P2-B5			
Depth	2.0	3.0	4.0	SL
As	120	23	4.2	11
Pb	24	10	--	80
Hg	0.27	<0.14	--	0.67

Location	P2-A5		
Depth	2.0	3.0	SL
As	4.4	4.1	11
Pb	6.0	8.3	80

Location	P2-B6					
Depth	2.0	3.0	4.0	4.0 (DUP)	5.0	SL
As	310	53	27	15	3.6	11
Pb	66	14	--	--	--	80
Hg	0.49	<0.14	--	--	--	0.67

Location	P2-A6		
Depth	2.0	3.0	SL
As	6.1	5.1	11
Pb	71	12.0	80

Location	P2-B7				
Depth	2.0	3.0	4.0	5.0	SL
As	210	72	38	6.1	11
Pb	78	14	--	--	80
Hg	11	0.32	--	--	0.67

Location	P2-A7		
Depth	2.0	3.0	SL
As	5.9	4.2	11
Pb	12	6.3	80

Location	P2-B8			
Depth	2.0	3.0	4.0	SL
As	100	91	10	11
Pb	68	16	--	80
Hg	0.50	<0.14	--	0.67

Location	P2-3		
Depth	1.0	2.5	SL
As	32	6.7	11
Pb	140	7.6	80
Hg	0.48	<0.050	0.67

Location	P2-A8		
Depth	2.0	3.0	SL
As	9.6	4.6	11
Pb	110	5.3	80

Location	P2-B9					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	19	59	29	12	4.5	11
Pb	24	25	--	--	--	80
Hg	0.24	0.18	--	--	--	0.67

Location	P2-4			
Depth	1.0	2.5	4.0	SL
As	220	8.9	4.0	11
Pb	56	12	--	80
Hg	2.1	<0.16 R	--	0.67

Location	P2-A9			
Depth	2.0	2.0 (DUP)	3.0	SL
As	9.9	11	4.6	11
Pb	44	94	5.3	80

Location	P2-A10		
Depth	2.0	3.0	SL
As	6.2	4.4	11
Pb	35	5.3	80
Hg	0.46	<0.16	0.67

Location	P2-B10					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	130	46	33	15	2.7	11
Pb	140	87	14	--	--	80
Hg	0.39	0.36	--	--	--	0.67

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, -- = not analyzed.
5) Data is shown for arsenic, lead, and mercury at locations with one or more detections. See Table 2 for complete analytical results for metals.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P2_Metals	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- SELECT METALS
PARCEL 2

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 4b

Location	P2-1	
Depth	2.5	SL
Benzo(a) anthracene	0.018	1.1
Benzo(a) pyrene	0.028	0.11
Benzo(b) fluoranthene	0.024	1.1
Benzo(g,h,i) perylene	0.025	None
Benzo(k) fluoranthene	0.020	11
Chrysene	0.022	110
Fluoranthene	0.036	2400
Indeno (1,2,3-cd) pyrene	0.028	1.1
Phenanthrene	0.024	None
Pyrene	0.041	1800
BaPe	0.045	0.9

Location	P2-2	
Depth	1.0	SL
Benzo(a) anthracene	0.130	1.1
Benzo(a) pyrene	0.240	0.11
Benzo(b) fluoranthene	0.180	1.1
Benzo(g,h,i) perylene	0.210	None
Benzo(k) fluoranthene	0.180	11
Chrysene	0.140	110
Dibenz(a,h) anthracene	0.036 J	0.028
Fluoranthene	0.120	2400
Indeno (1,2,3-cd) pyrene	0.250	1.1
Pyrene	0.160	1800
BaPe	0.338	0.9

Location	P2-3		
Depth	1.0	2.5	SL
Benzo(a) anthracene	0.047	<0.010	1.1
Benzo(a) pyrene	0.064	<0.010	0.11
Benzo(b) fluoranthene	0.063	<0.010	1.1
Benzo(g,h,i) perylene	0.059	<0.010	None
Benzo(k) fluoranthene	0.044	<0.010	11
Chrysene	0.059	<0.010	110
Fluoranthene	0.061	<0.010	2400
Indeno (1,2,3-cd) pyrene	0.058	<0.010	1.1
Phenanthrene	0.051	<0.010	None
Pyrene	0.068	<0.010	1800
BaPe	0.121	NA	0.9

Location	P2-4	
Depth	1.0	SL
All PAHs	ND	Various

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, PAHs = Polyaromatic Hydrocarbons, BaPe = benzo(a)pyrene equivalent value, NA = not applicable, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

BaPe: BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).
All other PAHs: DTSC screening levels for residential soil (DTSC-SLs) as published in DTSC, HERO, HHRA Note 3 (April 2025) or US Environmental Protection Agency Regional Screening Levels (November 2024), if no DTSC-SL is published.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P2_PAHs	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- PAHs
PARCEL 2

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 4c

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs). SLs and analytical results for each COPC are presented on Figures 5b-5d.

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)

Feet
0 10 20

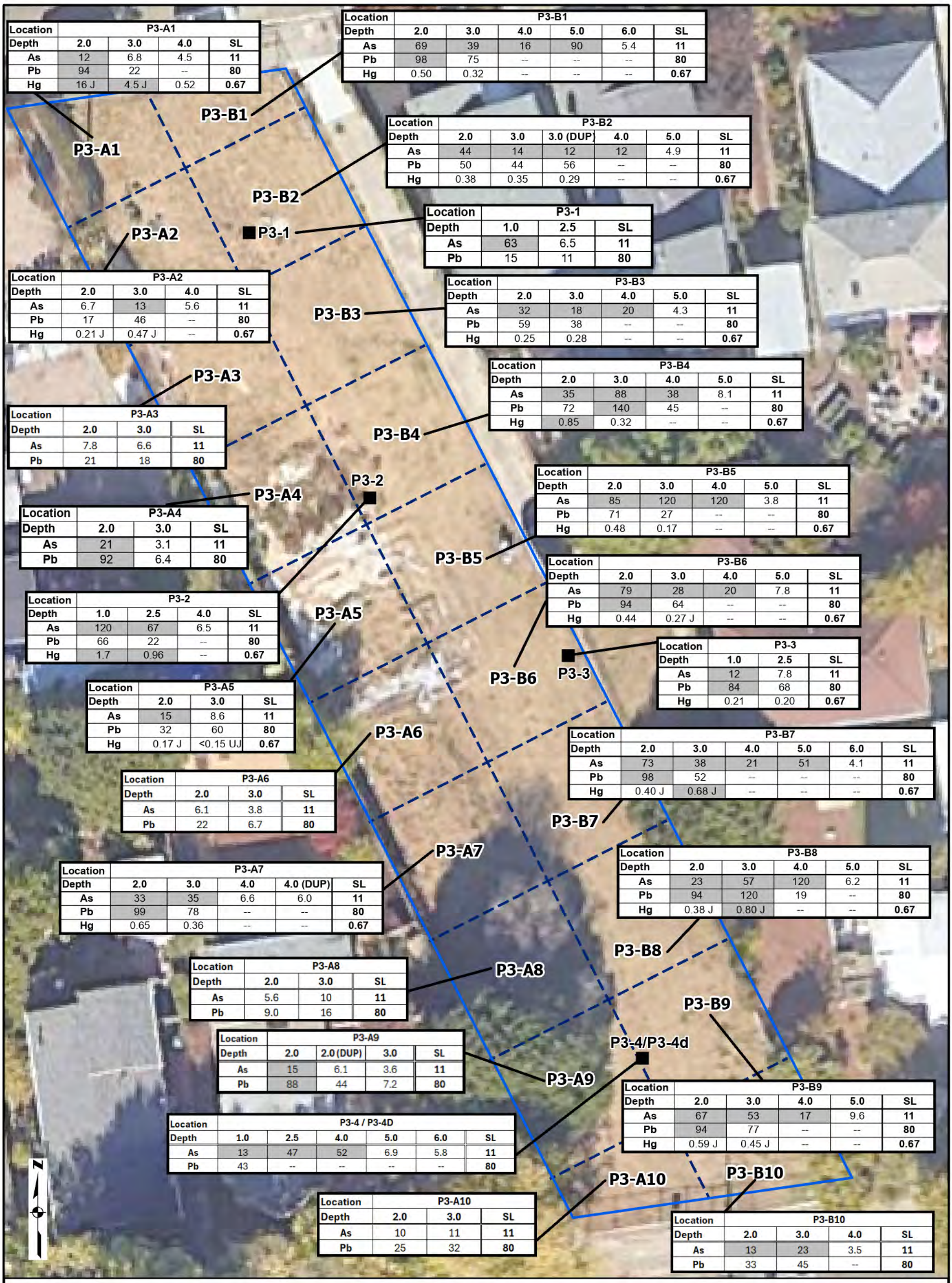
Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No. 6272		Map ID: P3_AllResults	
Issued: 16-Oct-2024		Drawn By: AJC	
		Chk'd By: TRG	Aprv'd By: JPD

PROPOSED EXCAVATION DEPTHS
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5a



Location	P3-A1			
Depth	2.0	3.0	4.0	SL
As	12	6.8	4.5	11
Pb	94	22	--	80
Hg	16 J	4.5 J	0.52	0.67

Location	P3-B1					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	69	39	16	90	5.4	11
Pb	98	75	--	--	--	80
Hg	0.50	0.32	--	--	--	0.67

Location	P3-B2					
Depth	2.0	3.0	3.0 (DUP)	4.0	5.0	SL
As	44	14	12	12	4.9	11
Pb	50	44	56	--	--	80
Hg	0.38	0.35	0.29	--	--	0.67

Location	P3-1		
Depth	1.0	2.5	SL
As	63	6.5	11
Pb	15	11	80

Location	P3-A2			
Depth	2.0	3.0	4.0	SL
As	6.7	13	5.6	11
Pb	17	46	--	80
Hg	0.21 J	0.47 J	--	0.67

Location	P3-B3				
Depth	2.0	3.0	4.0	5.0	SL
As	32	18	20	4.3	11
Pb	59	38	--	--	80
Hg	0.25	0.28	--	--	0.67

Location	P3-A3		
Depth	2.0	3.0	SL
As	7.8	6.6	11
Pb	21	18	80

Location	P3-B4				
Depth	2.0	3.0	4.0	5.0	SL
As	35	88	38	8.1	11
Pb	72	140	45	--	80
Hg	0.85	0.32	--	--	0.67

Location	P3-A4		
Depth	2.0	3.0	SL
As	21	3.1	11
Pb	92	6.4	80

Location	P3-B5				
Depth	2.0	3.0	4.0	5.0	SL
As	85	120	120	3.8	11
Pb	71	27	--	--	80
Hg	0.48	0.17	--	--	0.67

Location	P3-2			
Depth	1.0	2.5	4.0	SL
As	120	67	6.5	11
Pb	66	22	--	80
Hg	1.7	0.96	--	0.67

Location	P3-B6				
Depth	2.0	3.0	4.0	5.0	SL
As	79	28	20	7.8	11
Pb	94	64	--	--	80
Hg	0.44	0.27 J	--	--	0.67

Location	P3-A5		
Depth	2.0	3.0	SL
As	15	8.6	11
Pb	32	60	80
Hg	0.17 J	<0.15 UJ	0.67

Location	P3-3		
Depth	1.0	2.5	SL
As	12	7.8	11
Pb	84	68	80
Hg	0.21	0.20	0.67

Location	P3-A6		
Depth	2.0	3.0	SL
As	6.1	3.8	11
Pb	22	6.7	80

Location	P3-B7					
Depth	2.0	3.0	4.0	5.0	6.0	SL
As	73	38	21	51	4.1	11
Pb	98	52	--	--	--	80
Hg	0.40 J	0.68 J	--	--	--	0.67

Location	P3-A7				
Depth	2.0	3.0	4.0	4.0 (DUP)	SL
As	33	35	6.6	6.0	11
Pb	99	78	--	--	80
Hg	0.65	0.36	--	--	0.67

Location	P3-B8				
Depth	2.0	3.0	4.0	5.0	SL
As	23	57	120	6.2	11
Pb	94	120	19	--	80
Hg	0.38 J	0.80 J	--	--	0.67

Location	P3-A8		
Depth	2.0	3.0	SL
As	5.6	10	11
Pb	9.0	16	80

Location	P3-A9			
Depth	2.0	2.0 (DUP)	3.0	SL
As	15	6.1	3.6	11
Pb	88	44	7.2	80

Location	P3-B9				
Depth	2.0	3.0	4.0	5.0	SL
As	67	53	17	9.6	11
Pb	94	77	--	--	80
Hg	0.59 J	0.45 J	--	--	0.67

Location	P3-4 / P3-4D					
Depth	1.0	2.5	4.0	5.0	6.0	SL
As	13	47	52	6.9	5.8	11
Pb	43	--	--	--	--	80

Location	P3-A10		
Depth	2.0	3.0	SL
As	10	11	11
Pb	25	32	80

Location	P3-B10			
Depth	2.0	3.0	4.0	SL
As	13	23	3.5	11
Pb	33	45	--	80

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, -- = not analyzed.
5) Data is shown for arsenic, lead, and mercury at locations with one or more detections. See Table 2 for complete analytical results for metals.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

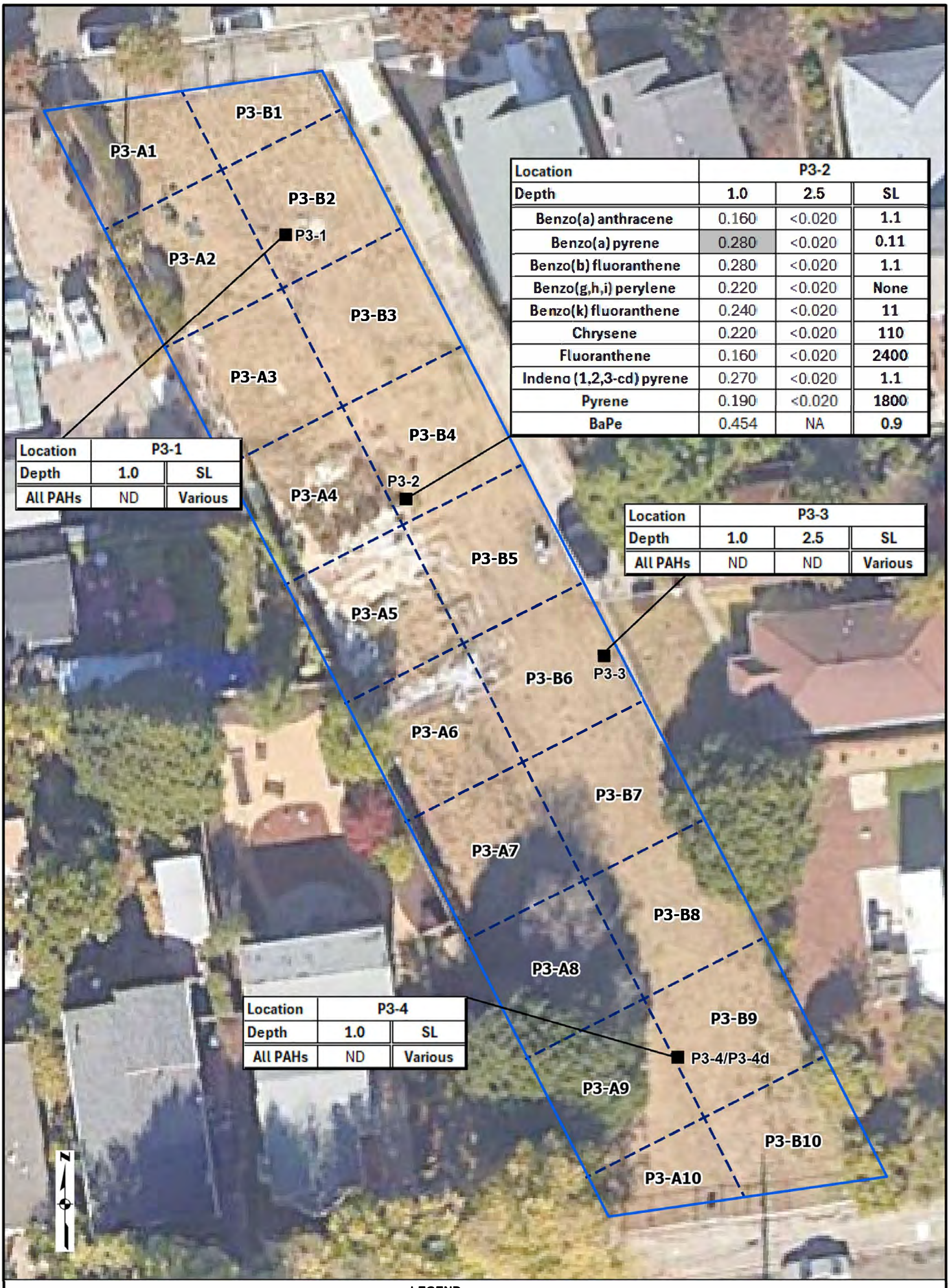
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P3_Metals	
Issued: 15-May-2025	Drawn By: AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- SELECT METALS
PARCEL 3

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5b



Location	P3-1	
Depth	1.0	SL
All PAHs	ND	Various

Location	P3-2		
Depth	1.0	2.5	SL
Benzo(a) anthracene	0.160	<0.020	1.1
Benzo(a) pyrene	0.280	<0.020	0.11
Benzo(b) fluoranthene	0.280	<0.020	1.1
Benzo(g,h,i) perylene	0.220	<0.020	None
Benzo(k) fluoranthene	0.240	<0.020	11
Chrysene	0.220	<0.020	110
Fluoranthene	0.160	<0.020	2400
Indeno (1,2,3-cd) pyrene	0.270	<0.020	1.1
Pyrene	0.190	<0.020	1800
BaPe	0.454	NA	0.9

Location	P3-3		
Depth	1.0	2.5	SL
All PAHs	ND	ND	Various

Location	P3-4	
Depth	1.0	SL
All PAHs	ND	Various

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, PAHs = Polyaromatic Hydrocarbons, BaPe = benzo(a)pyrene equivalent value, NA = not applicable, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

BaPe: BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).
All other PAHs: DTSC screening levels for residential soil (DTSC-SLs) as published in DTSC, HERO, HHRA Note 3 (April 2025) or US Environmental Protection Agency Regional Screening Levels (November 2024), if no DTSC-SL is published.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

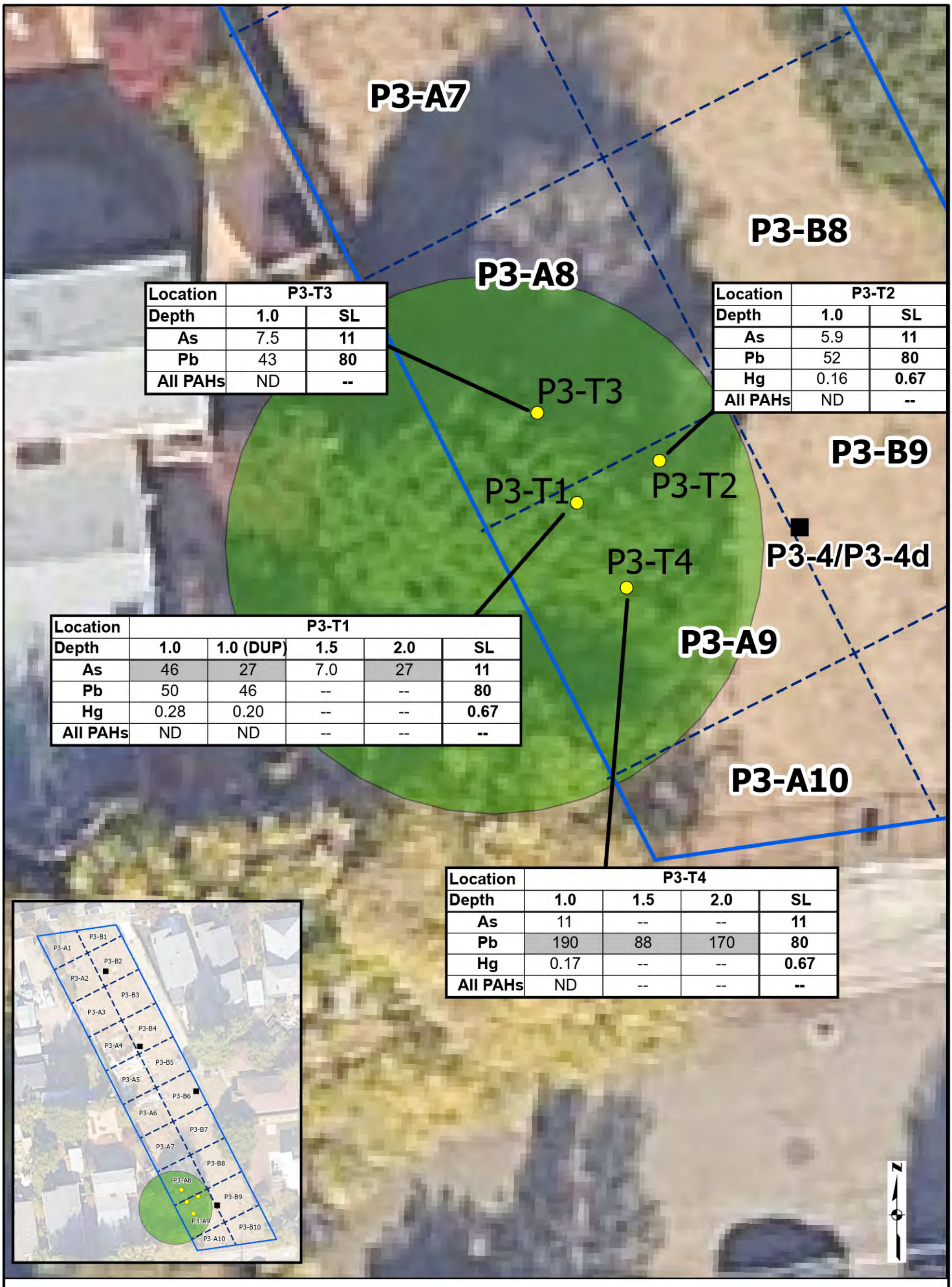
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P3_PAHs	
Issued: 15-May-2025	Drawn By: AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- PAHs
PARCEL 3

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5c



Location	P3-T3	
Depth	1.0	SL
As	7.5	11
Pb	43	80
All PAHs	ND	--

Location	P3-T2	
Depth	1.0	SL
As	5.9	11
Pb	52	80
Hg	0.16	0.67
All PAHs	ND	--

Location	P3-T1				
Depth	1.0	1.0 (DUP)	1.5	2.0	SL
As	46	27	7.0	27	11
Pb	50	46	--	--	80
Hg	0.28	0.20	--	--	0.67
All PAHs	ND	ND	--	--	--

Location	P3-T4			
Depth	1.0	1.5	2.0	SL
As	11	--	--	11
Pb	190	88	170	80
Hg	0.17	--	--	0.67
All PAHs	ND	--	--	--

Notes:

1) All depths in feet below ground surface (ft bgs).
2) grey shading indicates result exceeded SL.
3) results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, PAHs = Polyaromatic Hydrocarbons, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

- Targeted Soil Samples
- Tree Canopy
- Extent of Sample Grid Cell
- Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 5 10

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P3_Tree	
Issued: 15-May-2025	Drawn By: AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- TARGETED SAMPLES
PARCEL 3

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5d

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs). SLs and analytical results for each COPC are presented on Figures 5b-5d.

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)
- Planned City of Berkeley Property Gain
- Planned City of Berkeley Property Reduction

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

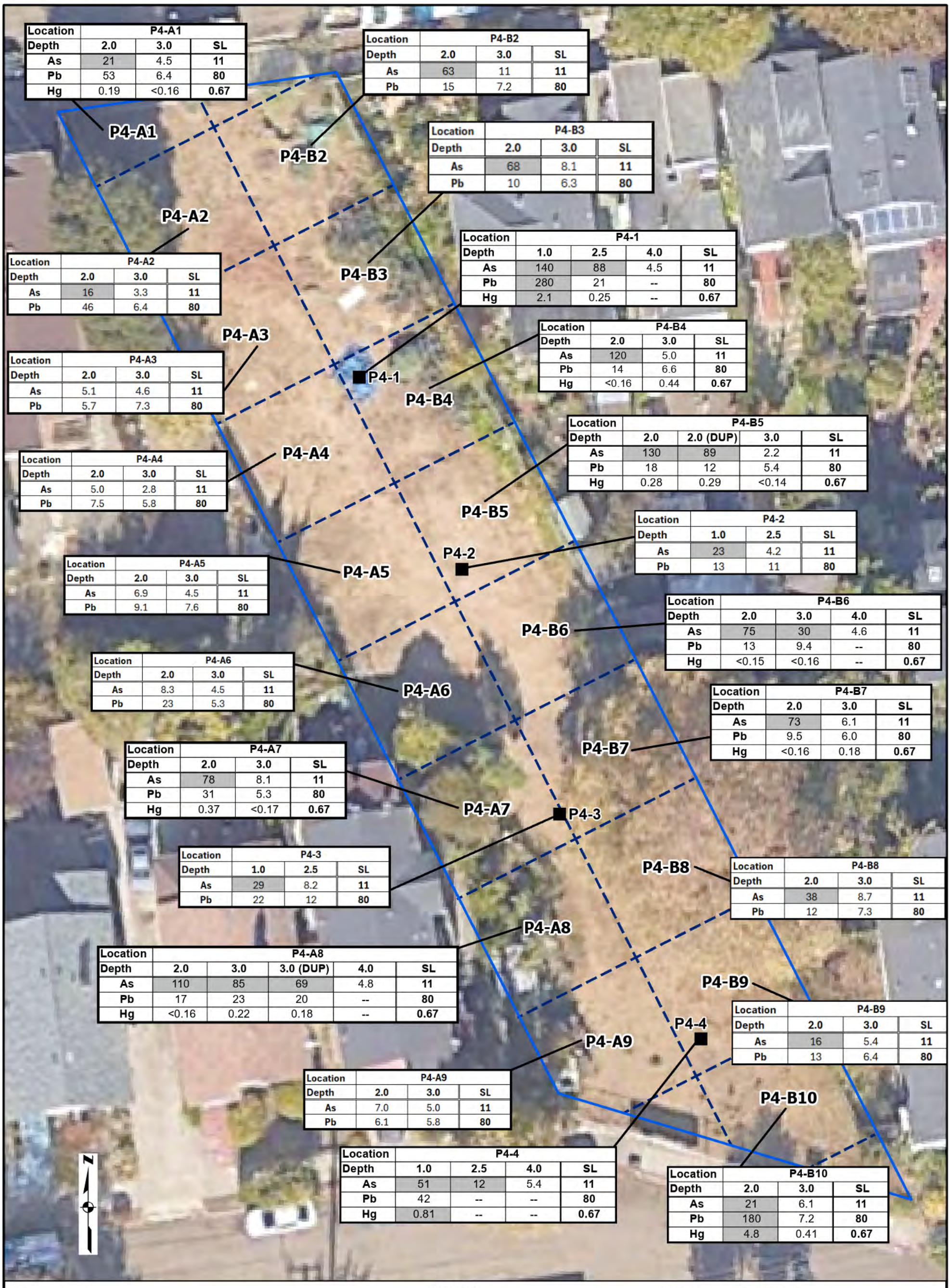
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P4_ResultsLotLines	
Issued:	Drawn By:	
22-Nov-2024	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

PROPOSED EXCAVATION DEPTHS
PARCEL 4

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 6a



Location	P4-A1		
Depth	2.0	3.0	SL
As	21	4.5	11
Pb	53	6.4	80
Hg	0.19	<0.16	0.67

Location	P4-B2		
Depth	2.0	3.0	SL
As	63	11	11
Pb	15	7.2	80

Location	P4-B3		
Depth	2.0	3.0	SL
As	68	8.1	11
Pb	10	6.3	80

Location	P4-A2		
Depth	2.0	3.0	SL
As	16	3.3	11
Pb	46	6.4	80

Location	P4-1			
Depth	1.0	2.5	4.0	SL
As	140	88	4.5	11
Pb	280	21	--	80
Hg	2.1	0.25	--	0.67

Location	P4-A3		
Depth	2.0	3.0	SL
As	5.1	4.6	11
Pb	5.7	7.3	80

Location	P4-B4		
Depth	2.0	3.0	SL
As	120	5.0	11
Pb	14	6.6	80
Hg	<0.16	0.44	0.67

Location	P4-B5			
Depth	2.0	2.0 (DUP)	3.0	SL
As	130	89	2.2	11
Pb	18	12	5.4	80
Hg	0.28	0.29	<0.14	0.67

Location	P4-A4		
Depth	2.0	3.0	SL
As	5.0	2.8	11
Pb	7.5	5.8	80

Location	P4-2		
Depth	1.0	2.5	SL
As	23	4.2	11
Pb	13	11	80

Location	P4-A5		
Depth	2.0	3.0	SL
As	6.9	4.5	11
Pb	9.1	7.6	80

Location	P4-B6			
Depth	2.0	3.0	4.0	SL
As	75	30	4.6	11
Pb	13	9.4	--	80
Hg	<0.15	<0.16	--	0.67

Location	P4-A6		
Depth	2.0	3.0	SL
As	8.3	4.5	11
Pb	23	5.3	80

Location	P4-B7		
Depth	2.0	3.0	SL
As	73	6.1	11
Pb	9.5	6.0	80
Hg	<0.16	0.18	0.67

Location	P4-A7		
Depth	2.0	3.0	SL
As	78	8.1	11
Pb	31	5.3	80
Hg	0.37	<0.17	0.67

Location	P4-3		
Depth	1.0	2.5	SL
As	29	8.2	11
Pb	22	12	80

Location	P4-B8		
Depth	2.0	3.0	SL
As	38	8.7	11
Pb	12	7.3	80

Location	P4-A8				
Depth	2.0	3.0	3.0 (DUP)	4.0	SL
As	110	85	69	4.8	11
Pb	17	23	20	--	80
Hg	<0.16	0.22	0.18	--	0.67

Location	P4-B9		
Depth	2.0	3.0	SL
As	16	5.4	11
Pb	13	6.4	80

Location	P4-A9		
Depth	2.0	3.0	SL
As	7.0	5.0	11
Pb	6.1	5.8	80

Location	P4-4			
Depth	1.0	2.5	4.0	SL
As	51	12	5.4	11
Pb	42	--	--	80
Hg	0.81	--	--	0.67

Location	P4-B10		
Depth	2.0	3.0	SL
As	21	6.1	11
Pb	180	7.2	80
Hg	4.8	0.41	0.67

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, As = Arsenic, Pb = Lead, Hg = Mercury, -- = not analyzed.
5) Data is shown for arsenic, lead, and mercury at locations with one or more detections. See Table 2 for complete analytical results for metals.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

As: Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
Pb: DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note 3, April.
Hg: DTSC, 2025, HERO, HHRA Note 3, April.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

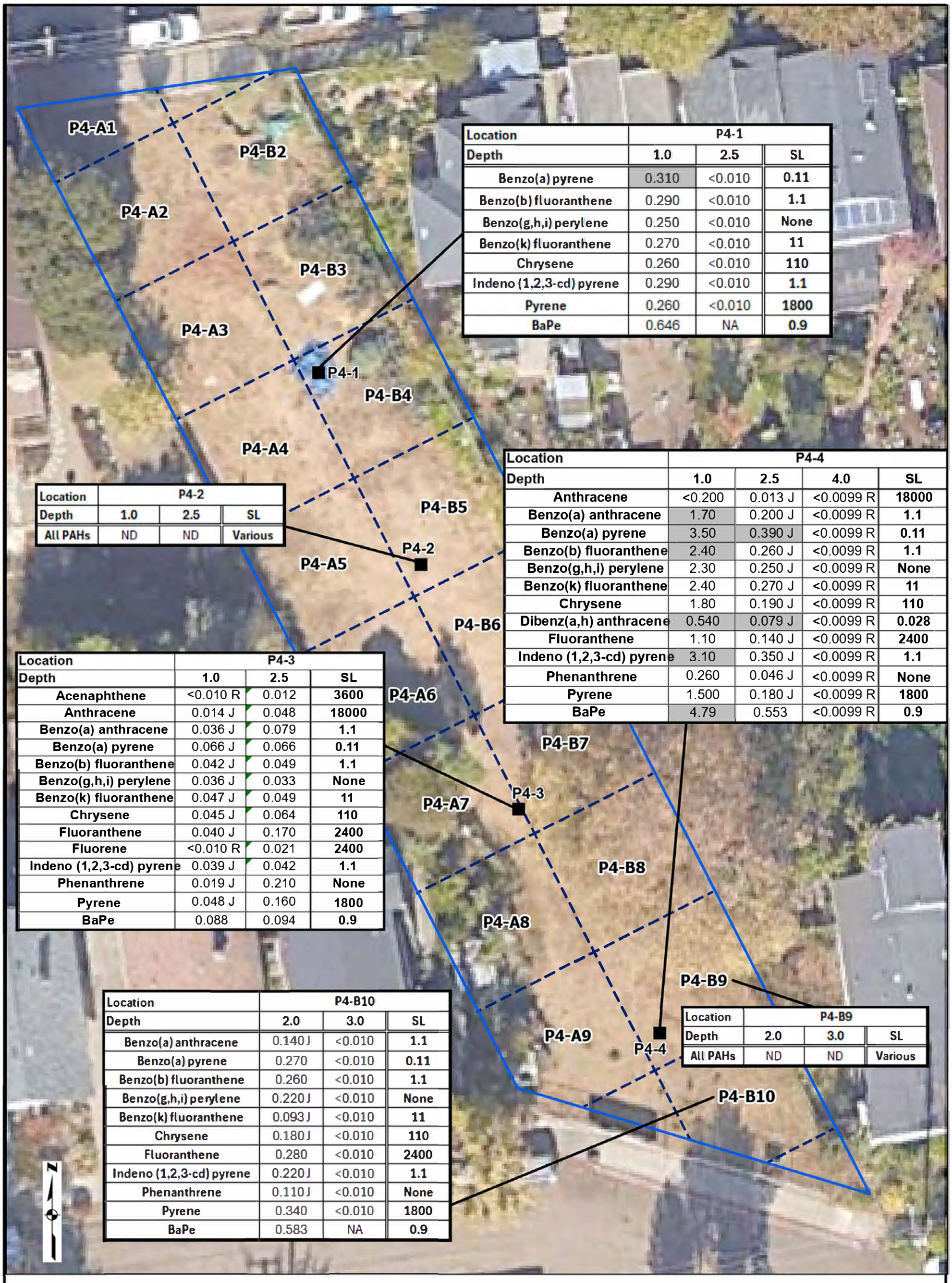
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P4_Metals	
Issued:	Drawn By:	
15-May-2025	AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- SELECT METALS
PARCEL 4

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 6b



Location	P4-1		
Depth	1.0	2.5	SL
Benzo(a) pyrene	0.310	<0.010	0.11
Benzo(b) fluoranthene	0.290	<0.010	1.1
Benzo(g,h,i) perylene	0.250	<0.010	None
Benzo(k) fluoranthene	0.270	<0.010	11
Chrysene	0.260	<0.010	110
Indeno (1,2,3-cd) pyrene	0.290	<0.010	1.1
Pyrene	0.260	<0.010	1800
BaPe	0.646	NA	0.9

Location	P4-2		
Depth	1.0	2.5	SL
All PAHs	ND	ND	Various

Location	P4-4			
Depth	1.0	2.5	4.0	SL
Anthracene	<0.200	0.013 J	<0.0099 R	18000
Benzo(a) anthracene	1.70	0.200 J	<0.0099 R	1.1
Benzo(a) pyrene	3.50	0.390 J	<0.0099 R	0.11
Benzo(b) fluoranthene	2.40	0.260 J	<0.0099 R	1.1
Benzo(g,h,i) perylene	2.30	0.250 J	<0.0099 R	None
Benzo(k) fluoranthene	2.40	0.270 J	<0.0099 R	11
Chrysene	1.80	0.190 J	<0.0099 R	110
Dibenz(a,h) anthracene	0.540	0.079 J	<0.0099 R	0.028
Fluoranthene	1.10	0.140 J	<0.0099 R	2400
Indeno (1,2,3-cd) pyrene	3.10	0.350 J	<0.0099 R	1.1
Phenanthrene	0.260	0.046 J	<0.0099 R	None
Pyrene	1.500	0.180 J	<0.0099 R	1800
BaPe	4.79	0.553	<0.0099 R	0.9

Location	P4-3		
Depth	1.0	2.5	SL
Acenaphthene	<0.010 R	0.012	3600
Anthracene	0.014 J	0.048	18000
Benzo(a) anthracene	0.036 J	0.079	1.1
Benzo(a) pyrene	0.066 J	0.066	0.11
Benzo(b) fluoranthene	0.042 J	0.049	1.1
Benzo(g,h,i) perylene	0.036 J	0.033	None
Benzo(k) fluoranthene	0.047 J	0.049	11
Chrysene	0.045 J	0.064	110
Fluoranthene	0.040 J	0.170	2400
Fluorene	<0.010 R	0.021	2400
Indeno (1,2,3-cd) pyrene	0.039 J	0.042	1.1
Phenanthrene	0.019 J	0.210	None
Pyrene	0.048 J	0.160	1800
BaPe	0.088	0.094	0.9

Location	P4-B9		
Depth	2.0	3.0	SL
All PAHs	ND	ND	Various

Location	P4-B10		
Depth	2.0	3.0	SL
Benzo(a) anthracene	0.140 J	<0.010	1.1
Benzo(a) pyrene	0.270	<0.010	0.11
Benzo(b) fluoranthene	0.260	<0.010	1.1
Benzo(g,h,i) perylene	0.220 J	<0.010	None
Benzo(k) fluoranthene	0.093 J	<0.010	11
Chrysene	0.180 J	<0.010	110
Fluoranthene	0.280	<0.010	2400
Indeno (1,2,3-cd) pyrene	0.220 J	<0.010	1.1
Phenanthrene	0.110 J	<0.010	None
Pyrene	0.340	<0.010	1800
BaPe	0.583	NA	0.9

Notes:

1) All depths in feet below ground surface (ft bgs).
2) Grey shading indicates result exceeded SL.
3) Results & SLs are reported in milligrams per kilogram.
4) SL = screening level, PAHs = Polyaromatic Hydrocarbons, BaPe = benzo(a)pyrene equivalent value, NA = not applicable, ND = not detected.
5) See Table 3 for analytical results for complete analytical results for PAHS and data flag definitions.

LEGEND

Extent of Sample Grid Cell

Previous Investigation Sample Location (2022)

Screening Level References:

BaPe: BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).
All other PAHs: DTSC screening levels for residential soil (DTSC-SLs) as published in DTSC, HERO, HHRA Note 3 (April 2025) or US Environmental Protection Agency Regional Screening Levels (November 2024), if no DTSC-SL is published.

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

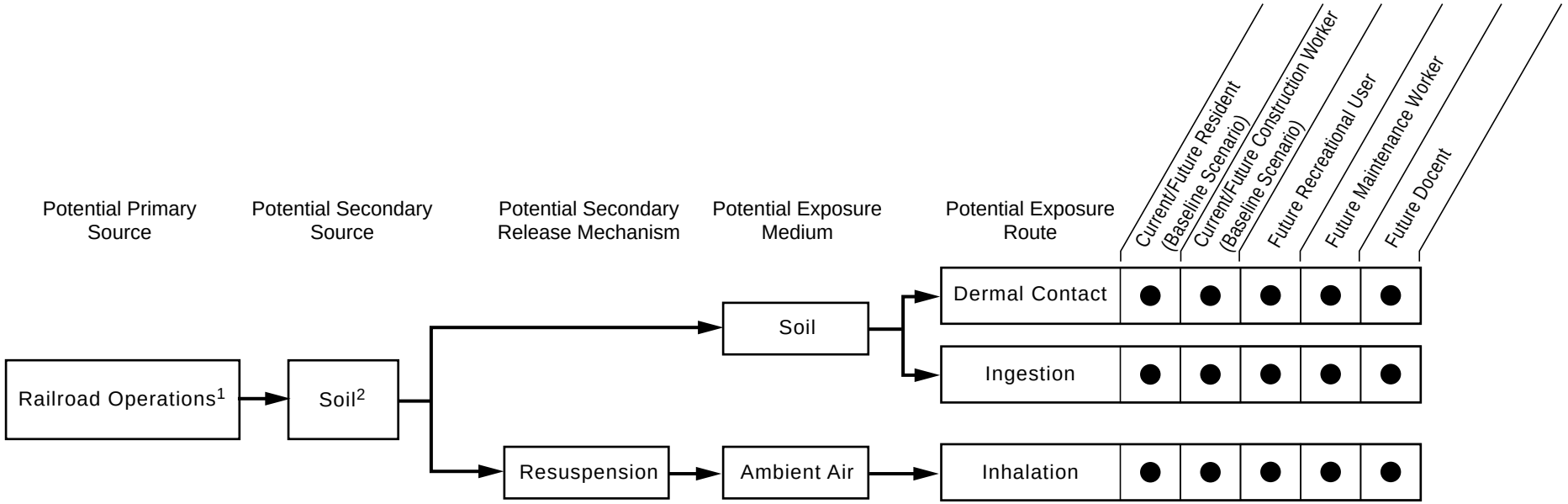
GSI ENVIRONMENTAL

GSI Job No.	Map ID:	
6272	P4_PAHs	
Issued: 15-May-2025	Drawn By: AJC	
	Chk'd By: TRG	Aprv'd By: JPD

SOIL SAMPLING RESULTS- PAHs
PARCEL 4

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 6c



Notes:

1) All parcels were formerly part of the Santa Fe Railroad Right-of-Way and contained railroad tracks. Typical environmental impacts on railroad corridors include deposition of petroleum-related constituents, metals, and weed control chemicals to shallow soil.

2) Site chemicals of potential concern (COPCs) are only present in the vadose zone, are not mobile in soil, and have low solubility. As such, mobilization of COPCs to groundwater does not represent a complete exposure pathway.

EXPLANATION

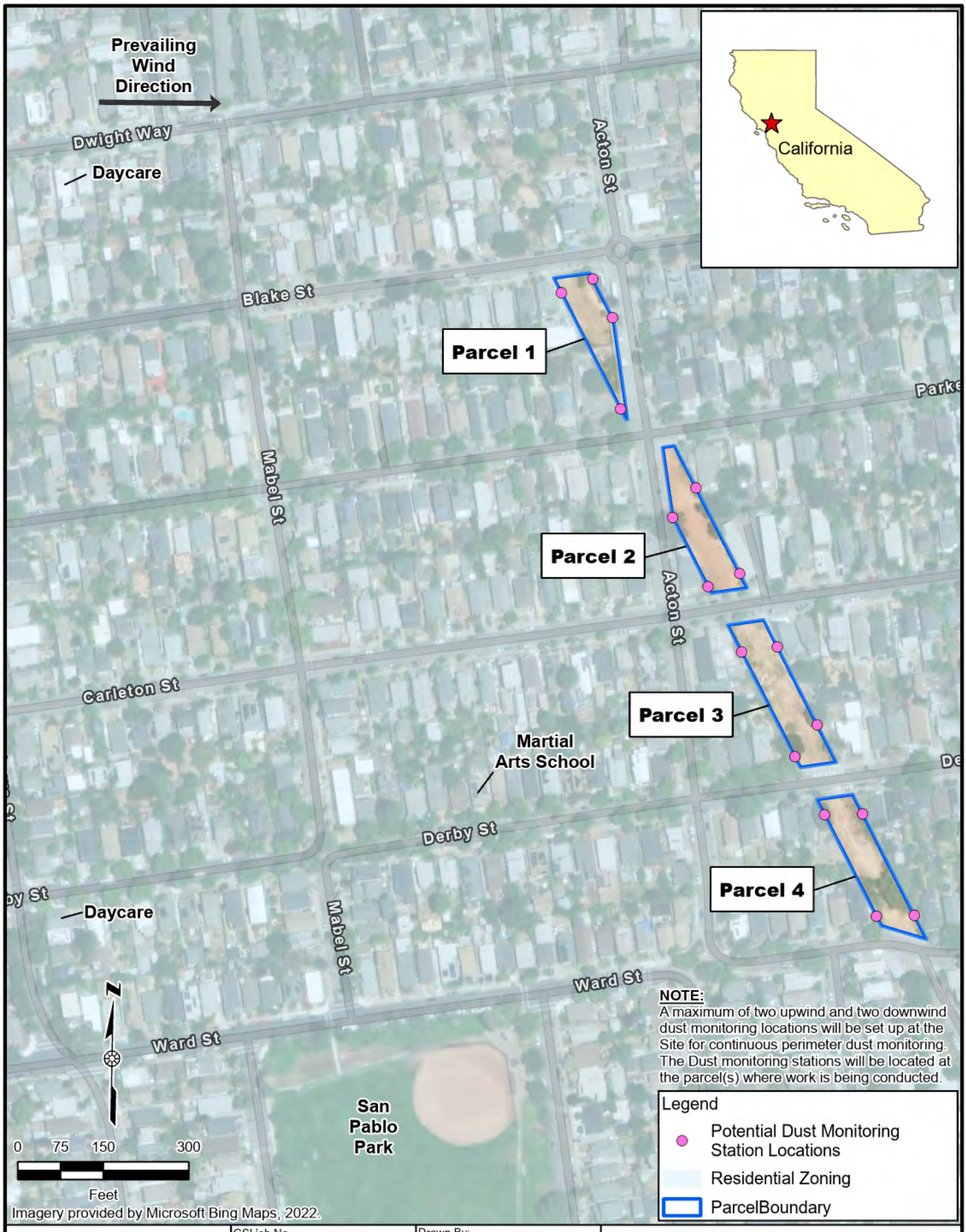
- ☐ Incomplete pathway if blank
- ● Complete exposure pathway; included in SLRE

GSI ENVIRONMENTAL

GSI Job No.	6272	Drawn By:	JC
Issued:	10/22/2024	Chk'd By:	JKW
	Figure 7	Aprv'd By:	JPD
Scale:	NA		

CONCEPTUAL SITE EXPOSURE MODEL

Santa Fe Trackbed to Park
Berkeley, California



GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	DM
Issued:	19-Mar-2025	Chk'd By:	KBI
		Appv'd By:	JPD
Map ID:	SFROW_Site_F8	**FIGURE 8**	

TYPICAL AIR MONITORING STATION LOCATIONS AND SENSITIVE RECEPTORS

Santa Fe Trackbed to Park
Berkeley, California

GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	AJC
Issued:	21-Oct-2025	Chk'd By:	TRG
		Appv'd By:	TRG
Map ID:	SFROW_TruckRoutes		FIGURE 9A

PRIMARY TRUCK ROUTE

Santa Fe Trackbed to Park
Berkeley, California

GSI ENVIRONMENTAL	GSI job No. 6272	Drawn By: AJC	ALTERNATIVE TRUCK ROUTE
	Issued: 21-Oct-2025	Chk'd By: TRG	
		Appv'd By: TRG	Santa Fe Trackbed to Park Berkeley, California
	Map ID: SFROW_TruckRoutes	FIGURE 9B	

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDICES

Appendix A. Conceptual Site Redevelopment Plans
Appendix B. Selection of Exposure Point Concentrations and Screening Levels
Appendix C. Screening Level Risk Assessment Calculations
Appendix D. Ecological Risk Assessment Supporting Documentation
Appendix E. Site-Specific Health and Safety Plan
Appendix F. Administrative Record
Appendix G. Air Quality Analysis

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX A

Conceptual Site Redevelopment Plans

1 COMMUNITY GARDEN PARK
-RAISED AND IN-GROUND GARDEN BEDS
-PICNIC TABLES AND WORK BENCH
-COMPOST, MULCH, AND TOOL STORAGE
-POLLINATOR, BIO-FILTRATION, AND PRIVACY SCREEN PLANTING

2 DOG PLAY AND COMMUNITY PARK
-SEPARATE ACTIVE AND PASSIVE DOG PLAY AREAS
-PERIMETER LOGS & SEATING
-DRINKING AND HOSE-OFF AREA
-PRIVACY SCREEN PLANTING

3 KID'S PLAY AND COMMUNITY PARK
-PLAYGROUND WITH WOOD EQUIPMENT
-KID'S SCOOTER/CYCLE TRACK
-PICNIC AREA
-POLLINATOR, BIO-FILTRATION, AND PRIVACY SCREEN PLANTING

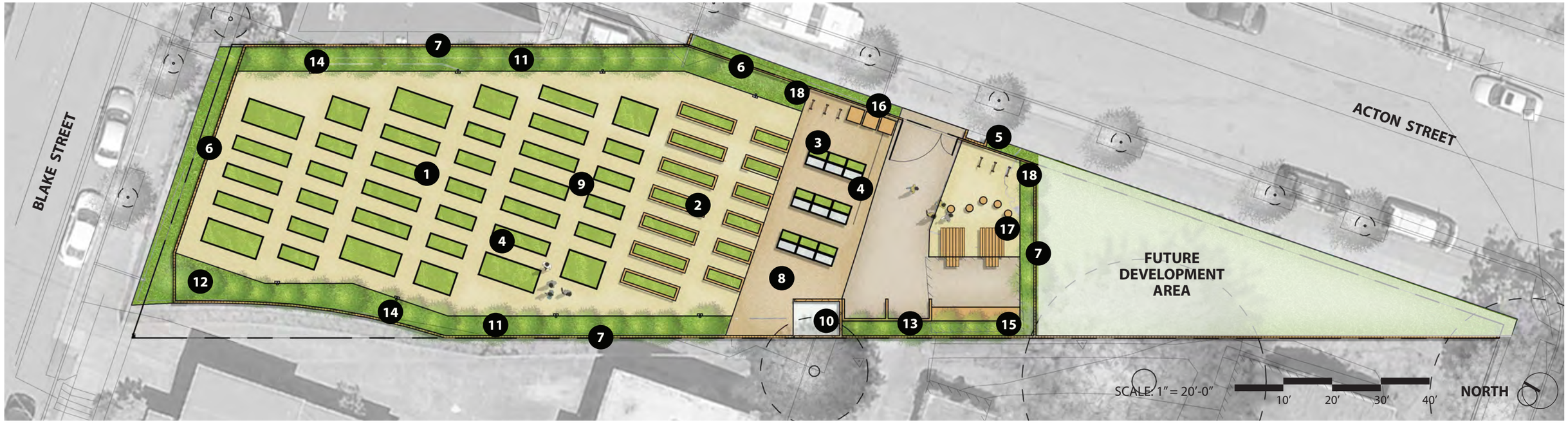
4 URBAN FARM AND EDUCATION PARK
-COMMUNITY PERMACTULTURE GARDEN
-OUTDOOR CLASSROOM WITH SPACE FOR LISTENING AND HANDS ON LEARNING
-PICNIC AREA
-POLLINATOR, BIO-FILTRATION, AND PRIVACY SCREEN PLANTING

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

LANDSCAPE PLAN - OVERALL

PGAdesign LANDSCAPE ARCHITECTS

7.19.2023



1 IN GROUND BEDS

2 RAISED BEDS

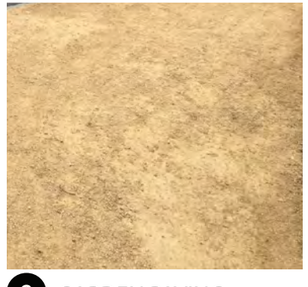
3 WHEELCHAIR ACCESIBLE BEDS

4 COLD FRAMES

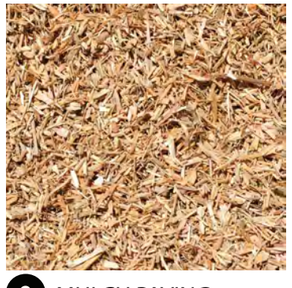
5 COMMUNITY FOOD PANTRY

6 WIRE FENCING

7 WOOD FENCING

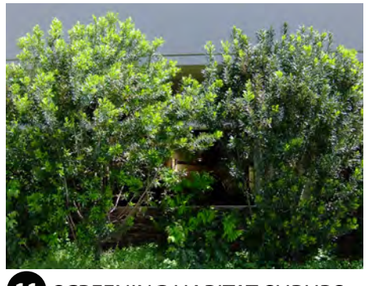


8 GARDEN PAVING



9 MULCH PAVING

10 GARDEN SHED



11 SCREENING HABITAT SHRUBS

12 POLLINATOR PLANTING AND HABITAT BOXES

13 BULK MATERIAL STORAGE

14 HOSE BIB

15 WORKBENCH

16 REFUSE BINS

17 PICNIC TABLES

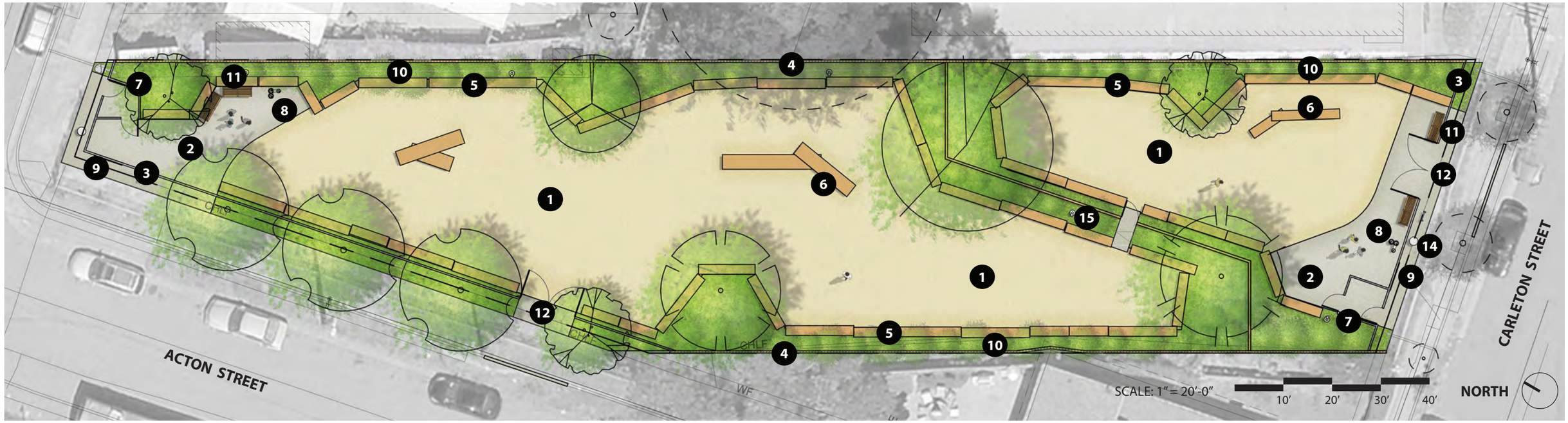
18 BICYCLE PARKING

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

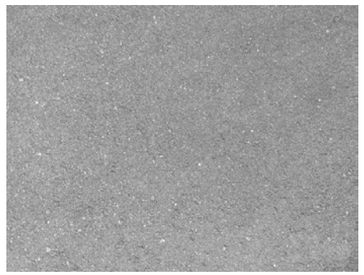
COMMUNITY GARDEN PARK

PGAdesign LANDSCAPE ARCHITECTS

7.19.2023



1 MULCH PAVING



2 CONCRETE PAVING

3 WIRE MESH FENCING

4 WOOD FENCING

5 LOG BORDER

6 STACKED LOGS

7 WOOD BENCH

8 HOSE BIB AND DRINKING FOUNTAIN

9 COMMUNITY NOTICE BOARD

10 SCREENING EVERGREEN SHRUBS

11 BENCHES

12 VEHICULAR ENTRY

13 BICYCLE PARKING

14 TRASH/RECYCLING

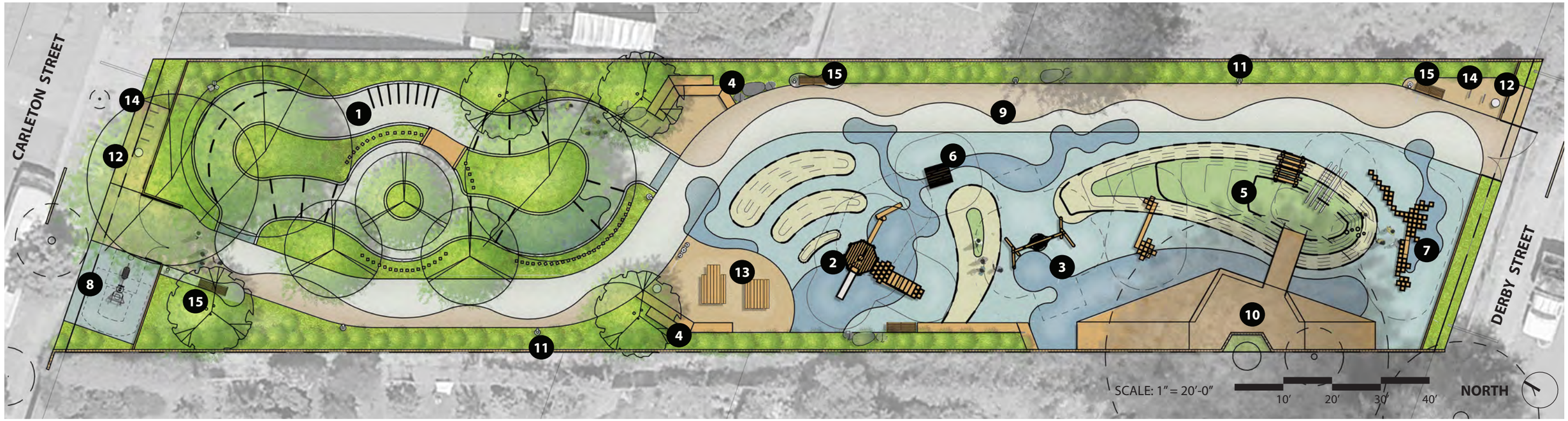
15 LIGHTING

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

DOG PLAY AND COMMUNITY PARK

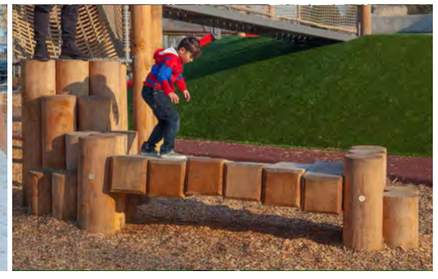
PGAdesign LANDSCAPE ARCHITECTS

7.19.2023



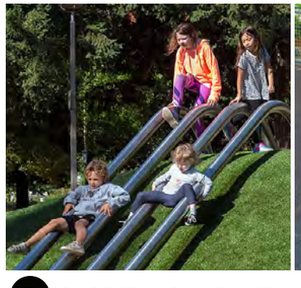
1 SCOOTER AND CYCLE TRACK

2 TREE HUT WITH TWISTING BRIDGE, SLIDE, AND LOG SCRAMBLE

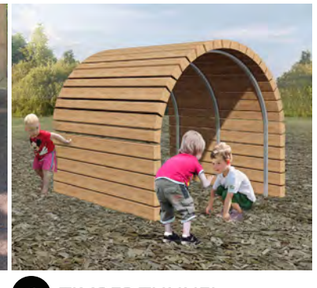


3 NEST SWING

4 TIMBER SEATING

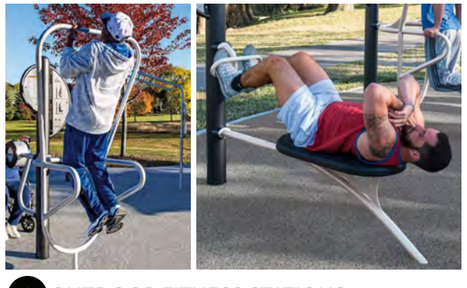


5 RUBBER MOUND WITH LADDER AND SLIDE

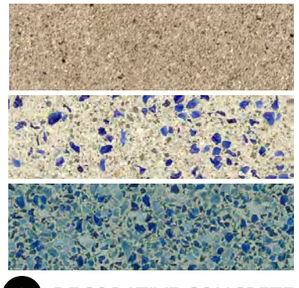


6 TIMBER TUNNEL

7 STEPPING CLUSTER



8 OUTDOOR FITNESS STATIONS



9 DECORATIVE CONCRETE

10 DECK AND BRIDGE

11 LIGHTING

12 TRASH/RECYCLING

13 PICNIC TABLES

14 BICYCLE PARKING

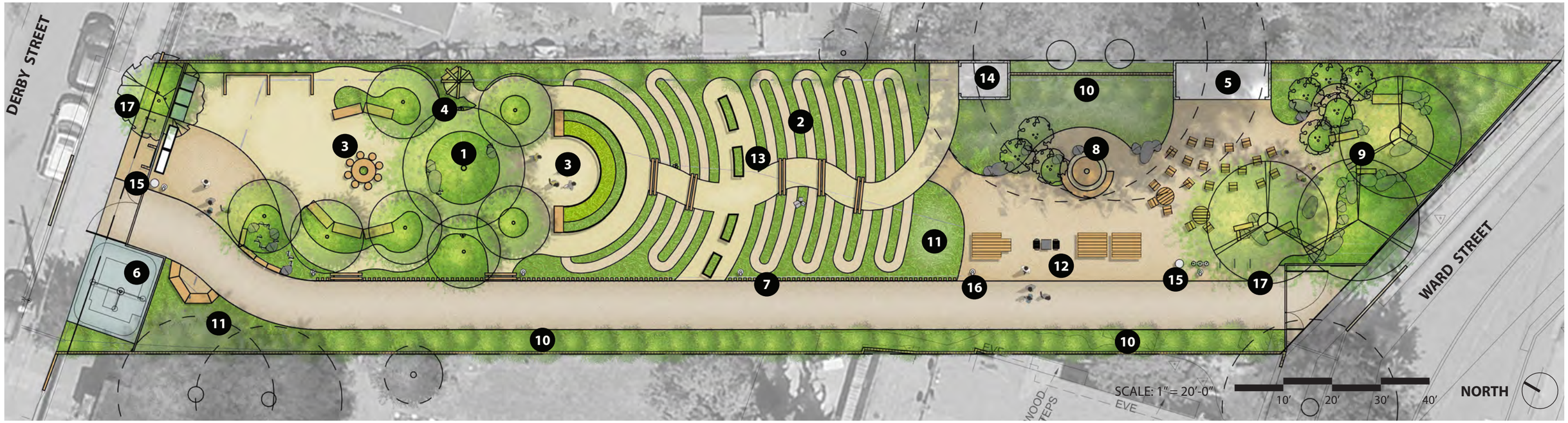
15 BENCHES

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

KID'S PLAY AND COMMUNITY PARK

PGAdesign LANDSCAPE ARCHITECTS

7.19.2023



1 PERMACULTURE GARDEN

2 ROW CROPS

3 GATHERING SPACE

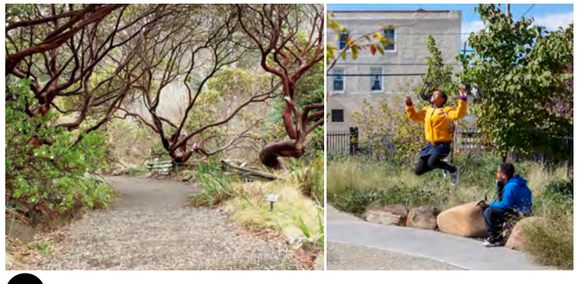
4 VINE PYRAMID

5 OUTDOOR CLASSROOM

6 FITNESS STATION

7 LOW GARDEN FENCE

8 KIDS HEIGHT ACTIVITY TABLE



9 EXPLORATION PATHWAY WITH BOULDER EDGE

10 SCREENING HABITAT SHRUBS

11 POLLINATOR PLANTING AND HABITAT BOXES

12 PICNIC AREA

13 HOSE BIB

14 GARDEN SHED

15 TRASH/RECYCLING

16 LIGHTING

17 BICYCLE PARKING

SANTA FE RAILROAD TRACKBED TO PARK CONVERSION PROJECT

URBAN FARM AND EDUCATION PARK

PGAdesign LANDSCAPE ARCHITECTS

7.19.2023

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX B

Selection of Exposure Point Concentrations and Screening Levels

GSI ENVIRONMENTAL

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
1	***2022 Soil Investigation***																				
	P1-1	P1-1-1.0	7/13/2022	1.0	**0.91**	**9.3**	**180**	**0.56**	<0.50	**62**	**15**	**37**	**34**	**0.30**	**0.78**	**57**	**1.2**	<0.50	<0.50	**72**	**100**
		P1-1-2.5	7/13/2022	2.5	<0.5	**8.4**	**200**	**0.65**	<0.5	**69**	**17**	**33**	**9**	<0.050	**0.9**	**67**	**1.3**	<0.5	<0.5	**74**	**72**
		P1-1-4.0	7/13/2022	4.0	<0.5	**6.1**	**180**	**0.63**	<0.5	**70**	**12**	**29**	**6.8**	<0.050	<0.5	**58**	**1.2**	<0.5	<0.5	**71**	**59**
	P1-2	P1-2-1.0	7/13/2022	1.0	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-2-2.5	7/13/2022	2.5	**1.3**	**12**	**300**	**0.73**	<0.5	**37**	**16**	**28**	**13**	**0.079**	**1.3**	**53**	**1.3**	<0.5	<0.5	**40**	**66**
		P1-2-4.0	7/13/2022	4.0	--	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-3	P1-3-1.0	7/13/2022	1.0	**2.7**	**83**	**190**	**0.5**	<0.5	**33**	**19**	**32**	**34**	**0.23**	**1.0**	**48**	**1.1**	<0.5	<0.5	**42**	**74**
		P1-3-2.5	7/13/2022	2.5	--	**35**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-3-4.0	7/13/2022	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P1-A2	P1-A2-2.0	1/11/2024	2.0	--	**8.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A2-3.0	1/11/2024	3.0	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A3	P1-A3-2.0	1/11/2024	2.0	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A3-3.0	1/11/2024	3.0	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A4	P1-A4-2.0	1/11/2024	2.0	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A4-3.0	1/11/2024	3.0	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A5	P1-A5-2.0	1/11/2024	2.0	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A5-3.0	1/11/2024	3.0	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A6	P1-A6-2.0	1/11/2024	2.0	--	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A6-3.0	1/11/2024	3.0	--	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<2.9 UJ	**8.0**	**160**	<0.48	<0.48	**50**	**12**	**31**	**34**	<0.16	<1.1	**45**	<2.9	<0.48	<2.9	**58**	**81**
		P1-A7-2.5	1/11/2024	2.5	<2.9 UJ	**4.1**	**130**	<0.49	<0.49	**46**	**11**	**20**	**6**	<0.16	<1.1	**41**	<2.9	<0.49	<2.9	**55**	**40**
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	<2.9 UJ	**6.1**	**170**	<0.48	<0.48	**48**	**14**	**33**	**47**	<0.16	<1	**46**	<2.9	<0.48	<2.9	**58**	**95**
		P1-A8-1.0	1/11/2024	1.0	<2.9 UJ	**7.5**	**200**	**0.49**	**0.71**	**47**	**23**	**35**	**54**	<0.16	<1	**52**	<2.9	<0.48	<2.9	**63**	**100**
		P1-A8-2.5	1/11/2024	2.5	<2.9 UJ	**5.5**	**140**	<0.49	<0.49	**40**	**11**	**21**	**9.5**	<0.16	**1.5**	**40**	<2.9	**0.51**	<2.9	**57**	**41**
	P1-A9	P1-A9-2.0	1/11/2024	2.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A9-3.0	1/11/2024	3.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A10	P1-A10-2.0	1/11/2024	2.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A10-3.0	1/11/2024	3.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B2	P1-B2-2.0	1/11/2024	2.0	--	**40**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B2-3.0	1/11/2024	3.0	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B3	P1-B3-2.0	1/11/2024	2.0	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B3-3.0	1/11/2024	3.0	--	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B4	P1-B4-2.0	1/11/2024	2.0	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-3.0	1/11/2024	3.0	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-4.0	1/11/2024	4.0	--	**9.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
1	P1-B5	P1-B5-2.0	1/11/2024	2.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-3.0	1/11/2024	3.0	--	**150**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-4.0	1/11/2024	4.0	--	**130**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5D-5.0	4/19/2024	5.0	--	**5.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		DUP-2-240419	4/19/2024	5.0	--	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B6	P1-B6-2.0	1/11/2024	2.0	--	**41**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-3.0	1/11/2024	3.0	--	**110**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-4.0	1/11/2024	4.0	--	**100**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-5.0	4/19/2024	5.0	--	**23**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-6.0	4/19/2024	6.0	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B7	P1-B7-2.0	1/11/2024	2.0	--	**32**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-3.0	1/11/2024	3.0	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-4.0	1/11/2024	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Parcel 1 Current Receptor EPCs				**2.7**	**150**	**300**	**0.73**	**0.71**	**70**	**23**	**37**	**54**	**0.30**	**1.5**	**67**	**1.3**	**0.51**	2.9	**74**	**100**
2	***2022 Soil Investigation***																				
	P2-1	P2-1-1.0	7/13/2022	1.0	--	**28**	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--
		P2-1-2.5	7/13/2022	2.5	**1.4**	**26**	**150**	<0.5	<0.5	**46**	**12**	**29**	**63**	**0.65**	<0.5	**37**	**0.93**	<0.5	<0.5	**55**	**180**
		P2-1-4.0	7/13/2022	4.0	--	**24**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-2	P2-2-1.0	7/13/2022	1.0	**1.8**	**37**	**170**	<0.5	<0.5	**34**	**12**	**42**	**200**	**0.43**	<0.5	**38**	**1.6**	<0.5	<0.5	**73**	**150**
		P2-2-2.5	7/13/2022	1.0	--	**41**	--	--	--	--	--	--	**10**	--	--	--	--	--	--	--	--
		P2-2-4.0	7/13/2022	4.0	--	**3.4**	--	--	--	--	--	--	**6.9**	--	--	--	--	--	--	--	--
	P2-3	P2-3-1.0	7/13/2022	1.0	**1.5**	**32**	**180**	<0.5	<0.5	**59**	**14**	**81**	**140**	**0.48**	**0.72**	**61**	**1.1**	<0.5	<0.5	**53**	**190**
		P2-3-2.5	7/13/2022	2.5	<0.5	**6.7**	**190**	**0.73**	<0.5	**73**	**13**	**32**	**7.6**	<0.050	<0.5	**55**	**1.2**	<0.5	<0.5	**71**	**61**
	P2-4	P2-4-1.0	7/13/2022	1.0	**3.6**	**220**	**280**	**0.57**	<0.5	**46**	**9.8**	**60**	**56**	**2.1**	<0.5	**83**	**0.91**	<0.5	<0.5	**34**	**62**
		P2-4-2.5	7/13/2022	2.5	--	**8.9**	--	--	--	--	--	--	**12**	<0.16 R	--	--	--	--	--	--	--
		P2-4-4.0	7/13/2022	4.0	--	**4.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																				
	P2-A4	P2-A4-2.0	1/8/2024	2.0	--	**4.7**	--	--	--	--	--	--	**6.6**	<0.16	--	--	--	--	--	--	--
		P2-A4-3.0	1/8/2024	3.0	--	**4.0**	--	--	--	--	--	--	**5.6**	<0.15	--	--	--	--	--	--	--
	P2-A5	P2-A5-2.0	1/8/2024	2.0	--	**4.4**	--	--	--	--	--	--	**6.0**	<0.16	--	--	--	--	--	--	--
		P2-A5-3.0	1/8/2024	3.0	--	**4.1**	--	--	--	--	--	--	**8.3**	<0.16	--	--	--	--	--	--	--
	P2-A6	P2-A6-2.0	1/8/2024	2.0	--	**6.1**	--	--	--	--	--	--	**71**	<0.15	--	--	--	--	--	--	--
		P2-A6-3.0	1/8/2024	3.0	--	**5.1**	--	--	--	--	--	--	**12**	<0.14	--	--	--	--	--	--	--
	P2-A7	P2-A7-2.0	1/8/2024	2.0	--	**5.9**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P2-A7-3.0	1/8/2024	3.0	--	**4.2**	--	--	--	--	--	--	**6.3**	<0.15	--	--	--	--	--	--	--
	P2-A8	P2-A8-2.0	1/8/2024	2.0	--	**9.6**	--	--	--	--	--	--	**110**	<0.15	--	--	--	--	--	--	--
		P2-A8-3.0	1/8/2024	3.0	--	**4.6**	--	--	--	--	--	--	**5.3**	<0.15	--	--	--	--	--	--	--
	P2-A9	P2-A9-2.0	1/8/2024	2.0	--	**9.9**	--	--	--	--	--	--	**44**	<0.14	--	--	--	--	--	--	--
		P2-A9-2.0(DUP)	1/8/2024	2.0	--	**11**	--	--	--	--	--	--	**94**	<0.16	--	--	--	--	--	--	--
		P2-A9-3.0	1/8/2024	3.0	--	**4.6**	--	--	--	--	--	--	**5.3**	<0.16	--	--	--	--	--	--	--
	P2-A10	P2-A10-2.0	1/8/2024	2.0	--	**6.2**	--	--	--	--	--	--	**35**	**0.46**	--	--	--	--	--	--	--
		P2-A10-3.0	1/8/2024	3.0	--	**4.4**	--	--	--	--	--	--	**5.3**	<0.16	--	--	--	--	--	--	--
	P2-B1	P2-B1-2.0	1/8/2024	2.0	--	**36**	--	--	--	--	--	--	**180**	**0.42**	--	--	--	--	--	--	--
		P2-B1-3.0(DUP)	1/8/2024	3.0	--	**20**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
		P2-B1-3.0	1/8/2024	3.0	--	**33**	--	--	--	--	--	--	**9.2**	<0.15	--	--	--	--	--	--	--
		P2-B1-4.0	1/8/2024	4.0	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B1D-5.0	4/19/2024	5.0	--	**4.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
2	P2-1D	P2-1D-5.0	1/8/2024	5.0	--	**14**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-1D-6.0	1/8/2024	6.0	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B3	P2-B3-2.0	1/8/2024	2.0	--	**21**	--	--	--	--	--	--	**6.2**	<0.14	--	--	--	--	--	--	--
		P2-B3-3.0	1/8/2024	3.0	--	**13**	--	--	--	--	--	--	**13**	<0.14	--	--	--	--	--	--	--
		P2-B3-4.0	1/8/2024	4.0	--	**5.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B4	P2-B4-2.0	1/8/2024	2.0	--	**24**	--	--	--	--	--	--	**51**	**0.27**	--	--	--	--	--	--	--
		P2-B4-3.0	1/8/2024	3.0	--	**53**	--	--	--	--	--	--	**7.3**	<0.14	--	--	--	--	--	--	--
		P2-B4-4.0	1/8/2024	4.0	--	**74**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B4D-5.0	4/19/2024	5.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B5	P2-B5-2.0	1/8/2024	2.0	--	**120**	--	--	--	--	--	--	**24**	**0.27**	--	--	--	--	--	--	--
		P2-B5-3.0	1/8/2024	3.0	--	**23**	--	--	--	--	--	--	**10**	<0.14	--	--	--	--	--	--	--
		P2-B5-4.0	1/8/2024	4.0	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B6	P2-B6-2.0	1/8/2024	2.0	--	**310**	--	--	--	--	--	--	**66**	**0.49**	--	--	--	--	--	--	--
		P2-B6-3.0	1/8/2024	3.0	--	**53**	--	--	--	--	--	--	**14**	<0.14	--	--	--	--	--	--	--
		P2-B6-4.0	1/8/2024	4.0	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6-4.0(DUP)	1/8/2024	4.0	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6D-5.0	4/19/2024	5.0	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B7	P2-B7-2.0	1/8/2024	2.0	--	**210**	--	--	--	--	--	--	**78**	**11**	--	--	--	--	--	--	--
		P2-B7-3.0	1/8/2024	3.0	--	**72**	--	--	--	--	--	--	**14**	**0.32**	--	--	--	--	--	--	--
		P2-B7-4.0	1/8/2024	4.0	--	**38**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B7D-5.0	4/19/2024	5.0	--	**6.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B8	P2-B8-2.0	1/8/2024	2.0	--	**100**	--	--	--	--	--	--	**68**	**0.5**	--	--	--	--	--	--	--
		P2-B8-3.0	1/8/2024	3.0	--	**91**	--	--	--	--	--	--	**16**	<0.14	--	--	--	--	--	--	--
		P2-B8-4.0	1/8/2024	4.0	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B9	P2-B9-2.0	1/8/2024	2.0	--	**19**	--	--	--	--	--	--	**24**	**0.24**	--	--	--	--	--	--	--
		P2-B9-3.0	1/8/2024	3.0	--	**59**	--	--	--	--	--	--	**25**	**0.18**	--	--	--	--	--	--	--
		P2-B9-4.0	1/8/2024	4.0	--	**29**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-5.0	4/19/2024	5.0	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-6.0	4/19/2024	6.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B10	P2-B10-2.0	1/8/2024	2.0	--	**130**	--	--	--	--	--	--	**140**	**0.39**	--	--	--	--	--	--	--
		P2-B10-3.0	1/8/2024	3.0	--	**46**	--	--	--	--	--	--	**87**	**0.36**	--	--	--	--	--	--	--
		P2-B10-4.0	1/8/2024	4.0	--	**33**	--	--	--	--	--	--	**14**	--	--	--	--	--	--	--	--
		P2-B10D-5.0	4/19/2024	5.0	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B10D-6.0	4/19/2024	6.0	--	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Parcel 2 Current Receptor EPCs				**3.6**	**310**	**280**	**0.73**	0.50	**73**	**14**	**81**	**210**	**11**	**0.72**	**83**	**1.6**	0.50	0.50	**73**	**190**
3	***2022 Soil Investigation***																				
	P3-1	P3-1-1.0	7/14/2022	1.0	--	**63**	--	--	--	--	--	--	**15**	<0.15 R	--	--	--	--	--	--	--
		P3-1-2.5	7/14/2022	2.5	<2.7	**6.5**	**190**	**0.56**	**0.59**	**46**	**10**	**26**	**11**	<0.17	<0.91	**45**	<2.7	<0.45	<2.7	**43**	**56**
	P3-2	P3-2-1.0	7/14/2022	1.0	<2.8	**120**	**66**	<0.47	**0.65**	**35**	**7.3**	**42**	**66**	**1.7**	<0.94	**41**	<2.8	<0.47	<2.8	**35**	**96**
		P3-2-2.5	7/14/2022	2.5	<2.7 R	**67**	**130**	<0.45	**0.57**	**56**	**13**	**60**	**22**	**0.96**	<0.89	**65**	<2.7	<0.45	<2.7	**39**	**110**
		P3-2-4.0	7/14/2022	4.0	--	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-3	P3-3-1.0	7/14/2022	1.0	<2.7	**12**	**180**	<0.44	**0.72**	**41**	**9.5**	**32**	**84**	**0.21**	<0.88	**39**	<2.7	<0.44	<2.7	**41**	**150**
		P3-3-2.5	7/14/2022	2.5	<3.0 UJ	**7.8**	**160**	<0.50	**0.69**	**37**	**12**	**30**	**68**	**0.20**	<0.99	**40**	<3.0	**0.56**	<3.0	**36**	**140**
	P3-4	P3-4-1.0	7/14/2022	1.0	<2.8	**13**	**130**	<0.47	**0.57**	**45**	**15**	**34**	**43**	<0.15	<0.94	**45**	<2.8	<0.47	<2.8	**50**	**73**
		P3-4-2.5	7/14/2022	2.5	--	**47**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4-4.0	7/14/2022	4.0	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
3	*2024 Soil Investigation*																				
	P3-A1	P3-A1-2.0	1/9/2024	2.0	--	12	--	--	--	--	--	--	94	16 J	--	--	--	--	--	--	--
		P3-A1-3.0	1/9/2024	3.0	--	6.8	--	--	--	--	--	--	22	4.5 J	--	--	--	--	--	--	--
		P3-A1-4.0	1/9/2024	4.0	--	4.5	--	--	--	--	--	--	--	0.52	--	--	--	--	--	--	--
	P3-A2	P3-A2-2.0	1/9/2024	2.0	--	6.7	--	--	--	--	--	--	17	0.21 J	--	--	--	--	--	--	--
		P3-A2-3.0	1/9/2024	3.0	--	13	--	--	--	--	--	--	46	0.47 J	--	--	--	--	--	--	--
		P3-A2-4.0	1/9/2024	4.0	--	5.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A3	P3-A3-2.0	1/9/2024	2.0	--	7.8	--	--	--	--	--	--	21	<0.15 UJ	--	--	--	--	--	--	--
		P3-A3-3.0	1/9/2024	3.0	--	6.6	--	--	--	--	--	--	18	<0.15 UJ	--	--	--	--	--	--	--
	P3-A4	P3-A4-2.0	1/9/2024	2.0	--	21	--	--	--	--	--	--	92	0.32 J	--	--	--	--	--	--	--
		P3-A4-3.0	1/9/2024	3.0	--	3.1	--	--	--	--	--	--	6.4	<0.15 UJ	--	--	--	--	--	--	--
	P3-A5	P3-A5-2.0	1/9/2024	2.0	--	15	--	--	--	--	--	--	32	0.17 J	--	--	--	--	--	--	--
		P3-A5-3.0	1/9/2024	3.0	--	8.6	--	--	--	--	--	--	60	<0.15 UJ	--	--	--	--	--	--	--
	P3-A6	P3-A6-2.0	1/9/2024	2.0	--	6.1	--	--	--	--	--	--	22	<0.14 UJ	--	--	--	--	--	--	--
		P3-A6-3.0	1/9/2024	3.0	--	3.8	--	--	--	--	--	--	6.7	<0.16 UJ	--	--	--	--	--	--	--
	P3-A7	P3-A7-2.0	1/9/2024	2.0	--	33	--	--	--	--	--	--	99	0.65	--	--	--	--	--	--	--
		P3-A7-3.0	1/9/2024	3.0	--	35	--	--	--	--	--	--	78	0.36	--	--	--	--	--	--	--
		P3-A7-4.0*	1/9/2024	4.0	--	6.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-A7-4.0	1/9/2024	4.0	--	6.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A8	P3-A8-2.0	1/9/2024	2.0	--	5.6	--	--	--	--	--	--	9.0	<0.14	--	--	--	--	--	--	--
		P3-A8-3.0	1/9/2024	3.0	--	10	--	--	--	--	--	--	16	<0.16	--	--	--	--	--	--	--
	P3-A9	P3-A9-2.0	1/9/2024	2.0	--	15	--	--	--	--	--	--	88	<0.16	--	--	--	--	--	--	--
		P3-A9-2.0(DUP)	1/9/2024	2.0	--	6.1	--	--	--	--	--	--	44	<0.15	--	--	--	--	--	--	--
		P3-A9-3.0	1/9/2024	3.0	--	3.6	--	--	--	--	--	--	7.2	<0.15	--	--	--	--	--	--	--
	P3-A10	P3-A10-2.0	1/9/2024	2.0	--	10	--	--	--	--	--	--	25	<0.16	--	--	--	--	--	--	--
		P3-A10-3.0	1/9/2024	3.0	--	11	--	--	--	--	--	--	32	<0.17	--	--	--	--	--	--	--
	P3-B1	P3-B1-2.0	1/9/2024	2.0	--	69	--	--	--	--	--	--	98	0.5	--	--	--	--	--	--	--
		P3-B1-3.0	1/9/2024	3.0	--	39	--	--	--	--	--	--	75	0.32	--	--	--	--	--	--	--
		P3-B1-4.0	1/9/2024	4.0	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-5.0	4/18/2024	5.0	--	90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-6.0	4/18/2024	6.0	--	5.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B2	P3-B2-2.0	1/9/2024	2.0	--	44	--	--	--	--	--	--	50	0.38	--	--	--	--	--	--	--
		P3-B2-3.0	1/9/2024	3.0	--	14	--	--	--	--	--	--	44	0.35	--	--	--	--	--	--	--
		P3-B2-3.0(DUP)	1/9/2024	3.0	--	12	--	--	--	--	--	--	56	0.29	--	--	--	--	--	--	--
		P3-B2-4.0	1/9/2024	4.0	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B2D-5.0	4/18/2024	5.0	--	4.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B3	P3-B3-2.0	1/9/2024	2.0	--	32	--	--	--	--	--	--	59	0.25	--	--	--	--	--	--	--
		P3-B3-3.0	1/9/2024	3.0	--	18	--	--	--	--	--	--	38	0.28	--	--	--	--	--	--	--
		P3-B3-4.0	1/9/2024	4.0	--	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B3D-5.0	4/18/2024	5.0	--	4.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B4	P3-B4-2.0	1/9/2024	2.0	--	35	--	--	--	--	--	--	72	0.85	--	--	--	--	--	--	--
		P3-B4-3.0	1/9/2024	3.0	--	88	--	--	--	--	--	--	140	0.32	--	--	--	--	--	--	--
		P3-B4-4.0	1/9/2024	4.0	--	38	--	--	--	--	--	--	45	--	--	--	--	--	--	--	--
		P3-B4D-5.0	4/18/2024	5.0	--	8.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																
3	P3-B5	P3-B5-2.0	1/9/2024	2.0	--	**85**	--	--	--	--	--	--	**71**	**0.48**	--	--	--	--	--	--	--
		P3-B5-3.0	1/9/2024	3.0	--	**120**	--	--	--	--	--	--	**27**	**0.17**	--	--	--	--	--	--	--
		P3-B5-4.0	1/9/2024	4.0	--	**120**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B5D-5.0	4/18/2024	5.0	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B6	P3-B6-2.0	1/9/2024	2.0	--	**79**	--	--	--	--	--	--	**94**	**0.44**	--	--	--	--	--	--	--
		P3-B6-3.0	1/9/2024	3.0	--	**28**	--	--	--	--	--	--	**64**	**0.27 J**	--	--	--	--	--	--	--
		P3-B6-4.0	1/9/2024	4.0	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B6D-5.0	4/18/2024	5.0	--	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B7	P3-B7-2.0	1/9/2024	2.0	--	**73**	--	--	--	--	--	--	**98**	**0.40 J**	--	--	--	--	--	--	--
		P3-B7-3.0	1/9/2024	3.0	--	**38**	--	--	--	--	--	--	**52**	**0.68 J**	--	--	--	--	--	--	--
		P3-B7-4.0	1/9/2024	4.0	--	**21**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-5.0	4/18/2024	5.0	--	**51**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-6.0	4/18/2024	6.0	--	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B8	P3-B8-2.0	1/9/2024	2.0	--	**23**	--	--	--	--	--	--	**94**	**0.38 J**	--	--	--	--	--	--	--
		P3-B8-3.0	1/9/2024	3.0	--	**57**	--	--	--	--	--	--	**120**	**0.80 J**	--	--	--	--	--	--	--
		P3-B8-4.0	1/9/2024	4.0	--	**120**	--	--	--	--	--	--	**19**	--	--	--	--	--	--	--	--
		P3-B8D-5.0	4/18/2024	5.0	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-4D	P3-4D-5.0	1/9/2024	5.0	--	**6.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4D-6.0	1/9/2024	6.0	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B9	P3-B9-2.0	1/9/2024	2.0	--	**67**	--	--	--	--	--	--	**94**	**0.59 J**	--	--	--	--	--	--	--
		P3-B9-3.0	1/9/2024	3.0	--	**53**	--	--	--	--	--	--	**77**	**0.45 J**	--	--	--	--	--	--	--
		P3-B9-4.0	1/9/2024	4.0	--	**17**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B9D-5.0	4/18/2024	5.0	--	**9.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B10	P3-B10-2.0	1/9/2024	2.0	--	**13**	--	--	--	--	--	--	**33**	<0.15 UJ	--	--	--	--	--	--	--
		P3-B10-3.0	1/9/2024	3.0	--	**23**	--	--	--	--	--	--	**45**	<0.16	--	--	--	--	--	--	--
		P3-B10-4.0	1/9/2024	4.0	--	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T1	P3-T1-1.0	4/18/2024	1.0	--	**46**	--	--	--	--	--	--	**50 J**	**0.28**	--	--	--	--	--	--	--
		DUP-3-240418	4/18/2024	1.0	--	**27**	--	--	--	--	--	--	**46**	**0.20**	--	--	--	--	--	--	--
		P3-T1-1.5	4/18/2024	1.5	--	**7.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-T1-2.0	4/18/2024	2.0	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T2	P3-T2-1.0	4/18/2024	1.0	--	**5.9**	--	--	--	--	--	--	**52**	**0.16**	--	--	--	--	--	--	--
	P3-T3	P3-T3-1.0	4/18/2024	1.0	--	**7.5**	--	--	--	--	--	--	**43**	<0.16	--	--	--	--	--	--	--
	P3-T4	P3-T4-1.0	4/18/2024	1.0	--	**11**	--	--	--	--	--	--	**490**	**0.17**	--	--	--	--	--	--	--
		P3-T4-1.5	4/18/2024	1.5	--	--	--	--	--	--	--	--	**88**	--	--	--	--	--	--	--	--
		P3-T4-2.0	4/18/2024	2.0	--	--	--	--	--	--	--	--	**170**	--	--	--	--	--	--	--	--
Parcel 3 Current Receptor EPCs					3.0	**120**	**190**	**0.56**	**0.72**	**56**	**15**	**60**	**490**	**16**	0.99	**65**	3.0	**0.56**	3.0	**50**	**150**
4	***2022 Soil Investigation***																				
	P4-1	P4-1-1.0	7/14/2022	1.0	<3.0	**140**	**190**	<0.50	**1.9**	**75**	**14**	**81**	**280**	**2.1**	<1.0	**120**	<3.0	<0.50	<3.0	**37**	**440**
		P4-1-2.5	7/14/2022	2.5	<2.8	**88**	**160**	<0.47	**0.47**	**26**	**17**	**28**	**21**	**0.25**	<0.93	**47**	<2.8	<0.47	<2.8	**24**	**60**
		P4-1-4.0	7/14/2022	4.0	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-2	P4-2-1.0	7/14/2022	1.0	<2.8	**23**	**100**	<0.46	<0.46	**19**	**9.6**	**23**	**13**	<0.16	<0.92	**31**	<2.8	<0.46	<2.8	**23**	**44**
		P4-2-2.5	7/14/2022	2.5	<3.1	**4.2**	**200**	<0.52	**0.55**	**44**	**14**	**27**	**11**	<0.16	<1.0	**21**	<3.1	<0.52	<3.1	**42**	**44**
	P4-3	P4-3-1.0	7/14/2022	1.0	--	**29**	--	--	--	--	--	--	**22**	<0.16 R	--	--	--	--	--	--	--
		P4-3-2.5	7/14/2022	2.5	<2.7	**8.2**	**180**	<0.45	<0.45	**25**	**9.8**	**21**	**12**	<0.14	<0.91	**34**	<2.7	<0.45	<2.7	**26**	**62**
	P4-4	P4-4-1.0	7/14/2022	1.0	<2.7	**51**	**85**	<0.45	<0.45	**16**	**5.3**	**36**	**42**	**0.81**	<0.89	**20**	<2.7	<0.45	<2.7	**24**	**190**
		P4-4-2.5	7/14/2022	2.5	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P4-4-4.0	7/14/2022	4.0	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]																
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	mg/kg																
4	*2024 Soil Investigation*																				
	P4-A1	P4-A1-2.0	1/10/2024	2.0	--	**21**	--	--	--	--	--	--	**53**	**0.19**	--	--	--	--	--	--	--
		P4-A1-3.0	1/10/2024	3.0	--	**4.5**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A2	P4-A2-2.0	1/10/2024	2.0	--	**16**	--	--	--	--	--	--	**46**	<0.14	--	--	--	--	--	--	--
		P4-A2-3.0	1/10/2024	3.0	--	**3.3**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A3	P4-A3-2.0	1/10/2024	2.0	--	**5.1**	--	--	--	--	--	--	**5.7**	<0.16	--	--	--	--	--	--	--
		P4-A3-3.0	1/10/2024	3.0	--	**4.6**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-A4	P4-A4-2.0	1/10/2024	2.0	--	**5.0**	--	--	--	--	--	--	**7.5**	<0.16	--	--	--	--	--	--	--
		P4-A4-3.0	1/10/2024	3.0	--	**2.8**	--	--	--	--	--	--	**5.8**	<0.14	--	--	--	--	--	--	--
	P4-A5	P4-A5-2.0	1/10/2024	2.0	--	**6.9**	--	--	--	--	--	--	**9.1**	<0.15	--	--	--	--	--	--	--
		P4-A5-3.0	1/10/2024	3.0	--	**4.5**	--	--	--	--	--	--	**7.6**	<0.16	--	--	--	--	--	--	--
	P4-A6	P4-A6-2.0	1/12/2024	2.0	--	**8.3**	--	--	--	--	--	--	**23**	<0.14	--	--	--	--	--	--	--
		P4-A6-3.0	1/12/2024	3.0	--	**4.5**	--	--	--	--	--	--	**5.3**	<0.14	--	--	--	--	--	--	--
	P4-A7	P4-A7-2.0	1/12/2024	2.0	--	**78**	--	--	--	--	--	--	**31**	**0.37**	--	--	--	--	--	--	--
		P4-A7-3.0	1/12/2024	3.0	--	**8.1**	--	--	--	--	--	--	**5.3**	<0.17	--	--	--	--	--	--	--
	P4-A8	P4-A8-2.0	1/12/2024	2.0	--	**110**	--	--	--	--	--	--	**17**	<0.16	--	--	--	--	--	--	--
		P4-A8-3.0	1/12/2024	3.0	--	**85**	--	--	--	--	--	--	**23**	**0.22**	--	--	--	--	--	--	--
		P4-A8-3.0(DUP)	1/12/2024	3.0	--	**69**	--	--	--	--	--	--	**20**	**0.18**	--	--	--	--	--	--	--
		P4-A8-4.0	1/12/2024	4.0	--	**4.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-A9	P4-A9-2.0	1/12/2024	2.0	--	**7.0**	--	--	--	--	--	--	**6.1**	<0.16	--	--	--	--	--	--	--
		P4-A9-3.0	1/12/2024	3.0	--	**5.0**	--	--	--	--	--	--	**5.8**	<0.16	--	--	--	--	--	--	--
	P4-B2	P4-B2-2.0	1/10/2024	2.0	--	**63**	--	--	--	--	--	--	**15**	<0.16	--	--	--	--	--	--	--
		P4-B2-3.0	1/10/2024	3.0	--	**11**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P4-B3	P4-B3-2.0	1/10/2024	2.0	--	**68**	--	--	--	--	--	--	**10**	<0.15	--	--	--	--	--	--	--
		P4-B3-3.0	1/10/2024	3.0	--	**8.1**	--	--	--	--	--	--	**6.3**	<0.14	--	--	--	--	--	--	--
	P4-B4	P4-B4-2.0	1/10/2024	2.0	--	**120**	--	--	--	--	--	--	**14**	<0.16	--	--	--	--	--	--	--
		P4-B4-3.0	1/10/2024	3.0	--	**5.0**	--	--	--	--	--	--	**6.6**	**0.44**	--	--	--	--	--	--	--
	P4-B5	P4-B5-2.0	1/10/2024	2.0	--	**130**	--	--	--	--	--	--	**18**	**0.28**	--	--	--	--	--	--	--
		P4-B5-2.0(DUP)	1/10/2024	2.0	--	**89**	--	--	--	--	--	--	**12**	**0.29**	--	--	--	--	--	--	--
		P4-B5-3.0	1/10/2024	3.0	--	**2.2**	--	--	--	--	--	--	**5.4**	<0.14	--	--	--	--	--	--	--
	P4-B6	P4-B6-2.0	1/10/2024	2.0	--	**75**	--	--	--	--	--	--	**13**	<0.15	--	--	--	--	--	--	--
		P4-B6-3.0	1/10/2024	3.0	--	**30**	--	--	--	--	--	--	**9.4**	<0.16	--	--	--	--	--	--	--
		P4-B6-4.0	1/10/2024	4.0	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-B7	P4-B7-2.0	1/10/2024	2.0	--	**73**	--	--	--	--	--	--	**9.5**	<0.16	--	--	--	--	--	--	--
		P4-B7-3.0	1/10/2024	3.0	--	**6.1**	--	--	--	--	--	--	**6.0**	**0.18**	--	--	--	--	--	--	--
	P4-B8	P4-B8-2.0	1/10/2024	2.0	--	**38**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P4-B8-3.0	1/10/2024	3.0	--	**8.7**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-B9	P4-B9-2.0	1/10/2024	2.0	--	**16**	--	--	--	--	--	--	**13**	<0.16	--	--	--	--	--	--	--
		P4-B9-3.0	1/10/2024	3.0	--	**5.4**	--	--	--	--	--	--	**6.4**	<0.15	--	--	--	--	--	--	--
	P4-B10	P4-B10-2.0	1/10/2024	2.0	--	**21**	--	--	--	--	--	--	**180**	**4.8**	--	--	--	--	--	--	--
		P4-B10-3.0	1/10/2024	3.0	--	**6.1**	--	--	--	--	--	--	**7.2**	**0.41**	--	--	--	--	--	--	--
	Parcel 4 Current Receptor EPCs				3.1	**140**	**200**	0.52	**1.9**	**75**	**17**	**81**	**280**	**4.8**	1.0	**120**	3.1	0.52	3.1	**42**	**440**
Screening Criteria																					
				Residential DTSC-SLs[2]	31	11[3]	15000	16	7.1	85000[4]	23	3100	80	0.67	390	820	390	390	0.78	390	23000
				Commercial/Industrial DTSC-SLs[2]	470	11[3]	220000	230	79	360000[4]	350	47000	500	2.9	5800	11000	5800	5800	12	5800	350000

APPENDIX B TABLE B-1: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Title 22 Metals[1]															
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Moly-bdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs	*mg/kg*																

Notes:

bold = Analyte detected above the reporting limit

Shaded concentrations indicate analyte exceeds either USEPA or DTSC residential screening level.

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical using United States Environmental Protection Agency (USEPA) Methods 6010B and 7471A (for mercury).

Select samples were analyzed by McCampbell Analytical for metals using USEPA Method 6020. Shaded concentrations exceed residential screening criteria.

2. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).

3. Analytical results for arsenic in soil are compared to the 99th percentile of background arsenic concentrations as presented by Duvergé (2011).

4. The USEPA residential and commercial/industrial RSLs for chromium(III) were selected as surrogate SLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or "hot work" on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations:

< = Analyte not detected above the reporting limit shown
-- = Not analyzed
bgs = Below ground surface
DUP = Duplicate sample
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
J = The value is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications.
mg/kg = milligrams per kilogram
R = The data are rejected because the MS/MSD results are outside specifications or the holding time was exceeded
SL = Screening Level
UJ = The non-detected data is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications

References:

DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

GSI ENVIRONMENTAL

APPENDIX B TABLE B-2: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Polycyclic Aromatic Hydrocarbons[1]																	
					Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs	*mg/kg*																	
1	***2022 Soil Investigation***																					
	P1-1	P1-1-1.0	7/13/2022	1.0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
		P1-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P1-1-4.0	7/13/2022	4.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	NA
	P1-2	P1-2-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P1-3	P1-3-1.0	7/13/2022	1.00	**0.015**	<0.0099	**0.029**	**0.14**	**0.19**	**0.15**	**0.11**	**0.15**	**0.17**	**0.027**	**0.15**	<0.0099	**0.15**	**0.022**	**0.032**	**0.05**	**0.071**	**0.19**	**0.26**
	2024 Soil Investigation																					
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A7	P1-A7-2.5	1/11/2024	2.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	NA
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-2.5	1/11/2024	2.5	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	Parcel 1 Current Receptor EPCs				**0.015**	0.020	**0.029**	**0.14**	**0.19**	**0.15**	**0.11**	**0.15**	**0.17**	**0.027**	**0.15**	0.020	**0.15**	**0.022**	**0.032**	**0.05**	**0.071**	**0.19**	**0.26**
2	***2022 Soil Investigation***																					
	P2-1	P2-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	**0.018**	**0.028**	**0.024**	**0.025**	**0.02**	**0.022**	<0.01	**0.036**	<0.01	**0.028**	<0.01	<0.01	<0.01	**0.024**	**0.041**	**0.045**
	P2-2	P2-2-1.0	7/13/2022	1.0	<0.04	<0.04	<0.04	**0.13**	**0.24**	**0.18**	**0.21**	**0.18**	**0.14**	<0.04	**0.12**	<0.04	**0.25**	<0.04	<0.04	<0.04	<0.04	**0.16**	**0.34**
	P2-3	P2-3-1.0	7/13/2022	1.0	<0.04	<0.04	<0.04	**0.047**	**0.064**	**0.063**	**0.059**	**0.044**	**0.059**	<0.04	**0.061**	<0.04	**0.058**	<0.04	<0.04	<0.04	**0.051**	**0.068**	**0.12**
		P2-3-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P2-4	P2-4-1.0	7/13/2022	1.0	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	Parcel 2 Current Receptor EPCs				0.040	0.10	0.040	**0.13**	**0.24**	**0.18**	**0.21**	**0.18**	**0.14**	0.040	**0.12**	0.040	**0.25**	0.040	0.040	0.040	**0.051**	**0.16**	**0.34**
3	***2022 Soil Investigation***																					
	P3-1	P3-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P3-2	P3-2-1.0	7/13/2022	1.0	<0.1	<0.1	<0.1	**0.16**	**0.28**	**0.28**	**0.22**	**0.24**	**0.22**	<0.1	**0.16**	<0.1	**0.27**	<0.1	<0.1	<0.1	<0.1	**0.19**	**0.45**
		P3-2-2.5	7/13/2022	2.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	P3-3	P3-3-1.0	7/13/2022	1.0	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	NA
		P3-3-2.5	7/13/2022	2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	NA
	P3-4	P3-4-1.0	7/13/2022	1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA
	2024 Soil Investigation																					
	P3-T1	P3-T1-1.0	4/18/2024	1.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
		DUP-3-240418	4/18/2024	1.0	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T2	P3-T2-1.0	4/18/2024	1.0	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T3	P3-T3-1.0	4/18/2024	1.0	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	NA
	P3-T4	P3-T4-1.0	4/18/2024	1.0	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
	Parcel 3 Current Receptor EPCs				0.50	0.50	0.50	**0.16**	**0.28**	**0.28**	**0.22**	**0.24**	**0.22**	0.50	**0.16**	0.50	**0.27**	0.50	0.50	0.50	0.50	**0.19**	**0.45**

GSI ENVIRONMENTAL

APPENDIX B TABLE B-2: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Polycyclic Aromatic Hydrocarbons[1]																	
					Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs	*mg/kg*																	
4	***2022 Soil Investigation***																					
	P4-1	P4-1-1.0	7/13/2022	1.0	<0.25	<0.25	<0.25	<0.25	**0.31**	**0.29**	**0.25**	**0.27**	**0.26**	<0.25	<0.25	<0.25	**0.29**	<0.25	<0.25	<0.25	<0.25	**0.26**	0.65
		P4-1-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-2	P4-2-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P4-2-2.5	7/13/2022	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-3	P4-3-1.0	7/13/2022	1.0	<0.01 R	<0.01 R	**0.014 J**	**0.036 J**	**0.066 J**	**0.042 J**	**0.036 J**	**0.047 J**	**0.045 J**	<0.01 R	**0.04 J**	<0.01 R	**0.039 J**	<0.01 R	<0.01 R	<0.01 R	**0.019 J**	**0.048 J**	**0.088**
		P4-3-2.5	7/13/2022	2.5	**0.012**	<0.01	**0.048**	**0.079**	**0.066**	**0.049**	**0.033**	**0.049**	**0.064**	<0.01	**0.17**	**0.021**	**0.042**	<0.01	<0.01	<0.01	**0.21**	**0.16**	**0.094**
	P4-4	P4-4-1.0	7/13/2022	1.0	<0.2	<0.2	<0.2	**1.7**	**3.5**	**2.4**	**2.3**	**2.4**	**1.8**	**0.54**	**1.1**	<0.2	**3.1**	<0.2	<0.2	<0.2	**0.26**	**1.5**	**4.79**
		P4-4-2.5	7/13/2022	2.5	<0.01 R	<0.01 R	**0.013 J**	**0.2 J**	**0.39 J**	**0.26 J**	**0.25 J**	**0.27 J**	**0.19 J**	**0.079 J**	**0.14 J**	<0.01 R	**0.35 J**	<0.01 R	<0.01 R	<0.01 R	**0.046 J**	**0.18 J**	**0.55**
		P4-4-4.0	7/13/2022	4.0	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	NA
	2024 Soil Investigation																					
	P4-B9	P4-B9-2.0	1/10/2024	2.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
		P4-B9-3.0	1/10/2024	3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P4-B10	P4-B10-2.0	1/10/2024	2.0	<0.250	<0.250	<0.250	0.140 J	**0.270**	**0.260**	**0.220 J**	**0.093 J**	**0.180 J**	<0.250	**0.280**	<0.250	**0.220 J**	<0.250	<0.250	<0.250	**0.110 J**	**0.340**	**0.58**
		P4-B10-3.0	1/10/2024	3.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	Parcel 4 Current Receptor EPCs				**0.012**	0.25	**0.048**	**1.7**	**3.5**	**2.4**	**2.3**	**2.4**	**1.8**	**0.54**	**1.1**	**0.021**	**3.1**	0.25	0.25	0.25	**0.26**	**1.5**	**4.8**
Screening Criteria [2]																						
	Residential Risk-Based Screening Levels[3]				3600	None	18000	1.1	0.11	1.1	None	11	110	0.028	2400	2400	1.1	0.18	190	2	None	1800	0.9 [4]
	Commercial/Industrial Risk-Based Screening Levels[3]				29000	None	170000	16	1.7	17	None	170	1700	0.41	24000	21000	17	0.77	1500	7.6	None	18000	0.9 [4]

Notes:

bold = Analyte detected above the reporting limit

Shaded concentrations indicate analyte exceeds either USEPA or DTSC residential screening level.

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for polycyclic aromatic hydrocarbons (PAHs) using United States Environmental Protection Agency (USEPA) Method 8270C with selective ion monitoring (SIM). Shaded concentrations exceed residential screening criteria.

2. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs.

3. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).

4. BaPe are compared to the regional ambient level of 0.9 mg/kg established by DTSC (2009).

Abbreviations:

< = Analyte not detected above the reporting limit shown
BaPe = Benzo(a)pyrene equivalent value
bgs = Below ground surface
DUP = Duplicate sample
EPC = exposure point concentration
J = The detected result is estimated.
mg/kg = Milligrams per kilogram
NA = Not applicable; PAHs were not detected; therefore, a BaPe was not calculated
R = The non-detected result is rejected because the holding time was exceeded.

References:

California Department of Toxic Substances Control (DTSC), 2009, Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process, July 1.
DTSC, 2015, Preliminary Endangerment Assessment Guidance Manual, October.
DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

GSI ENVIRONMENTAL

APPENDIX B TABLE B-3: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR PESTICIDES IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Organochlorine Pesticides																		
					Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC	Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
				feet bgs	mg/kg																		
1	***2022 Soil Investigation***																						
	P1-1	P1-1-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P1-1-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P1-1-4.0	7/13/2022	4.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P1-2	P1-2-2.5	7/13/2022	2.5	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
	P1-3	P1-3-1.0	7/13/2022	1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	2024 Soil Investigation																						
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
		P1-A7-2.5	1/11/2024	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.100
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	**0.057**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
		P1-A8-1.0(DUP)	1/11/2024	1.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.010	<0.100
		P1-A8-2.5	1/11/2024	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	Parcel 1 Current Receptor EPCs				0.0099	0.0099	0.0099	0.0099	0.0099	**0.057**	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.0099	0.020	0.20
2	***2022 Soil Investigation***																						
	P2-1	P2-1-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-2	P2-2-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	**0.012 C J**	**0.015**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	P2-3	P2-3-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	**0.025**	**0.024**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P2-3-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-4	P2-4-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	Parcel 2 Current Receptor EPCs				0.010	0.010	0.010	0.010	0.010	0.10	0.010	**0.025**	**0.024**	**0.015**	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.020	0.20
3	***2022 Soil Investigation***																						
	P3-1	P3-1-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-2	P3-2-1.0	7/13/2022	1.0	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.098	<0.0098	**0.011 C**	**0.04**	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.02	<0.2
		P3-2-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-3	P3-3-1.0	7/13/2022	1.0	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	**0.01**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P3-3-2.5	7/13/2022	2.5	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.049	<0.49
	P3-4	P3-4-1.0	7/13/2022	1.0	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
	Parcel 3 Current Receptor EPCs				0.025	0.025	0.025	0.025	0.025	0.25	0.025	**0.011**	**0.040**	**0.010**	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.050	0.50
4	***2022 Soil Investigation***																						
	P4-1	P4-1-1.0	7/13/2022	1.0	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	**0.037**	**0.14**	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
		P4-1-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P4-2	P4-2-1.0	7/13/2022	1.0	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P4-2-2.5	7/13/2022	2.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	P4-3	P4-3-2.5	7/13/2022	2.5	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P4-4	P4-4-1.0	7/13/2022	1.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	Parcel 4 Current Receptor EPCs				0.025	0.025	0.025	0.025	0.025	0.25	0.025	**0.037**	**0.14**	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.050	0.50
Screening Criteria																							
				Residential Risk-Based Screening Levels[2]	0.039	0.086	0.3	0.0038	0.057	1.7	2.3	2.0	1.9	0.034	470	470 [3]	380	19	19 [4]	19 [4]	0.13	0.07	320	0.45
				Commercial/Industrial Risk-Based Screening Levels[2]	0.18	0.3	1.1	0.049	0.8	7.7	7.9	9.3	8.5	0.12	6000	6000 [3]	4100	200	200 [4]	200 [4]	0.63	0.33	3400	1.6

Notes:

bold = Analyte detected above the reporting limit

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for organochlorine pesticides using United States Environmental Protection Agency (USEPA) Method 8081A.
2. Current residential and commercial/industrial soil SLs approved or modified by the California Department of Toxic Substances Control (2025). If DTSC-SLs were not available, USEPA regional screening levels for residential and commercial/industrial soil were selected (USEPA, 2024).
3. The residential and commercial/industrial soil DTSC screening levels for endosulfan were used as surrogate SLs for endosulfan II.
4. The residential and commercial/industrial soil DTSC screening levels for endrin were used as surrogate SLs for endrin aldehyde and endrin ketone.

Abbreviations:

< = Analyte not detected above the reporting limit shown
bgs = Below ground surface
C = Presence confirmed, but the Relative Percent Difference (RPD) between columns exceeds 40%
DUP = Duplicate sample
EPC = exposure point concentration
J = The detected result is an estimate
mg/kg = Milligrams per kilogram

References:

DTSC, 2025, Human and Ecological Risk (HERO), HHRA Note Number 3, April.
United States Environmental Protection Agency, 2024, Regional Screening Levels, November.

GSI ENVIRONMENTAL

APPENDIX B TABLE B-4: HYPOTHETICAL CURRENT RECEPTOR EXPOSURE POINT CONCENTRATIONS FOR TOTAL PETROLEUM HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Total Petroleum Hydrocarbons	
					TPH-d	TPH-mo
				feet bgs	mg/kg	
1	***2022 Soil Investigation***					
	P1-1	P1-1-1.0	7/13/2022	1.0	<10	<20
		P1-1-2.5	7/13/2022	2.5	<10	<20
		P1-1-4.0	7/13/2022	4.0	<10	<20
	P1-2	P1-2-2.5	7/13/2022	2.5	<10	<20
	P1-3	P1-3-1.0	7/13/2022	1.0	**14**	**22**
	2024 Soil Investigation					
	P1-A7	P1-A7-1.0	1/11/2024	1.0	<10	<20
		P1-A7-2.5	1/11/2024	2.5	<10	<20
	P1-A8	P1-A8-1.0	1/11/2024	1.0	<10	<20
		P1-A8-1.0(DUP)	1/11/2024	1.0	**11**	<20
		P1-A8-2.5	1/11/2024	2.5	<9.9	<20
	Parcel 1 Current Receptor EPCs				**14**	**22**
2	***2022 Soil Investigation***					
	P2-1	P2-1-2.5	7/13/2022	2.5	<10	<20
	P2-2	P2-2-1.0	7/13/2022	1.0	**20**	**51**
	P2-3	P2-3-1.0	7/13/2022	1.0	**25**	**61**
		P2-3-2.5	7/13/2022	2.5	<10	<20
	P2-4	P2-4-1.0	7/13/2022	1.0	**47**	**89**
	Parcel 2 Current Receptor EPCs				**47**	**89**
3	***2022 Soil Investigation***					
	P3-1	P3-1-2.5	7/13/2022	2.5	<10	<20
	P3-2	P3-2-1.0	7/13/2022	1.0	<50	<100
		P3-2-2.5	7/13/2022	2.5	<10	<20
	P3-3	P3-3-1.0	7/13/2022	1.0	**120**	**87**
		P3-3-2.5	7/13/2022	2.5	**160**	**490**
	P3-4	P3-4-1.0	7/13/2022	1.0	**65**	**210**
	Parcel 3 Current Receptor EPCs				**160**	**490**
4	***2022 Soil Investigation***					
	P4-1	P4-1-1.0	7/13/2022	1.0	<50	<100
		P4-1-2.5	7/13/2022	2.5	<10	<20
	P4-2	P4-2-1.0	7/13/2022	1.0	<10	<20
		P4-2-2.5	7/13/2022	2.5	<10	<20
	P4-3	P4-3-2.5	7/13/2022	2.5	<10	<20
	P4-4	P4-4-1.0	7/13/2022	1.0	**45**	**76**
	Parcel 4 Current Receptor EPCs				**45**	**76**
Screening Criteria						
				Residential Risk-Based Screening Levels [2]	260	12,000
				Commercial/Industrial Risk-Based Screening Levels[2]	1,200	180,000

Notes:

bold = Analyte detected above the reporting limit

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical for TPH using United States Environmental Protection Agency (USEPA) Method 8015M.

2. Direct exposure environmental screening levels for human health published by the San Francisco Bay Regional Water Quality Control Board (Water Board, 2019).

Abbreviations:

< = Analyte not detected above the reporting limit shown
bgs = Below ground surface
DUP = Duplicate sample
EPC = exposure point concentration
mg/kg = Milligrams per kilogram
TPH = Total petroleum hydrocarbons
TPHd = TPH quantified as diesel (diesel range orgnics [DRO] C10-C28)
TPHmo = TPH quantified as motor oil (oil range organics [ORO] C28-C44)

References:

San Francisco Bay Regional Water Quality Control Board (Water Board), 2019, Environmental Screening Levels, Summary Tables, January (Rev. 2).

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
1	***2022 Soil Investigation***																					
	P1-1	P1-1-1.0	7/13/2022	1.0	No	**0.91**	**9.3**	**180**	**0.56**	<0.50	**62**	**15**	**37**	**34**	**0.30**	**0.78**	**57**	**1.2**	<0.50	<0.50	**72**	**100**
		P1-1-2.5	7/13/2022	2.5	Yes	<0.5	**8.4**	**200**	**0.65**	<0.5	**69**	**17**	**33**	**9**	<0.050	**0.9**	**67**	**1.3**	<0.5	<0.5	**74**	**72**
		P1-1-4.0	7/13/2022	4.0	Yes	<0.5	**6.1**	**180**	**0.63**	<0.5	**70**	**12**	**29**	**6.8**	<0.050	<0.5	**58**	**1.2**	<0.5	<0.5	**71**	**59**
	P1-2	P1-2-1.0	7/13/2022	1.0	No	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-2-2.5	7/13/2022	2.5	Yes	**1.3**	**12**	**300**	**0.73**	<0.5	**37**	**16**	**28**	**13**	**0.079**	**1.3**	**53**	**1.3**	<0.5	<0.5	**40**	**66**
		P1-2-4.0	7/13/2022	4.0	Yes	--	**5.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-3	P1-3-1.0	7/13/2022	1.0	No	**2.7**	**83**	**190**	**0.5**	<0.5	**33**	**19**	**32**	**34**	**0.23**	**1.0**	**48**	**1.1**	<0.5	<0.5	**42**	**74**
		P1-3-2.5	7/13/2022	2.5	No	--	**35**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-3-4.0	7/13/2022	4.0	No	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																					
	P1-A2	P1-A2-2.0	1/11/2024	2.0	Yes	--	**8.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A2-3.0	1/11/2024	3.0	Yes	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A3	P1-A3-2.0	1/11/2024	2.0	Yes	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A3-3.0	1/11/2024	3.0	Yes	--	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A4	P1-A4-2.0	1/11/2024	2.0	Yes	--	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A4-3.0	1/11/2024	3.0	Yes	--	**5.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A5	P1-A5-2.0	1/11/2024	2.0	Yes	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A5-3.0	1/11/2024	3.0	Yes	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A6	P1-A6-2.0	1/11/2024	2.0	Yes	--	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A6-3.0	1/11/2024	3.0	Yes	--	**5.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A7	P1-A7-1.0	1/11/2024	1.0	Yes	<2.9 UJ	**8.0**	**160**	<0.48	<0.48	**50**	**12**	**31**	**34**	<0.16	<1.1	**45**	<2.9	<0.48	<2.9	**58**	**81**
		P1-A7-2.5	1/11/2024	2.5	Yes	<2.9 UJ	**4.1**	**130**	<0.49	<0.49	**46**	**11**	**20**	**6**	<0.16	<1.1	**41**	<2.9	<0.49	<2.9	**55**	**40**
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	Yes	<2.9 UJ	**6.1**	**170**	<0.48	<0.48	**48**	**14**	**33**	**47**	<0.16	<1	**46**	<2.9	<0.48	<2.9	**58**	**95**
		P1-A8-1.0	1/11/2024	1.0	Yes	<2.9 UJ	**7.5**	**200**	**0.49**	**0.71**	**47**	**23**	**35**	**54**	<0.16	<1	**52**	<2.9	<0.48	<2.9	**63**	**100**
		P1-A8-2.5	1/11/2024	2.5	Yes	<2.9 UJ	**5.5**	**140**	<0.49	<0.49	**40**	**11**	**21**	**9.5**	<0.16	**1.5**	**40**	<2.9	**0.51**	<2.9	**57**	**41**
	P1-A9	P1-A9-2.0	1/11/2024	2.0	Yes	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A9-3.0	1/11/2024	3.0	Yes	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-A10	P1-A10-2.0	1/11/2024	2.0	Yes	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-A10-3.0	1/11/2024	3.0	Yes	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B2	P1-B2-2.0	1/11/2024	2.0	No	--	**40**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B2-3.0	1/11/2024	3.0	Yes	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B3	P1-B3-2.0	1/11/2024	2.0	No	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B3-3.0	1/11/2024	3.0	Yes	--	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B4	P1-B4-2.0	1/11/2024	2.0	No	--	**62**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-3.0	1/11/2024	3.0	No	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B4-4.0	1/11/2024	4.0	Yes	--	**9.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B5	P1-B5-2.0	1/11/2024	2.0	No	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-3.0	1/11/2024	3.0	No	--	**150**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5-4.0	1/11/2024	4.0	No	--	**130**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B5D-5.0	4/19/2024	5.0	Yes	--	**5.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		DUP-2-240419	4/19/2024	5.0	Yes	--	**2.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
1	P1-B6	P1-B6-2.0	1/11/2024	2.0	No	--	**41**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-3.0	1/11/2024	3.0	No	--	**110**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6-4.0	1/11/2024	4.0	No	--	**100**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-5.0	4/19/2024	5.0	No	--	**23**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B6D-6.0	4/19/2024	6.0	Yes	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P1-B7	P1-B7-2.0	1/11/2024	2.0	No	--	**32**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-3.0	1/11/2024	3.0	No	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P1-B7-4.0	1/11/2024	4.0	Yes	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Parcel 1 Future Receptor EPCs					2.9	**10**	**200**	**0.65**	**0.71**	**70**	**23**	**35**	**54**	0.16	**1.5**	**67**	**1.3**	**0.51**	2.9	**74**	**100**
2	***2022 Soil Investigation***																					
	P2-1	P2-1-1.0	7/13/2022	1.0	No	--	**28**	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--
		P2-1-2.5	7/13/2022	2.5	No	**1.4**	**26**	**150**	<0.5	<0.5	**46**	**12**	**29**	**63**	**0.65**	<0.5	**37**	**0.93**	<0.5	<0.5	**55**	**180**
		P2-1-4.0	7/13/2022	4.0	No	--	**24**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-2	P2-2-1.0	7/13/2022	1.0	No	**1.8**	**37**	**170**	<0.5	<0.5	**34**	**12**	**42**	**200**	**0.43**	<0.5	**38**	**1.6**	<0.5	<0.5	**73**	**150**
		P2-2-2.5	7/13/2022	1.0	No	--	**41**	--	--	--	--	--	--	**10**	--	--	--	--	--	--	--	--
		P2-2-4.0	7/13/2022	4.0	Yes	--	**3.4**	--	--	--	--	--	--	**6.9**	--	--	--	--	--	--	--	--
	P2-3	P2-3-1.0	7/13/2022	1.0	No	**1.5**	**32**	**180**	<0.5	<0.5	**59**	**14**	**81**	**140**	**0.48**	**0.72**	**61**	**1.1**	<0.5	<0.5	**53**	**190**
		P2-3-2.5	7/13/2022	2.5	No	<0.5	**6.7**	**190**	**0.73**	<0.5	**73**	**13**	**32**	**7.6**	<0.050	<0.5	**55**	**1.2**	<0.5	<0.5	**71**	**61**
	P2-4	P2-4-1.0	7/13/2022	1.0	No	**3.6**	**220**	**280**	**0.57**	<0.5	**46**	**9.8**	**60**	**56**	**2.1**	<0.5	**83**	**0.91**	<0.5	<0.5	**34**	**62**
		P2-4-2.5	7/13/2022	2.5	No	--	**8.9**	--	--	--	--	--	--	**12**	<0.16 R	--	--	--	--	--	--	--
		P2-4-4.0	7/13/2022	4.0	Yes	--	**4.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																					
	P2-A4	P2-A4-2.0	1/8/2024	2.0	Yes	--	**4.7**	--	--	--	--	--	--	**6.6**	<0.16	--	--	--	--	--	--	--
		P2-A4-3.0	1/8/2024	3.0	Yes	--	**4.0**	--	--	--	--	--	--	**5.6**	<0.15	--	--	--	--	--	--	--
	P2-A5	P2-A5-2.0	1/8/2024	2.0	Yes	--	**4.4**	--	--	--	--	--	--	**6.0**	<0.16	--	--	--	--	--	--	--
		P2-A5-3.0	1/8/2024	3.0	Yes	--	**4.1**	--	--	--	--	--	--	**8.3**	<0.16	--	--	--	--	--	--	--
	P2-A6	P2-A6-2.0	1/8/2024	2.0	Yes	--	**6.1**	--	--	--	--	--	--	**71**	<0.15	--	--	--	--	--	--	--
		P2-A6-3.0	1/8/2024	3.0	Yes	--	**5.1**	--	--	--	--	--	--	**12**	<0.14	--	--	--	--	--	--	--
	P2-A7	P2-A7-2.0	1/8/2024	2.0	Yes	--	**5.9**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P2-A7-3.0	1/8/2024	3.0	Yes	--	**4.2**	--	--	--	--	--	--	**6.3**	<0.15	--	--	--	--	--	--	--
	P2-A8	P2-A8-2.0	1/8/2024	2.0	No	--	**9.6**	--	--	--	--	--	--	**110**	<0.15	--	--	--	--	--	--	--
		P2-A8-3.0	1/8/2024	3.0	Yes	--	**4.6**	--	--	--	--	--	--	**5.3**	<0.15	--	--	--	--	--	--	--
	P2-A9	P2-A9-2.0	1/8/2024	2.0	No	--	**9.9**	--	--	--	--	--	--	**44**	<0.14	--	--	--	--	--	--	--
		P2-A9-2.0(DUP)	1/8/2024	2.0	No	--	**11**	--	--	--	--	--	--	**94**	<0.16	--	--	--	--	--	--	--
		P2-A9-3.0	1/8/2024	3.0	Yes	--	**4.6**	--	--	--	--	--	--	**5.3**	<0.16	--	--	--	--	--	--	--
	P2-A10	P2-A10-2.0	1/8/2024	2.0	Yes	--	**6.2**	--	--	--	--	--	--	**35**	**0.46**	--	--	--	--	--	--	--
		P2-A10-3.0	1/8/2024	3.0	Yes	--	**4.4**	--	--	--	--	--	--	**5.3**	<0.16	--	--	--	--	--	--	--
	P2-B1	P2-B1-2.0	1/8/2024	2.0	No	--	**36**	--	--	--	--	--	--	**180**	**0.42**	--	--	--	--	--	--	--
		P2-B1-3.0(DUP)	1/8/2024	3.0	No	--	**20**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
		P2-B1-3.0	1/8/2024	3.0	No	--	**33**	--	--	--	--	--	--	**9.2**	<0.15	--	--	--	--	--	--	--
		P2-B1-4.0	1/8/2024	4.0	No	--	**18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B1D-5.0	4/19/2024	5.0	Yes	--	**4.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]																
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
2	P2-1D	P2-1D-5.0	1/8/2024	5.0	No	--	**14**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-1D-6.0	1/8/2024	6.0	Yes	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B3	P2-B3-2.0	1/8/2024	2.0	No	--	**21**	--	--	--	--	--	--	**6.2**	<0.14	--	--	--	--	--	--	--
		P2-B3-3.0	1/8/2024	3.0	No	--	**13**	--	--	--	--	--	--	**13**	<0.14	--	--	--	--	--	--	--
		P2-B3-4.0	1/8/2024	4.0	Yes	--	**5.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B4	P2-B4-2.0	1/8/2024	2.0	No	--	**24**	--	--	--	--	--	--	**51**	**0.27**	--	--	--	--	--	--	--
		P2-B4-3.0	1/8/2024	3.0	No	--	**53**	--	--	--	--	--	--	**7.3**	<0.14	--	--	--	--	--	--	--
		P2-B4-4.0	1/8/2024	4.0	No	--	**74**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B4D-5.0	4/19/2024	5.0	Yes	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B5	P2-B5-2.0	1/8/2024	2.0	No	--	**120**	--	--	--	--	--	--	**24**	**0.27**	--	--	--	--	--	--	--
		P2-B5-3.0	1/8/2024	3.0	No	--	**23**	--	--	--	--	--	--	**10**	<0.14	--	--	--	--	--	--	--
		P2-B5-4.0	1/8/2024	4.0	Yes	--	**4.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B6	P2-B6-2.0	1/8/2024	2.0	No	--	**310**	--	--	--	--	--	--	**66**	**0.49**	--	--	--	--	--	--	--
		P2-B6-3.0	1/8/2024	3.0	No	--	**53**	--	--	--	--	--	--	**14**	<0.14	--	--	--	--	--	--	--
		P2-B6-4.0	1/8/2024	4.0	No	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6-4.0(DUP)	1/8/2024	4.0	No	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B6D-5.0	4/19/2024	5.0	Yes	--	**3.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B7	P2-B7-2.0	1/8/2024	2.0	No	--	**210**	--	--	--	--	--	--	**78**	**11**	--	--	--	--	--	--	--
		P2-B7-3.0	1/8/2024	3.0	No	--	**72**	--	--	--	--	--	--	**14**	**0.32**	--	--	--	--	--	--	--
		P2-B7-4.0	1/8/2024	4.0	No	--	**38**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B7D-5.0	4/19/2024	5.0	Yes	--	**6.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B8	P2-B8-2.0	1/8/2024	2.0	No	--	**100**	--	--	--	--	--	--	**68**	**0.5**	--	--	--	--	--	--	--
		P2-B8-3.0	1/8/2024	3.0	No	--	**91**	--	--	--	--	--	--	**16**	<0.14	--	--	--	--	--	--	--
		P2-B8-4.0	1/8/2024	4.0	Yes	--	**10**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B9	P2-B9-2.0	1/8/2024	2.0	No	--	**19**	--	--	--	--	--	--	**24**	**0.24**	--	--	--	--	--	--	--
		P2-B9-3.0	1/8/2024	3.0	No	--	**59**	--	--	--	--	--	--	**25**	**0.18**	--	--	--	--	--	--	--
		P2-B9-4.0	1/8/2024	4.0	No	--	**29**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-5.0	4/19/2024	5.0	No	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B9D-6.0	4/19/2024	6.0	Yes	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P2-B10	P2-B10-2.0	1/8/2024	2.0	No	--	**130**	--	--	--	--	--	--	**140**	**0.39**	--	--	--	--	--	--	--
		P2-B10-3.0	1/8/2024	3.0	No	--	**46**	--	--	--	--	--	--	**87**	**0.36**	--	--	--	--	--	--	--
		P2-B10-4.0	1/8/2024	4.0	No	--	**33**	--	--	--	--	--	--	**14**	--	--	--	--	--	--	--	--
		P2-B10D-5.0	4/19/2024	5.0	No	--	**15**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P2-B10D-6.0	4/19/2024	6.0	Yes	--	**2.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Parcel 2 Future Receptor EPCs					--	**10**	--	--	--	--	--	--	**71**	**0.46**	--	--	--	--	--	--	--
3	***2022 Soil Investigation***																					
	P3-1	P3-1-1.0	7/14/2022	1.0	No	--	**63**	--	--	--	--	--	--	**15**	<0.15 R	--	--	--	--	--	--	--
		P3-1-2.5	7/14/2022	2.5	No	<2.7	**6.5**	**190**	**0.56**	**0.59**	**46**	**10**	**26**	**11**	<0.17	<0.91	**45**	<2.7	<0.45	<2.7	**43**	**56**
	P3-2	P3-2-1.0	7/14/2022	1.0	No	<2.8	**120**	**66**	<0.47	**0.65**	**35**	**7.3**	**42**	**66**	**1.7**	<0.94	**41**	<2.8	<0.47	<2.8	**35**	**96**
		P3-2-2.5	7/14/2022	2.5	No	<2.7 R	**67**	**130**	<0.45	**0.57**	**56**	**13**	**60**	**22**	**0.96**	<0.89	**65**	<2.7	<0.45	<2.7	**39**	**110**
		P3-2-4.0	7/14/2022	4.0	No	--	**6.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-3	P3-3-1.0	7/14/2022	1.0	No	<2.7	**12**	**180**	<0.44	**0.72**	**41**	**9.5**	**32**	**84**	**0.21**	<0.88	**39**	<2.7	<0.44	<2.7	**41**	**150**
		P3-3-2.5	7/14/2022	2.5	No	<3.0 UJ	**7.8**	**160**	<0.50	**0.69**	**37**	**12**	**30**	**68**	**0.20**	<0.99	**40**	<3.0	**0.56**	<3.0	**36**	**140**

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
3	P3-4	P3-4-1.0	7/14/2022	1.0	No	<2.8	**13**	**130**	<0.47	**0.57**	**45**	**15**	**34**	**43**	<0.15	<0.94	**45**	<2.8	<0.47	<2.8	**50**	**73**
		P3-4-2.5	7/14/2022	2.5	No	--	**47**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4-4.0	7/14/2022	4.0	No	--	**52**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																					
	P3-A1	P3-A1-2.0	1/9/2024	2.0	No	--	**12**	--	--	--	--	--	--	**94**	**16 J**	--	--	--	--	--	--	--
		P3-A1-3.0	1/9/2024	3.0	No	--	**6.8**	--	--	--	--	--	--	**22**	**4.5 J**	--	--	--	--	--	--	--
		P3-A1-4.0	1/9/2024	4.0	Yes	--	**4.5**	--	--	--	--	--	--	--	**0.52**	--	--	--	--	--	--	--
	P3-A2	P3-A2-2.0	1/9/2024	2.0	No	--	**6.7**	--	--	--	--	--	--	**17**	**0.21 J**	--	--	--	--	--	--	--
		P3-A2-3.0	1/9/2024	3.0	No	--	**13**	--	--	--	--	--	--	**46**	**0.47 J**	--	--	--	--	--	--	--
		P3-A2-4.0	1/9/2024	4.0	Yes	--	**5.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A3	P3-A3-2.0	1/9/2024	2.0	Yes	--	**7.8**	--	--	--	--	--	--	**21**	<0.15 UJ	--	--	--	--	--	--	--
		P3-A3-3.0	1/9/2024	3.0	Yes	--	**6.6**	--	--	--	--	--	--	**18**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A4	P3-A4-2.0	1/9/2024	2.0		--	**21**	--	--	--	--	--	--	**92**	**0.32 J**	--	--	--	--	--	--	--
		P3-A4-3.0	1/9/2024	3.0	Yes	--	**3.1**	--	--	--	--	--	--	**6.4**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A5	P3-A5-2.0	1/9/2024	2.0	No	--	**15**	--	--	--	--	--	--	**32**	**0.17 J**	--	--	--	--	--	--	--
		P3-A5-3.0	1/9/2024	3.0	Yes	--	**8.6**	--	--	--	--	--	--	**60**	<0.15 UJ	--	--	--	--	--	--	--
	P3-A6	P3-A6-2.0	1/9/2024	2.0	Yes	--	**6.1**	--	--	--	--	--	--	**22**	<0.14 UJ	--	--	--	--	--	--	--
		P3-A6-3.0	1/9/2024	3.0	Yes	--	**3.8**	--	--	--	--	--	--	**6.7**	<0.16 UJ	--	--	--	--	--	--	--
	P3-A7	P3-A7-2.0	1/9/2024	2.0	No	--	**33**	--	--	--	--	--	--	**99**	**0.65**	--	--	--	--	--	--	--
		P3-A7-3.0	1/9/2024	3.0	No	--	**35**	--	--	--	--	--	--	**78**	**0.36**	--	--	--	--	--	--	--
		P3-A7-4.0*	1/9/2024	4.0	Yes	--	**6.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-A7-4.0	1/9/2024	4.0	Yes	--	**6.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-A8	P3-A8-2.0	1/9/2024	2.0	Yes	--	**5.6**	--	--	--	--	--	--	**9.0**	<0.14	--	--	--	--	--	--	--
		P3-A8-3.0	1/9/2024	3.0	Yes	--	**10**	--	--	--	--	--	--	**16**	<0.16	--	--	--	--	--	--	--
	P3-A9	P3-A9-2.0	1/9/2024	2.0	No	--	**15**	--	--	--	--	--	--	**88**	<0.16	--	--	--	--	--	--	--
		P3-A9-2.0(DUP)	1/9/2024	2.0	No	--	**6.1**	--	--	--	--	--	--	**44**	<0.15	--	--	--	--	--	--	--
		P3-A9-3.0	1/9/2024	3.0	Yes	--	**3.6**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P3-A10	P3-A10-2.0	1/9/2024	2.0	Yes	--	**10**	--	--	--	--	--	--	**25**	<0.16	--	--	--	--	--	--	--
		P3-A10-3.0	1/9/2024	3.0	Yes	--	**11**	--	--	--	--	--	--	**32**	<0.17	--	--	--	--	--	--	--
	P3-B1	P3-B1-2.0	1/9/2024	2.0	No	--	**69**	--	--	--	--	--	--	**98**	**0.5**	--	--	--	--	--	--	--
		P3-B1-3.0	1/9/2024	3.0	No	--	**39**	--	--	--	--	--	--	**75**	**0.32**	--	--	--	--	--	--	--
		P3-B1-4.0	1/9/2024	4.0	No	--	**16**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-5.0	4/18/2024	5.0	No	--	**90**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B1D-6.0	4/18/2024	6.0	Yes	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B2	P3-B2-2.0	1/9/2024	2.0	No	--	**44**	--	--	--	--	--	--	**50**	**0.38**	--	--	--	--	--	--	--
		P3-B2-3.0	1/9/2024	3.0	No	--	**14**	--	--	--	--	--	--	**44**	**0.35**	--	--	--	--	--	--	--
		P3-B2-3.0(DUP)	1/9/2024	3.0	No	--	**12**	--	--	--	--	--	--	**56**	**0.29**	--	--	--	--	--	--	--
		P3-B2-4.0	1/9/2024	4.0	No	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B2D-5.0	4/18/2024	5.0	Yes	--	**4.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B3	P3-B3-2.0	1/9/2024	2.0	No	--	**32**	--	--	--	--	--	--	**59**	**0.25**	--	--	--	--	--	--	--
		P3-B3-3.0	1/9/2024	3.0	No	--	**18**	--	--	--	--	--	--	**38**	**0.28**	--	--	--	--	--	--	--
		P3-B3-4.0	1/9/2024	4.0	No	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B3D-5.0	4/18/2024	5.0	Yes	--	**4.3**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL

Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
3	P3-B4	P3-B4-2.0	1/9/2024	2.0	No	--	**35**	--	--	--	--	--	--	**72**	**0.85**	--	--	--	--	--	--	--
		P3-B4-3.0	1/9/2024	3.0	No	--	**88**	--	--	--	--	--	--	**140**	**0.32**	--	--	--	--	--	--	--
		P3-B4-4.0	1/9/2024	4.0	No	--	**38**	--	--	--	--	--	--	**45**	--	--	--	--	--	--	--	--
		P3-B4D-5.0	4/18/2024	5.0	Yes	--	**8.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B5	P3-B5-2.0	1/9/2024	2.0	No	--	**85**	--	--	--	--	--	--	**71**	**0.48**	--	--	--	--	--	--	--
		P3-B5-3.0	1/9/2024	3.0	No	--	**120**	--	--	--	--	--	--	**27**	**0.17**	--	--	--	--	--	--	--
		P3-B5-4.0	1/9/2024	4.0	No	--	**120**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B5D-5.0	4/18/2024	5.0	Yes	--	**3.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B6	P3-B6-2.0	1/9/2024	2.0	No	--	**79**	--	--	--	--	--	--	**94**	**0.44**	--	--	--	--	--	--	--
		P3-B6-3.0	1/9/2024	3.0	No	--	**28**	--	--	--	--	--	--	**64**	**0.27 J**	--	--	--	--	--	--	--
		P3-B6-4.0	1/9/2024	4.0	No	--	**20**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B6D-5.0	4/18/2024	5.0	Yes	--	**7.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B7	P3-B7-2.0	1/9/2024	2.0	No	--	**73**	--	--	--	--	--	--	**98**	**0.40 J**	--	--	--	--	--	--	--
		P3-B7-3.0	1/9/2024	3.0	No	--	**38**	--	--	--	--	--	--	**52**	**0.68 J**	--	--	--	--	--	--	--
		P3-B7-4.0	1/9/2024	4.0	No	--	**21**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-5.0	4/18/2024	5.0	No	--	**51**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B7D-6.0	4/18/2024	6.0	Yes	--	**4.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B8	P3-B8-2.0	1/9/2024	2.0	No	--	**23**	--	--	--	--	--	--	**94**	**0.38 J**	--	--	--	--	--	--	--
		P3-B8-3.0	1/9/2024	3.0	No	--	**57**	--	--	--	--	--	--	**120**	**0.80 J**	--	--	--	--	--	--	--
		P3-B8-4.0	1/9/2024	4.0	No	--	**120**	--	--	--	--	--	--	**19**	--	--	--	--	--	--	--	--
		P3-B8D-5.0	4/18/2024	5.0	Yes	--	**6.2**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-4D	P3-4D-5.0	1/9/2024	5.0	Yes	--	**6.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-4D-6.0	1/9/2024	6.0	Yes	--	**5.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B9	P3-B9-2.0	1/9/2024	2.0	No	--	**67**	--	--	--	--	--	--	**94**	**0.59 J**	--	--	--	--	--	--	--
		P3-B9-3.0	1/9/2024	3.0	No	--	**53**	--	--	--	--	--	--	**77**	**0.45 J**	--	--	--	--	--	--	--
		P3-B9-4.0	1/9/2024	4.0	No	--	**17**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-B9D-5.0	4/18/2024	5.0	Yes	--	**9.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-B10	P3-B10-2.0	1/9/2024	2.0	No	--	**13**	--	--	--	--	--	--	**33**	<0.15 UJ	--	--	--	--	--	--	--
		P3-B10-3.0	1/9/2024	3.0	No	--	**23**	--	--	--	--	--	--	**45**	<0.16	--	--	--	--	--	--	--
		P3-B10-4.0	1/9/2024	4.0	Yes	--	**3.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T1	P3-T1-1.0	4/18/2024	1.0	No	--	**46**	--	--	--	--	--	--	**50 J**	**0.28**	--	--	--	--	--	--	--
		DUP-3-240418	4/18/2024	1.0	No	--	**27**	--	--	--	--	--	--	**46**	**0.20**	--	--	--	--	--	--	--
		P3-T1-1.5	4/18/2024	1.5	No	--	**7.0**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P3-T1-2.0	4/18/2024	2.0	Yes	--	**27**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P3-T2	P3-T2-1.0	4/18/2024	1.0	No	--	**5.9**	--	--	--	--	--	--	**52**	**0.16**	--	--	--	--	--	--	--
	P3-T3	P3-T3-1.0	4/18/2024	1.0	No	--	**7.5**	--	--	--	--	--	--	**43**	<0.16	--	--	--	--	--	--	--
	P3-T4	P3-T4-1.0	4/18/2024	1.0	No	--	**11**	--	--	--	--	--	--	**490**	**0.17**	--	--	--	--	--	--	--
		P3-T4-1.5	4/18/2024	1.5	No	--	--	--	--	--	--	--	--	**88**	--	--	--	--	--	--	--	--
		P3-T4-2.0	4/18/2024	2.0	No	--	--	--	--	--	--	--	--	**170**	--	--	--	--	--	--	--	--
	Parcel 3 Future Receptor EPCs					--	**11**	--	--	--	--	--	--	**60**	**0.52**	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		mg/kg																
4	***2022 Soil Investigation***																					
	P4-1	P4-1-1.0	7/14/2022	1.0	No	<3.0	**140**	**190**	<0.50	**1.9**	**75**	**14**	**81**	**280**	**2.1**	<1.0	**120**	<3.0	<0.50	<3.0	**37**	**440**
		P4-1-2.5	7/14/2022	2.5	No	<2.8	**88**	**160**	<0.47	**0.47**	**26**	**17**	**28**	**21**	**0.25**	<0.93	**47**	<2.8	<0.47	<2.8	**24**	**60**
		P4-1-4.0	7/14/2022	4.0	Yes	--	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-2	P4-2-1.0	7/14/2022	1.0	No	<2.8	**23**	**100**	<0.46	<0.46	**19**	**9.6**	**23**	**13**	<0.16	<0.92	**31**	<2.8	<0.46	<2.8	**23**	**44**
		P4-2-2.5	7/14/2022	2.5	No	<3.1	**4.2**	**200**	<0.52	**0.55**	**44**	**14**	**27**	**11**	<0.16	<1.0	**21**	<3.1	<0.52	<3.1	**42**	**44**
	P4-3	P4-3-1.0	7/14/2022	1.0	No	--	**29**	--	--	--	--	--	--	**22**	<0.16 R	--	--	--	--	--	--	--
		P4-3-2.5	7/14/2022	2.5	No	<2.7	**8.2**	**180**	<0.45	<0.45	**25**	**9.8**	**21**	**12**	<0.14	<0.91	**34**	<2.7	<0.45	<2.7	**26**	**62**
	P4-4	P4-4-1.0	7/14/2022	1.0	No	<2.7	**51**	**85**	<0.45	<0.45	**16**	**5.3**	**36**	**42**	**0.81**	<0.89	**20**	<2.7	<0.45	<2.7	**24**	**190**
		P4-4-2.5	7/14/2022	2.5	No	--	**12**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		P4-4-4.0	7/14/2022	4.0	Yes	--	**5.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2024 Soil Investigation																					
	P4-A1	P4-A1-2.0	1/10/2024	2.0	No	--	**21**	--	--	--	--	--	--	**53**	**0.19**	--	--	--	--	--	--	--
		P4-A1-3.0	1/10/2024	3.0	Yes	--	**4.5**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A2	P4-A2-2.0	1/10/2024	2.0	No	--	**16**	--	--	--	--	--	--	**46**	<0.14	--	--	--	--	--	--	--
		P4-A2-3.0	1/10/2024	3.0	Yes	--	**3.3**	--	--	--	--	--	--	**6.4**	<0.16	--	--	--	--	--	--	--
	P4-A3	P4-A3-2.0	1/10/2024	2.0	Yes	--	**5.1**	--	--	--	--	--	--	**5.7**	<0.16	--	--	--	--	--	--	--
		P4-A3-3.0	1/10/2024	3.0	Yes	--	**4.6**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-A4	P4-A4-2.0	1/10/2024	2.0	Yes	--	**5.0**	--	--	--	--	--	--	**7.5**	<0.16	--	--	--	--	--	--	--
		P4-A4-3.0	1/10/2024	3.0	Yes	--	**2.8**	--	--	--	--	--	--	**5.8**	<0.14	--	--	--	--	--	--	--
	P4-A5	P4-A5-2.0	1/10/2024	2.0	Yes	--	**6.9**	--	--	--	--	--	--	**9.1**	<0.15	--	--	--	--	--	--	--
		P4-A5-3.0	1/10/2024	3.0	Yes	--	**4.5**	--	--	--	--	--	--	**7.6**	<0.16	--	--	--	--	--	--	--
	P4-A6	P4-A6-2.0	1/12/2024	2.0	Yes	--	**8.3**	--	--	--	--	--	--	**23**	<0.14	--	--	--	--	--	--	--
		P4-A6-3.0	1/12/2024	3.0	Yes	--	**4.5**	--	--	--	--	--	--	**5.3**	<0.14	--	--	--	--	--	--	--
	P4-A7	P4-A7-2.0	1/12/2024	2.0	No	--	**78**	--	--	--	--	--	--	**31**	**0.37**	--	--	--	--	--	--	--
		P4-A7-3.0	1/12/2024	3.0	Yes	--	**8.1**	--	--	--	--	--	--	**5.3**	<0.17	--	--	--	--	--	--	--
	P4-A8	P4-A8-2.0	1/12/2024	2.0	No	--	**110**	--	--	--	--	--	--	**17**	<0.16	--	--	--	--	--	--	--
		P4-A8-3.0	1/12/2024	3.0	No	--	**85**	--	--	--	--	--	--	**23**	**0.22**	--	--	--	--	--	--	--
		P4-A8-3.0(DUP)	1/12/2024	3.0	No	--	**69**	--	--	--	--	--	--	**20**	**0.18**	--	--	--	--	--	--	--
		P4-A8-4.0	1/12/2024	4.0	Yes	--	**4.8**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	P4-A9	P4-A9-2.0	1/12/2024	2.0	Yes	--	**7.0**	--	--	--	--	--	--	**6.1**	<0.16	--	--	--	--	--	--	--
		P4-A9-3.0	1/12/2024	3.0	Yes	--	**5.0**	--	--	--	--	--	--	**5.8**	<0.16	--	--	--	--	--	--	--
	P4-B2	P4-B2-2.0	1/10/2024	2.0	No	--	**63**	--	--	--	--	--	--	**15**	<0.16	--	--	--	--	--	--	--
		P4-B2-3.0	1/10/2024	3.0	Yes	--	**11**	--	--	--	--	--	--	**7.2**	<0.15	--	--	--	--	--	--	--
	P4-B3	P4-B3-2.0	1/10/2024	2.0	No	--	**68**	--	--	--	--	--	--	**10**	<0.15	--	--	--	--	--	--	--
		P4-B3-3.0	1/10/2024	3.0	Yes	--	**8.1**	--	--	--	--	--	--	**6.3**	<0.14	--	--	--	--	--	--	--
	P4-B4	P4-B4-2.0	1/10/2024	2.0	No	--	**120**	--	--	--	--	--	--	**14**	<0.16	--	--	--	--	--	--	--
		P4-B4-3.0	1/10/2024	3.0	No	--	**5.0**	--	--	--	--	--	--	**6.6**	**0.44**	--	--	--	--	--	--	--
	P4-B5	P4-B5-2.0	1/10/2024	2.0	No	--	**130**	--	--	--	--	--	--	**18**	**0.28**	--	--	--	--	--	--	--
		P4-B5-2.0(DUP)	1/10/2024	2.0	No	--	**89**	--	--	--	--	--	--	**12**	**0.29**	--	--	--	--	--	--	--
		P4-B5-3.0	1/10/2024	3.0	Yes	--	**2.2**	--	--	--	--	--	--	**5.4**	<0.14	--	--	--	--	--	--	--
	P4-B6	P4-B6-2.0	1/10/2024	2.0	No	--	**75**	--	--	--	--	--	--	**13**	<0.15	--	--	--	--	--	--	--
		P4-B6-3.0	1/10/2024	3.0	No	--	**30**	--	--	--	--	--	--	**9.4**	<0.16	--	--	--	--	--	--	--
		P4-B6-4.0	1/10/2024	4.0	Yes	--	**4.6**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-5. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: METALS IN SOIL

Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Title 22 Metals[1]															
						Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
				feet bgs		*mg/kg*																
4	P4-B7	P4-B7-2.0	1/10/2024	2.0	No	--	**73**	--	--	--	--	--	--	**9.5**	<0.16	--	--	--	--	--	--	--
		P4-B7-3.0	1/10/2024	3.0	Yes	--	**6.1**	--	--	--	--	--	--	**6.0**	0.18	--	--	--	--	--	--	--
	P4-B8	P4-B8-2.0	1/10/2024	2.0	No	--	**38**	--	--	--	--	--	--	**12**	<0.15	--	--	--	--	--	--	--
		P4-B8-3.0	1/10/2024	3.0	Yes	--	**8.7**	--	--	--	--	--	--	**7.3**	<0.15	--	--	--	--	--	--	--
	P4-B9	P4-B9-2.0	1/10/2024	2.0	No	--	**16**	--	--	--	--	--	--	**13**	<0.16	--	--	--	--	--	--	--
		P4-B9-3.0	1/10/2024	3.0	No	--	**5.4**	--	--	--	--	--	--	**6.4**	<0.15	--	--	--	--	--	--	--
	P4-B10	P4-B10-2.0	1/10/2024	2.0	No	--	**21**	--	--	--	--	--	--	**180**	**4.8**	--	--	--	--	--	--	--
		P4-B10-3.0	1/10/2024	3.0	Yes	--	**6.1**	--	--	--	--	--	--	**7.2**	**0.41**	--	--	--	--	--	--	--
	Parcel 4 Future Receptor EPCs					--	**11**	--	--	--	--	--	--	**23**	**0.41**	--	--	--	--	--	--	--

Notes:

Green highlighted cells indicate the "left in place" soil COPC concentration was considered for selection as the EPC for future receptors (i.e., future resident and future construction worker) under the planned soil removal scenario. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization.

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical using United States Environmental Protection Agency (USEPA) Methods 6010B and 7471A (for mercury).
Select samples were analyzed by McCampbell Analytical for metals using USEPA Method 6020. Shaded concentrations exceed residential screening criteria.

Abbreviations:
< = Analyte not detected above the reporting limit shown
-- = Not analyzed
bgs = Below ground surface
bold = Analyte detected above the reporting limit
DUP = Duplicate sample
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
J = The value is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications.
mg/kg = Milligrams per kilogram
R = The data are rejected because the MS/MSD results are outside specifications or the holding time was exceeded
RAW = Remedial Action Work Plan
UJ = The non-detected data is estimated because the Matrix Spike (MS)/Matrix Spike Duplicate (MSD) results are outside specifications

GSI ENVIRONMENTAL

APPENDIX B TABLE B-6. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Polycyclic Aromatic Hydrocarbons[1]																	
						Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs		mg/kg																		
	2022 Soil Investigation																							
1	P1-1	P1-1-1.0	7/13/2022	1.0	No	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
		P1-1-2.5	7/13/2022	2.5	Yes	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P1-1-4.0	7/13/2022	4.0	Yes	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	NA
	P1-2	P1-2-2.5	7/13/2022	2.5	Yes	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P1-3	P1-3-1.0	7/13/2022	1.00	No	**0.015**	<0.0099	**0.029**	**0.14**	**0.19**	**0.15**	**0.11**	**0.15**	**0.17**	**0.027**	**0.15**	<0.0099	**0.15**	**0.022**	**0.032**	**0.05**	**0.071**	**0.19**	**0.26**
	2024 Soil Investigation																							
	P1-A7	P1-A7-1.0	1/11/2024	1.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A7	P1-A7-2.5	1/11/2024	2.5	Yes	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-1.0(DUP)	1/11/2024	1.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.013**	NA
	P1-A8	P1-A8-1.0	1/11/2024	1.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P1-A8	P1-A8-2.5	1/11/2024	2.5	Yes	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	Parcel 1 Future Receptor EPCs					0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	NA
	2022 Soil Investigation																							
2	P2-1	P2-1-2.5	7/13/2022	2.5	No	<0.01	<0.01	<0.01	**0.018**	**0.028**	**0.024**	**0.025**	**0.02**	**0.022**	<0.01	**0.036**	<0.01	**0.028**	<0.01	<0.01	<0.01	**0.024**	**0.041**	**0.045**
	P2-2	P2-2-1.0	7/13/2022	1.0	No	<0.04	<0.04	<0.04	**0.13**	**0.24**	**0.18**	**0.21**	**0.18**	**0.14**	<0.04	**0.12**	<0.04	**0.25**	<0.04	<0.04	<0.04	<0.04	**0.16**	**0.34**
	P2-3	P2-3-1.0	7/13/2022	1.0	No	<0.04	<0.04	<0.04	**0.047**	**0.064**	**0.063**	**0.059**	**0.044**	**0.059**	<0.04	**0.061**	<0.04	**0.058**	<0.04	<0.04	<0.04	**0.051**	**0.068**	**0.12**
		P2-3-2.5	7/13/2022	2.5	Yes	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P2-4	P2-4-1.0	7/13/2022	1.0	No	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	Parcel 2 Future Receptor EPCs					0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	NA
	2022 Soil Investigation																							
3	P3-1	P3-1-2.5	7/13/2022	2.5	Yes	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P3-2	P3-2-1.0	7/13/2022	1.0	No	<0.1	<0.1	<0.1	**0.16**	**0.28**	**0.28**	**0.22**	**0.24**	**0.22**	<0.1	**0.16**	<0.1	**0.27**	<0.1	<0.1	<0.1	<0.1	**0.19**	**0.45**
		P3-2-2.5	7/13/2022	2.5	Yes	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	NA
	P3-3	P3-3-1.0	7/13/2022	1.0	No	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	NA
		P3-3-2.5	7/13/2022	2.5	Yes	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	NA
	P3-4	P3-4-1.0	7/13/2022	1.0	No	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA
	2024 Soil Investigation																							
	P3-T1	P3-T1-1.0	4/18/2024	1.0	No	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
		DUP-3-240418	4/18/2024	1.0	No	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T2	P3-T2-1.0	4/18/2024	1.0	No	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	NA
	P3-T3	P3-T3-1.0	4/18/2024	1.0	No	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	NA
	P3-T4	P3-T4-1.0	4/18/2024	1.0	No	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	NA
	Parcel 3 Future Receptor EPCs					0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	NA

GSI ENVIRONMENTAL

APPENDIX B TABLE B-6. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS: POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Polycyclic Aromatic Hydrocarbons[1]																		
						Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	BaPe[2]
				feet bgs		mg/kg																		
4	***2022 Soil Investigation***																							
	P4-1	P4-1-1.0	7/13/2022	1.0	No	<0.25	<0.25	<0.25	<0.25	**0.31**	**0.29**	**0.25**	**0.27**	**0.26**	<0.25	<0.25	<0.25	**0.29**	<0.25	<0.25	<0.25	<0.25	**0.26**	0.65
		P4-1-2.5	7/13/2022	2.5	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-2	P4-2-1.0	7/13/2022	1.0	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
		P4-2-2.5	7/13/2022	2.5	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA
	P4-3	P4-3-1.0	7/13/2022	1.0	No	<0.01 R	<0.01 R	**0.014 J**	**0.036 J**	**0.066 J**	**0.042 J**	**0.036 J**	**0.047 J**	**0.045 J**	<0.01 R	**0.04 J**	<0.01 R	**0.039 J**	<0.01 R	<0.01 R	<0.01 R	**0.019 J**	**0.048 J**	**0.088**
		P4-3-2.5	7/13/2022	2.5	No	**0.012**	<0.01	**0.048**	**0.079**	**0.066**	**0.049**	**0.033**	**0.049**	**0.064**	<0.01	**0.17**	**0.021**	**0.042**	<0.01	<0.01	<0.01	**0.21**	**0.16**	**0.094**
	P4-4	P4-4-1.0	7/13/2022	1.0	No	<0.2	<0.2	<0.2	**1.7**	**3.5**	**2.4**	**2.3**	**2.4**	**1.8**	**0.54**	**1.1**	<0.2	**3.1**	<0.2	<0.2	<0.2	**0.26**	**1.5**	**4.79**
		P4-4-2.5	7/13/2022	2.5	No	<0.01 R	<0.01 R	**0.013 J**	**0.2 J**	**0.39 J**	**0.26 J**	**0.25 J**	**0.27 J**	**0.19 J**	**0.079 J**	**0.14 J**	<0.01 R	**0.35 J**	<0.01 R	<0.01 R	<0.01 R	**0.046 J**	**0.18 J**	**0.55**
		P4-4-4.0	7/13/2022	4.0	Yes	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	<0.0099 R	NA
	2024 Soil Investigation																							
	P4-B9	P4-B9-2.0	1/10/2024	2.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
		P4-B9-3.0	1/10/2024	3.0	No	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	P4-B10	P4-B10-2.0	1/10/2024	2.0	No	<0.250	<0.250	<0.250	0.140 J	**0.270**	**0.260**	**0.220 J**	**0.093 J**	**0.180 J**	<0.250	**0.280**	<0.250	**0.220 J**	<0.250	<0.250	<0.250	**0.110 J**	**0.340**	**0.58**
		P4-B10-3.0	1/10/2024	3.0	Yes	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NA
	Parcel 4 Future Receptor EPCs					0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	NA

Notes:

Green highlighted cells indicate the "left in place" soil COPC concentration was considered for selection as the EPC for future receptors (i.e., future resident and future construction worker) under the planned soil removal scenario. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization.

1. Soil samples collected by GSI Environmental Inc.and analyzed by Enthalpy Analytical for polycyclic aromatic hydrocarbons (PAHs) using United States Environmental Protection Agency (USEPA) Method 8270C with selective ion monitoring (SIM). Shaded concentrations exceed residential screening criteria.

2. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs.

Abbreviations:

< = Analyte not detected above the reporting limit shown
BaPe = Benzo(a)pyrene equivalent value
bgs = Below ground surface
bold = Analyte detected above the reporting limit
DUP = Duplicate sample
EPC = exposure point concentration
J = The detected result is estimated.
mg/kg = Milligrams per kilogram
NA = Not applicable; PAHs were not detected; therefore, a BaPe was not calculated
R = The non-detected result is rejected because the holding time was exceeded.
RAW = Remedial Action Work Plan

GSI ENVIRONMENTAL

APPENDIX B TABLE B-7. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS
PESTICIDES IN SOIL
Santa Fe Trackbed to Park
Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Organochlorine Pesticides[1]																	
						Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC	Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
				feet bgs		mg/kg																			
1	***2022 Soil Investigation***																								
	P1-1	P1-1-1.0	7/13/2022	1.0	No	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P1-1-2.5	7/13/2022	2.5	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P1-1-4.0	7/13/2022	4.0	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P1-2	P1-2-2.5	7/13/2022	2.5	Yes	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
	P1-3	P1-3-1.0	7/13/2022	1.0	No	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	2024 Soil Investigation																								
	P1-A7	P1-A7-1.0	1/11/2024	1.0	No	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
		P1-A7-2.5	1/11/2024	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.100
	P1-A8	P1-A8-1.0	1/11/2024	1.0	No	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	**0.057**	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0098	<0.098
		P1-A8-1.0(DUP)	1/11/2024	1.0	No	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.010	<0.100
		P1-A8-2.5	1/11/2024	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.050	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	Parcel 1 Future Receptor EPCs					0.0051	0.0051	0.0051	0.0051	0.0051	0.050	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.010	0.10
2	***2022 Soil Investigation***																								
	P2-1	P2-1-2.5	7/13/2022	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-2	P2-2-1.0	7/13/2022	1.0	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	**0.012 C J**	**0.015**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	P2-3	P2-3-1.0	7/13/2022	1.0	No	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	**0.025**	**0.024**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P2-3-2.5	7/13/2022	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P2-4	P2-4-1.0	7/13/2022	1.0	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	Parcel 2 Future Receptor EPCs					0.0050	0.0050	0.0050	0.0050	0.0050	0.050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0099	0.099
3	***2022 Soil Investigation***																								
	P3-1	P3-1-2.5	7/13/2022	2.5	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-2	P3-2-1.0	7/13/2022	1.0	No	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.098	<0.0098	**0.011 C**	**0.04**	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.02	<0.2
		P3-2-2.5	7/13/2022	2.5	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P3-3	P3-3-1.0	7/13/2022	1.0	No	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.099	<0.0099	<0.0099	<0.0099	**0.01**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.02	<0.2
		P3-3-2.5	7/13/2022	2.5	Yes	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.049	<0.49
	P3-4	P3-4-1.0	7/13/2022	1.0	No	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
	Parcel 3 Future Receptor EPCs					0.025	0.025	0.025	0.025	0.025	0.25	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.049	0.49
4	***2022 Soil Investigation***																								
	P4-1	P4-1-1.0	7/13/2022	1.0	No	<0.025	<0.025	<0.025	<0.025	<0.025	<0.25	<0.025	**0.037**	**0.14**	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.5
		P4-1-2.5	7/13/2022	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0099	<0.099
	P4-2	P4-2-1.0	7/13/2022	1.0	No	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
		P4-2-2.5	7/13/2022	2.5	Yes	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.1
	P4-3	P4-3-2.5	7/13/2022	2.5	Yes	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.01	<0.1
	P4-4	P4-4-1.0	7/13/2022	1.0	No	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.2
	Parcel 4 Future Receptor EPCs					0.0051	0.0051	0.0051	0.0051	0.0051	0.050	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.0051	0.010	0.10

Notes:

Green highlighted cells indicate the "left in place" soil COPC concentration was considered for selection as the EPC for future receptors (i.e., future resident and future construction worker) under the planned soil removal scenario. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization.

Abbreviations:

< = Analyte not detected above the reporting limit shown
bold = Analyte detected above the reporting limit
bgs = Below ground surface
C = Presence confirmed, but the Relative Percent Difference (RPD) between columns exceeds 40%
DUP = Duplicate sample
EPC = exposure point concentration
J = The detected result is an estimate
mg/kg = Milligrams per kilogram
RAW = Remedial Action Work Plan

GSI ENVIRONMENTAL

APPENDIX B TABLE B-8. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS
TOTAL PETROLEUM HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Total Petroleum Hydrocarbons[1]	
						TPH-d	TPH-mo
				feet bgs		mg/kg	
1	***2022 Soil Investigation***						
	P1-1	P1-1-1.0	7/13/2022	1.0	No	<10	<20
		P1-1-2.5	7/13/2022	2.5	Yes	<10	<20
		P1-1-4.0	7/13/2022	4.0	Yes	<10	<20
	P1-2	P1-2-2.5	7/13/2022	2.5	Yes	<10	<20
	P1-3	P1-3-1.0	7/13/2022	1.0	No	**14**	**22**
	2024 Soil Investigation						
	P1-A7	P1-A7-1.0	1/11/2024	1.0	No	<10	<20
		P1-A7-2.5	1/11/2024	2.5	Yes	<10	<20
	P1-A8	P1-A8-1.0	1/11/2024	1.0	No	<10	<20
		P1-A8-1.0(DUP)	1/11/2024	1.0	No	**11**	<20
		P1-A8-2.5	1/11/2024	2.5	Yes	<9.9	<20
	Parcel 1 Future Receptor EPCs					10	20
2	***2022 Soil Investigation***						
	P2-1	P2-1-2.5	7/13/2022	2.5	Yes	<10	<20
	P2-2	P2-2-1.0	7/13/2022	1.0	No	**20**	**51**
	P2-3	P2-3-1.0	7/13/2022	1.0	No	**25**	**61**
		P2-3-2.5	7/13/2022	2.5	Yes	<10	<20
	P2-4	P2-4-1.0	7/13/2022	1.0	No	**47**	**89**
	Parcel 2 Future Receptor EPCs					10	20
3	***2022 Soil Investigation***						
	P3-1	P3-1-2.5	7/13/2022	2.5	Yes	<10	<20
	P3-2	P3-2-1.0	7/13/2022	1.0	No	<50	<100
		P3-2-2.5	7/13/2022	2.5	Yes	<10	<20
	P3-3	P3-3-1.0	7/13/2022	1.0	No	**120**	**87**
		P3-3-2.5	7/13/2022	2.5	No	**160**	**490**
	P3-4	P3-4-1.0	7/13/2022	1.0	No	**65**	**210**
	Parcel 3 Future Receptor EPCs					10	20

GSI ENVIRONMENTAL

APPENDIX B TABLE B-8. HYPOTHETICAL FUTURE RECEPTOR EXPOSURE POINT CONCENTRATIONS TOTAL PETROLEUM HYDROCARBONS IN SOIL

Santa Fe Trackbed to Park

Berkeley, California

Parcel	Boring	Sample Name	Date Collected	Sample Depth	Soil Left in Place Post-Excavation	Total Petroleum Hydrocarbons[1]	
						TPH-d	TPH-mo
				feet bgs		mg/kg	
4	***2022 Soil Investigation***						
	P4-1	P4-1-1.0	7/13/2022	1.0	No	<50	<100
		P4-1-2.5	7/13/2022	2.5	Yes	<10	<20
	P4-2	P4-2-1.0	7/13/2022	1.0	No	<10	<20
		P4-2-2.5	7/13/2022	2.5	Yes	<10	<20
	P4-3	P4-3-2.5	7/13/2022	2.5	Yes	<10	<20
	P4-4	P4-4-1.0	7/13/2022	1.0	No	**45**	**76**
	Parcel 4 Future Receptor EPCs					10	20

Notes:

Green highlighted cells indicate the "left in place" soil COPC concentration was considered for selection as the EPC for future receptors (i.e., future resident and future construction worker) under the planned soil removal scenario. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization.

1. Soil samples collected by GSI Environmental Inc. and analyzed by Enthalpy Analytical for TPH using United States Environmental Protection Agency (USEPA) Method 8015M.

Abbreviations:

< = Analyte not detected above the reporting limit shown

bold = Analyte detected above the reporting limit

bgs = Below ground surface

EPC = exposure point concentration

mg/kg = Milligrams per kilogram

RAW = Remedial Action Work Plan

TPH = Total petroleum hydrocarbons

TPH-d = TPH quantified as diesel (diesel range organics [DRO] C10-C28)

TPH-mo = TPH quantified as motor oil (oil range organics [ORO] C28-C44)

GSI ENVIRONMENTAL

APPENDIX B TABLE B-9. TOXICITY CRITERIA REQUIRED BY RULE AND DTSC-RECOMMENDED TOXICITY CRITERIA[a]

Santa Fe Trackbed to Park

Berkeley, California

		Cancer-Risk Values							Noncancer Health-Hazard Values				
			Oral Slope Factor			Inhalation Unit Risk			Reference Dose - Oral			Reference Concentration	
Analyte	**CAS #**	**Mutagen?**	**SFo** (mg/kg-d)$^{-1}$	**Reference**		**IUR** (µg/m^3)$^{-1}$	**Reference**		**RfDo** (mg/kg-d)	**Reference**		**RfC** (µg/m^3)	**Reference**
1-Methylnaphthalene	90-12-0	--	2.9E-02	PPRTV		7.3E-06	Route (PPRTV)		7.0E-02	ATSDR		2.8E+02	Route (ATSDR)
2-Methylnaphthalene	91-57-6	--	--	--		--	--		4.0E-03	IRIS		1.6E+01	Route (IRIS)
4,4'-DDD	72-54-8	--	2.4E-01	IRIS		6.9E-05	OEHHA		3.0E-05	sPPRTV		--	--
4,4'-DDE	72-55-9	--	3.4E-01	OEHHA		9.7E-05	OEHHA		3.0E-04	sPPRTV		1.2E+00	Route (sPPRTV)
4,4'-DDT	50-29-3	--	3.4E-01	IRIS		9.7E-05	IRIS		5.0E-04	IRIS		--	--
Acenaphthene	83-32-9	--	--	--		--	--		6.0E-02	IRIS		2.4E+02	Route (IRIS)
Aldrin	309-00-2	--	1.7E+01	IRIS		4.9E-03	OEHHA		3.0E-05	IRIS		1.2E-01	Route (IRIS)
alpha-HCH	319-84-6	--	6.3E+00	IRIS		1.8E-03	IRIS		8.0E-03	ATSDR		--	--
Anthracene	120-12-7	--	--	--		--	--		3.0E-01	IRIS		1.2E+03	Route (IRIS)
Antimony	7440-36-0	--	--	--		--	--		4.0E-04	IRIS		--	--
Arsenic	7440-38-2	--	**9.5E+00**	**OEHHA PHG**		4.3E-03	IRIS		**3.5E-06**	**OEHHA**		**1.5E-02**	**OEHHA**
Barium	7440-39-3	--	--	--		--	--		2.0E-01	IRIS		5.0E-01	HEAST
Benzo[a]anthracene	56-55-3	M	1.0E-01	ECAO		**1.1E-04**	**OEHHA TSD**		--	--		--	--
Benzo[a]pyrene	50-32-8	M	1.0E+00	IRIS		**1.1E-03**	**OEHHA PHG**		3.0E-04	IRIS		2.0E-03	IRIS
Benzo[b]fluoroanthene	205-99-2	M	1.0E-01	ECAO		**1.1E-04**	**OEHHA TSD**		--	--		--	--
Benzo[k]fluoroanthene	207-08-9	M	1.0E-02	ECAO		**1.1E-04**	**OEHHA TSD**		--	--		--	--
Beryllium	7440-41-7	--	--	--		2.4E-03	IRIS		**2.0E-04**	**OEHHA PHG**		**7.0E-03**	**OEHHA**
beta-HCH	319-85-7	--	1.8E+00	IRIS		5.3E-04	IRIS		--	--		--	--
Cadmium	7440-43-9	--	--	--		**4.2E-03**	**OEHHA**		1.0E-03	IRIS		1.0E-02	ATSDR
Chlordane (technical)	12789-03-6	--	3.5E-01	IRIS		1.0E-04	IRIS		5.0E-04	IRIS		7.0E-01	IRIS
Chromium	7440-47-3	--	--	--		--	--		--	--		--	--
Chrysene	218-01-9	M	1.0E-03	ECAO		**1.1E-05**	**OEHHA TSD**		--	--		--	--
Cobalt	7440-48-4	--	--	--		9.0E-03	PPRTV		3.0E-04	PPRTV		6.0E-03	PPRTV
Copper	7440-50-8	--	--	--		--	--		4.0E-02	HEAST		--	--
Dibenz[a,h]anthracene	53-70-3	M	**4.1E+00**	**OEHHA ECP**		**1.2E-03**	**OEHHA ECP**		--	--		--	--
Dieldrin	60-57-1	--	1.6E+01	OEHHA		4.6E-03	OEHHA		5.0E-05	IRIS		2.0E-01	Route (IRIS)
Endosulfan	115-29-7	--	--	--		--	--		6.0E-03	IRIS		2.4E+01	Route (IRIS)
Endrin	72-20-8	--	--	--		--	--		3.0E-04	IRIS		--	--
Fluoranthene	206-44-0	--	--	--		--	--		4.0E-02	IRIS		--	--
Fluorene	86-73-7	--	--	--		--	--		4.0E-02	IRIS		1.6E+02	Route (IRIS)
gamma-HCH	58-89-9	--	1.1E+00	OEHHA		3.1E-04	OEHHA		3.0E-04	IRIS		--	--
Heptachlor	76-44-8	--	4.5E+00	IRIS		1.3E-03	IRIS		5.0E-04	IRIS		2.0E+00	Route (IRIS)
Heptachlor Epoxide	1024-57-3	--	9.1E+00	IRIS		2.6E-03	IRIS		1.3E-05	IRIS		5.2E-02	Route (IRIS)
Indeno[1,2,3-cd]pyrene	193-39-5	M	1.0E-01	ECAO		**1.1E-04**	**OEHHA TSD**		--	--		--	--
Lead[d]	7439-92-1	**HHRA Note 3[d]**											
Mercury	7439-97-6	--	--	--		--	--		**1.6E-04**	**OEHHA REL**		**3.0E-02**	**OEHHA**
Methoxychlor	72-43-5	--	--	--		--	--		5.0E-03	IRIS		2.0E+01	Route (IRIS)
Molybdenum	7439-98-7	--	--	--		--	--		5.0E-03	IRIS		--	--
Naphthalene	91-20-3	--	1.2E-01	OEHHA		3.4E-05	OEHHA		2.0E-02	IRIS		3.0E+00	IRIS
Nickel	7440-02-0	--	--	--		**2.6E-04**	**OEHHA**		**1.1E-02**	**OEHHA**		**1.4E-02**	**OEHHA**
Pyrene	129-00-0	--	--	--		--	--		3.0E-02	IRIS		1.2E+02	Route (IRIS)
Selenium	7782-49-2	--	--	--		--	--		5.0E-03	IRIS		2.0E+01	OEHHA
Silver	7440-22-4	--	--	--		--	--		5.0E-03	IRIS		--	--
Thallium	7440-28-0	--	--	--		--	--		1.0E-05	sPPRTV		--	--
Toxaphene	8001-35-2	--	**1.2E+00**	**OEHHA**		3.2E-04	IRIS		9.0E-05	sPPRTV		--	--

GSI ENVIRONMENTAL

APPENDIX B TABLE B-9. TOXICITY CRITERIA REQUIRED BY RULE AND DTSC-RECOMMENDED TOXICITY CRITERIA[a]

Santa Fe Trackbed to Park

Berkeley, California

		Cancer-Risk Values							Noncancer Health-Hazard Values				
			Oral Slope Factor			Inhalation Unit Risk			Reference Dose - Oral			Reference Concentration	
Analyte	**CAS #**	**Mutagen?**	**SFo** $(mg/kg\text{-}d)^{-1}$	**Reference**		**IUR** $(\mu g/m^3)^{-1}$	**Reference**		**RfDo** (mg/kg-d)	**Reference**		**RfC** ($\mu g/m^3$)	**Reference**
Vanadium	7440-62-2	--	--	--		--	--		5.0E-03	RSL		1.0E-01	ATSDR
Zinc	7440-66-6	--	--	--		--	--		3.0E-01	IRIS		--	--

NOTES:

[a] Summarized from the Rule and from HHRA Note 3; toxicity criteria and values are listed for USEPA RSL analytes;
"--" = indicates that toxicity values are not available from standard reference sources.

[b] Named in the USEPA RSL tables as 2-Chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester sulfite

[c] Named in the USEPA RSL tables as Hexachlorodibenzo-p-dioxin Mixture (2:1 1,2,3,7,8,9- and 1,2,3,6,7,8-)

[d] Screening levels for lead are derived differently than other risk-based screening levels; see the text of HHRA Note 3 for details.

Green-shaded chemicals are COPCs with DTSC-specific toxicity criteria used to calculate construction worker risk-based screening levels using the USEPA RSL calculator (USEPA, 2024b).

Gray-shaded bold values indicate toxicity criteria required by Rule (a) criteria.

Plain text values are DTSC-recommended values for use in deriving screening concentrations for environmental media, or in screening-level human health risk assessments.

$(mg/kg\text{-}d)^{-1}$ = per (milligram per kilogram--day)
$(\mu g/m^3)^{-1}$ = per (microgram per cubic meter)
µg/L = micrograms per liter
$\mu g/m^3$ = micrograms per cubic meter
ATSDR = Agency for Toxic Substances and Disease Registry
CAS # = Chemical Abstracts Service Registry Number
DTSC = California Department of Toxic Substances Control
ECAO = Environmental Criteria and Assessment Office (RSLs)
ECP = Expedited Cancer Potency Factors
HEAST = Health Effects Assessment Summary Tables
HHRA Note 3 = DTSC Human Health Risk Assessment Note 3
HxCDD = hexachlorodibenzo-*p*-dioxin
IRIS = USEPA's *Integrated Risk Information System*
IUR = inhalation unit-risk factor
M = mutagen
mg/kg = milligrams per kilogram
mg/kg-d = milligrams per kilogram--day
OEHHA = Office of Environmental Health Hazard Assessment
OPP = USEPA Office of Pesticide Programs
PHG = Public Health Goal toxicity factor
PPRTV = provisional peer-reviewed toxicity value
REL = reference exposure level
RfC = reference concentration
RfDo = oral reference dose

Route('xyz') = route extrapolation from an oral toxicity value (from the 'xyz' source) to an inhalation toxicity value:
IUR $(\mu g/m^3)^{-1}$ = SFo $(mg/kg\text{-}day)^{-1}$ × (1/80 kg) × 20 m^3/day × 0.001 mg/µg
RfC ($\mu g/m^3$) = RfDo (mg/kg-day) × 80 kg × (1 day/20 m^3) × 1000 µg/mg
RSL = USEPA Regional Screening Level
SFo = oral slope factor
SL = screening level
sPPRTV = screening PPRTV
TEF = toxicity equivalence factor (from WHO [World Health Organization], 1995)
TSD = technical support document
USEPA = U.S. Environmental Protection Agency

GSI ENVIRONMENTAL

APPENDIX B TABLE B-10. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs: TOXICITY CRITERIA REQUIRED BY DTSC RULE AND HHRA NOTE 3

Santa Fe Trackbed to Park

Berkeley, California

Variable	Construction Worker Soil - Other Default Value	Site-Specific Value
A (PEF Dispersion Constant)	2.4538	2.4538
A_{surf} (areal extent of site) m^2	2023.43	2023.43
A (VF Dispersion Constant)	2.4538	2.4538
B (PEF Dispersion Constant)	17.566	17.566
B (VF Dispersion Constant)	17.566	17.566
C (PEF Dispersion Constant)	189.0426	189.0426
C (VF Dispersion Constant)	189.0426	189.0426
DW_{con} (days worked - construction worker) days/week	5	5
EW_{con} (weeks worked - construction worker) weeks/year	50	50
F_D Unitless Dispersion Correction Factor	0.185837208	0.185837208
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependant on U_m/U_t derived using Cowherd et al. (1985))	0.194	0.194
$M_{m\text{-}doz}$ (Gravimetric soil moisture content) %	7.9	7.9
$M_{m\text{-}excav}$ (Gravimetric soil moisture content) %	12	12
M_{wind} (dust emitted by wind erosion) g	8803.913546	8803.913546
$N_{A\text{-}dump}$ (number of times soil is dumped)	2	2
$N_{A\text{-}till}$ (number of times soil is tilled)	2	2
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_b (dry soil bulk density) g/cm^3	1.5	1.5
p_b (dry soil bulk density - mass limit) g/cm^3	1.5	1.5
p_s (soil particle density) g/cm^3	2.65	2.65
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{vol} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
p_{soil} (density) g/cm^3 - chemical-specific	1.68	1.68
A_s ($VF_{mlim\text{-}sc}$ acres)	0.5	0.5
A_s ($VF_{ulim\text{-}sc}$ acres)	0.5	0.5
s_{doz} (soil silt content) %	6.9	6.9
AF_{con} (skin adherence factor - construction worker) mg/cm^2	0.3	0.8
AT_{con} (averaging time - construction worker) days	365	365
$AT_{con\text{-}a}$ (averaging time - construction worker) days	350	350
BW_{con} (body weight - construction worker) kg	80	80
ED_{con} (exposure duration - construction worker) yr	1	1
EF_{con} (exposure frequency - construction worker) day/yr	250	250
ET_{con} (exposure time - construction worker) hr/day	8	8
THQ (target hazard quotient) unitless	0.1	1
IRS_{con} (soil ingestion rate - construction worker) mg/day	330	330
LT (lifetime) yr	70	70
SA_{con} (surface area - construction worker) cm^2/day	3527	6032
TR (target cancer risk) unitless	0.000001	0.000001
S_{doz} (dozing speed) kph	11.4	11.4
S_{grade} (grading speed) kph	11.4	11.4
s_{till} (soil silt content) %	18	18
t_c (overall duration of construction) hours	8400	8400
T_c (overall duration of construction) s	30240000	30240000
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (time over which traffic occurs) s	7200000	7200000
T_t (overall duration of traffic) s	7200000	7200000
U_m (mean annual wind speed) m/s	4.69	4.69
U_t (equivalent threshold value) m/s	11.32	11.32
V (fraction of vegetative cover)	0	0

Notes:
Orange-highlighted cells indicate user-input (i.e., non-default) values per DTSC guidance.
RSL = regional screening level
RBSL = risk-based screening level

GSI ENVIRONMENTAL

APPENDIX B TABLE B-11. USEPA RSL CALCULATOR OUTPUT VALUES FOR CONSTRUCTION WORKER RBSLs: TOXICITY CRITERIA REQUIRED BY DTSC RULE AND HHRA NOTE 3

Santa Fe Trackbed to Park
Berkeley, California

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	Particulate Emission Factor (m^3/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
Arsenic, Inorganic	7440-38-2	No	No	Inorganics	9.50E+00	U	4.30E-03	U	3.50E-06	U	1.50E+01	U	1.00E+06	2.43E+00	1.14E+00
Benz[a]anthracene	56-55-3	Yes	Yes	Organics	1.00E-01	U	1.10E-04	U	-		-		1.00E+06	8.04E+01	-
Benzo[a]pyrene	50-32-8	Yes	No	Organics	1.00E+00	U	1.10E-03	U	-		-		1.00E+06	8.29E+00	-
Benzo[b]fluoranthene	205-99-2	Yes	No	Organics	1.00E-01	U	1.10E-04	U	-		-		1.00E+06	8.29E+01	-
Benzo[k]fluoranthene	207-08-9	Yes	No	Organics	1.00E-02	U	1.10E-04	U	-		-		1.00E+06	6.54E+02	-
Beryllium and compounds	7440-41-7	No	No	Inorganics	-		2.40E-03	U	2.00E-04	U	7.00E+00	U	1.00E+06	1.28E+02	6.79E+01
Cadmium (Diet)	7440-43-9	No	No	Inorganics	-		4.20E-03	U	5.00E-04	U	-		1.00E+06	7.30E+01	1.07E+02
Chrysene	218-01-9	Yes	No	Organics	1.00E-03	U	1.10E-05	U	-		-		1.00E+06	6.54E+03	-
Dibenz[a,h]anthracene	53-70-3	Yes	No	Organics	4.10E+00	U	1.20E-03	U	-		-		1.00E+06	2.07E+00	-
Indeno[1,2,3-cd]pyrene	193-39-5	Yes	No	Organics	1.00E-01	U	1.10E-04	U	-		-		1.00E+06	8.29E+01	-
Mercury (elemental)	7439-97-6	No	Yes	Inorganics	-		-		1.60E-04	U	3.00E+01	U	1.00E+06	-	5.43E+01
Nickel Soluble Salts	7440-02-0	No	No	Inorganics	-		2.60E-04	U	1.10E-02	U	1.40E+01	U	1.00E+06	1.18E+03	3.73E+03
Toxaphene	8001-35-2	No	No	Organics	1.10E+00	U	3.20E-04	U	3.00E-04	U	-		1.00E+06	9.06E+00	4.14E+01

GSI ENVIRONMENTAL

APPENDIX B TABLE B-12. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs: DEFAULT USEPA TOXICITY CRITERIA

Santa Fe Trackbed to Park

Berkeley, California

Variable	Construction Worker Soil - Other Default Value	Site-Specific Value
A (PEF Dispersion Constant)	2.4538	2.4538
A_{surf} (areal extent of site) m^2	2023.43	2023.43
A (VF Dispersion Constant)	2.4538	2.4538
B (PEF Dispersion Constant)	17.566	17.566
B (VF Dispersion Constant)	17.566	17.566
C (PEF Dispersion Constant)	189.0426	189.0426
C (VF Dispersion Constant)	189.0426	189.0426
DW_{con} (days worked - construction worker) days/week	5	5
EW_{con} (weeks worked - construction worker) weeks/year	50	50
F_D Unitless Dispersion Correction Factor	0.185837208	0.185837208
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependant on U_m/U_t derived using Cowherd et al. (1985))	0.194	0.194
$M_{m\text{-}doz}$ (Gravimetric soil moisture content) %	7.9	7.9
$M_{m\text{-}excav}$ (Gravimetric soil moisture content) %	12	12
M_{wind} (dust emitted by wind erosion) g	8803.913546	8803.913546
$N_{A\text{-}dump}$ (number of times soil is dumped)	2	2
$N_{A\text{-}till}$ (number of times soil is tilled)	2	2
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
p_b (dry soil bulk density) g/cm^3	1.5	1.5
p_b (dry soil bulk density - mass limit) g/cm^3	1.5	1.5
p_s (soil particle density) g/cm^3	2.65	2.65
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{vol} (g/m^2-s per kg/m^3)	14.31407	14.31407
Q/C_{sa} (g/m^2-s per kg/m^3)	14.31407	14.31407
p_{soil} (density) g/cm^3 - chemical-specific	1.68	1.68
A_s ($VF_{mlim\text{-}sc}$ acres)	0.5	0.5
A_s ($VF_{ulim\text{-}sc}$ acres)	0.5	0.5
s_{doz} (soil silt content) %	6.9	6.9
AF_{con} (skin adherence factor - construction worker) mg/cm^2	0.3	0.8
AT_{con} (averaging time - construction worker) days	365	365
$AT_{con\text{-}a}$ (averaging time - construction worker) days	350	350
BW_{con} (body weight - construction worker) kg	80	80
ED_{con} (exposure duration - construction worker) yr	1	1
EF_{con} (exposure frequency - construction worker) day/yr	250	250
ET_{con} (exposure time - construction worker) hr/day	8	8
THQ (target hazard quotient) unitless	0.1	1
IRS_{con} (soil ingestion rate - construction worker) mg/day	330	330
LT (lifetime) yr	70	70
SA_{con} (surface area - construction worker) cm^2/day	3527	6032
TR (target cancer risk) unitless	0.000001	0.000001
S_{doz} (dozing speed) kph	11.4	11.4
S_{grade} (grading speed) kph	11.4	11.4
s_{till} (soil silt content) %	18	18
t_c (overall duration of construction) hours	8400	8400
T_c (overall duration of construction) s	30240000	30240000
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15

APPENDIX B TABLE B-12. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs: DEFAULT USEPA TOXICITY CRITERIA

Santa Fe Trackbed to Park

Berkeley, California

Variable	Construction Worker Soil - Other Default Value	Site-Specific Value
T (time over which traffic occurs) s	7200000	7200000
T_t (overall duration of traffic) s	7200000	7200000
U_m (mean annual wind speed) m/s	4.69	4.69
U_t (equivalent threshold value) m/s	11.32	11.32
V (fraction of vegetative cover)	0	0

Notes:
Orange-highlighted cells indicate user-input (i.e., non-default) values per DTSC guidance.
RSL = regional screening level
RBSL = risk-based screening level

GSI ENVIRONMENTAL

APPENDIX B TABLE B-13. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs:
DEFAULT USEPA TOXICITY CRITERIA
Santa Fe Trackbed to Park
Berkeley, California

Chemical	CAS Number	Mutagen ?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	Particulate Emission Factor (m^3/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
Acenaphthene	83-32-9	No	Yes	Organics	-		-		2.00E-01	P /Subchronic	-		1.00E+06	-	2.34E+04
Acenaphthylene	208-96-8	No	Yes	Organics	-		-		-		-		1.00E+06	-	-
Aldrin	309-00-2	No	Yes	Organics	1.70E+01	I	4.90E-03	I	4.00E-05	P /Subchronic	-		1.00E+06	1.34E+00	1.36E+01
Anthracene	120-12-7	No	Yes	Organics	-		-		1.00E+00	P /Subchronic	-		1.00E+06	-	1.17E+05
Antimony (metallic)	7440-36-0	No	No	Inorganics	-		-		4.00E-04	P /Subchronic	1.00E-03	A /Subchronic	1.00E+06	-	1.32E+02
Barium	7440-39-3	No	No	Inorganics	-		-		2.00E-01	A /Subchronic	5.00E-03	H /Subchronic	1.00E+06	-	1.60E+04
Benzo[g,h,i]perylene	191-24-2	No	No	Organics	-		-		-		-		1.00E+06	-	-
Chlordane (technical mixture)	12789-03-6	No	Yes	Organics	3.50E-01	I	1.00E-04	I	6.00E-04	A /Subchronic	2.00E-04	A /Subchronic	1.00E+06	4.22E+01	7.96E+01
Chromium, Total	7440-47-3	No	No	Inorganics	-		-		-		-		1.00E+06	-	-
Cobalt	7440-48-4	No	No	Inorganics	-		9.00E-03	P	3.00E-03	P /Subchronic	2.00E-05	P /Subchronic	1.00E+06	3.41E+01	7.76E+01
Copper	7440-50-8	No	No	Inorganics	-		-		2.00E-02	A /Subchronic	-		1.00E+06	-	6.79E+03
Dichlorodiphenyldichloroethane, p,p'-(DDD)	72-54-8	No	No	Organics	2.40E-01	I	6.90E-05	C	5.00E-04	A /Subchronic	-		1.00E+06	4.15E+01	6.89E+01
Dichlorodiphenyldichloroethylene, p,p'-(DDE)	72-55-9	No	Yes	Organics	3.40E-01	I	9.70E-05	C	3.00E-04	P /Subchronic	-		1.00E+06	6.79E+01	1.02E+02
Dichlorodiphenyltrichloroethane, p,p'-(DDT)	50-29-3	No	No	Organics	3.40E-01	I	9.70E-05	I	5.00E-04	A /Subchronic	-		1.00E+06	4.99E+01	1.18E+02
Dieldrin	60-57-1	No	No	Organics	1.60E+01	I	4.60E-03	I	1.00E-04	A /Subchronic	-		1.00E+06	6.23E-01	1.38E+01
Endosulfan I	959-98-8	No	No	Organics	-		-		-		-		1.00E+06	-	-
Endosulfan II	9	No	No	Organics	-		-		-		-		1.00E+06	-	-
Endosulfan Sulfate	1031-07-8	No	No	Organics	-		-		3.00E-03	X /Subchronic	-		1.00E+06	-	4.14E+02
Endrin	72-20-8	No	No	Organics	-		-		6.00E-04	A /Subchronic	-		1.00E+06	-	8.27E+01
Endrin aldehyde	7421-93-4	No	No	Organics	-		-		-		-		1.00E+06	-	-
Endrin ketone	5	No	No	Organics	-		-		-		-		1.00E+06	-	-
Fluoranthene	206-44-0	No	No	Organics	-		-		1.00E-01	P /Subchronic	-		1.00E+06	-	1.17E+04
Fluorene	86-73-7	No	Yes	Organics	-		-		8.00E-04	P /Subchronic	-		1.00E+06	-	9.36E+01
Heptachlor	76-44-8	No	Yes	Organics	4.50E+00	I	1.30E-03	I	1.00E-04	A /Subchronic	-		1.00E+06	4.41E+00	3.39E+01
Heptachlor Epoxide	1024-57-3	No	Yes	Organics	9.10E+00	I	2.60E-03	I	1.30E-05	H /Subchronic	-		1.00E+06	2.37E+00	4.41E+00
Hexachlorocyclohexane, Alpha-	319-84-6	No	No	Organics	6.30E+00	I	1.80E-03	I	2.00E-03	A /Subchronic	-		1.00E+06	1.58E+00	2.76E+02
Hexachlorocyclohexane, Beta-	319-85-7	No	No	Organics	1.80E+00	I	5.30E-04	I	6.00E-04	A /Subchronic	-		1.00E+06	5.54E+00	8.27E+01
Hexachlorocyclohexane, Delta-	319-86-8	No	No	Organics	-		-		-		-		1.00E+06	-	-

GSI ENVIRONMENTAL

APPENDIX B TABLE B-13. USEPA RSL CALCULATOR INPUT VALUES FOR CONSTRUCTION WORKER RBSLs: DEFAULT USEPA TOXICITY CRITERIA
Santa Fe Trackbed to Park
Berkeley, California

Chemical	CAS Number	Mutagen ?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	Particulate Emission Factor (m^3/kg)	Carcinogenic SL TR=1E-06 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
Hexachlorocyclohexane, Gamma-(Lindane)	58-89-9	No	No	Organics	1.10E+00	C	3.10E-04	C	8.00E-07	A /Subchronic	-		1.00E+06	1.40E+01	1.71E-01
Lead and Compounds	7439-92-1	No	No	Inorganics	-		-		-		-		1.00E+06	-	-
Methoxychlor	72-43-5	No	No	Organics	-		-		5.00E-03	A /Subchronic	-		1.00E+06	-	6.89E+02
Methylnaphthalene, 1-	90-12-0	No	Yes	Organics	5.10E-02	X	-		2.00E-01	X /Subchronic	3.00E-05	P /Subchronic	1.00E+06	1.67E+02	1.58E+00
Methylnaphthalene, 2-	91-57-6	No	Yes	Organics	-		-		4.00E-03	P /Subchronic	-		1.00E+06	-	4.68E+02
Molybdenum	7439-98-7	No	No	Inorganics	-		-		6.00E-02	A /Subchronic	2.00E-03	A /Chronic	1.00E+06	-	5.95E+03
Naphthalene	91-20-3	No	Yes	Organics	1.20E-01	C	3.40E-05	C	6.00E-01	A /Subchronic	3.00E-03	I /Chronic	1.00E+06	3.97E+01	1.25E+02
Phenanthrene	85-01-8	No	Yes	Organics	-		-		-		-		1.00E+06	-	-
Pyrene	129-00-0	No	Yes	Organics	-		-		3.00E-01	P /Subchronic	-		1.00E+06	-	3.51E+04
Selenium	7782-49-2	No	No	Inorganics	-		-		5.00E-03	H /Subchronic	2.00E-02	C /Chronic	1.00E+06	-	1.66E+03
Silver	7440-22-4	No	No	Inorganics	-		-		5.00E-03	H /Subchronic	-		1.00E+06	-	1.70E+03
Thallium (Soluble Salts)	7440-28-0	No	No	Inorganics	-		-		4.00E-05	X /Subchronic	-		1.00E+06	-	1.36E+01
Vanadium and Compounds	7440-62-2	No	No	Inorganics	-		-		1.00E-02	A /Subchronic	1.00E-04	A /Chronic	1.00E+06	-	3.74E+02
Zinc and Compounds	7440-66-6	No	No	Inorganics	-		-		3.00E-01	A /Subchronic	-		1.00E+06	-	1.02E+05

GSI ENVIRONMENTAL

APPENDIX B TABLE B-14. LEADSPREAD 9 LEAD RISK ASSESSMENT SPREADSHEET
CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Santa Fe Trackbed to Park

Berkeley, California

USERS GUIDE to Leadspread Version 9

INPUT

MEDIUM	LEVEL
Lead in Soil/Dust (µg/g)	80
Respirable Dust (µg/cubic m)	1.5

EXPOSURE PARAMETERS

Parameter	units	adults	children
Days per week	days/wk	7	
Days per week, occupational	-	5	
Geometric Standard Deviation	-	1.6	
Blood lead level of concern	(µg/dl)	1.1	1
Skin area, residential	square cm	6032	2373
Skin area occupational	square cm	6032	
Soil adherence	µg/square cm	800	200
Dermal uptake constant	(µg/dl)/(µg/day)	0.00027	0.00048
Soil ingestion	mg/day	100	80
Soil ingestion, pica	mg/day		1000
Ingestion constant	(µg/dl)/(µg/day)	0.09	0.16
Bioavailability	unitless	0.6	
Breathing rate	cubic meter/day	20	10
Inhalation constant	(µg/dl)/(µg/day)	0.082	0.192

Click here for REFERENCES

OUTPUT

ENDPOINT and RECEPTOR	50th Percentile Change in Blood Pb (µg/dl)	90th Percentile Change in Blood Pb (µg/dl)	95th Percentile Change in Blood Pb (µg/dl)	PRG-90 (µg/g)	PRG-95 (µg/g)
BLOOD Pb, ADULT	0.5	0.9	1.1	97	82
BLOOD Pb, CHILD	0.6	1.1	1.4	70	59
BLOOD Pb, PICA CHILD	7.7	14.0	16.6	6	5
BLOOD Pb, OCCUPATIONAL	0.4	0.6	0.8	136	115

PATHWAYS

ADULTS	Residential Pathway Contribution	Residential Pathway Contribution	Residential Pathway Contribution	Occupational Pathway contribution	Occupational Pathway contribution	Occupational Pathway contribution
Pathway	PEF*	µg/dl	percent	PEF	µg/dl	percent
Soil Contact	7.8E-4	0.06	13%	5.6E-4	0.04	13%
Soil Ingestion	5.4E-3	0.43	87%	3.9E-3	0.31	87%
Inhalation	2.5E-6	0.00	0.0%	1.8E-6	0.00	0.0%
CHILDREN	**Typical Pathway contribution**	**Typical Pathway contribution**	**Typical Pathway contribution**	**with pica Pathway contribution**	**with pica Pathway contribution**	**with pica Pathway contribution**
Pathway	PEF*	µg/dl	percent	PEF	µg/dl	percent
Soil Contact	1.4E-4	0.01	1.7%		0.01	0.1%
Soil Ingestion	7.7E-3	0.61	98%	9.6E-2	7.68	100%
Inhalation	2.9E-6	0.00	0.0%		0.00	0.0%

*Pathway Exposure Factor

Click here for Equations

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX C

Screening Level Risk Assessment Calculations

GSI ENVIRONMENTAL

APPENDIX C TABLE C-1: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons							
TPH-d	**14**	--	--	260	SFBRWQCB, 2019	--	5E-02
TPH-mo	**22**	--	--	12,000	SFBRWQCB, 2019	--	2E-03
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	**0.015**	--	--	3,600	DTSC, 2025	--	4E-06
Acenaphthylene	0.020	--	--	--	--	--	--
Anthracene	**0.029**	--	--	18,000	USEPA, 2024	--	2E-06
Benzo(a)anthracene	**0.14**	1.1	USEPA, 2024	--	--	1E-07	--
Benzo(a) pyrene	**0.19**	0.11	USEPA, 2024	18	USEPA, 2024	2E-06	1E-02
Benzo(b) fluoranthene	**0.15**	1.1	USEPA, 2024	--	--	1E-07	--
Benzo(g,h,i) perylene	**0.11**	--	--	--	--	--	--
Benzo(k) fluoranthene	**0.15**	11	USEPA, 2024	--	--	1E-08	--
Chrysene	**0.17**	110	USEPA, 2024	--	--	2E-09	--
Dibenz(a,h) anthracene	**0.027**	0.028	DTSC, 2025	--	--	1E-06	--
Fluoranthene	**0.15**	--	--	2,400	USEPA, 2024	--	6E-05
Fluorene	0.020	--	--	2,400	USEPA, 2024	--	8E-06
Indeno (1,2,3-cd) pyrene	**0.15**	1.1	USEPA, 2024	--	--	1E-07	--
1-Methylnaphthalene	**0.022**	5.6	DTSC, 2025	0.18	USEPA, 2024	4E-09	1E-01
2-Methylnaphthalene	**0.032**	--	--	190	DTSC, 2025	--	2E-04
Naphthalene	**0.05**	2	DTSC, 2025	130	USEPA, 2024	3E-08	4E-04
Phenanthrene	**0.071**	--	--	--	--	--	--
Pyrene	**0.19**	--	--	1,800	USEPA, 2024	--	1E-04
BaPe[a]	**0.26**	0.9	DTSC, 2009	--	--	--	--
Pesticides							
Aldrin	0.0099	0.039	USEPA, 2024	2.3	USEPA, 2024	3E-07	4E-03
Alpha-BHC	0.0099	0.086	USEPA, 2024	57	USEPA, 2024	1E-07	2E-04
Beta-BHC	0.0099	0.3	USEPA, 2024	--	--	3E-08	--
Delta-BHC	0.0099	--	USEPA, 2024	0.0038	USEPA, 2024	--	3E+00
Gamma-BHC	0.0099	0.057	USEPA, 2024	21	USEPA, 2024	2E-07	5E-04
Chlordane	**0.057**	1.7	USEPA, 2024	35	USEPA, 2024	3E-08	2E-03
4,4'-DDD	0.0099	2.3	USEPA, 2024	32	USEPA, 2024	4E-09	3E-04
4,4'-DDE	0.0099	2.0	USEPA, 2024	39	USEPA, 2024	5E-09	3E-04
4,4'-DDT	0.0099	1.9	USEPA, 2024	37	USEPA, 2024	5E-09	3E-04
Dieldrin	0.0099	0.034	USEPA, 2024	3.2	USEPA, 2024	3E-07	3E-03
Endosulfan I	0.0099	--	--	470	USEPA, 2024	--	2E-05
Endosulfan II	0.0099	--	--	470	Surrogate[2]	--	2E-05
Endosulfan sulfate	0.0099	--	--	380	USEPA, 2024	--	3E-05
Endrin	0.0099	--	--	19	USEPA, 2024	--	5E-04
Endrin aldehyde	0.0099	--	--	19	Surrogate[3]	--	5E-04
Endrin ketone	0.0099	--	--	19	Surrogate[3]	--	5E-04
Heptachlor	0.0099	0.13	USEPA, 2024	7.8	USEPA, 2024	8E-08	1E-03
Heptachlor epoxide	0.0099	0.07	USEPA, 2024	1	USEPA, 2024	1E-07	1E-02
Methoxychlor	0.020	--	--	320	USEPA, 2024	--	6E-05
Toxaphene	0.20	0.45	DTSC, 2025	5.7	USEPA, 2024	4E-07	4E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-1: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals							
Antimony	**2.7**	--	--	31	USEPA, 2024	--	9E-02
Arsenic	**150**	0.032	DTSC, 2025	0.41	DTSC, 2025	5E-03	4E+02
Barium	**300**	--	--	15,000	USEPA, 2024	--	2E-02
Beryllium	**0.73**	1,600	USEPA, 2024	16	DTSC, 2025	5E-10	5E-02
Cadmium	**0.71**	910	DTSC, 2025	7.1	USEPA, 2024	8E-10	1E-01
Chromium (Total)	**70**	--	--	85000	Surrogate[4]	--	8E-04
Cobalt	**23**	420	USEPA, 2024	23	USEPA, 2024	5E-08	1E+00
Copper	**37**	--	--	3,100	USEPA, 2024	--	1E-02
Lead[b]	**54**	--	--	80	DTSC, 2025	--	--
Mercury	**0.30**	--	--	0.67	DTSC, 2025	--	4E-01
Molybdenum	**1.5**	--	--	390	USEPA, 2024	--	4E-03
Nickel	**67**	15,000	DTSC, 2025	820	DTSC, 2025	4E-09	8E-02
Selenium	**1.3**	--	--	390	USEPA, 2024	--	3E-03
Silver	**0.51**	--	--	390	USEPA, 2024	--	1E-03
Thallium	2.9	--	--	0.78	USEPA, 2024	--	4E+00
Vanadium	**74**	--	--	390	USEPA, 2024	--	2E-01
Zinc	**100**	--	--	23,000	USEPA, 2024	--	4E-03
					TOTAL	5E-03	374

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.

2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or "hot work" on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
PAH = polycyclic aromatic hydrocarbon
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
background = consistent with background levels
ND = not detected in soil samples collected at the Site

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.

Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).

USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-2: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons							
TPH-d	**47**	--	--	260	SFBRWQCB, 2019	--	2E-01
TPH-mo	**89**	--	--	12,000	SFBRWQCB, 2019	--	7E-03
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.040	--	--	3,600	DTSC, 2025	--	1E-05
Acenaphthylene	0.10	--	--	--	--	--	--
Anthracene	0.040	--	--	18,000	USEPA, 2024	--	2E-06
Benzo(a)anthracene	**0.13**	1.1	USEPA, 2024	--	--	1E-07	--
Benzo(a)pyrene	**0.24**	0.11	USEPA, 2024	18	USEPA, 2024	2E-06	1E-02
Benzo(b)fluoranthene	**0.18**	1.1	USEPA, 2024	--	--	2E-07	--
Benzo(g,h,i)perylene	**0.21**	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.18**	11	USEPA, 2024	--	--	2E-08	--
Chrysene	**0.14**	110	USEPA, 2024	--	--	1E-09	--
Dibenz(a,h)anthracene	0.040	0.028	DTSC, 2025	--	--	1E-06	--
Fluoranthene	**0.12**	--	--	2,400	USEPA, 2024	--	5E-05
Fluorene	0.040	--	--	2,400	USEPA, 2024	--	2E-05
Indeno(1,2,3-cd)pyrene	**0.25**	1.1	USEPA, 2024	--	--	2E-07	--
1-Methylnaphthalene	0.040	5.6	DTSC, 2025	0.18	USEPA, 2024	7E-09	2E-01
2-Methylnaphthalene	0.040	--	--	190	DTSC, 2025	--	2E-04
Naphthalene	0.040	2	DTSC, 2025	130	USEPA, 2024	2E-08	3E-04
Phenanthrene	**0.051**	--	--	--	--	--	--
Pyrene	**0.16**	--	--	1,800	USEPA, 2024	--	9E-05
BaPe[a]	**0.34**	0.9	DTSC, 2009	--	--	--	--
Pesticides							
Aldrin	0.010	0.039	USEPA, 2024	2.3	USEPA, 2024	3E-07	4E-03
Alpha-BHC	0.010	0.086	USEPA, 2024	57	USEPA, 2024	1E-07	2E-04
Beta-BHC	0.010	0.3	USEPA, 2024	--	--	3E-08	--
Delta-BHC	0.010	--	USEPA, 2024	0.0038	USEPA, 2024	--	3E+00
Gamma-BHC	0.010	0.057	USEPA, 2024	21	USEPA, 2024	2E-07	5E-04
Chlordane	0.10	1.7	USEPA, 2024	35	USEPA, 2024	6E-08	3E-03
4,4'-DDD	0.010	2.3	USEPA, 2024	32	USEPA, 2024	4E-09	3E-04
4,4'-DDE	**0.025**	2.0	USEPA, 2024	39	USEPA, 2024	1E-08	6E-04
4,4'-DDT	**0.024**	1.9	USEPA, 2024	37	USEPA, 2024	1E-08	6E-04
Dieldrin	**0.015**	0.034	USEPA, 2024	3.2	USEPA, 2024	4E-07	5E-03
Endosulfan I	0.010	--	--	470	USEPA, 2024	--	2E-05
Endosulfan II	0.010	--	--	470	Surrogate[2]	--	2E-05
Endosulfan sulfate	0.010	--	--	380	USEPA, 2024	--	3E-05
Endrin	0.010	--	--	19	USEPA, 2024	--	5E-04
Endrin aldehyde	0.010	--	--	19	Surrogate[3]	--	5E-04
Endrin ketone	0.010	--	--	19	Surrogate[3]	--	5E-04
Heptachlor	0.010	0.13	USEPA, 2024	7.8	USEPA, 2024	8E-08	1E-03
Heptachlor epoxide	0.010	0.07	USEPA, 2024	1	USEPA, 2024	1E-07	1E-02
Methoxychlor	0.020	--	--	320	USEPA, 2024	--	6E-05
Toxaphene	0.20	0.45	DTSC, 2025	5.7	USEPA, 2024	4E-07	4E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-2: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals							
Antimony	**3.6**	--	--	31	USEPA, 2024	--	1E-01
Arsenic	**310**	0.032	DTSC, 2025	0.41	DTSC, 2025	1E-02	8E+02
Barium	**280**	--	--	15,000	USEPA, 2024	--	2E-02
Beryllium	**0.73**	1,600	USEPA, 2024	16	DTSC, 2025	5E-10	5E-02
Cadmium	0.50	910	DTSC, 2025	7.1	USEPA, 2024	5E-10	7E-02
Chromium (Total)[4]	**73**	--	--	85000	Surrogate[4]	--	9E-04
Cobalt	**14**	420	USEPA, 2024	23	USEPA, 2024	3E-08	6E-01
Copper	**81**	--	--	3,100	USEPA, 2024	--	3E-02
Lead[b]	**210**	--	--	80	DTSC, 2025	--	--
Mercury	**11**	--	--	0.67	DTSC, 2025	--	2E+01
Molybdenum	**0.72**	--	--	390	USEPA, 2024	--	2E-03
Nickel	**83**	15,000	DTSC, 2025	820	DTSC, 2025	6E-09	1E-01
Selenium	**1.6**	--	--	390	USEPA, 2024	--	4E-03
Silver	0.50	--	--	390	USEPA, 2024	--	1E-03
Thallium	0.50	--	--	0.78	USEPA, 2024	--	6E-01
Vanadium	**73**	--	--	390	USEPA, 2024	--	2E-01
Zinc	**190**	--	--	23,000	USEPA, 2024	--	8E-03
Baseline Scenario					**TOTAL**	1E-02	777

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.

2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

APPENDIX C TABLE C-2: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
PAH = polycyclic aromatic hydrocarbon
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-3: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons							
TPH-d	**160**	--	--	260	SFBRWQCB, 2019	--	6E-01
TPH-mo	**490**	--	--	12,000	SFBRWQCB, 2019	--	4E-02
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	0.50	--	--	3,600	DTSC, 2025	--	1E-04
Acenaphthylene	0.50	--	--	--	--	--	--
Anthracene	0.50	--	--	18,000	USEPA, 2024	--	3E-05
Benzo(a)anthracene	**0.16**	1.1	USEPA, 2024	--	--	1E-07	--
Benzo(a)pyrene	**0.28**	0.11	USEPA, 2024	18	USEPA, 2024	3E-06	2E-02
Benzo(b)fluoranthene	**0.28**	1.1	USEPA, 2024	--	--	3E-07	--
Benzo(g,h,i)perylene	**0.22**	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.24**	11	USEPA, 2024	--	--	2E-08	--
Chrysene	**0.22**	110	USEPA, 2024	--	--	2E-09	--
Dibenz(a,h)anthracene	0.50	0.028	DTSC, 2025	--	--	2E-05	--
Fluoranthene	**0.16**	--	--	2,400	USEPA, 2024	--	7E-05
Fluorene	0.50	--	--	2,400	USEPA, 2024	--	2E-04
Indeno(1,2,3-cd)pyrene	**0.27**	1.1	USEPA, 2024	--	--	2E-07	--
1-Methylnaphthalene	0.50	5.6	DTSC, 2025	0.18	USEPA, 2024	9E-08	3E+00
2-Methylnaphthalene	0.50	--	--	190	DTSC, 2025	--	3E-03
Naphthalene	0.50	2	DTSC, 2025	130	USEPA, 2024	3E-07	4E-03
Phenanthrene	0.50	--	--	--	--	--	--
Pyrene	**0.19**	--	--	1,800	USEPA, 2024	--	1E-04
BaPe[a]	**0.45**	0.9	DTSC, 2009	--	--	--	--
Pesticides							
Aldrin	0.025	0.039	USEPA, 2024	2.3	USEPA, 2024	6E-07	1E-02
Alpha-BHC	0.025	0.086	USEPA, 2024	57	USEPA, 2024	3E-07	4E-04
Beta-BHC	0.025	0.3	USEPA, 2024	--	--	8E-08	--
Delta-BHC	0.025	--	USEPA, 2024	0.0038	USEPA, 2024	--	7E+00
Gamma-BHC	0.025	0.057	USEPA, 2024	21	USEPA, 2024	4E-07	1E-03
Chlordane	0.25	1.7	USEPA, 2024	35	USEPA, 2024	1E-07	7E-03
4,4'-DDD	0.025	2.3	USEPA, 2024	32	USEPA, 2024	1E-08	8E-04
4,4'-DDE	**0.011**	2.0	USEPA, 2024	39	USEPA, 2024	6E-09	3E-04
4,4'-DDT	**0.040**	1.9	USEPA, 2024	37	USEPA, 2024	2E-08	1E-03
Dieldrin	**0.010**	0.034	USEPA, 2024	3.2	USEPA, 2024	3E-07	3E-03
Endosulfan I	0.025	--	--	470	USEPA, 2024	--	5E-05
Endosulfan II	0.025	--	--	470	Surrogate[2]	--	5E-05
Endosulfan sulfate	0.025	--	--	380	USEPA, 2024	--	7E-05
Endrin	0.025	--	--	19	USEPA, 2024	--	1E-03
Endrin aldehyde	0.025	--	--	19	Surrogate[3]	--	1E-03
Endrin ketone	0.025	--	--	19	Surrogate[3]	--	1E-03
Heptachlor	0.025	0.13	USEPA, 2024	7.8	USEPA, 2024	2E-07	3E-03
Heptachlor epoxide	0.025	0.07	USEPA, 2024	1	USEPA, 2024	4E-07	3E-02
Methoxychlor	0.050	--	--	320	USEPA, 2024	--	2E-04
Toxaphene	0.50	0.45	DTSC, 2025	5.7	USEPA, 2024	1E-06	9E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-3: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals							
Antimony	3.0	--	--	31	USEPA, 2024	--	1E-01
Arsenic	**120**	0.032	DTSC, 2025	0.41	DTSC, 2025	4E-03	3E+02
Barium	**190**	--	--	15,000	USEPA, 2024	--	1E-02
Beryllium	**0.56**	1,600	USEPA, 2024	16	DTSC, 2025	4E-10	4E-02
Cadmium	**0.72**	910	DTSC, 2025	7.1	USEPA, 2024	8E-10	1E-01
Chromium (Total)[4]	**56**	--	--	85000	Surrogate[4]	--	7E-04
Cobalt	**15**	420	USEPA, 2024	23	USEPA, 2024	4E-08	7E-01
Copper	**60**	--	--	3,100	USEPA, 2024	--	2E-02
Lead[b]	**490**	--	--	80	DTSC, 2025	--	--
Mercury	**16**	--	--	0.67	DTSC, 2025	--	2E+01
Molybdenum	0.99	--	--	390	USEPA, 2024	--	3E-03
Nickel	**65**	15,000	DTSC, 2025	820	DTSC, 2025	4E-09	8E-02
Selenium	3.0	--	--	390	USEPA, 2024	--	8E-03
Silver	**0.56**	--	--	390	USEPA, 2024	--	1E-03
Thallium	3.0	--	--	0.78	USEPA, 2024	--	4E+00
Vanadium	**50**	--	--	390	USEPA, 2024	--	1E-01
Zinc	**150**	--	--	23,000	USEPA, 2024	--	7E-03
Baseline Scenario					**TOTAL**	4E-03	332

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.

2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-3: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 3

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
PAH = polycyclic aromatic hydrocarbon
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-4: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons							
TPH-d	**45**	--	--	260	SFBRWQCB, 2019	--	2E-01
TPH-mo	**76**	--	--	12,000	SFBRWQCB, 2019	--	6E-03
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	**0.012**	--	--	3,600	DTSC, 2025	--	3E-06
Acenaphthylene	0.25	--	--	--	--	--	--
Anthracene	**0.048**	--	--	18,000	USEPA, 2024	--	3E-06
Benzo(a)anthracene	**1.7**	1.1	USEPA, 2024	--	--	2E-06	--
Benzo(a) pyrene	**3.5**	0.11	USEPA, 2024	18	USEPA, 2024	3E-05	2E-01
Benzo(b) fluoranthene	**2.4**	1.1	USEPA, 2024	--	--	2E-06	--
Benzo(g,h,i) perylene	**2.3**	--	--	--	--	--	--
Benzo(k) fluoranthene	**2.4**	11	USEPA, 2024	--	--	2E-07	--
Chrysene	**1.8**	110	USEPA, 2024	--	--	2E-08	--
Dibenz(a,h) anthracene	**0.54**	0.028	DTSC, 2025	--	--	2E-05	--
Fluoranthene	**1.1**	--	--	2,400	USEPA, 2024	--	5E-04
Fluorene	**0.021**	--	--	2,400	USEPA, 2024	--	9E-06
Indeno (1,2,3-cd) pyrene	**3.1**	1.1	USEPA, 2024	--	--	3E-06	--
1-Methylnaphthalene	0.25	5.6	DTSC, 2025	0.18	USEPA, 2024	4E-08	1E+00
2-Methylnaphthalene	0.25	--	--	190	DTSC, 2025	--	1E-03
Naphthalene	0.25	2.0	DTSC, 2025	130	USEPA, 2024	1E-07	2E-03
Phenanthrene	**0.26**	--	--	--	--	--	--
Pyrene	**1.5**	--	--	1,800	USEPA, 2024	--	8E-04
BaPe[a]	**4.8**	0.9	DTSC, 2009	--	--	--	--
Pesticides							
Aldrin	0.025	0.039	USEPA, 2024	2.3	USEPA, 2024	6E-07	1E-02
Alpha-BHC	0.025	0.086	USEPA, 2024	57	USEPA, 2024	3E-07	4E-04
Beta-BHC	0.025	0.3	USEPA, 2024	--	--	8E-08	--
Delta-BHC	0.025	--	USEPA, 2024	0.0038	USEPA, 2024	--	7E+00
Gamma-BHC	0.025	0.057	USEPA, 2024	21	USEPA, 2024	4E-07	1E-03
Chlordane	0.25	1.7	USEPA, 2024	35	USEPA, 2024	1E-07	7E-03
4,4'-DDD	0.025	2.3	USEPA, 2024	32	USEPA, 2024	1E-08	8E-04
4,4'-DDE	**0.037**	2.0	USEPA, 2024	39	USEPA, 2024	2E-08	9E-04
4,4'-DDT	**0.14**	1.9	USEPA, 2024	37	USEPA, 2024	7E-08	4E-03
Dieldrin	0.025	0.034	USEPA, 2024	3.2	USEPA, 2024	7E-07	8E-03
Endosulfan I	0.025	--	--	470	USEPA, 2024	--	5E-05
Endosulfan II	0.025	--	--	470	Surrogate[2]	--	5E-05
Endosulfan sulfate	0.025	--	--	380	USEPA, 2024	--	7E-05
Endrin	0.025	--	--	19	USEPA, 2024	--	1E-03
Endrin aldehyde	0.025	--	--	19	Surrogate[3]	--	1E-03
Endrin ketone	0.025	--	--	19	Surrogate[3]	--	1E-03
Heptachlor	0.025	0.13	USEPA, 2024	7.8	USEPA, 2024	2E-07	3E-03
Heptachlor epoxide	0.025	0.07	USEPA, 2024	1.0	USEPA, 2024	4E-07	3E-02
Methoxychlor	0.050	--	--	320	USEPA, 2024	--	2E-04
Toxaphene	0.50	0.45	DTSC, 2025	5.7	USEPA, 2024	1E-06	9E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-4: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals							
Antimony	3.1	--	--	31	USEPA, 2024	--	1E-01
Arsenic	**140**	0.032	DTSC, 2025	0.41	DTSC, 2025	4E-03	3E+02
Barium	**200**	--	--	15,000	USEPA, 2024	--	1E-02
Beryllium	0.52	1,600	USEPA, 2024	16	DTSC, 2025	3E-10	3E-02
Cadmium	**1.9**	910	DTSC, 2025	7.1	USEPA, 2024	2E-09	3E-01
Chromium (Total)[4]	**75**	--	--	85000	Surrogate[4]	--	9E-04
Cobalt	**17**	420	USEPA, 2024	23	USEPA, 2024	4E-08	7E-01
Copper	**81**	--	--	3,100	USEPA, 2024	--	3E-02
Lead[b]	**280**	--	--	80	DTSC, 2025	--	--
Mercury	**4.8**	--	--	0.67	DTSC, 2025	--	7E+00
Molybdenum	1.0	--	--	390	USEPA, 2024	--	3E-03
Nickel	**120**	15,000	DTSC, 2025	820	DTSC, 2025	8E-09	1E-01
Selenium	3.1	--	--	390	USEPA, 2024	--	8E-03
Silver	0.52	--	--	390	USEPA, 2024	--	1E-03
Thallium	3.1	--	--	0.78	USEPA, 2024	--	4E+00
Vanadium	**42**	--	--	390	USEPA, 2024	--	1E-01
Zinc	**440**	--	--	23,000	USEPA, 2024	--	2E-02
Baseline Scenario					**TOTAL**	4E-03	363

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.

2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-4: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT RESIDENT, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Resident: Baseline Scenario	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Resident: Baseline Scenario	
	Soil EPC[1] (mg/kg)	Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
PAH = polycyclic aromatic hydrocarbon
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-5: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 1
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	**14**	--	--	--	1,100	SFBRWQCB, 2019	--	1E-02
TPH-mo	**22**	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	**0.015**	--	--	--	23,400	RSL Calculator	--	6E-07
Acenaphthylene	0.020	--	--	--	--	--	--	--
Anthracene	**0.029**	--	--	--	117,000	RSL Calculator	--	2E-07
Benzo(a)anthracene	**0.14**	Yes	80	RSL Calculator	--	--	2E-09	--
Benzo(a)pyrene	**0.19**	Yes	8.3	RSL Calculator	--	--	2E-08	--
Benzo(b)fluoranthene	**0.15**	Yes	83	RSL Calculator	--	--	2E-09	--
Benzo(g,h,i) perylene	**0.11**	--	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.15**	Yes	654	RSL Calculator	--	--	2E-10	--
Chrysene	**0.17**	Yes	6,540	RSL Calculator	--	--	3E-11	--
Dibenz(a,h) anthracene	**0.027**	Yes	2.1	RSL Calculator	--	--	1E-08	--
Fluoranthene	**0.15**	--	--	--	11,700	RSL Calculator	--	1E-05
Fluorene	0.020	--	--	--	94	RSL Calculator	--	2E-04
Indeno (1,2,3-cd) pyrene	**0.15**	Yes	83	RSL Calculator	--	--	2E-09	--
1-Methylnaphthalene	**0.022**	--	167	RSL Calculator	2	RSL Calculator	1E-10	1E-02
2-Methylnaphthalene	**0.032**	--	--	--	468	RSL Calculator	--	7E-05
Naphthalene	**0.050**	--	40	RSL Calculator	125	RSL Calculator	1E-09	4E-04
Phenanthrene	**0.071**	--	--	--	--	--	--	--
Pyrene	**0.19**	--	--	--	35,100	RSL Calculator	--	5E-06
BaPe[a]	**0.26**	--	0.9	DTSC, 2009	--	--	--	--
Pesticides								
Aldrin	0.0099	--	1.34	RSL Calculator	13.6	RSL Calculator	7E-09	7E-04
Alpha-BHC	0.0099	--	1.6	RSL Calculator	276	RSL Calculator	6E-09	4E-05
Beta-BHC	0.0099	--	5.5	RSL Calculator	83	RSL Calculator	2E-09	1E-04
Delta-BHC	0.0099	--	--	--	--	--	--	--
Gamma-BHC	0.0099	--	14	RSL Calculator	0.171	RSL Calculator	7E-10	6E-02
Chlordane	**0.057**	--	42	RSL Calculator	80	RSL Calculator	1E-09	7E-04
4,4'-DDD	0.0099	--	42	RSL Calculator	69	RSL Calculator	2E-10	1E-04
4,4'-DDE	0.0099	--	68	RSL Calculator	102	RSL Calculator	1E-10	1E-04
4,4'-DDT	0.0099	--	50	RSL Calculator	118	RSL Calculator	2E-10	8E-05
Dieldrin	0.0099	--	0.62	RSL Calculator	14	RSL Calculator	2E-08	7E-04
Endosulfan I	0.0099	--	--	--	414	Surrogate[3]	--	2E-05
Endosulfan II	0.0099	--	--	--	414	Surrogate[3]	--	2E-05
Endosulfan sulfate	0.0099	--	--	--	414	RSL Calculator	--	2E-05
Endrin	0.0099	--	--	--	83	RSL Calculator	--	1E-04
Endrin aldehyde	0.0099	--	--	--	83	Surrogate[4]	--	1E-04
Endrin ketone	0.0099	--	--	--	83	Surrogate[4]	--	1E-04
Heptachlor	0.0099	--	4.4	RSL Calculator	34	RSL Calculator	2E-09	3E-04
Heptachlor epoxide	0.0099	--	2.4	RSL Calculator	4.4	RSL Calculator	4E-09	2E-03
Methoxychlor	0.020	--	--	--	689	RSL Calculator	--	3E-05
Toxaphene	0.20	Yes	9.1	RSL Calculator	41	RSL Calculator	2E-08	5E-03

GSI ENVIRONMENTAL

APPENDIX C TABLE C-5: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	**2.7**	--	--	--	132	RSL Calculator	--	2E-02
Arsenic	**150**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	6E-05	1E+02
Barium	**300**	--	--	--	16,000	RSL Calculator	--	2E-02
Beryllium	**0.73**	Yes	128	RSL Calculator	68	RSL Calculator	6E-09	1E-02
Cadmium	**0.71**	Yes	73	RSL Calculator	107	RSL Calculator	1E-08	7E-03
Chromium (Total)	**70**	--	--	--	--	--	--	--
Cobalt	**23**	--	34	RSL Calculator	78	RSL Calculator	7E-07	3E-01
Copper	**37**	--	--	--	6,790	RSL Calculator	--	5E-03
Lead[b]	**54**	--	--	--	136	LeadSpread 9	--	--
Mercury	**0.30**	Yes	--	--	54.3	RSL Calculator	--	6E-03
Molybdenum	**1.5**	--	--	--	5,950	RSL Calculator	--	3E-04
Nickel	**67**	Yes	1,180	RSL Calculator	3730	RSL Calculator	6E-08	2E-02
Selenium	**1.3**	--	--	--	1,660	RSL Calculator	--	8E-04
Silver	**0.51**	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	2.9	--	--	--	14	RSL Calculator	--	2E-01
Vanadium	**74**	--	--	--	374	RSL Calculator	--	2E-01
Zinc	**100**	--	--	--	102,000	RSL Calculator	--	1E-03
Baseline Scenario						**TOTAL**	6E-05	132

Notes:
Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.
Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.
2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.
3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria published for these chemicals.
4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no toxicity criteria published for these chemicals.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-5: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 1

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-6: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	**47**	--	--	--	1,100	SFBRWQCB, 2019	--	4E-02
TPH-mo	**89**	--	--	--	54,000	SFBRWQCB, 2019	--	2E-03
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.040	--	--	--	23,400	RSL Calculator	--	2E-06
Acenaphthylene	0.10	--	--	--	--	--	--	--
Anthracene	0.040	--	--	--	117,000	RSL Calculator	--	3E-07
Benzo(a)anthracene	**0.13**	Yes	80	RSL Calculator	--	--	2E-09	--
Benzo(a)pyrene	**0.24**	Yes	8.3	RSL Calculator	--	--	3E-08	--
Benzo(b)fluoranthene	**0.18**	Yes	83	RSL Calculator	--	--	2E-09	--
Benzo(g,h,i) perylene	**0.21**	--	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.18**	Yes	654	RSL Calculator	--	--	3E-10	--
Chrysene	**0.14**	Yes	6,540	RSL Calculator	--	--	2E-11	--
Dibenz(a,h) anthracene	0.040	Yes	2.1	RSL Calculator	--	--	2E-08	--
Fluoranthene	**0.12**	--	--	--	11,700	RSL Calculator	--	1E-05
Fluorene	0.040	--	--	--	94	RSL Calculator	--	4E-04
Indeno (1,2,3-cd) pyrene	**0.25**	Yes	83	RSL Calculator	--	--	3E-09	--
1-Methylnaphthalene	0.040	--	167	RSL Calculator	2	RSL Calculator	2E-10	3E-02
2-Methylnaphthalene	0.040	--	--	--	468	RSL Calculator	--	9E-05
Naphthalene	0.040	--	40	RSL Calculator	125	RSL Calculator	1E-09	3E-04
Phenanthrene	**0.051**	--	--	--	--	--	--	--
Pyrene	**0.16**	--	--	--	35,100	RSL Calculator	--	5E-06
BaPe[a]	**0.34**	--	0.9	DTSC, 2009	--	--	--	--
Pesticides								
Aldrin	0.010	--	1.34	RSL Calculator	13.6	RSL Calculator	7E-09	7E-04
Alpha-BHC	0.010	--	1.6	RSL Calculator	276	RSL Calculator	6E-09	4E-05
Beta-BHC	0.010	--	5.5	RSL Calculator	83	RSL Calculator	2E-09	1E-04
Delta-BHC	0.010	--	--	--	--	--	--	--
Gamma-BHC	0.010	--	14	RSL Calculator	0.171	RSL Calculator	7E-10	6E-02
Chlordane	0.10	--	42	RSL Calculator	80	RSL Calculator	2E-09	1E-03
4,4'-DDD	0.010	--	42	RSL Calculator	69	RSL Calculator	2E-10	1E-04
4,4'-DDE	**0.025**	--	68	RSL Calculator	102	RSL Calculator	4E-10	2E-04
4,4'-DDT	**0.024**	--	50	RSL Calculator	118	RSL Calculator	5E-10	2E-04
Dieldrin	**0.015**	--	0.62	RSL Calculator	14	RSL Calculator	2E-08	1E-03
Endosulfan I	0.010	--	--	--	414	Surrogate[3]	--	2E-05
Endosulfan II	0.010	--	--	--	414	Surrogate[3]	--	2E-05
Endosulfan sulfate	0.010	--	--	--	414	RSL Calculator	--	2E-05
Endrin	0.010	--	--	--	83	RSL Calculator	--	1E-04
Endrin aldehyde	0.010	--	--	--	83	Surrogate[4]	--	1E-04
Endrin ketone	0.010	--	--	--	83	Surrogate[4]	--	1E-04
Heptachlor	0.010	--	4.4	RSL Calculator	34	RSL Calculator	2E-09	3E-04
Heptachlor epoxide	0.010	--	2.4	RSL Calculator	4.4	RSL Calculator	4E-09	2E-03
Methoxychlor	0.020	--	--	--	689	RSL Calculator	--	3E-05
Toxaphene	0.20	Yes	9.1	RSL Calculator	41	RSL Calculator	2E-08	5E-03

GSI ENVIRONMENTAL

APPENDIX C TABLE C-6: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	**3.6**	--	--	--	132	RSL Calculator	--	3E-02
Arsenic	**310**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	1E-04	3E+02
Barium	**280**	--	--	--	16,000	RSL Calculator	--	2E-02
Beryllium	**0.73**	Yes	128	RSL Calculator	68	RSL Calculator	6E-09	1E-02
Cadmium	0.50	Yes	73	RSL Calculator	107	RSL Calculator	7E-09	5E-03
Chromium (Total)	**73**	--	--	--	--	--	--	--
Cobalt	**14**	--	34	RSL Calculator	78	RSL Calculator	4E-07	2E-01
Copper	**81**	--	--	--	6,790	RSL Calculator	--	1E-02
Lead[b]	**210**	--	--	--	136	LeadSpread 9	--	--
Mercury	**11**	Yes	--	--	54.3	RSL Calculator	--	2E-01
Molybdenum	**0.72**	--	--	--	5,950	RSL Calculator	--	1E-04
Nickel	**83**	Yes	1,180	RSL Calculator	3730	RSL Calculator	7E-08	2E-02
Selenium	**1.6**	--	--	--	1,660	RSL Calculator	--	1E-03
Silver	0.50	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	0.50	--	--	--	14	RSL Calculator	--	4E-02
Vanadium	**73**	--	--	--	374	RSL Calculator	--	2E-01
Zinc	**190**	--	--	--	102,000	RSL Calculator	--	2E-03
Baseline Scenario						**TOTAL**	1E-04	273

Notes:
Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.
Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.
2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.
3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria published for these chemicals.
4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no toxicity criteria published for these chemicals.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-6: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 2

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-7: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	**160**	--	--	--	1,100	SFBRWQCB, 2019	--	1E-01
TPH-mo	**490**	--	--	--	54,000	SFBRWQCB, 2019	--	9E-03
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.50	--	--	--	23,400	RSL Calculator	--	2E-05
Acenaphthylene	0.50	--	--	--	--	--	--	--
Anthracene	0.50	--	--	--	117,000	RSL Calculator	--	4E-06
Benzo(a)anthracene	**0.16**	Yes	80	RSL Calculator	--	--	2E-09	--
Benzo(a)pyrene	**0.28**	Yes	8.3	RSL Calculator	--	--	3E-08	--
Benzo(b)fluoranthene	**0.28**	Yes	83	RSL Calculator	--	--	3E-09	--
Benzo(g,h,i) perylene	**0.22**	--	--	--	--	--	--	--
Benzo(k)fluoranthene	**0.24**	Yes	654	RSL Calculator	--	--	4E-10	--
Chrysene	**0.22**	Yes	6,540	RSL Calculator	--	--	3E-11	--
Dibenz(a,h) anthracene	0.50	Yes	2.1	RSL Calculator	--	--	2E-07	--
Fluoranthene	**0.16**	--	--	--	11,700	RSL Calculator	--	1E-05
Fluorene	0.50	--	--	--	94	RSL Calculator	--	5E-03
Indeno (1,2,3-cd) pyrene	**0.27**	Yes	83	RSL Calculator	--	--	3E-09	--
1-Methylnaphthalene	0.50	--	167	RSL Calculator	2	RSL Calculator	3E-09	3E-01
2-Methylnaphthalene	0.50	--	--	--	468	RSL Calculator	--	1E-03
Naphthalene	0.50	--	40	RSL Calculator	125	RSL Calculator	1E-08	4E-03
Phenanthrene	0.50	--	--	--	--	--	--	--
Pyrene	**0.19**	--	--	--	35,100	RSL Calculator	--	5E-06
BaPe[a]	**0.45**	--	0.9	DTSC, 2009	--	--	--	--
Pesticides								
Aldrin	0.025	--	1.34	RSL Calculator	13.6	RSL Calculator	2E-08	2E-03
Alpha-BHC	0.025	--	1.6	RSL Calculator	276	RSL Calculator	2E-08	9E-05
Beta-BHC	0.025	--	5.5	RSL Calculator	83	RSL Calculator	5E-09	3E-04
Delta-BHC	0.025	--	--	--	--	--	--	--
Gamma-BHC	0.025	--	14	RSL Calculator	0.171	RSL Calculator	2E-09	1E-01
Chlordane	0.25	--	42	RSL Calculator	80	RSL Calculator	6E-09	3E-03
4,4'-DDD	0.025	--	42	RSL Calculator	69	RSL Calculator	6E-10	4E-04
4,4'-DDE	**0.011**	--	68	RSL Calculator	102	RSL Calculator	2E-10	1E-04
4,4'-DDT	**0.040**	--	50	RSL Calculator	118	RSL Calculator	8E-10	3E-04
Dieldrin	**0.010**	--	0.62	RSL Calculator	14	RSL Calculator	2E-08	7E-04
Endosulfan I	0.025	--	--	--	414	Surrogate[3]	--	6E-05
Endosulfan II	0.025	--	--	--	414	Surrogate[3]	--	6E-05
Endosulfan sulfate	0.025	--	--	--	414	RSL Calculator	--	6E-05
Endrin	0.025	--	--	--	83	RSL Calculator	--	3E-04
Endrin aldehyde	0.025	--	--	--	83	Surrogate[4]	--	3E-04
Endrin ketone	0.025	--	--	--	83	Surrogate[4]	--	3E-04
Heptachlor	0.025	--	4.4	RSL Calculator	34	RSL Calculator	6E-09	7E-04
Heptachlor epoxide	0.025	--	2.4	RSL Calculator	4.4	RSL Calculator	1E-08	6E-03
Methoxychlor	0.050	--	--	--	689	RSL Calculator	--	7E-05
Toxaphene	0.50	Yes	9.1	RSL Calculator	41	RSL Calculator	6E-08	1E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-7: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	3.0	--	--	--	132	RSL Calculator	--	2E-02
Arsenic	**120**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	5E-05	1E+02
Barium	**190**	--	--	--	16,000	RSL Calculator	--	1E-02
Beryllium	**0.56**	Yes	128	RSL Calculator	68	RSL Calculator	4E-09	8E-03
Cadmium	**0.72**	Yes	73	RSL Calculator	107	RSL Calculator	1E-08	7E-03
Chromium (Total)	**56**	--	--	--	--	--	--	--
Cobalt	**15**	--	34	RSL Calculator	78	RSL Calculator	4E-07	2E-01
Copper	**60**	--	--	--	6,790	RSL Calculator	--	9E-03
Lead[b]	**490**	--	--	--	136	LeadSpread 9	--	--
Mercury	**16**	Yes	--	--	54.3	RSL Calculator	--	3E-01
Molybdenum	0.99	--	--	--	5,950	RSL Calculator	--	2E-04
Nickel	**65**	Yes	1,180	RSL Calculator	3730	RSL Calculator	6E-08	2E-02
Selenium	3.0	--	--	--	1,660	RSL Calculator	--	2E-03
Silver	**0.56**	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	3.0	--	--	--	14	RSL Calculator	--	2E-01
Vanadium	**50**	--	--	--	374	RSL Calculator	--	1E-01
Zinc	**150**	--	--	--	102,000	RSL Calculator	--	1E-03
Baseline Scenario						**TOTAL**	5E-05	107

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.
2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.
3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria published for these chemicals.
4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no toxicity criteria published for these chemicals.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-7: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 3
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-8: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	**45**	--	--	--	1,100	SFBRWQCB, 2019	--	4E-02
TPH-mo	**76**	--	--	--	54,000	SFBRWQCB, 2019	--	1E-03
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	**0.012**	--	--	--	23,400	RSL Calculator	--	5E-07
Acenaphthylene	0.25	--	--	--	--	--	--	--
Anthracene	**0.048**	--	--	--	117,000	RSL Calculator	--	4E-07
Benzo(a)anthracene	**1.7**	Yes	80	RSL Calculator	--	--	2E-08	--
Benzo(a)pyrene	**3.5**	Yes	8.3	RSL Calculator	--	--	4E-07	--
Benzo(b)fluoranthene	**2.4**	Yes	83	RSL Calculator	--	--	3E-08	--
Benzo(g,h,i) perylene	**2.3**	--	--	--	--	--	--	--
Benzo(k)fluoranthene	**2.4**	Yes	654	RSL Calculator	--	--	4E-09	--
Chrysene	**1.8**	Yes	6,540	RSL Calculator	--	--	3E-10	--
Dibenz(a,h) anthracene	**0.54**	Yes	2.1	RSL Calculator	--	--	3E-07	--
Fluoranthene	**1.1**	--	--	--	11,700	RSL Calculator	--	9E-05
Fluorene	**0.021**	--	--	--	94	RSL Calculator	--	2E-04
Indeno (1,2,3-cd) pyrene	**3.1**	Yes	83	RSL Calculator	--	--	4E-08	--
1-Methylnaphthalene	0.25	--	167	RSL Calculator	2	RSL Calculator	1E-09	2E-01
2-Methylnaphthalene	0.25	--	--	--	468	RSL Calculator	--	5E-04
Naphthalene	0.25	--	40	RSL Calculator	125	RSL Calculator	6E-09	2E-03
Phenanthrene	**0.26**	--	--	--	--	--	--	--
Pyrene	**1.5**	--	--	--	35,100	RSL Calculator	--	4E-05
BaPe[a]	**4.8**	--	0.9	DTSC, 2009	--	--	--	--
Pesticides								
Aldrin	0.025	--	1.34	RSL Calculator	13.6	RSL Calculator	2E-08	2E-03
Alpha-BHC	0.025	--	1.6	RSL Calculator	276	RSL Calculator	2E-08	9E-05
Beta-BHC	0.025	--	5.5	RSL Calculator	83	RSL Calculator	5E-09	3E-04
Delta-BHC	0.025	--	--	--	--	--	--	--
Gamma-BHC	0.025	--	14	RSL Calculator	0.171	RSL Calculator	2E-09	1E-01
Chlordane	0.25	--	42	RSL Calculator	80	RSL Calculator	6E-09	3E-03
4,4'-DDD	0.025	--	42	RSL Calculator	69	RSL Calculator	6E-10	4E-04
4,4'-DDE	**0.037**	--	68	RSL Calculator	102	RSL Calculator	5E-10	4E-04
4,4'-DDT	**0.14**	--	50	RSL Calculator	118	RSL Calculator	3E-09	1E-03
Dieldrin	0.025	--	0.62	RSL Calculator	14	RSL Calculator	4E-08	2E-03
Endosulfan I	0.025	--	--	--	414	Surrogate[3]	--	6E-05
Endosulfan II	0.025	--	--	--	414	Surrogate[3]	--	6E-05
Endosulfan sulfate	0.025	--	--	--	414	RSL Calculator	--	6E-05
Endrin	0.025	--	--	--	83	RSL Calculator	--	3E-04
Endrin aldehyde	0.025	--	--	--	83	Surrogate[4]	--	3E-04
Endrin ketone	0.025	--	--	--	83	Surrogate[4]	--	3E-04
Heptachlor	0.025	--	4.4	RSL Calculator	34	RSL Calculator	6E-09	7E-04
Heptachlor epoxide	0.025	--	2.4	RSL Calculator	4.4	RSL Calculator	1E-08	6E-03
Methoxychlor	0.050	--	--	--	689	RSL Calculator	--	7E-05
Toxaphene	0.50	Yes	9.1	RSL Calculator	41	RSL Calculator	6E-08	1E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-8: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	3.1	--	--	--	132	RSL Calculator	--	2E-02
Arsenic	**140**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	6E-05	1E+02
Barium	**200**	--	--	--	16,000	RSL Calculator	--	1E-02
Beryllium	0.52	Yes	128	RSL Calculator	68	RSL Calculator	4E-09	8E-03
Cadmium	**1.9**	Yes	73	RSL Calculator	107	RSL Calculator	3E-08	2E-02
Chromium (Total)	**75**	--	--	--	--	--	--	--
Cobalt	**17**	--	34	RSL Calculator	78	RSL Calculator	5E-07	2E-01
Copper	**81**	--	--	--	6,790	RSL Calculator	--	1E-02
Lead[b]	**280**	--	--	--	136	LeadSpread 9	--	--
Mercury	**4.8**	Yes	--	--	54.3	RSL Calculator	--	9E-02
Molybdenum	1.0	--	--	--	5,950	RSL Calculator	--	2E-04
Nickel	**120**	Yes	1,180	RSL Calculator	3730	RSL Calculator	1E-07	3E-02
Selenium	3.1	--	--	--	1,660	RSL Calculator	--	2E-03
Silver	0.52	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	3.1	--	--	--	14	RSL Calculator	--	2E-01
Vanadium	**42**	--	--	--	374	RSL Calculator	--	1E-01
Zinc	**440**	--	--	--	102,000	RSL Calculator	--	4E-03
Baseline Scenario						**TOTAL**	6E-05	124

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC. See Appendix B Tables B-1 through B-4.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as doing so would double-count the risk contribution of carcinogenic PAHs.

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. As required by DTSC, maximum concentrations measured in soil samples at or less than 10 feet below ground surface were selected as EPCs. If all samples were non-detect, the maximum laboratory reporting limit was used as a surrogate EPC value.
2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.
3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria published for these chemicals.
4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no toxicity criteria published for these chemicals.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-8: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL CURRENT CONSTRUCTION WORKER, BASELINE SCENARIO
PARCEL 4

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Current Construction Worker: Baseline Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Current Construction Worker: Baseline Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = indicates a screening level is not available.
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-9: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons										
TPH-d	10	--	--	--	260	SFBRWQCB, 2019	--	4E-02	--	4E-02
TPH-mo	20	--	--	--	12,000	SFBRWQCB, 2019	--	2E-03	--	2E-03
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	0.010	--	--	--	3,600	DTSC, 2025	--	3E-06	--	3E-06
Acenaphthylene	0.010	--	--	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	18,000	USEPA, 2024	--	6E-07	--	6E-07
Benzo(a)anthracene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(a) pyrene	0.010	Background	0.11	USEPA, 2024	18	USEPA, 2024	9E-08	6E-04	--	--
Benzo(b) fluoranthene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--	--	--
Benzo(k) fluoranthene	0.010	Background	11	USEPA, 2024	--	--	9E-10	--	--	--
Chrysene	0.010	Background	110	USEPA, 2024	--	--	9E-11	--	--	--
Dibenz(a,h) anthracene	0.010	Background	0.028	DTSC, 2025	--	--	4E-07	--	--	--
Fluoranthene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Fluorene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Indeno (1,2,3-cd) pyrene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
1-Methylnaphthalene	0.010	--	5.6	DTSC, 2025	0.18	USEPA, 2024	2E-09	6E-02	2E-09	6E-02
2-Methylnaphthalene	0.010	--	--	--	190	DTSC, 2025	--	5E-05	--	5E-05
Naphthalene	0.010		2	DTSC, 2025	130	USEPA, 2024	5E-09	8E-05	5E-09	8E-05
Phenanthrene	0.010		--	--	--	--	--	--	--	--
Pyrene	0.010		--	--	1,800	USEPA, 2024	--	6E-06	--	6E-06
BaPe[a]	*0.0175*	**--**	*0.9*	*DTSC, 2009*	--	--	--	--	--	--
Pesticides										
Aldrin	0.0051	not detected at Site	0.039	USEPA, 2024	2.3	USEPA, 2024	1E-07	2E-03	--	--
Alpha-BHC	0.0051	not detected at Site	0.086	USEPA, 2024	57	USEPA, 2024	6E-08	9E-05	--	--
Beta-BHC	0.0051	not detected at Site	0.3	USEPA, 2024	--	--	2E-08	--	--	--
Delta-BHC	0.0051	not detected at Site	--	USEPA, 2024	0.0038	USEPA, 2024	--	1E+00	--	--
Gamma-BHC	0.0051	--	0.057	USEPA, 2024	21	USEPA, 2024	9E-08	2E-04	9E-08	2E-04
Chlordane	0.050	--	1.7	USEPA, 2024	35	USEPA, 2024	3E-08	1E-03	3E-08	1E-03
4,4'-DDD	0.0051	not detected at Site	2.3	USEPA, 2024	32	USEPA, 2024	2E-09	2E-04	--	--
4,4'-DDE	0.0051	--	2.0	USEPA, 2024	39	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
4,4'-DDT	0.0051	--	1.9	USEPA, 2024	37	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
Dieldrin	0.0051	--	0.034	USEPA, 2024	3.2	USEPA, 2024	2E-07	2E-03	2E-07	2E-03
Endosulfan I	0.0051	not detected at Site	--	--	470	USEPA, 2024	--	1E-05	--	--
Endosulfan II	0.0051	not detected at Site	--	--	470	Surrogate[2]	--	1E-05	--	--
Endosulfan sulfate	0.0051	not detected at Site	--	--	380	USEPA, 2024	--	1E-05	--	--
Endrin	0.0051	not detected at Site	--	--	19	USEPA, 2024	--	3E-04	--	--
Endrin aldehyde	0.0051	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Endrin ketone	0.0051	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Heptachlor	0.0051	not detected at Site	0.13	USEPA, 2024	7.8	USEPA, 2024	4E-08	7E-04	--	--
Heptachlor epoxide	0.0051	not detected at Site	0.07	USEPA, 2024	1	USEPA, 2024	7E-08	5E-03	--	--
Methoxychlor	0.010	not detected at Site	--	--	320	USEPA, 2024	--	3E-05	--	--
Toxaphene	0.10	not detected at Site	0.45	DTSC, 2025	5.7	USEPA, 2024	2E-07	2E-02	--	--

GSI ENVIRONMENTAL

APPENDIX C TABLE C-9: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals										
Antimony	2.9	--	--	--	31	USEPA, 2024	--	9E-02	--	9E-02
Arsenic	**10**	Background	0.032	DTSC, 2025	0.41	DTSC, 2025	3E-04	2E+01	--	--
Barium	**200**	--	--	--	15,000	USEPA, 2024	--	1E-02	--	1E-02
Beryllium	**0.65**	--	1,600	USEPA, 2024	16	DTSC, 2025	4E-10	4E-02	4E-10	4E-02
Cadmium	**0.71**	--	910	DTSC, 2025	7.1	USEPA, 2024	8E-10	1E-01	8E-10	1E-01
Chromium (Total)	**70**	--	--	--	85000	Surrogate[4]	--	8E-04	--	8E-04
Cobalt	**23**	Background	420	USEPA, 2024	23	USEPA, 2024	5E-08	1E+00	--	--
Copper	**35**	--	--	--	3,100	USEPA, 2024	--	1E-02	--	1E-02
Lead[b]	**54**	--	--	--	80	DTSC, 2025	--	7E-01	--	b
Mercury	0.16	--	--	--	0.67	DTSC, 2025	--	2E-01	--	2E-01
Molybdenum	**1.5**	--	--	--	390	USEPA, 2024	--	4E-03	--	4E-03
Nickel	**67**	--	15,000	DTSC, 2025	820	DTSC, 2025	4E-09	8E-02	4E-09	8E-02
Selenium	**1.3**	--	--	--	390	USEPA, 2024	--	3E-03	--	3E-03
Silver	**0.51**	--	--	--	390	USEPA, 2024	--	1E-03	--	1E-03
Thallium	2.9	not detected at Site	--	--	0.78	USEPA, 2024	--	4E+00	--	--
Vanadium	**74**	--	--	--	390	USEPA, 2024	--	2E-01	--	2E-01
Zinc	**100**	--	--	--	23,000	USEPA, 2024	--	4E-03	--	4E-03
						TOTAL	3E-04	26	3E-07	0.9
						TOTAL (Excluding metals consistent with background)	1E-06	2E+00		

Notes:
Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate concentration.
Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).
b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.
2. The USEPA RSL for endosulfan I was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.
3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.
4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations
-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
ND = non-detect
RAW = Remedial Action Work Plan
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
NA = not applicable

References
DTSC. 2009. Use of the Northern and Southern CaliforniaPolynuclear Aromatic Hydrocarbon (PAH) Studies in theManufactured Gas Plant Site Cleanup Process. California Environmental Protection Agency. July 1.
DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-10: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons										
TPH-d	10	--	--	--	260	SFBRWQCB, 2019	--	4E-02	--	4E-02
TPH-mo	20	--	--	--	12,000	SFBRWQCB, 2019	--	2E-03	--	2E-03
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	0.010	--	--	--	3,600	DTSC, 2025	--	3E-06	--	3E-06
Acenaphthylene	0.010	--	--	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	18,000	USEPA, 2024	--	6E-07	--	6E-07
Benzo(a)anthracene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(a)pyrene	0.010	Background	0.11	USEPA, 2024	18	USEPA, 2024	9E-08	6E-04	--	--
Benzo(b)fluoranthene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(g,h,i)perylene	0.010	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.010	Background	11	USEPA, 2024	--	--	9E-10	--	--	--
Chrysene	0.010	Background	110	USEPA, 2024	--	--	9E-11	--	--	--
Dibenz(a,h)anthracene	0.010	Background	0.028	DTSC, 2025	--	--	4E-07	--	--	--
Fluoranthene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Fluorene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Indeno(1,2,3-cd)pyrene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
1-Methylnaphthalene	0.010	--	5.6	DTSC, 2025	0.18	USEPA, 2024	2E-09	6E-02	2E-09	6E-02
2-Methylnaphthalene	0.010		--	--	190	DTSC, 2025	--	5E-05	--	5E-05
Naphthalene	0.010		2	DTSC, 2025	130	USEPA, 2024	5E-09	8E-05	5E-09	8E-05
Phenanthrene	0.010		--	--	--	--	--	--	--	--
Pyrene	0.010		--	--	1,800	USEPA, 2024	--	6E-06	--	6E-06
BaPe[a]	*0.0175*	--	*0.9*	*DTSC, 2009*	--	--	--	--	--	--
Pesticides										
Aldrin	0.0050	not detected at Site	0.039	USEPA, 2024	2.3	USEPA, 2024	1E-07	2E-03	--	--
Alpha-BHC	0.0050	not detected at Site	0.086	USEPA, 2024	57	USEPA, 2024	6E-08	9E-05	--	--
Beta-BHC	0.0050	not detected at Site	0.3	USEPA, 2024	--	--	2E-08	--	--	--
Delta-BHC	0.0050	not detected at Site	--	USEPA, 2024	0.0038	USEPA, 2024	--	1E+00	--	--
Gamma-BHC	0.0050	--	0.057	USEPA, 2024	21	USEPA, 2024	9E-08	2E-04	9E-08	2E-04
Chlordane	0.050	--	1.7	USEPA, 2024	35	USEPA, 2024	3E-08	1E-03	3E-08	1E-03
4,4'-DDD	0.0050	not detected at Site	2.3	USEPA, 2024	32	USEPA, 2024	2E-09	2E-04	--	--
4,4'-DDE	0.0050	--	2.0	USEPA, 2024	39	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
4,4'-DDT	0.0050	--	1.9	USEPA, 2024	37	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
Dieldrin	0.0050	--	0.034	USEPA, 2024	3.2	USEPA, 2024	1E-07	2E-03	1E-07	2E-03
Endosulfan I	0.0050	not detected at Site	--	--	470	USEPA, 2024	--	1E-05	--	--
Endosulfan II	0.0050	not detected at Site	--	--	470	Surrogate[2]	--	1E-05	--	--
Endosulfan sulfate	0.0050	not detected at Site	--	--	380	USEPA, 2024	--	1E-05	--	--
Endrin	0.0050	not detected at Site	--	--	19	USEPA, 2024	--	3E-04	--	--
Endrin aldehyde	0.0050	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Endrin ketone	0.0050	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Heptachlor	0.0050	not detected at Site	0.13	USEPA, 2024	7.8	USEPA, 2024	4E-08	6E-04	--	--
Heptachlor epoxide	0.0050	not detected at Site	0.07	USEPA, 2024	1	USEPA, 2024	7E-08	5E-03	--	--
Methoxychlor	0.0099	not detected at Site	--	--	320	USEPA, 2024	--	3E-05	--	--
Toxaphene	0.099	not detected at Site	0.45	DTSC, 2025	5.7	USEPA, 2024	2E-07	2E-02	--	--

GSI ENVIRONMENTAL

APPENDIX C TABLE C-10: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals										
Antimony	--	--	--	--	31	USEPA, 2024	--	--	--	--
Arsenic	**10**	Background	0.032	DTSC, 2025	0.41	DTSC, 2025	3E-04	2E+01	--	--
Barium	--	--	--	--	15,000	USEPA, 2024	--	--	--	--
Beryllium	--	--	1,600	USEPA, 2024	16	DTSC, 2025	--	--	--	--
Cadmium	--	--	910	DTSC, 2025	7.1	USEPA, 2024	--	--	--	--
Chromium (Total)	--	--	--	--	85000	Surrogate[4]	--	--	--	--
Cobalt	--	Background	420	USEPA, 2024	23	USEPA, 2024	--	--	--	--
Copper	--	--	--	--	3,100	USEPA, 2024	--	--	--	--
Lead[b]	**71**	--	--	--	80	DTSC, 2025	--	--	--	b
Mercury	**0.46**	--	--	--	0.67	DTSC, 2025	--	7E-01	--	7E-01
Molybdenum	--	--	--	--	390	USEPA, 2024	--	--	--	--
Nickel	--	--	15,000	DTSC, 2025	820	DTSC, 2025	--	--	--	--
Selenium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Silver	--	--	--	--	390	USEPA, 2024	--	--	--	--
Thallium	--	not detected at Site	--	--	0.78	USEPA, 2024	--	--	--	--
Vanadium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Zinc	--	--	--	--	23,000	USEPA, 2024	--	--	--	--
						TOTAL	3E-04	27	3E-07	0.8
					TOTAL (Excluding metals consistent with background)		1E-06	2E+00		

Notes:
Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate concentration.
Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. The USEPA RSL for endosulfan was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
ND = non-detect
RAW = Remedial Action Work Plan
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
NA = not applicable

References

DTSC. 2009. Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process. California Environmental Protection Agency. July 1.
DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-11: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, 1-methyl naphthalene non-detect results, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons										
TPH-d	10	--	--	--	260	SFBRWQCB, 2019	--	4E-02	--	4E-02
TPH-mo	20	--	--	--	12,000	SFBRWQCB, 2019	--	2E-03	--	2E-03
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	0.25	--	--	--	3,600	DTSC, 2025	--	7E-05	--	7E-05
Acenaphthylene	0.25	--	--	--	--	--	--	--	--	--
Anthracene	0.25	--	--	--	18,000	USEPA, 2024	--	1E-05	--	1E-05
Benzo(a)anthracene	0.25	Background	1.1	USEPA, 2024	--	--	2E-07	--	--	--
Benzo(a)pyrene	0.25	Background	0.11	USEPA, 2024	18	USEPA, 2024	2E-06	1E-02	--	--
Benzo(b)fluoranthene	0.25	Background	1.1	USEPA, 2024	--	--	2E-07	--	--	--
Benzo(g,h,i)perylene	0.25	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.25	Background	11	USEPA, 2024	--	--	2E-08	--	--	--
Chrysene	0.25	Background	110	USEPA, 2024	--	--	2E-09	--	--	--
Dibenz(a,h)anthracene	0.25	Background	0.028	DTSC, 2025	--	--	9E-06	--	--	--
Fluoranthene	0.25	--	--	--	2,400	USEPA, 2024	--	1E-04	--	1E-04
Fluorene	0.25	--	--	--	2,400	USEPA, 2024	--	1E-04	--	1E-04
Indeno(1,2,3-cd)pyrene	0.25	Background	1.1	USEPA, 2024	--	--	2E-07	--	--	--
1-Methylnaphthalene	0.25	--	5.6	DTSC, 2025	0.18	USEPA, 2024	4E-08	1E+00	--	--
2-Methylnaphthalene	0.25	not detected at Parcel 3	--	--	190	DTSC, 2025	--	1E-03	--	1E-03
Naphthalene	0.25	--	2.0	DTSC, 2025	130	USEPA, 2024	1E-07	2E-03	1E-07	2E-03
Phenanthrene	0.25	--	--	--	--	--	--	--	--	--
Pyrene	0.25	--	--	--	1,800	USEPA, 2024	--	1E-04	--	1E-04
BaPe[a]	*0.4375*	--	*0.9*	*DTSC, 2009*	--	--	--	--	--	--
Pesticides										
Aldrin	0.025	not detected at Site	0.039	USEPA, 2024	2.3	USEPA, 2024	6E-07	1E-02	--	--
Alpha-BHC	0.025	not detected at Site	0.086	USEPA, 2024	57	USEPA, 2024	3E-07	4E-04	--	--
Beta-BHC	0.025	not detected at Site	0.3	USEPA, 2024	--	--	8E-08	--	--	--
Delta-BHC	0.025	not detected at Site	--	USEPA, 2024	0.0038	USEPA, 2024	--	7E+00	--	--
Gamma-BHC	0.025	--	0.057	USEPA, 2024	21	USEPA, 2024	4E-07	1E-03	--	--
Chlordane	0.25	--	1.7	USEPA, 2024	35	USEPA, 2024	1E-07	7E-03	1E-07	7E-03
4,4'-DDD	0.025	not detected at Site	2.3	USEPA, 2024	32	USEPA, 2024	1E-08	8E-04	--	--
4,4'-DDE	0.025	--	2.0	USEPA, 2024	39	USEPA, 2024	1E-08	6E-04	1E-08	6E-04
4,4'-DDT	0.025	--	1.9	USEPA, 2024	37	USEPA, 2024	1E-08	7E-04	1E-08	7E-04
Dieldrin	0.025	--	0.034	USEPA, 2024	3.2	USEPA, 2024	7E-07	8E-03	7E-07	8E-03
Endosulfan I	0.025	not detected at Site	--	--	470	USEPA, 2024	--	5E-05	--	--
Endosulfan II	0.025	not detected at Site	--	--	470	Surrogate[2]	--	5E-05	--	--
Endosulfan sulfate	0.025	not detected at Site	--	--	380	USEPA, 2024	--	7E-05	--	--
Endrin	0.025	not detected at Site	--	--	19	USEPA, 2024	--	1E-03	--	--
Endrin aldehyde	0.025	not detected at Site	--	--	19	Surrogate[3]	--	1E-03	--	--
Endrin ketone	0.025	not detected at Site	--	--	19	Surrogate[3]	--	1E-03	--	--
Heptachlor	0.025	not detected at Site	0.13	USEPA, 2024	7.8	USEPA, 2024	2E-07	3E-03	--	--
Heptachlor epoxide	0.025	not detected at Site	0.07	USEPA, 2024	1	USEPA, 2024	4E-07	3E-02	--	--
Methoxychlor	0.049	not detected at Site	--	--	320	USEPA, 2024	--	2E-04	--	--
Toxaphene	0.49	not detected at Site	0.45	DTSC, 2025	5.7	USEPA, 2024	1E-06	9E-02	--	--

GSI ENVIRONMENTAL

APPENDIX C TABLE C-11: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, 1-methyl naphthalene non-detect results, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals										
Antimony	--	--	--	--	31	USEPA, 2024	--	--	--	--
Arsenic	**11**	Background	0.032	DTSC, 2025	0.41	DTSC, 2025	3E-04	3E+01	--	--
Barium	--	--	--	--	15,000	USEPA, 2024	--	--	--	--
Beryllium	--	--	1,600	USEPA, 2024	16	DTSC, 2025	--	--	--	--
Cadmium	--	--	910	DTSC, 2025	7.1	USEPA, 2024	--	--	--	--
Chromium (Total)	--	--	--	--	85000	Surrogate[4]	--	--	--	--
Cobalt	--	Background	420	USEPA, 2024	23	USEPA, 2024	--	--	--	--
Copper	--	--	--	--	3,100	USEPA, 2024	--	--	--	--
Lead[b]	**60**	--	--	--	80	DTSC, 2025	--	--	--	--
Mercury	**0.52**	--	--	--	0.67	DTSC, 2025	--	8E-01	--	8E-01
Molybdenum	--	--	--	--	390	USEPA, 2024	--	--	--	--
Nickel	--	--	15,000	DTSC, 2025	820	DTSC, 2025	--	--	--	--
Selenium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Silver	--	--	--	--	390	USEPA, 2024	--	--	--	--
Thallium	--	not detected at Site	--	--	0.78	USEPA, 2024	--	--	--	--
Vanadium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Zinc	--	--	--	--	23,000	USEPA, 2024	--	--	--	--
						TOTAL	4E-04	36	1E-06	0.8
						TOTAL (Excluding metals consistent with background)	2E-05	9E+00		

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate concentration.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. The USEPA RSL for endosulfan was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.

3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
RAW = Remedial Action Work Plan
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
NA = not applicable

References

DTSC. 2009. Use of the Northern and Southern CaliforniaPolynuclear Aromatic Hydrocarbon (PAH) Studies in theManufactured Gas Plant Site Cleanup Process. California Environmental Protection Agency. July 1.
DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-12: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons										
TPH-d	10	--	--	--	260	SFBRWQCB, 2019	--	4E-02	--	4E-02
TPH-mo	20	--	--	--	12,000	SFBRWQCB, 2019	--	2E-03	--	2E-03
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	0.010	--	--	--	3,600	DTSC, 2025	--	3E-06	--	3E-06
Acenaphthylene	0.010	--	--	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	18,000	USEPA, 2024	--	6E-07	--	6E-07
Benzo(a)anthracene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(a) pyrene	0.010	Background	0.11	USEPA, 2024	18	USEPA, 2024	9E-08	6E-04	--	--
Benzo(b) fluoranthene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--	--	--
Benzo(k) fluoranthene	0.010	Background	11	USEPA, 2024	--	--	9E-10	--	--	--
Chrysene	0.010	Background	110	USEPA, 2024	--	--	9E-11	--	--	--
Dibenz(a,h) anthracene	0.010	Background	0.028	DTSC, 2025	--	--	4E-07	--	--	--
Fluoranthene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Fluorene	0.010	--	--	--	2,400	USEPA, 2024	--	4E-06	--	4E-06
Indeno (1,2,3-cd) pyrene	0.010	Background	1.1	USEPA, 2024	--	--	9E-09	--	--	--
1-Methylnaphthalene	0.010	--	5.6	DTSC, 2025	0.18	USEPA, 2024	2E-09	6E-02	2E-09	6E-02
2-Methylnaphthalene	0.010		--	--	190	DTSC, 2025	--	5E-05	--	5E-05
Naphthalene	0.010		2	DTSC, 2025	130	USEPA, 2024	5E-09	8E-05	5E-09	8E-05
Phenanthrene	0.010		--	--	--	--	--	--	--	--
Pyrene	0.010		--	--	1,800	USEPA, 2024	--	6E-06	--	6E-06
BaPe[a]	*0.0175*	**--**	*0.9*	*DTSC, 2009*	--	--	--	--	--	--
Pesticides										
Aldrin	0.0051	not detected at Site	0.039	USEPA, 2024	2.3	USEPA, 2024	1E-07	2E-03	--	--
Alpha-BHC	0.0051	not detected at Site	0.086	USEPA, 2024	57	USEPA, 2024	6E-08	9E-05	--	--
Beta-BHC	0.0051	not detected at Site	0.3	USEPA, 2024	**--**	**--**	2E-08	--	--	--
Delta-BHC	0.0051	not detected at Site	--	USEPA, 2024	0.0038	USEPA, 2024	--	1E+00	--	--
Gamma-BHC	0.0051	**--**	0.057	USEPA, 2024	21	USEPA, 2024	9E-08	2E-04	9E-08	2E-04
Chlordane	0.050	**--**	1.7	USEPA, 2024	35	USEPA, 2024	3E-08	1E-03	3E-08	1E-03
4,4'-DDD	0.0051	not detected at Site	2.3	USEPA, 2024	32	USEPA, 2024	2E-09	2E-04	--	--
4,4'-DDE	0.0051	**--**	2.0	USEPA, 2024	39	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
4,4'-DDT	0.0051	**--**	1.9	USEPA, 2024	37	USEPA, 2024	3E-09	1E-04	3E-09	1E-04
Dieldrin	0.0051	**--**	0.034	USEPA, 2024	3.2	USEPA, 2024	2E-07	2E-03	2E-07	2E-03
Endosulfan I	0.0051	not detected at Site	--	--	470	USEPA, 2024	--	1E-05	--	--
Endosulfan II	0.0051	not detected at Site	--	--	470	Surrogate[2]	--	1E-05	--	--
Endosulfan sulfate	0.0051	not detected at Site	--	--	380	USEPA, 2024	--	1E-05	--	--
Endrin	0.0051	not detected at Site	--	--	19	USEPA, 2024	--	3E-04	--	--
Endrin aldehyde	0.0051	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Endrin ketone	0.0051	not detected at Site	--	--	19	Surrogate[3]	--	3E-04	--	--
Heptachlor	0.0051	not detected at Site	0.13	USEPA, 2024	7.8	USEPA, 2024	4E-08	7E-04	--	--
Heptachlor epoxide	0.0051	not detected at Site	0.07	USEPA, 2024	1	USEPA, 2024	7E-08	5E-03	--	--
Methoxychlor	0.0010	not detected at Site	--	--	320	USEPA, 2024	--	3E-06	--	--
Toxaphene	0.10	not detected at Site	0.45	DTSC, 2025	5.7	USEPA, 2024	2E-07	2E-02	--	--

GSI ENVIRONMENTAL

APPENDIX C TABLE C-12: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE RESIDENT, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Resident: Planned Soil Removal Scenario	Notes	Residential Screening Levels for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Resident: Planned Soil Removal Scenario		Hypothetical Future Resident: Planned Soil Removal Scenario (Excluding pesticides that were not detected in any soil samples, and COPCs consistent with background)	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals										
Antimony	--	--	--	--	31	USEPA, 2024	--	--	--	--
Arsenic	**11**	Background	0.032	DTSC, 2025	0.41	DTSC, 2025	3E-04	3E+01	--	--
Barium	--	--	--	--	15,000	USEPA, 2024	--	--	--	--
Beryllium	--	--	1,600	USEPA, 2024	16	DTSC, 2025	--	--	--	--
Cadmium	--	--	910	DTSC, 2025	7.1	USEPA, 2024	--	--	--	--
Chromium (Total)	--	--	--	--	85000	Surrogate[4]	--	--	--	--
Cobalt	--	Background	420	USEPA, 2024	23	USEPA, 2024	--	--	--	--
Copper	--	--	--	--	3,100	USEPA, 2024	--	--	--	--
Lead[b]	**23**	--	--	--	80	DTSC, 2025	--	--	--	--
Mercury	**0.41**	--	--	--	0.67	DTSC, 2025	--	6E-01	--	6E-01
Molybdenum	--	--	--	--	390	USEPA, 2024	--	--	--	--
Nickel	--	--	15,000	DTSC, 2025	820	DTSC, 2025	--	--	--	--
Selenium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Silver	--	--	--	--	390	USEPA, 2024	--	--	--	--
Thallium	--	not detected at Site	--	--	0.78	USEPA, 2024	--	--	--	--
Vanadium	--	--	--	--	390	USEPA, 2024	--	--	--	--
Zinc	--	--	--	--	23,000	USEPA, 2024	--	--	--	--
						TOTAL	3E-04	29	3E-07	0.7
						TOTAL (Excluding metals consistent with background)	1E-06	2E+00		

Notes:
Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate concentration.
Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chrysene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).
b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.
2. The USEPA RSL for endosulfan was used as a surrogate value for endosulfan II, as there are no DTSC-SLs or RSLs available for endosulfan II.
3. The USEPA RSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.
4. The USEPA residential RSL for chromium(III) was selected as a surrogate SL for total chromium, as there are no DTSC-SLs or RSLs for total chromium. Chromium(VI) is not likely to be present at the Site due to its use in specific industrial processes, such as welding or “hot work” on stainless steel and other metals that contain chromium, spray paintings and coatings, and chrome plating baths. There is no record of these industrial activities at the Site based on available Site history documentation.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
RAW = Remedial Action Work Plan
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency
NA = not applicable

References

DTSC. 2009. Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process. California Environmental Protection Agency. July 1.
DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-13: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	10	--	--	--	1,100	SFBRWQCB, 2019	--	9E-03
TPH-mo	20	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.010	--	--	--	23,400	RSL Calculator	--	4E-07
Acenaphthylene	0.010	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	117,000	RSL Calculator	--	9E-08
Benzo(a)anthracene	0.010	Yes	80	RSL Calculator	--	--	1E-10	--
Benzo(a)pyrene	0.010	Yes	8.3	RSL Calculator	--	--	1E-09	--
Benzo(b)fluoranthene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.010	Yes	654	RSL Calculator	--	--	2E-11	--
Chrysene	0.010	Yes	6,540	RSL Calculator	--	--	2E-12	--
Dibenz(a,h) anthracene	0.010	Yes	2.1	RSL Calculator	--	--	5E-09	--
Fluoranthene	0.010	--	--	--	11,700	RSL Calculator	--	9E-07
Fluorene	0.010	--	--	--	94	RSL Calculator	--	1E-04
Indeno (1,2,3-cd) pyrene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
1-Methylnaphthalene	0.010	--	167	RSL Calculator	2	RSL Calculator	6E-11	6E-03
2-Methylnaphthalene	0.010	--	--	--	468	RSL Calculator	--	2E-05
Naphthalene	0.010	--	40	RSL Calculator	125	RSL Calculator	3E-10	8E-05
Phenanthrene	0.010	--	--	--	--	--	--	--
Pyrene	0.010	--	--	--	35,100	RSL Calculator	--	3E-07
BaPe[a]	*0.0175*	--	*0.9*	*DTSC, 2009*	--	*0.09*	--	--
Pesticides								
Aldrin	0.0051	--	1.34	RSL Calculator	13.6	RSL Calculator	4E-09	4E-04
Alpha-BHC	0.0051	--	1.6	RSL Calculator	276	RSL Calculator	3E-09	2E-05
Beta-BHC	0.0051	--	5.5	RSL Calculator	83	RSL Calculator	9E-10	6E-05
Delta-BHC	0.0051	--	--	--	--	--	--	--
Gamma-BHC	0.0051	--	14	RSL Calculator	0.171	RSL Calculator	4E-10	3E-02
Chlordane	0.050	--	42	RSL Calculator	80	RSL Calculator	1E-09	6E-04
4,4'-DDD	0.0051	--	42	RSL Calculator	69	RSL Calculator	1E-10	7E-05
4,4'-DDE	0.0051	--	68	RSL Calculator	102	RSL Calculator	8E-11	5E-05
4,4'-DDT	0.0051	--	50	RSL Calculator	118	RSL Calculator	1E-10	4E-05
Dieldrin	0.0051	--	0.62	RSL Calculator	14	RSL Calculator	8E-09	4E-04

GSI ENVIRONMENTAL

APPENDIX C TABLE C-13: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Endosulfan I	0.0051	--	--	--	414	Surrogate[3]	--	1E-05
Endosulfan II	0.0051	--	--	--	414	Surrogate[3]	--	1E-05
Endosulfan sulfate	0.0051	--	--	--	414	RSL Calculator	--	1E-05
Endrin	0.0051	--	--	--	83	RSL Calculator	--	6E-05
Endrin aldehyde	0.0051	--	--	--	83	Surrogate[4]	--	6E-05
Endrin ketone	0.0051	--	--	--	83	Surrogate[4]	--	6E-05
Heptachlor	0.0051	--	4.4	RSL Calculator	34	RSL Calculator	1E-09	2E-04
Heptachlor epoxide	0.0051	--	2.4	RSL Calculator	4.4	RSL Calculator	2E-09	1E-03
Methoxychlor	0.010	--	--	--	689	RSL Calculator	--	1E-05
Toxaphene	0.10	Yes	9.1	RSL Calculator	41	RSL Calculator	1E-08	2E-03
Metals								
Antimony	2.9	--	--	--	132	RSL Calculator	--	2E-02
Arsenic	**10**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	4E-06	9E+00
Barium	**200**	--	--	--	16,000	RSL Calculator	--	1E-02
Beryllium	**0.65**	Yes	128	RSL Calculator	68	RSL Calculator	5E-09	1E-02
Cadmium	**0.71**	Yes	73	RSL Calculator	107	RSL Calculator	1E-08	7E-03
Chromium (Total)	**70**	--	--	--	--	--	--	--
Cobalt	**23**	--	34	RSL Calculator	78	RSL Calculator	7E-07	3E-01
Copper	**35**	--	--	--	6,790	RSL Calculator	--	5E-03
Lead[b]	**54**	--	--	--	136	LeadSpread 9	--	--
Mercury	0.16	Yes	--	--	54.3	RSL Calculator	--	3E-03
Molybdenum	**1.5**	--	--	--	5,950	RSL Calculator	--	3E-04
Nickel	**67**	Yes	1,180	RSL Calculator	3730	RSL Calculator	6E-08	2E-02
Selenium	**1.3**	--	--	--	1,660	RSL Calculator	--	8E-04
Silver	**0.51**	--	--	--	1,700	RSL Calculator	--	3E-04
Thallium	2.9	--	--	--	14	RSL Calculator	--	2E-01
Vanadium	**74**	--	--	--	374	RSL Calculator	--	2E-01
Zinc	**100**	--	--	--	102,000	RSL Calculator	--	1E-03
						TOTAL	5E-06	10
						Total (excluding arsenic and BaPe at background levels)	8E-07	0.8

GSI ENVIRONMENTAL

APPENDIX C TABLE C-13: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 1

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.

3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria for these chemicals.

4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RAW = Remedial Action Work Plan
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-14: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	10	--	--	--	1,100	SFBRWQCB, 2019	--	9E-03
TPH-mo	20	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.010	--	--	--	23,400	RSL Calculator	--	4E-07
Acenaphthylene	0.010	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	117,000	RSL Calculator	--	9E-08
Benzo(a)anthracene	0.010	Yes	80	RSL Calculator	--	--	1E-10	--
Benzo(a)pyrene	0.010	Yes	8.3	RSL Calculator	--	--	1E-09	--
Benzo(b)fluoranthene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.010	Yes	654	RSL Calculator	--	--	2E-11	--
Chrysene	0.010	Yes	6,540	RSL Calculator	--	--	2E-12	--
Dibenz(a,h) anthracene	0.010	Yes	2.1	RSL Calculator	--	--	5E-09	--
Fluoranthene	0.010	--	--	--	11,700	RSL Calculator	--	9E-07
Fluorene	0.010	--	--	--	94	RSL Calculator	--	1E-04
Indeno (1,2,3-cd) pyrene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
1-Methylnaphthalene	0.010	--	167	RSL Calculator	2	RSL Calculator	6E-11	6E-03
2-Methylnaphthalene	0.010	--	--	--	468	RSL Calculator	--	2E-05
Naphthalene	0.010	--	40	RSL Calculator	125	RSL Calculator	3E-10	8E-05
Phenanthrene	0.010	--	--	--	--	--	--	--
Pyrene	0.010	--	--	--	35,100	RSL Calculator	--	3E-07
BaPe[a]	*0.0175*	--	*0.9*	*DTSC, 2009*	--	--	--	--
Pesticides								
Aldrin	0.0050	--	1.34	RSL Calculator	13.6	RSL Calculator	4E-09	4E-04
Alpha-BHC	0.0050	--	1.6	RSL Calculator	276	RSL Calculator	3E-09	2E-05
Beta-BHC	0.0050	--	5.5	RSL Calculator	83	RSL Calculator	9E-10	6E-05
Delta-BHC	0.0050	--	--	--	--	--	--	--
Gamma-BHC	0.0050	--	14	RSL Calculator	0.171	RSL Calculator	4E-10	3E-02
Chlordane	0.050	--	42	RSL Calculator	80	RSL Calculator	1E-09	6E-04
4,4'-DDD	0.0050	--	42	RSL Calculator	69	RSL Calculator	1E-10	7E-05
4,4'-DDE	0.0050	--	68	RSL Calculator	102	RSL Calculator	7E-11	5E-05
4,4'-DDT	0.0050	--	50	RSL Calculator	118	RSL Calculator	1E-10	4E-05
Dieldrin	0.0050	--	0.62	RSL Calculator	14	RSL Calculator	8E-09	4E-04

GSI ENVIRONMENTAL

APPENDIX C TABLE C-14: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Endosulfan I[3]	0.0050	--	--	--	414	Surrogate	--	1E-05
Endosulfan II[3]	0.0050	--	--	--	414	Surrogate	--	1E-05
Endosulfan sulfate	0.0050	--	--	--	414	RSL Calculator	--	1E-05
Endrin	0.0050	--	--	--	83	RSL Calculator	--	6E-05
Endrin aldehyde[4]	0.0050	--	--	--	83	Surrogate	--	6E-05
Endrin ketone[4]	0.0050	--	--	--	83	Surrogate	--	6E-05
Heptachlor	0.0050	--	4.4	RSL Calculator	34	RSL Calculator	1E-09	1E-04
Heptachlor epoxide	0.0050	--	2.4	RSL Calculator	4.4	RSL Calculator	2E-09	1E-03
Methoxychlor	0.0099	--	--	--	689	RSL Calculator	--	1E-05
Toxaphene	0.099	Yes	9.1	RSL Calculator	41	RSL Calculator	1E-08	2E-03
Metals								
Antimony	--	--	--	--	132	RSL Calculator	--	--
Arsenic	**10**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	4E-06	9E+00
Barium	--	--	--	--	16,000	RSL Calculator	--	--
Beryllium	--	Yes	128	RSL Calculator	68	RSL Calculator	--	--
Cadmium	--	Yes	73	RSL Calculator	107	RSL Calculator	--	--
Chromium (Total)	--	--	--	--	--	--	--	--
Cobalt	--	--	34	RSL Calculator	78	RSL Calculator	--	--
Copper	--	--	--	--	6,790	RSL Calculator	--	--
Lead[b]	**71**	--	--	--	136	LeadSpread 9	--	--
Mercury	**0.46**	Yes	--	--	54.3	RSL Calculator	--	8E-03
Molybdenum	--	--	--	--	5,950	RSL Calculator	--	--
Nickel	--	Yes	1,180	RSL Calculator	3730	RSL Calculator	--	--
Selenium	--	--	--	--	1,660	RSL Calculator	--	--
Silver	--	--	--	--	1,700	RSL Calculator	--	--
Thallium	--	--	--	--	14	RSL Calculator	--	--
Vanadium	--	--	--	--	374	RSL Calculator	--	--
Zinc	--	--	--	--	102,000	RSL Calculator	--	--
						TOTAL	4E-06	9
						Total (excluding arsenic and BaPe at background levels)	3E-08	0.06

APPENDIX C TABLE C-14: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 2

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.

3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria for these chemicals.

4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RAW = Remedial Action Work Plan
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.

Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).

USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-15: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3
Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	10	--	--	--	1,100	SFBRWQCB, 2019	--	9E-03
TPH-mo	20	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.25	--	--	--	23,400	RSL Calculator	--	1E-05
Acenaphthylene	0.25	--	--	--	--	--	--	--
Anthracene	0.25	--	--	--	117,000	RSL Calculator	--	2E-06
Benzo(a)anthracene	0.25	Yes	80	RSL Calculator	--	--	3E-09	--
Benzo(a)pyrene	0.25	Yes	8.3	RSL Calculator	--	--	3E-08	--
Benzo(b)fluoranthene	0.25	Yes	83	RSL Calculator	--	--	3E-09	--
Benzo(g,h,i) perylene	0.25	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.25	Yes	654	RSL Calculator	--	--	4E-10	--
Chrysene	0.25	Yes	6,540	RSL Calculator	--	--	4E-11	--
Dibenz(a,h) anthracene	0.25	Yes	2.1	RSL Calculator	--	--	1E-07	--
Fluoranthene	0.25	--	--	--	11,700	RSL Calculator	--	2E-05
Fluorene	0.25	--	--	--	94	RSL Calculator	--	3E-03
Indeno (1,2,3-cd) pyrene	0.25	Yes	83	RSL Calculator	--	--	3E-09	--
1-Methylnaphthalene	0.25	--	167	RSL Calculator	2	RSL Calculator	1E-09	2E-01
2-Methylnaphthalene	0.25	--	--	--	468	RSL Calculator	--	5E-04
Naphthalene	0.25	--	40	RSL Calculator	125	RSL Calculator	6E-09	2E-03
Phenanthrene	0.25	--	--	--	--	--	--	--
Pyrene	0.25	--	--	--	35,100	RSL Calculator	--	7E-06
BaPe[a]	*0.4375*	--	*0.9*	*DTSC, 2009*	--	--	--	--
Pesticides								
Aldrin	0.025	--	1.34	RSL Calculator	13.6	RSL Calculator	2E-08	2E-03
Alpha-BHC	0.025	--	1.6	RSL Calculator	276	RSL Calculator	2E-08	9E-05
Beta-BHC	0.025	--	5.5	RSL Calculator	83	RSL Calculator	5E-09	3E-04
Delta-BHC	0.025	--	--	--	--	--	--	--
Gamma-BHC	0.025	--	14	RSL Calculator	0.171	RSL Calculator	2E-09	1E-01
Chlordane	0.25	--	42	RSL Calculator	80	RSL Calculator	6E-09	3E-03
4,4'-DDD	0.025	--	42	RSL Calculator	69	RSL Calculator	6E-10	4E-04
4,4'-DDE	0.025	--	68	RSL Calculator	102	RSL Calculator	4E-10	2E-04
4,4'-DDT	0.025	--	50	RSL Calculator	118	RSL Calculator	5E-10	2E-04
Dieldrin	0.025	--	0.62	RSL Calculator	14	RSL Calculator	4E-08	2E-03
Endosulfan I[3]	0.025	--	--	--	414	Surrogate	--	6E-05
Endosulfan II[3]	0.025	--	--	--	414	Surrogate	--	6E-05
Endosulfan sulfate	0.025	--	--	--	414	RSL Calculator	--	6E-05
Endrin	0.025	--	--	--	83	RSL Calculator	--	3E-04
Endrin aldehyde[4]	0.025	--	--	--	83	Surrogate	--	3E-04
Endrin ketone[4]	0.025	--	--	--	83	Surrogate	--	3E-04
Heptachlor	0.025	--	4.4	RSL Calculator	34	RSL Calculator	6E-09	7E-04
Heptachlor epoxide	0.025	--	2.4	RSL Calculator	4.4	RSL Calculator	1E-08	6E-03
Methoxychlor	0.049	--	--	--	689	RSL Calculator	--	7E-05
Toxaphene	0.49	Yes	9.1	RSL Calculator	41	RSL Calculator	5E-08	1E-02

GSI ENVIRONMENTAL

APPENDIX C TABLE C-15: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	--	--	--	--	132	RSL Calculator	--	--
Arsenic	**11**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	5E-06	1E+01
Barium	--	--	--	--	16,000	RSL Calculator	--	--
Beryllium	--	Yes	128	RSL Calculator	68	RSL Calculator	--	--
Cadmium	--	Yes	73	RSL Calculator	107	RSL Calculator	--	--
Chromium (Total)	--	--	--	--	--	--	--	--
Cobalt	--	--	34	RSL Calculator	78	RSL Calculator	--	--
Copper	--	--	--	--	6,790	RSL Calculator	--	--
Lead[b]	**60**	--	--	--	136	LeadSpread 9	--	--
Mercury	**0.52**	Yes	--	--	54.3	RSL Calculator	--	1E-02
Molybdenum	--	--	--	--	5,950	RSL Calculator	--	--
Nickel	--	Yes	1,180	RSL Calculator	3730	RSL Calculator	--	--
Selenium	--	--	--	--	1,660	RSL Calculator	--	--
Silver	--	--	--	--	1,700	RSL Calculator	--	--
Thallium	--	--	--	--	14	RSL Calculator	--	--
Vanadium	--	--	--	--	374	RSL Calculator	--	--
Zinc	--	--	--	--	102,000	RSL Calculator	--	--
						TOTAL	5E-06	10
						Total (excluding arsenic and BaPe at background levels)	2E-07	0.4

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.

3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria for these chemicals.

4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-15: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 3

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RAW = Remedial Action Work Plan
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-16: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Petroleum Hydrocarbons								
TPH-d	10	--	--	--	1,100	SFBRWQCB, 2019	--	9E-03
TPH-mo	20	--	--	--	54,000	SFBRWQCB, 2019	--	4E-04
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	0.010	--	--	--	23,400	RSL Calculator	--	4E-07
Acenaphthylene	0.010	--	--	--	--	--	--	--
Anthracene	0.010	--	--	--	117,000	RSL Calculator	--	9E-08
Benzo(a)anthracene	0.010	Yes	80	RSL Calculator	--	--	1E-10	--
Benzo(a)pyrene	0.010	Yes	8.3	RSL Calculator	--	--	1E-09	--
Benzo(b)fluoranthene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
Benzo(g,h,i) perylene	0.010	--	--	--	--	--	--	--
Benzo(k)fluoranthene	0.010	Yes	654	RSL Calculator	--	--	2E-11	--
Chrysene	0.010	Yes	6,540	RSL Calculator	--	--	2E-12	--
Dibenz(a,h) anthracene	0.010	Yes	2.1	RSL Calculator	--	--	5E-09	--
Fluoranthene	0.010	--	--	--	11,700	RSL Calculator	--	9E-07
Fluorene	0.010	--	--	--	94	RSL Calculator	--	1E-04
Indeno (1,2,3-cd) pyrene	0.010	Yes	83	RSL Calculator	--	--	1E-10	--
1-Methylnaphthalene	0.010	--	167	RSL Calculator	2	RSL Calculator	6E-11	6E-03
2-Methylnaphthalene	0.010	--	--	--	468	RSL Calculator	--	2E-05
Naphthalene	0.010	--	40	RSL Calculator	125	RSL Calculator	3E-10	8E-05
Phenanthrene	0.010	--	--	--	--	--	--	--
Pyrene	0.010	--	--	--	35,100	RSL Calculator	--	3E-07
BaPe[a]	*0.0175*	--	*0.9*	*DTSC, 2009*	--	--	--	--
Pesticides								
Aldrin	0.0051	--	1.34	RSL Calculator	13.6	RSL Calculator	4E-09	4E-04
Alpha-BHC	0.0051	--	1.6	RSL Calculator	276	RSL Calculator	3E-09	2E-05
Beta-BHC	0.0051	--	5.5	RSL Calculator	83	RSL Calculator	9E-10	6E-05
Delta-BHC	0.0051	--	--	--	--	--	--	--
Gamma-BHC	0.0051	--	14	RSL Calculator	0.171	RSL Calculator	4E-10	3E-02
Chlordane	0.050	--	42	RSL Calculator	80	RSL Calculator	1E-09	6E-04
4,4'-DDD	0.0051	--	42	RSL Calculator	69	RSL Calculator	1E-10	7E-05
4,4'-DDE	0.0051	--	68	RSL Calculator	102	RSL Calculator	8E-11	5E-05
4,4'-DDT	0.0051	--	50	RSL Calculator	118	RSL Calculator	1E-10	4E-05
Dieldrin	0.0051	--	0.62	RSL Calculator	14	RSL Calculator	8E-09	4E-04
Endosulfan I[3]	0.0051	--	--	--	414	Surrogate	--	1E-05
Endosulfan II[3]	0.0051	--	--	--	414	Surrogate	--	1E-05
Endosulfan sulfate	0.0051	--	--	--	414	RSL Calculator	--	1E-05
Endrin	0.0051	--	--	--	83	RSL Calculator	--	6E-05
Endrin aldehyde[4]	0.0051	--	--	--	83	Surrogate	--	6E-05
Endrin ketone[4]	0.0051	--	--	--	83	Surrogate	--	6E-05
Heptachlor	0.0051	--	4.4	RSL Calculator	34	RSL Calculator	1E-09	2E-04
Heptachlor epoxide	0.0051	--	2.4	RSL Calculator	4.4	RSL Calculator	2E-09	1E-03
Methoxychlor	0.0010	--	--	--	689	RSL Calculator	--	1E-06
Toxaphene	0.10	Yes	9.1	RSL Calculator	41	RSL Calculator	1E-08	2E-03

GSI ENVIRONMENTAL

APPENDIX C TABLE C-16: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4
Santa Fe Trackbed to Park
Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient
Metals								
Antimony	--	--	--	--	132	RSL Calculator	--	--
Arsenic	**11**	Yes	2.43	RSL Calculator	1.14	RSL Calculator	5E-06	1E+01
Barium	--	--	--	--	16,000	RSL Calculator	--	--
Beryllium	--	Yes	128	RSL Calculator	68	RSL Calculator	--	--
Cadmium	--	Yes	73	RSL Calculator	107	RSL Calculator	--	--
Chromium (Total)	--	--	--	--	--	--	--	--
Cobalt	--	--	34	RSL Calculator	78	RSL Calculator	--	--
Copper	--	--	--	--	6,790	RSL Calculator	--	--
Lead[b]	**23**	--	--	--	136	LeadSpread 9	--	--
Mercury	**0.41**	Yes	--	--	54.3	RSL Calculator	--	8E-03
Molybdenum	--	--	--	--	5,950	RSL Calculator	--	--
Nickel	--	Yes	1,180	RSL Calculator	3730	RSL Calculator	--	--
Selenium	--	--	--	--	1,660	RSL Calculator	--	--
Silver	--	--	--	--	1,700	RSL Calculator	--	--
Thallium	--	--	--	--	14	RSL Calculator	--	--
Vanadium	--	--	--	--	374	RSL Calculator	--	--
Zinc	--	--	--	--	102,000	RSL Calculator	--	--
						TOTAL	5E-06	10
					Total (excluding arsenic and BaPe at background levels)		3E-08	0.06

Notes:

Bold EPC values indicate maximum detected concentrations for a given COPC. Non-bold EPC values indicate the maximum laboratory reporting limit was used as a surrogate EPC.

Shaded values exceed the target risk level ($1x10^{-6}$) or target hazard level (1).

a. BaPe is calculated using potency equivalency factors for seven PAHs considered carcinogenic by the State of California. These PAHs, with their corresponding equivalency factors, are: benzo(a)anthracene (0.1), benzo(a)pyrene (1), benzo(b)fluoranthene (0.1), benzo(k)fluoranthene (0.1), chyrsene (0.01), dibenzo(a,h)anthracene (0.34), and indeno(1,2,3-cd)pyrene (0.1). Note that while naphthalene is the eighth carcinogenic PAH, it is not included in the BaPe because this PAH is evaluated separately from the other PAHs. BaPe is not evaluated quantitatively as a COPC in this assessment, as all carcinogenic PAH EPCs under the planned soil removal scenario are surrogate EPCs (i.e., laboratory reporting limits).

b. The potential for human health effects caused by lead are uniquely measured based on estimated blood lead concentrations and not included in HQ calculations.

1. Estimated future EPCs were selected based on the extent of Site characterization and planned excavation depth described in the RAW, since the expected COPC concentration following the planned soil removal is anticipated to be less than or equal to the maximum detection (or maximum laboratory reporting limit) for each COPC measured pre-excavation (i.e., consistent with naturally-occurring background levels). Where appropriate, future EPCs were selected from soils "left in place" as described in the RAW. If all soils in a given parcel were planned for excavation in the planned soil removal described in the RAW, the EPC (sample detection or maximum laboratory reporting limit) was selected from the maximum depth of characterization. See Appendix B Tables B-5 through B-8 which identify the EPCs selected for hypothetical future receptors.

2. OEHHA chemical-specific toxicity criteria were applied to the RSL calculator where available for select COPCs, per HHRA Note 10 Table 1. See Appendix B Table B-9 for a summary of these OEHHA-specific toxicity criteria for applicable COPCs.

3. The calculated RBSL for endosulfan sulfate was used as a surrogate value for endosulfan I and endosulfan II, as there are no toxicity criteria for these chemicals.

4. The calculated RBSL for endrin was used as a surrogate value for endrin aldehyde and endrin ketone, as there are no DTSC-SLs or RSLs available for these COPCs.

GSI ENVIRONMENTAL

APPENDIX C TABLE C-16: SUMMARY OF SCREENING LEVEL RISK EVALUATION -- HYPOTHETICAL FUTURE CONSTRUCTION WORKER, PLANNED SOIL REMOVAL SCENARIO
PARCEL 4

Santa Fe Trackbed to Park

Berkeley, CA

COPC	Hypothetical Future Construction Worker: Planned Soil Removal Scenario	OEHHA COPC-Specific Toxicity Criteria Applied[2]	Site-Specific Construction Worker RBSLs for Soil (TR=1E-06, HQ=1.0)				Hypothetical Future Construction Worker: Planned Soil Removal Scenario	
	Soil EPC[1] (mg/kg)		Carcinogenic (mg/kg)	Reference	Noncarcinogenic (mg/kg)	Reference	Theoretical Excess Lifetime Cancer Risk	Noncancer Hazard Quotient

Abbreviations

-- = not available
COPC = chemical of potential concern
DTSC = Department of Toxic Substances Control
EPC = exposure point concentration
HQ = hazard quotient
mg/kg = milligrams per kilogram
OEHHA = California Office of Environmental Health Hazard Assessment
RAW = Remedial Action Work Plan
RBSL = risk-based screening level
RSL = regional screening level
TPH-d = total petroleum hydrocarbons as diesel
TPH-mo = total petroleum hydrocarbons as motor oil
TR = carcinogenic target risk
USEPA = United States Environmental Protection Agency

References

DTSC. 2025. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). California Environmental Protection Agency. April.
Duvergé, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. Environmental Screening Levels ESL Workbook, Table S-1. January (Rev. 2).
USEPA. 2024. Regional Screening Levels. November.

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX D

Ecological Risk Assessment Supporting Documentation

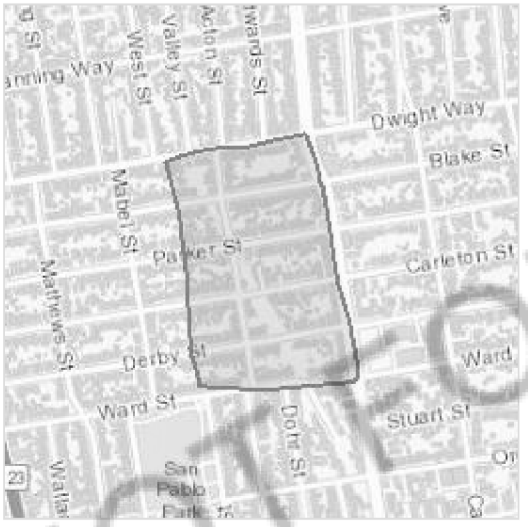
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Alameda County, California



NOT FOR CONSULTATION

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

NOT FOR CONSULTATION

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse Reithrodontomys raviventris Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Least Tern Sternula antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
California Ridgway''s Rail Rallus obsoletus obsoletus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered

NOT FOR CONSULTATION

Western Snowy Plover Charadrius nivosus nivosus — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/8035

Reptiles

NAME	STATUS

Alameda Whipsnake (=striped Racer) Masticophis lateralis euryxanthus — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/5524

Green Sea Turtle Chelonia mydas — Threatened

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6199

Northwestern Pond Turtle Actinemys marmorata — Proposed Threatened

Wherever found

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1111

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2891

NOT FOR CONSULTATION

Foothill Yellow-legged Frog Rana boylii — Threatened

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5133

Fishes

NAME	STATUS
Tidewater Goby Eucyclogobius newberryi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Santa Cruz Tarplant Holocarpha macradenia Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6832	Threatened

NOT FOR CONSULTATION

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

NOT FOR CONSULTATION

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey

NOT FOR CONSULTATION

events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

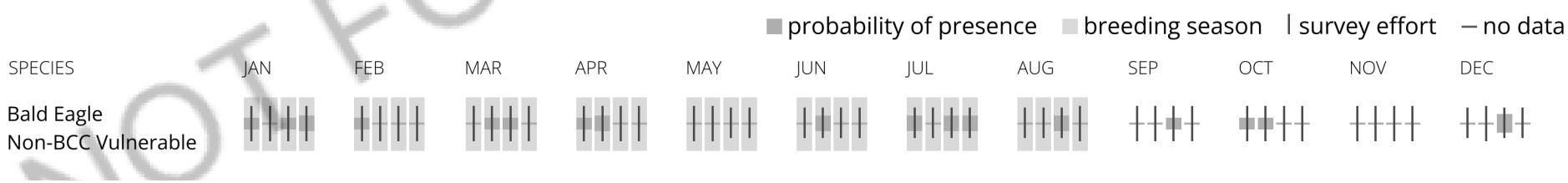
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

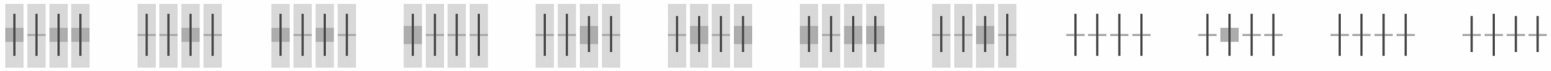
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



NOT FOR CONSULTATION

Golden Eagle
Non-BCC Vulnerable



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

NOT FOR CONSULTATION

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

NOT FOR CONSULTATION

Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9637

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Belding's Savannah Sparrow Passerculus sandwichensis beldingi — Breeds Apr 1 to Aug 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8

Black Oystercatcher Haematopus bachmani — Breeds Apr 15 to Oct 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9591

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

NOT FOR CONSULTATION

Black Turnstone Arenaria melanocephala — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Black-chinned Sparrow Spizella atrogularis — Breeds Apr 15 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9447

Brandt's Cormorant Urile penicillatus — Breeds Apr 15 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus — Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cassin's Finch Haemorhous cassinii — Breeds May 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9462

NOT FOR CONSULTATION

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Elegant Tern Thalasseus elegans — Breeds Apr 5 to Aug 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8561

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Heermann's Gull Larus heermanni — Breeds Mar 15 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lawrence's Goldfinch Spinus lawrencei — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

NOT FOR CONSULTATION

Long-eared Owl asio otus

Breeds Mar 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3631

Marbled Godwit Limosa fedoa

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Northern Harrier Circus hudsonius

Breeds Apr 1 to Sep 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8350

Nuttall's Woodpecker Dryobates nuttallii

Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus

Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi

Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

NOT FOR CONSULTATION

Red Knot Calidris canutus roselaari — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8880

Santa Barbara Song Sparrow Melospiza melodia graminea — Breeds Mar 1 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/5513

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Western Gull Larus occidentalis — Breeds Apr 21 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Western Screech-owl Megascops kennicottii cardonensis — Breeds Mar 1 to Jun 30

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

NOT FOR CONSULTATION

Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

NOT FOR CONSULTATION

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

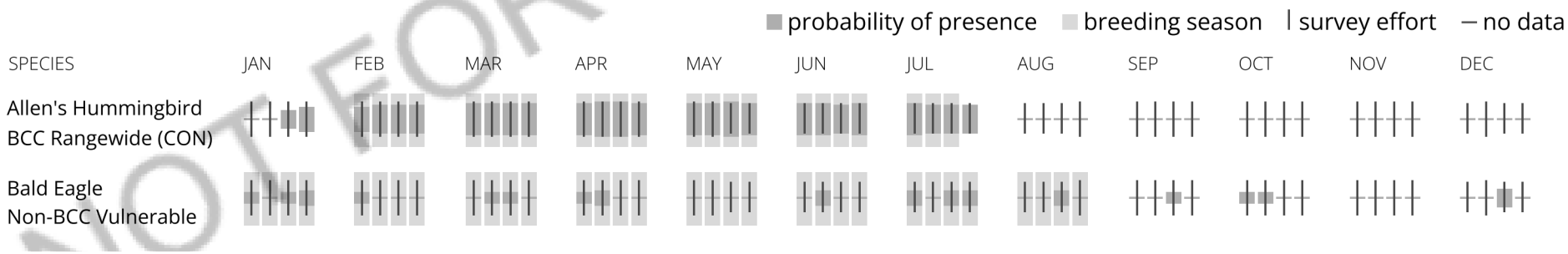
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

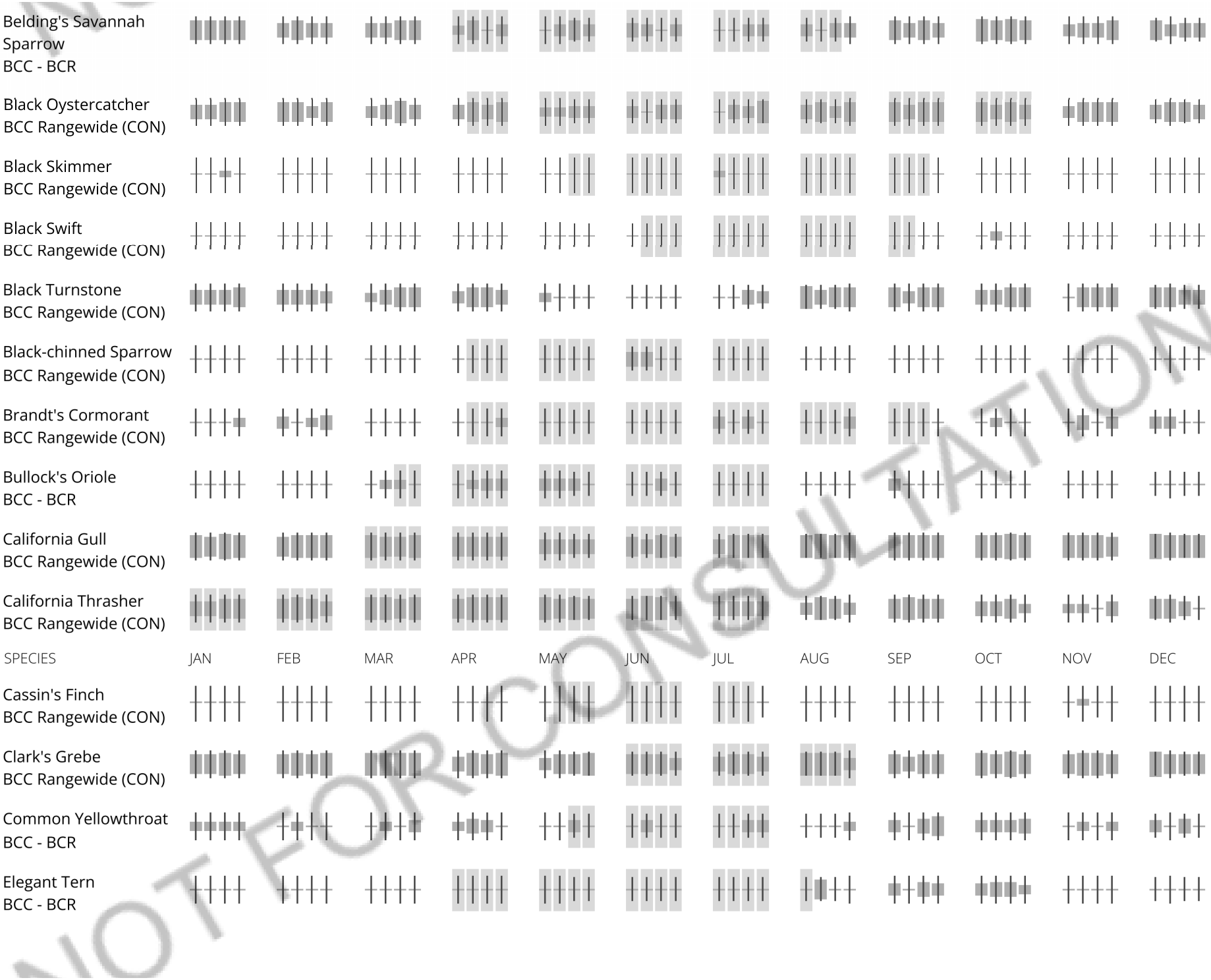
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

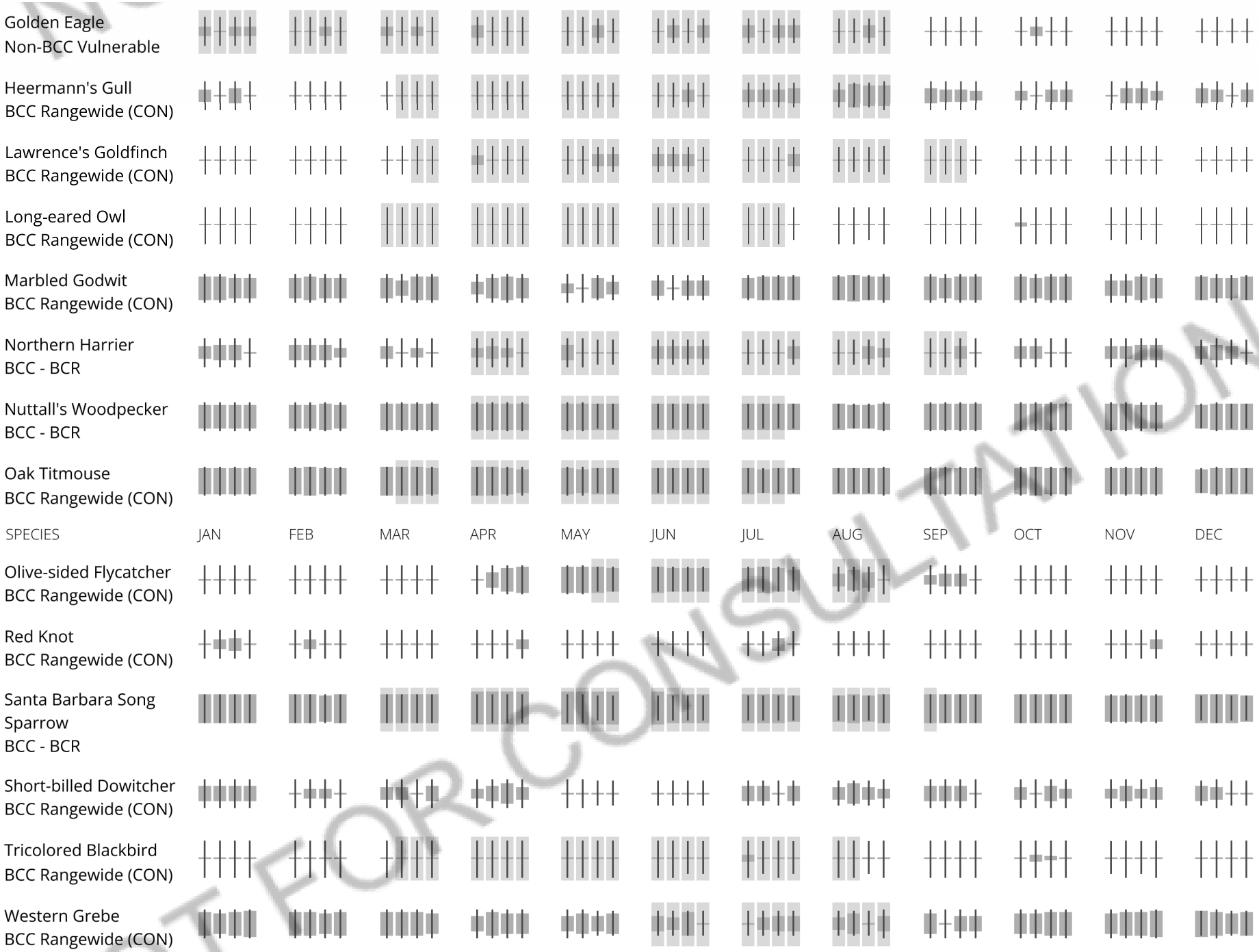
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



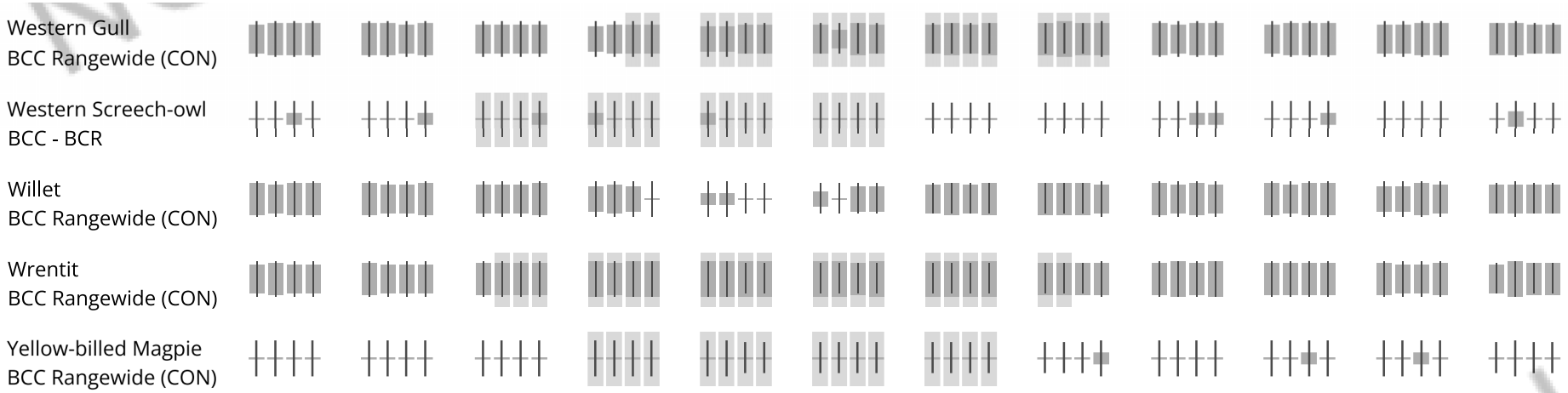
NOT FOR CONSULTATION



NOT FOR CONSULTATION



NOT FOR CONSULTATION



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

NOT FOR CONSULTATION

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

NOT FOR CONSULTATION

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

NOT FOR CONSULTATION

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

NOT FOR CONSULTATION

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX E

Site-Specific Health and Safety Plan

SITE SPECIFIC HEALTH AND SAFETY PLAN

REMEDIAL ACTION IMPLEMENTATION
SANTA FE TRACKBED TO PARK

Berkeley, California

Prepared for:
CITY OF BERKELEY
Department of Parks, Recreation, and Waterfront
1947 Center Street, 5th Floor
Berkeley, California 94704

Prepared by:
GSI ENVIRONMENTAL INC.
2000 Powell Street, Suite 820
Emeryville, California 94608
Phone: 510.463.8484
www.gsienv.com

GSI Job No: 6272
Issued: April 7, 2025

GSI Job No.: 6272
Issued: April 7, 2025

SITE SPECIFIC HEALTH AND SAFETY PLAN

REMEDIAL ACTION IMPLEMENTATION
SANTA FE TRACKBED TO PARK
Berkeley, California

GSI Job No.:	6272	Revision No.:	0
Plan Prepared By:	Tiffany George	Date:	March 28, 2025
Plan Reviewed By:	Jennifer Duffield	Date:	March 31, 2025

Plan Approved: Jennifer Duffield Date: March 31, 2025

ACKNOWLEDGEMENT

I, the undersigned, have been provided with a copy of this Site-Specific Health and Safety Plan. I have read the Plan and have had the opportunity to ask questions about health and safety issues relating to this project. I understand that it is my responsibility to abide by this Plan, and that physical injury, damage and other harm to myself or others could result from my failure to do so.

Name & Company (please print)	Signature	Date

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Implementation
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

1.0 SCOPE AND APPLICATION 1
2.0 PROJECT DESCRIPTION 2
2.1 General Information 2
2.2 Site Description 2
2.3 Project Tasks 2
3.0 EMERGENCY RESPONSE PROCEDURES 3
3.1 Emergency Actions 3
4.0 PROJECT ORGANIZATION, KEY PERSONNEL, & TRAINING REQUIREMENTS 4
4.1 Key Personnel and Responsibilities 4
4.1.1 GSI Project Manager 5
4.1.2 GSI Project Safety Manager 5
4.1.3 GSI Site Safety Officer 5
4.2 Training Requirements 6
4.3 Requirements for Respirator Use 6
4.4 Personnel Documents 6
5.0 POTENTIAL HAZARDS & HAZARD CONTROL MEASURES 6
5.1 General Site Access Control 6
5.2 Work Zones 7
5.2.1 Exclusion Zone 7
5.2.2 Contaminant Reduction Zone 7
5.2.3 Support Zone 7
5.3 Project Personnel Access Control 7
5.4 Traffic Control 7
5.5 Underground Utilities Clearance 7
5.6 General Work Hazards and Avoidance 8
5.7 Fire and Explosion Hazard Mitigation 9
5.8 Heat-Related Disorders 9
5.9 Heavy Equipment Operations 10
5.10 Confined Space and Excavation Safety 11
5.11 Potential Chemical Exposure Hazards 11
5.11 Other Potential Hazards 12
6.0 AIR QUALITY MONITORING 12
7.0 PERSONAL PROTECTIVE EQUIPMENT (PPE) 13
7.1 Level D PPE 13
7.2 Supplemental Level D PPE 13
7.3 Level C PPE 13
7.4 Level B PPE 13
8.0 DECONTAMINATION PROTOCOL 13
9.0 SPILL CONTAINMENT 14
10.0 ILLUMINATION 14

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Implementation
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

11.0 SANITATION 14
12.0 DAILY SITE SAFETY MEETINGS 14
13.0 REFERENCES 15

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Implementation
Santa Fe Trackbed to Park
Berkeley, California

TABLE OF CONTENTS

TABLES

Table 1. Summary of Screening Levels for Dust in Work Zone Air

FIGURES

Figure 1 Site Overview
Figure 2 Proposed Excavation Depths – Parcel 1
Figure 3 Proposed Excavation Depths – Parcel 2
Figure 4 Proposed Excavation Depths – Parcel 3
Figure 5 Proposed Excavation Depths – Parcel 4
Figure 6 Urgent Care Location Map
Figure 7 Hospital Location Map

ATTACHMENTS

Attachment 1 GSI Job Hazard Analyses
Attachment 2 GSI Example Job Hazard Analysis Form
Attachment 3 Daily Tailgate Safety Meeting Form
Attachment 4 Chemical Safety Data Sheets

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Implementation
Santa Fe Trackbed to Park
Berkeley, California

1.0 SCOPE AND APPLICATION

This Site-Specific Health and Safety Plan (HASP) has been prepared in accordance with 29 CFR §1910.120, 8 CCR 5192 for the Santa Fe Trackbed to Park conversion project located in Berkeley, California (the Site; Figure 1). This HASP specifies the minimum health and safety protocols to be followed during implementation of project work by all Site personnel including employees, contractors, and subcontractors. In the event of conflicting standards between this plan or the client health and safety requirements, the more protective standard shall apply. This HASP is to be provided to all Site workers for their review. All personnel are required to comply with this HASP and to indicate their agreement to do so by signing the cover page.

GSI performed an initial soil investigation at the Santa Fe Trackbed to Park Site in July 2022 and detected concentrations of arsenic, lead, mercury, and polycyclic aromatic hydrocarbons (PAHs) that exceeded the human health screening criteria (GSI, 2022). The City of Berkeley Department of Parks, Recreation, and Waterfront (the City) entered into a voluntary cleanup agreement with the California Department of Toxic Substances (DTSC) to oversee environmental characterization and remediation of the Site. Since 2022, GSI completed further investigation and confirmed the extent of the impacts attributed to the historical use as the Santa Fe Railroad. Impacts to soil are limited primarily to shallow soil (upper 2 feet) but extend to 5.5 feet below ground surface (bgs) in some areas (GSI, 2024). The proposed remediation method for the Site is removing the impacted soil with targeted excavations to depths ranging from 2 to 6 feet bgs, as described in the Remedial Action Workplan dated April 2, 2025 (GSI, 2025). GSI prepared this site-specific HASP to complete the proposed remediation activities.

Site workers shall adhere to all applicable federal, state, and local regulations and codes relating to health and safety and all sections of California Occupational Safety and Health Administration regulations contained in Title 8 of the California Code of Regulations (8 CCR) as they apply to the Site activities. Applicable requirements may include but are not limited to the following:

- Injury and Illness Prevention Program (8 CCR 1509 and 8 CCR 3203).
- Hazardous Waste Operations and Emergency Response (8 CCR 5192).
- Hazard Communication (8 CCR 5194).
- Personal Protective Equipment (8 CCR Article 10).
- Respiratory Protective Equipment (8 CCR 5144).
- Control of Noise Exposure (8 CCR 5095-5100).
- Excavations (8 CCR 1503 and 8 CCR 1539- 1547).
- Fire Prevention and Suppression Procedures (8 CCR 4848).
- Portable Fire Extinguishers (8 CCR 6151).
- Cleaning, Repairing, Servicing, and Adjusting Prime Movers, Machinery, and Equipment Lockout/Tagout (8 CCR 3314).
- Medical Services and First Aid (8 CCR 3400).

As stated above, the protocols outlined in this HASP are considered minimum requirements and shall not be strictly relied upon. Instead, it is the responsibility of each subcontractor performing work at the Site to prepare its own HASP relative to the tasks its personnel will be conducting. Each subcontractor is responsible for the health and safety of those persons under its oversight, including its personnel and subcontractors.

2.0 PROJECT DESCRIPTION

2.1 General Information

Client	City of Berkeley
Site Owner	City of Berkeley
Project Name and General Description	Remediation - Historic Santa Fe Right-of-Way
Project Locations (Physical Address)	Santa Fe Trackbed to Park (the Site), Berkeley, California
Detailed Location Information	Four non-contiguous parcels that extend north-to-south from Blake Street to Ward Street, and east-to-west between Sacramento Street and Mabel Street.
Start Date/Duration/ Other Schedule Info.	The start date is to be determined and the work is estimated to take 15 to 25 business days to complete. Note: all work will be completed during daylight hours.

2.2 Site Description

The Site (Figure 1) is currently undeveloped land that was historically a railroad in Berkeley, California. It extends north-to-south between Blake Street and Ward Street and east-to-west between Sacramento and Mabel Streets. The Site is approximately 1.32 acres and consists of four parcels.

- Parcel 1 – located between Blake and Parker Streets
- Parcel 2 – located between Parker and Carleton Streets
- Parcel 3 – located between Carleton and Derby Streets
- Parcel 4 – located between Derby and Ward Streets#

2.3 Project Tasks

Work to be conducted includes excavation and backfilling at varying depths throughout the Site. Activities that may result in potential exposure to chemicals at the Site and other hazards associated with a construction project may include, but are not limited to:

- Staking the excavation locations;
- Excavating each grid cell to a minimum depth of 2 feet bgs and a maximum depth of 6 feet bgs (detailed excavation depths are presented in Figures 2 through 5);
- Off-hauling soil;
- Backfilling each excavation with clean import soil from the total depth excavated to ground surface; and
- Perimeter air monitoring.

Information pertaining to potential chemical hazards that may be encountered during Site activities, and general control measures are discussed in Section 5.0. Job Hazard Analyses (JHAs) for the above tasks as applicable to GSI's role of observing and documenting excavation activities are included in Attachment 1.

Hazards related to the work that is being conducted by the remediation contractor (e.g., use of heavy equipment or certain hand tools) will be identified by the contractor in its site-specific HASP.

In its HASP, the contractor will include a JHA for those tasks that may meet one of the following criteria:[1]

- tasks with a high likelihood of injury or illness, including those where a simple error could result in a severe accident or injury;
- tasks that are new to the contractor's operations or that have undergone changes in processes and procedures; and,
- tasks that are complex enough to require written instructions.

An example format for the JHA is included as Attachment 2.

3.0 EMERGENCY RESPONSE PROCEDURES

In an emergency call **911.**

Report all accidents immediately to:

Tiffany George (GSI): *510-858-0102 or 831-227-5144*
Stephen Sasaki (GSI): *713-522-6300*
Stacey Rutherford (City of Berkeley): *510-981-6738*

NOTE: Specific emergency contact information and applicable directions to the nearest medical facility are contained in Figures 6 and 7. Secure the safety of yourself and those working under your direction and then contact appropriate Site, GSI, and City of Berkeley representatives that are referenced above.

Non-Emergency Contacts:

Berkeley Police Department: *510-981-5900*
Berkeley Fire Department: *510-981-3473*

3.1 Emergency Actions

Location of emergency assembly area(s):

In case of the need to evacuate the Site, all personnel should assemble at the emergency muster points described below and shown on Figure 1:

- **Parcel 1** (between Blake Street and Parker Street) – assemble at the southwestern corner of the intersection of Blake Street and Acton Street.
- **Parcel 2** (between Parker and Carleton Streets) – assemble at the southeastern corner of the intersection of Acton and Parker Streets or the northeastern corner of the intersection of Acton and Carleton Streets.

[1] U.S. Department of Labor, Occupational Safety and Health Administration, OSHA 3071, 2002 (revised)

- **Parcel 3** (between Carleton and Derby Streets) – assemble on Carleton Street at the north side of Site or on Derby Street at the south side of Site.
- **Parcel 4** (between Derby Street and Ward Street) – assemble on Derby Street at the north side of Site or the north corner of the intersection of Ward Street and Sojourner Truth Court.

Other applicable emergency response measures to be taken (decontamination and/or medical treatment):

Should ocular chemical exposure occur, the eyes should be flushed immediately and constantly with water or saline solution. The victim should be immediately transported to the nearest emergency facility or urgent care facility depending on the severity of exposure (see below).

Location and phone number of nearest urgent care facility (see Figure 6)

Concentra Urgent Care

2850 Seventh Street, Suite 100
Berkeley, CA 94710
510-845-5170

Location and phone number of nearest hospital with emergency room (see Figure 7)

Sutter Health Alta Bates Summit Medical Center

2450 Ashby Avenue
Berkeley, CA 94705
510-204-1303

4.0 PROJECT ORGANIZATION, KEY PERSONNEL, & TRAINING REQUIREMENTS

4.1 Key Personnel and Responsibilities

Key project personnel are listed in the table below
.

Position	Name	Phone (Cell Phone)
GSI Project Manager	Jennifer Duffield	510-821-8925
GSI Project Safety Manager	Tiffany George	831-227-5144
GSI Site-Safety Officer (SSO)	To be determined (TBD)	TBD
GSI Corporate Health & Safety Coordinator	Stephen Sasaki	713-522-6300
Client Project Manager	Stacey Rutherford	510-981-6738
Owner Representative	Stacey Rutherford	510-981-6738
Contractor Site Manager	TBD	TBD

4.1.1 GSI Project Manager

The Project Manager has the overall responsibility for the success of the project, including implementation of this HASP. The Project Manager will have the authority to reallocate resources and personnel, as needed, to address health and safety components of the project and safely complete the fieldwork. The Project Manager will i) direct personnel involved in the field work, ii) make the Project Safety Manager and Site Safety Officer (SSO) aware of all project plans and work scope, iii) make available the resources necessary to maintain a safe working environment, and iv) and maintain communications with the client.

4.1.2 GSI Project Safety Manager

The GSI Project Safety Manager is responsible for daily management of Site operations during field work, including management of subcontractors. The Project Safety Manager will:

- verify that all personnel have received the required training, are aware of potential hazards, and have received and reviewed the HASP;
- ensure that required personal protective equipment (PPE), monitoring, and emergency equipment is provided and maintained in effective working condition; and
- modify the HASP as required based on accidents/incidents and findings regarding site hazards and work practices

Additionally, the Project Safety Manager will conduct periodic site audits and advise the SSO and project GSI personnel on the health and safety aspects of remedial and monitoring activities conducted at the Site. During site audits, the Project Safety Manager will observe field procedures with respect to health and safety and suspend work if an imminent health hazard is observed. Any observed accidents/incidents or unsafe work practiced will be reported to the Project Manager and SSO.

4.1.3 GSI Site Safety Officer

The SSO must be a qualified person, with knowledge, experience, and training commensurate with the responsibilities for the particular site and project.

The SSO is responsible for:

- communicating project health and safety requirements to project personnel, including subcontractors;
- conducting daily tailgate meetings and other safety briefings, as needed;
- implementing the HASP and reporting any observed differences from anticipated Site conditions to the Project Safety Manager when appropriate,
- ensuring that required personal protective equipment (PPE), monitoring, and emergency equipment is provided and maintained in effective working condition;
- verifying the safety training credentials [e.g., Occupational Safety and Health Administration (OSHA) training certificates] of subcontract personnel;
- observing subcontractor's procedures with respect to health and safety and suspend work if an imminent health hazard is observed;
- conducting inspection of the work site each day to identify hazards and mitigation measures before work commences and as work is on-going,

- completing the Daily Site Safety Record (Attachment 3) and related documentation; and
- communicating safety-related concerns to the client's designated safety representative and to the Project Safety Manager, as appropriate.

4.2 Training Requirements

Site personnel shall be trained and certified in environmental health and safety procedures pursuant to OSHA 29 CFR 1910.20, Hazardous Waste Operations and Emergency Response (HAZWOPER) training requirements. Such personnel are required to complete an initial 40-hour training course on safety and health for HAZWOPER, and an annual 8-hour refresher course, as required by 29 CFR 1910.120 ("the OSHA standard").

Following 40-hour training, field workers shall receive a minimum of 24 hours (three days) of on-the-job field training under the direct supervision of an experienced, qualified supervisor, as required by OSHA regulation (29 CFR 1910.120(e)(3)(i)). Additional training and/or on-site supervision shall be provided, as needed, to achieve demonstrated competence for the scope of work to be performed.

Additionally, all employees who perform fieldwork and may need to use PPE, possibly including respirators, participate in the medical monitoring program as required by 8 CCR 5192(f) and 29 CFR 1910.120. Employees required to be in the medical surveillance program shall undergo pre-assignment and annual physical examinations by a physician or licensed health care provider to ensure fitness to use PPE and a respirator.

4.3 Requirements for Respirator Use

Respirator use is not anticipated for the specified tasks because the chemicals of concern (COCs) are not volatile and dust control measures will be implemented to control generation of dust that may contain non-volatile constituents. Air quality monitoring for dust will be performed as described in section 6.0; if the action level is exceeded, work will be stopped and additional dust control measures will be implemented.

4.4 Personnel Documents

If applicable, field project personnel, including subcontractors, are to maintain training and medical records at their respective offices and provide them to GSI, if requested. OSHA 40-hour HAZWOPER training with 8-hour refresher courses is required of all field personnel performing work subject to the OSHA standard.

5.0 POTENTIAL HAZARDS & HAZARD CONTROL MEASURES

5.1 General Site Access Control

Field activities will be performed between 7:00 AM and 5:00 PM. Access to each parcel in the Site is provided through chain-link gates and will be coordinated with the Client Project Manager. While on Site each gate should remain closed, though not locked unless deemed necessary by the SSO. Cones will be placed in front of the gates while work is being conducted. The general public will not have access to the Site.

5.2 Work Zones

The work area will be divided into three zones: the exclusion zone, the contamination reduction zone (CRZ), and the support zone. The zones are characterized by the activities being performed and the possible presence of biological and chemical hazards.

5.2.1 Exclusion Zone

The exclusion zone constitutes the area where potentially hazardous contaminants and physical hazards may be found. Only authorized personnel will be permitted in the exclusion zone and no smoking, eating, or drinking is allowed. Egress from the exclusion zone is through the CRZ, unless other means of egress is warranted due to an imminent hazard or emergency.

5.2.2 Contaminant Reduction Zone

Equipment and personnel decontamination will be conducted in the CRZ, adjacent to the exclusion zone. PPE will be removed in this area, prior to entering the support zone.

5.2.3 Support Zone

The support zone is the clean area outside of the CRZ. There should be no contamination in the support zone.

5.3 Project Personnel Access Control

All personnel visiting the Site, including subcontractors and regulatory personnel, will be required to sign in and review the HASP.

5.4 Traffic Control

During soil transport activities, trucks will enter the Site via the road designated by the Contractor Site Manager. The roads used for soil transport activities will vary based on which parcel soil is being excavated from and which road is nearest the active work area. A flag person will be located at the site to assist the truck drivers to safely enter the Site. A Site trucking coordinator will be designated to maintain communication with on-Site trucks and coordinate transportation. In addition, all vehicles will be required to maintain slow speeds (i.e., less than 5 mph) for safety and for dust control purposes.

Prior to exiting the Site, vehicles will be brushed off to remove any extra soil from areas not covered or protected. Prior to the off-Site transport, the Contractor Site Manager will be responsible for inspecting each truck to ensure that the payloads are adequately covered, the trucks are cleaned of excess soil and properly placarded, and that the truck's manifest has been completed and signed by the generator (or its agent) and the transporter. As the trucks leave the Site, the flag person will assist the truck drivers so that they can safely merge with traffic. Personnel shall wear a high-visibility vest or other suitable garments marked with or made of reflectorized or high-visibility material per 8 CCR 1541(d) and Section 7.2.

5.5 Underground Utilities Clearance

Utility clearance will include at least a 2-day notification to Underground Service Alert (USA) of California, the state underground utility notification authority.

Below are the color designations typically used by the underground utilities' surveyors in California (note other states may differ):

WHITE – PROPOSED EXCAVATION

PINK – TEMPORARY SURVEY MARKINGS

RED – ELECTRIC POWER LINES, CABLES, CONDUIT AND LIGHTING CABLES

YELLOW – GAS, OIL, STEAM, PETROLEUM OR GASEOUS MATERIALS

ORANGE – COMMUNICATION, ALARM OR SIGNAL LINES, CABLES OR CONDUIT

BLUE – POTABLE WATER

PURPLE – RECLAIMED WATER, IRRIGATION AND SLURRY LINES

GREEN – SEWERS AND DRAIN LINES

5.6 General Work Hazards and Avoidance

General work hazards include slip, trip, and fall hazards, head or foot injuries from falling or dropped objects, strains from over-exertion or incorrect lifting, electrical shocks, etc. These hazards can be controlled by good housekeeping measures and safe work practices, as outlined below.

Housekeeping Measures:

- Excess brush or high vegetation should be cleared from the work area to the extent practical prior to start of the job.
- The job site must be kept clean and free of trash and debris. Trash will be placed in bags or other suitable containers when generated. Disposable PPE must be disposed of in designated containers upon removal.
- Materials shall be neatly stored in a designated area.
- Tools and equipment must be returned to the toolbox or designated area when no longer in use.

General Safe Work Practices:

- Use a buddy system.
- Stay alert at all times to activities in your surroundings. Watch for on-coming vehicles, other workers, and overhead hazards.
- Work at a deliberate pace; do not rush a job.
- Avoid heavy lifting and lift with knees bent.

- Use tools only for their intended use, and make sure tools are in good condition. Inspect power tools and extension cords prior to use.
- Maintain safe distance (at least 10 feet and an additional 4 inches for every 10 kilovolts (kV) over 50 kV) between overhead equipment and overhead lines.
- Avoid unauthorized entry to restricted areas including confined space areas.
- Proper PPE (specified below) must be worn at all times. PPE must be inspected regularly and properly maintained.
- Remove gloves and wash hands before handling food or tobacco products.

5.7 Fire and Explosion Hazard Mitigation

- All excavation locations must be properly cleared for the presence of underground utilities prior to digging. Utility clearance procedures are specified in Section 5.5.
- Gasoline and other fuels must be stored in steel safety cans with mesh flame arresters and spring-mounted relief vent mechanisms. Flammable and combustible materials including paints and solvents must be properly stored away from sources of ignition.
- Fire extinguishers must be present on all vehicles and in all areas where spark producing equipment is in use.
- Smoking permitted only in designated areas.

5.8 Heat-Related Disorders

The major varieties of heat-related disorders, their related symptoms and appropriate treatment are listed below in order of increasing severity.

Condition & Related Symptoms	Heat Stress	Heat Exhaustion or Heat Syncope	Heat Stroke
Cramping	May be present	May be present	Absent
Mental State	Faint, dizzy, fatigue	May be disoriented	Stupor or coma
Skin & Complexion	Cool, moist, flush; rash may be present	Cool, pale, moist	Red, hot, dry
Temperature	Normal	Normal to low	Very high (>105° F)
Pulse	Rapid (>110 beat /min)	Rapid, weak	Rapid, bounding
Blood Pressure	May be low	May be low	May be high in early stages
Treatment	Give water & electrolytes, loosen or remove clothing, move to shade	Give water & electrolytes, loosen or remove clothing, move to shade	Provide rapid cooling by immersion; cover in wet cloth and transport to emergency room

Prevention Measures: All heat disorders are caused by loss of fluids and the body's inability to cool itself. Measures to prevent heat illness include procedures related to acclimatization, training, and emergency responses. Additional preventative requirements include, but are not limited to the following measures:

- Pre-hydrate before going into the field: water or water-electrolyte drinks are preferable to caffeinated beverages or soft drinks. Refrain from alcohol the night before field work.
- Drink fluids frequently while in the field. Numerous small drinks at a tepid temperature are better than rapid, large volume intakes of iced drinks.

- Water shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift. If, during the day, quantities have been reduced to unacceptable levels, one employee shall be tasked with going for more water. An inadequate supply of drinking water may require temporary suspension of work until water can be obtained [CalOSHA 8 CCR 3395(c)].
- Rest at least a few minutes every hour or two.
- Observe co-workers for signs of heat stress.
- Shade shall be present on the worksite when the temperature exceeds 80 degrees Fahrenheit. Below 80 degrees Fahrenheit, if shade is not already present on site, shade must be provided when requested by an employee. “Shade” means blockage of direct sunlight that can accommodate at least 25 percent of the employees on the shift at any time [CalOSHA 8 CCR 3395(d)].

OSHA identifies the following Risk Levels for given values of the heat index and recommends increasing Protective Measures to be implemented at each level.

Heat Index	Risk Level	Protective Measures
< 91° F	Lower (Caution)	Basic heat safety and planning
91° to 103° F	Moderate	Implement precautions and heighten awareness
103° to 115° F	High	Additional precautions to protect workers
> 115° F	Very High to Extreme	Aggressive measures (e.g., reschedule non-essential work)

5.9 Heavy Equipment Operations

The use of heavy equipment is anticipated for excavation, backfilling and hauling activities. All equipment must be in good condition. The equipment must be equipped with a back-up beeper. Barricades, caution tape and fencing at the Site should be used as needed to exclude unauthorized personnel from the work area.

All heavy equipment must employ the warning methods while the vehicle is backing up, as described in 8 CCR 1592, including:

- Automatic back-up alarm;
- Automatic braking device;
- A spotter directing the vehicle;
- Inspection of the entire perimeter of the vehicle prior to backing up; and/or
- Prohibiting foot traffic in the work area.

Equipment should be positioned to allow for adequate work room and the area kept free of trip and slip hazards. Care must be taken to avoid the catching of loose clothing in moving parts, and to keep hands free of pinch points. Proper PPE including hard hat, safety glasses, gloves, hearing protection, and safety shoes must be worn.

All vehicles or mechanical equipment that may have all or parts of its structure near energized overhead lines should maintain an operating distance as stipulated by CalOSHA requirements (8 CCR 2946). For boom-type lifting or hoisting equipment (i.e., drill rigs) required clearance distances are provided below:

Nominal Volage		Minimum Required Clearance (feet)
From	To	
600	50,000	10
Over 50,000	75,000	11
Over 75,000	125,000	13
Over 125,000	175,000	15
Over 175,000	250,000	17
Over 250,000	370,000	21
Over 370,000	550,000	27
Over 550,000	1,000,000	42

5.10 Confined Space and Excavation Safety

All personnel must obey all posted restrictions on entry to confined spaces. Excavations deeper than 4 feet should not be entered for any purpose unless 1) the excavation walls are properly shored or are sloped at a 1:1 slope, or less steep, and there is no danger of collapse or engulfment; 2) a suitable means of egress such as ramp, stairs or ladder is located so as to require no more than 25 feet of lateral travel to reach it; and 3) testing demonstrates a hazardous atmosphere is not present.

5.11 Potential Chemical Exposure Hazards

Primary constituents of concern, relevant exposure levels, and the maximum expected concentrations in soil and/or water, to the extent known, are presented below. Safety Data Sheets (SDSs) are included in Attachment 4.

Constituents of Concern (COCs)	Exposure Limits[1]			I.P.[3]	Max. Expected Concentration or Free-Phase (FP)		Health Hazard Target Organ Route of Entry
Chemical Name/ CAS No.	**PEL/ TLV (mg/m3)**	**STEL (mg/m3)**	**IDLH[2] (mg/m3)**	**(eV)**	**Soil (mg/kg)**	**Water (mg/L)**	Ca = Carcinogen Abs = Skin Absorption Con = Skin or Eye Contact Inh = Inhalation Ing = Ingestion
Arsenic 7440-38-2	0.01	NPV	5	NA	338	NE	Ca, Abs, Con, Inh, Ing
Lead 7439-92-1	0.05	NPV	100	NA	294	NE	Con, Inh, Ing
Mercury 7439-97-6	0.025	NPV	10	NA	2.1	NE	Con, Abs, Inh, Ing
Benzo(a)pyrene (as Coal Pitch Tar volatiles) 65996-93-2	0.2	NPV	80	NA	3.5	NE	Ca, Con, Inh

1 Unless otherwise noted, Permissible Exposure Limits (PEL) and Threshold Limit Values (TLVs) are permissible time-weighted average exposure limits (milligrams per cubic meter [mg/m^3] in air), which must not be exceeded for an 8-hour work-day/40-hour work week. Short-Term Exposure Limits (STELs) must not be exceeded over a 15-minute period. Some exposure limits are expressed in milligrams per cubic meter (mg/m^3).
2 IDLH = Immediately Dangerous to Life or Health; must not be exceeded at any time.
3 I.P. = Ionization Potential. A photoionization detector specified in Section 6.0 should have a lamp with an IP (i.e., 10.6 eV or 11.7 eV) that is greater than the largest IP of COCs from this table that may reasonably be expected to occur as volatiles.

4 NPV = No published value
5 Exposure limits, ionization potentials, and associated health hazards can be found in the NIOSH Pocket Guide to Chemical Hazards and the ACGIH Guide to TLVs and BEIs and Cal-OSHA 8 CCR 5155 Table AC-1.
6 NE = Not Established
7 NA = Not Applicable

Other metals, PAHs, and organochlorine pesticides may also be present in Site soil. However, these compounds are not included in the table above because the previous detections were below their respective residential screening levels in soil.

To minimize potential chemical exposure, the following measures will be taken:

- SDS must be provided for any chemical brought on-site for project use.
- Workers should remain upwind of contaminated materials to the extent practical.
- PPE specified below will be worn to prevent skin or eye contact with constituents.
- Air quality monitoring will be conducted, as described below.
- Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur.
- Workers must remove gloves in the work area and drink from a water source outside the immediate work zone.
- PPE must be removed, and hands thoroughly washed prior to breaking for meals.

5.11 Other Potential Hazards

Other potential hazards associated with the site and/or specific tasks and applicable hazard mitigation methods are described below.

If applicable, exercise extreme caution when working near or around heavy machinery. Make sure the equipment operator can see where you are, especially when the equipment is being moved from one location to the next.

6.0 AIR QUALITY MONITORING

Real-time perimeter air monitoring data for dust using direct-reading instruments will be conducted during removal of impacted soil. At least one upwind and two downwind sampling stations will be set up for continuous perimeter dust monitoring. At each station, dust monitoring devices will be set with the air intake set to 4 to 5 feet off the ground to monitor air representative of the breathing zone. Monitoring locations will be recorded in field notes and on Site plans. Air monitoring will be conducted using direct-reading instruments (e.g., a TSI DustTrak or similar) for measurement of total dust. Electronic data logs of real-time measurements will be used to determine the maximum and average dust concentrations at upwind and downwind perimeter monitoring locations.

Chemical-specific action levels for dust in work zone air were developed using Permissible Exposure Limits (PEL) published by the California Division of Occupational Safety and Health (Cal-OSHA; 2019). The resulting chemical-specific, work zone action levels are presented in Table 1. As presented in Table 1, the PEL for the respirable fraction of particulates (5 mg/m^3) is more conservative (i.e., lower) than every chemical-specific action level for work zone air. Therefore, the PEL for the respirable fraction of particulates (5 mg/m^3) was selected as the action level for perimeter dust monitoring. If this action level is exceeded, work will be temporarily stopped and additional engineering controls such as wetting the soil or installing wind barriers will be implemented to further reduce dust concentrations. Work will be stopped if engineering

controls cannot limit dust emissions to acceptable levels. Finally, no visible dust should be observed leaving the Site. If visible dust is observed leaving the Site, additional measures will be employed immediately to reduce dust emissions. Work will be stopped if engineering controls cannot limit dust emissions to acceptable levels.

7.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

7.1 Level D PPE

A minimum of Level D PPE is required for all site personnel at all times, upgraded as necessary depending on task and conditions. Basic Level D PPE shall include the following elements: **1) Hard Hat**; **2) Safety Glasses** (w/side shields); **3) Safety Shoes** (w/steel toes); **4) Body Covering** (long pants, shirt w/ sleeves, collar). Basic Level D equipment will be supplemented as follows:

7.2 Supplemental Level D PPE

	Item	When/Where to be Used
	Flame Retardant Clothing (FRC)	
X	Hearing Protection	As needed, during noise generating activities
X	Work gloves	As needed
	Latex or vinyl surgical gloves	
X	Neoprene or Nitrile gloves	As needed, during contact with potentially affected soil
X	High-Visibility Vest	As needed, when exposed to public vehicular traffic
	Tyvek Coveralls	
	Polycoat Tyvek Coveralls	
	Chemical-resistant boots	
	Face Shield	

7.3 Level C PPE

No Level C PPE (use of Air-Purifying Respirator) will be performed on this job.

7.4 Level B PPE

No Level B work will be performed on this job.

8.0 DECONTAMINATION PROTOCOL

Track out of soil from the Site will be prohibited. Soil or other materials adhered to the vehicles will be removed via brushing or washing before exiting the Site. Water generated from the cleaning processes will be collected and contained on the Site. Sampling may be needed prior to disposal in compliance with any receiving facility requirements or sewer discharge permit(s). Sampling and compliance will be performed by the Contractor.

Remediation derived waste (e.g., PPE, paper towels, gloves) will be placed in trash bags, and disposed of off-Site as municipal waste. Personnel should wash their hands and/or shower prior to engaging in non-work area activities, such as eating.

9.0 SPILL CONTAINMENT

In the event of a release of chemicals, a sorbent material, such as bentonite, will be applied to contain the spill. The GSI project manager and client project manager will be immediately notified.

The removal action contractor will provide training for drivers and Site personnel on spill response procedures. The removal action contractor will ensure that all trucks carrying hazardous waste are equipped with spill kits and that drivers are trained in spill containment and cleanup.

10.0 ILLUMINATION

All planned field activities are located outside and will be conducted during daylight hours; therefore, artificial illumination will not be required.

11.0 SANITATION

Temporary restrooms and a handwashing station will be staged at the Site for the duration of the scope of work.

12.0 DAILY SITE SAFETY MEETINGS

The SSO will conduct a Site Safety Meeting before the start of work each day. As a means of tracking attendance, all on-Site personnel are expected to review and sign the HASP. If deemed necessary by the SSO, additional site safety meetings may be conducted to refresh all field personnel on the safety issues associated with the project tasks.

13.0 REFERENCES

GSI, 2022. Santa Fe Right-of-Way Phase II Environmental Site Assessment – Report of Findings. Historic Santa Fe Right-of-Way, Berkeley, California. November 22.

GSI, 2024. Final Additional Soil Sampling Report, Santa Fe Trackbed to Park, Berkeley, California. September 9.

GSI, 2025, Remedial Action Workplan, Santa Fe Trackbed to Park, Berkeley, California. April 7.

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

TABLES

Table 1. Summary of Screening Levels for Dust in Work Zone Air

TABLE 1: SUMMARY OF SCREENING LEVELS FOR DUST IN WORK ZONE AIR

Santa Fe Trackbed to Park

Berkeley, California

Chemical [1]	Maximum Detected Concentration (mg/kg)	Permissible Exposure Limit (mg/m^3)	Dust Action Level (mg/m^3)
Metals [2]			
Antimony	3.6	0.5	138,900
Arsenic	310	0.01	32
Barium	300	0.5	1,670
Beryllium	0.73	0.0002	270
Cadmium	1.9	0.005	2,630
Chromium (Total)	75	0.005	67
Cobalt	23	0.02	870
Copper	81	1	12,350
Lead	490	0.05	102
Mercury	11	0.025	2,270
Molybdenum	1.5	0.5	333,330
Nickel	120	0.5	4,170
Selenium	1.6	0.2	125,000
Silver	0.56	0.01	17,860
Vanadium	74	0.05	680
Zinc	440	5	11,360
PAHs [3]			
Polynuclear Aromatic Hydrocarbons (PAHs)	4.79	0.2	41,750
Particulates [4]			
Respirable Fraction of Particulates	--	5	**5**

Equation:

Dust Action Level (mg/m^3) = Chemical-specific Action Level (mg/m^3) x EAF x 10^6 (mg/kg)
Maximum Soil Concentration (mg/kg)

$$Action\ Level\ \left(\frac{mg}{m^3}\right) = \frac{Permissible\ Exposure\ Limit\ \left(\frac{mg}{m^3}\right) \times 10^6\ \left(\frac{mg}{kg}\right)}{Maximum\ Soil\ Concentration\ \left(\frac{mg}{kg}\right)}$$

Notes:

1. All chemicals detected in at least one soil sample above the laboratory analytical detection limit were evaluated for work zone air monitoring.

2. California Division of Occupational Safety and Health (Cal/OSHA) Table AC-1, Permissible Exposure Limits (PELs), in California Code of Regulations (CCR) Title 8 Section 5155, October 2,

3. Permissible Exposure Limits for PAH as coal tar pitch volatiles published by California Division of Occupational Safety and Health, https://www.osha.gov/dsg/annotated-pels/tablez-1.html

4. Permissible Exposure Limits for Particulates not Otherwise Regulated published by California Division of Occupational Safety and Health, https://www.osha.gov/chemicaldata/801

Abbreviations:

-- = not applicable

mg/kg = milligrams per kilogram

mg/m^3 = milligrams per cubic meter

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

FIGURES

Figure 1. Site Overview

Figure 2. Proposed Excavation Depths – Parcel 1

Figure 3. Proposed Excavation Depths – Parcel 2

Figure 4. Proposed Excavation Depths – Parcel 3

Figure 5. Proposed Excavation Depths – Parcel 4

Figure 6. Urgent Care Location Map

Figure 7. Hospital Location Map

GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	AV
Issued:	8-Jun-2023	Chk'd By:	TRK
		Appv'd By:	JPD
Map ID:	SFROW_SiteOverviewZmo		FIGURE 1

SITE OVERVIEW

Santa Fe Trackbed to Park
Berkeley, California

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern(COPCs: arsenic, lead, mercury, and PAHs).

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P1_AllResults		
Issued: 16-Oct-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS PARCEL 1

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 2

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs).

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)
- Planned City of Berkeley Property Gain
- Planned City of Berkeley Property Reduction

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P2_ResultsLotLines		
Issued: 22-Nov-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS
PARCEL 2

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 3

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs).

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P3_AllResults		
Issued: 16-Oct-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS
PARCEL 3

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 4

Notes:

1) All depths in feet below ground surface (ft bgs).
2) The depth of each proposed excavation is the depth with no screening level (SL) exceedance for the constituents of potential concern (COPCs: arsenic, lead, mercury, and PAHs).

LEGEND

- Excavate to 2 ft bgs
- Excavate to 3 ft bgs
- Excavate to 4 ft bgs
- Excavate to 5 ft bgs
- Excavate to 6 ft bgs
- Previous Investigation Sample Location (2022)
- Planned City of Berkeley Property Gain
- Planned City of Berkeley Property Reduction

Feet
0 10 20

Aerial imagery provided by Esri ArcGIS Online, September 2021.

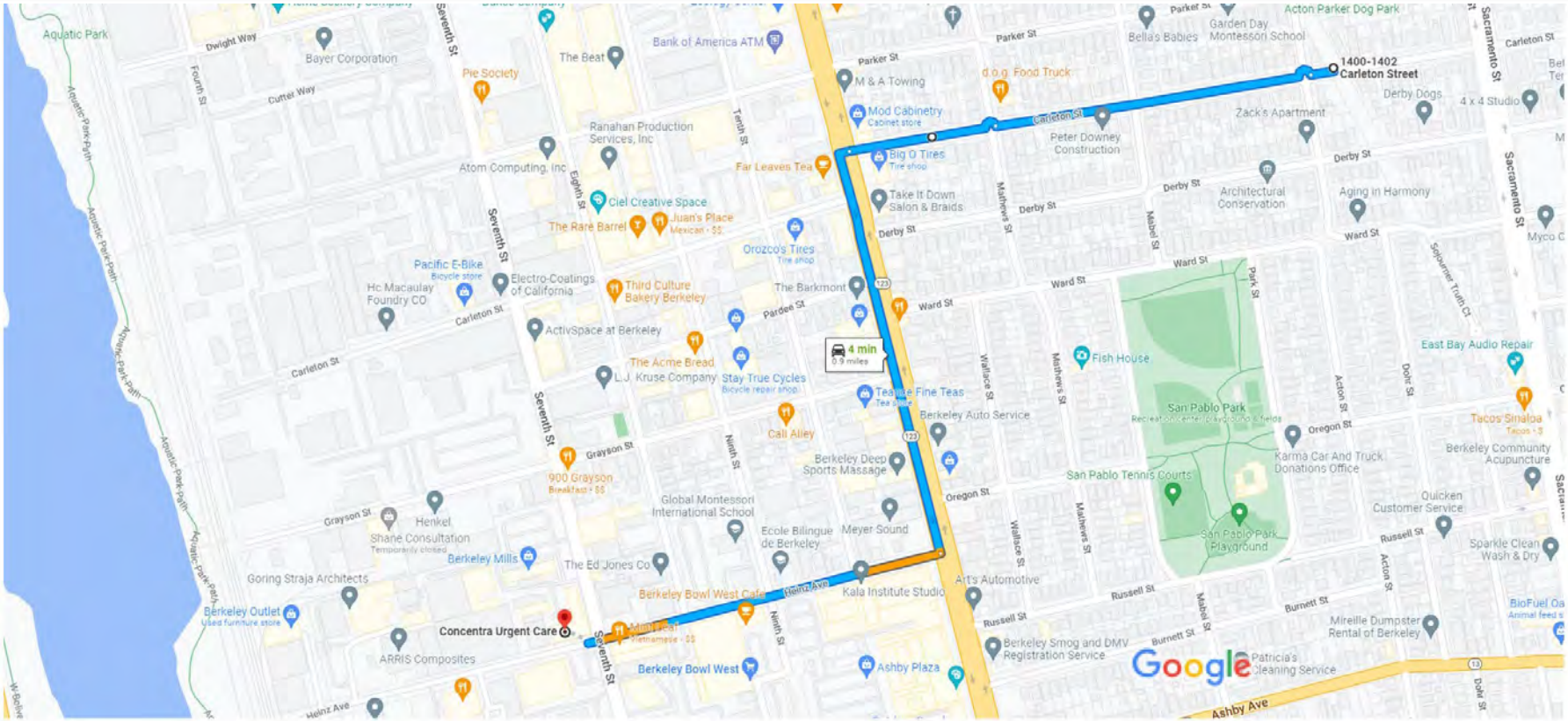
GSI ENVIRONMENTAL

GSI Job No. 6272	Map ID: P4_ResultsLotLines		
Issued: 22-Nov-2024	Drawn By: AJC		
	Chk'd By: TRG	Aprv'd By: JPD	

PROPOSED EXCAVATION DEPTHS
PARCEL 4

Santa Fe Trackbed to Park
Berkeley, California

FIGURE 5



Collected Via Google Maps:

1400-1402 Carleton St
Berkeley, CA 94702

1. Head west on Carleton St — 89 ft
2. At the traffic circle, continue straight to stay on Carleton St — 0.2 mi
3. At the traffic circle, continue straight to stay on Carleton St — 0.1 mi
4. Turn left onto San Pablo Ave — 0.3 mi
5. Turn right onto Heinz Ave — 0.3 mi

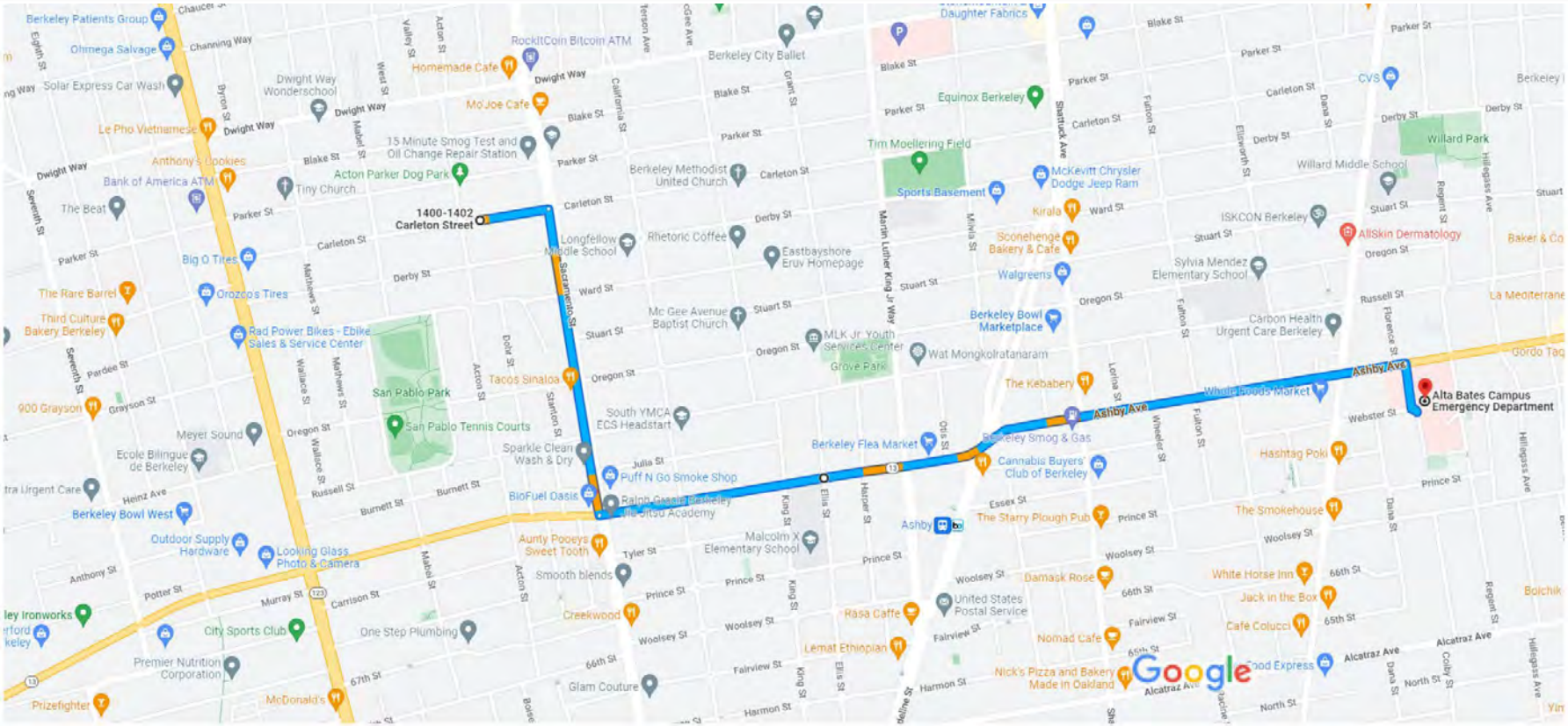
Concentra Urgent Care
2850 Seventh St Suite 100, Berkeley, CA 94710
(510) 845-5170

GSI Job No.	6272	Drawn By:	AV
Issued:	8-Jun-23	Chk'd By:	
Revised:		Aprv'd By:	JPD
Scale:			

GSI ENVIRONMENTAL

FIGURE 6: URGENT CARE LOCATION MAP

Santa Fe Trackbed to Park
Berkeley, California



Collected Via Google Maps:

1400-1402 Carleton St
Berkeley, CA 94702

1. Head east on Carleton St toward Sacramento St — 0.1 mi
2. Turn right at the 1st cross street onto Sacramento St — 0.4 mi
3. Turn left onto Ashby Ave — 1.2 mi
4. Turn right onto Colby St — 400 ft
   Destination will be on the left

Alta Bates Campus Emergency Department
2450 Ashby Ave, Berkeley, CA 94705
(510) 204-1303

GSI ENVIRONMENTAL

GSI Job No.	6272	Drawn By:	AV
Issued:	8-Jun-23	Chk'd By:	
Revised:		Aprv'd By:	JPD
Scale:			

FIGURE 7: HOSPITAL LOCATION MAP

Santa Fe Trackbed to Park
Berkeley, California

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENTS

Attachment 1	GSI Job Hazard Analyses
Attachment 2	GSI Example Job Hazard Analysis Form
Attachment 3	Daily Tailgate Safety Meeting Form
Attachment 4	Chemical Safety Data Sheets

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENT 1

GSI Job Hazard Analyses

JOB HAZARD ANALYSIS

Santa Fe Trackbed to Park

Berkeley, California

Task: Staking Excavation Locations

Job Hazard Analyst: Tiffany George, GSI Environmental, Inc.

Reviewed By: James Libby, GSI Environmental, Inc.

Review Date: April 3, 2025

HAZARD TYPES	HAZARD DESCRIPTIONS
1. Physical strain and obstruction to pedestrians 2. Splinters 3. Slips, trips and falls 4. Chemical exposure 5. Struck by vehicles and/or equipment	1. Removing or loading survey equipment from/to the work vehicle could cause back strain or other physical injury. Unloading equipment adjacent to sidewalks could result in potential struck by or slips, trips, and falls hazards to pedestrians. 2. Wood used as excavation stakes can be brittle and has the potential to become embedded under the skin. 3. Uneven surfaces will be present throughout the work area. 4. Identified chemicals of potential concern include arsenic, lead, mercury and polycyclic aromatic hydrocarbons (PAHs). 5. Struck-by hazards occur when a worker is hit by an object, tool, or equipment.

HAZARD CONTROLS

1. Use proper lifting techniques (i.e., lift your legs, hold the load close to your body). Use the buddy system if lifting over 50 lbs. Minimize the distance equipment is carried utilizing a wagon, cart, dolly, etc. Check to ensure no oncoming pedestrians are approaching during loading/unloading. If pedestrians are approaching, pause work until the path is clear.
2. Wear protective work gloves appropriate for the hazard and work tasks.
3. Identify and remove trip hazards, and keep materials stored outside of designated walkways.
4. Keep equipment stored unless in use. Maintain clear sight of the walkway. Refrain from using a cell phone while walking.
5. Level D personal protective equipment (PPE) shall be worn at all times when other operations are occurring within the same work area. Wash hands with soap and water prior to using the restroom, eating or applying sunscreen. Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur.
6. Avoid generation of visible dust from work activities, and stand upwind of excavation and stockpiled soil, if possible.

7. Clearly delineate work zones and designate vehicular travel path, stop/direct traffic during moving of equipment and supplies as necessary.
8. Keep vigilant for passing vehicles and equipment.

RATIONALE / COMMENT / ADDITIONAL INFORMATION

JOB HAZARD ANALYSIS

Santa Fe Trackbed to Park
Berkeley, California

Task: Excavation Oversight

Job Hazard Analyst: Tiffany George, GSI Environmental, Inc.

Reviewed By: James Libby, GSI Environmental, Inc.

Review Date: April 3, 2025

HAZARD TYPES	HAZARD DESCRIPTIONS
1. Struck by/Caught between equipment 2. Pinch points 3. Falling soil/debris 4. Slips, trips and falls 5. Chemical exposure 6. Open excavations 7. Underground and above ground utilities 8. Exposure to public	1. Onsite personnel are subject to being accidentally hit by or pinned by heavy equipment. 2. Personnel close to equipment could get pinched by heavy or rotating machinery. 3. Soil and or falling debris could fall from the excavation bucket when moving between the excavation and the truck or stockpile. 4. Uneven surfaces, open excavation, and equipment will be present throughout the work area. 5. Identified chemicals of potential concern include arsenic, lead, mercury and polycyclic aromatic hydrocarbons (PAHs). 6. Excavations to a minimum depth of 2 feet and a maximum depth of 6 feet below ground surface may be left open during work hours. 7. Although the parcels are vacant, above and below ground utilities may be present. 8. Stockpiled excavated soil could potentially cause chemical exposure to the surrounding residences and the public.

HAZARD CONTROLS

1. Nonessential personnel to stay clear of work area when excavation is in progress. Equipment must be equipped with a back-up alarm. Always receive verbal or physical confirmation from equipment operators before crossing through their work area. Be diligent about staying outside of an operator's blind spot and the swing radius of heavy equipment.
2. Wear Level D PPE, including leather or protective palmed gloves. Keep hands clear of potential pinch points. Refrain from wearing loose clothing or jewelry near rotating equipment.
3. Level D personal protective equipment (PPE) shall be worn at all times within the work area. Wash hands with soap and water prior to using the restroom, eating or applying sunscreen. Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur. Nitrile gloves shall be worn when handling soil.

4. Keep equipment stored unless in use. Maintain clear sight of the walkway. Refrain from using a cell phone while walking or in active work zones. Remove all trip hazards by keeping materials/objects organized and out of walkways.
5. Utilize caution tape, spray paint, signs or barricades to demarcate open excavations and increase visibility. Maintain a minimum distance of at least 2 feet from any open excavation. A competent person must approve all entries into excavations over 4 feet deep before work begins, and after any event that could affect its stability, such as rain or earthquakes. Do not enter excavations of any depth with standing water or if signs of sloughing are present. Ensure the means of egress is located no more than 25 feet away from workers in a trench or excavation.
6. No visible dust should be observed leaving the Site. Spray water on loose soils as necessary to mitigate dust generation. Air quality monitoring will be performed in accordance with Section 6.0 of the project Health and Safety Plan.
7. For underground utilities, confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions. Utilize hand digging or vacuum post-holing within 3 feet of utility locations or other high-risk conditions. For overhead utilities, maintain proper clearance and employ other appropriate precautions for the conditions.
8. If it is necessary to temporarily stockpile soil during excavation activities, all stockpiled soil will be placed on plastic sheeting and appropriately bermed in accordance with best management practices (BMPs) described in the Construction General Permit. Stockpiled soil will be covered at the end of each workday or in the event of rain. However, the method of covering will be determined based on the anticipated time that the stockpiles will be left in place, weather conditions, regulatory requirements (i.e., BMPs and Storm Water Prevention Plan provisions), and other practical factors such as the size of the stockpiles. The stockpiled soil will be fenced or otherwise secured, and located as far away as possible from storm drain inlets.

RATIONALE / COMMENT / ADDITIONAL INFORMATION

JOB HAZARD ANALYSIS

Santa Fe Trackbed to Park

Berkeley, California

Task: Perimeter Air Monitoring

Job Hazard Analyst: **Job Hazard Analyst**: Tiffany George, GSI Environmental, Inc.

Reviewed By: James Libby, GSI Environmental, Inc.

Review Date: April 3, 2025

HAZARD TYPES	HAZARD DESCRIPTIONS
1. Manual lifting 2. Slips, trips and falls 3. Chemical exposure 4. Heavy equipment 5. Open excavations	1. Dust monitors need to be secured to an adjustable tripod approximately 4 to 5 feet off the ground. 2. Uneven surfaces and potentially unstable soil will be present throughout the work area. 3. Identified chemicals of potential concern include arsenic, lead, mercury and polycyclic aromatic hydrocarbons (PAHs). 4. Excavators and heavy trucks will be actively working between 7am and 5pm. 5. Excavations to a minimum depth of 2 feet and a maximum depth of 6 feet below ground surface may be left open during work hours.

HAZARD CONTROLS

1. Use proper lifting techniques (i.e., lift your legs, hold the load close to your body). Use the buddy system if lifting over 50 lbs. Minimize the distance equipment is carried utilizing a wagon, cart, dolly, etc.
2. Keep a clean work area and clear walking path by ensuring tools are stored and organized. Maintain clear sight of the walkway. Refrain from using a cell phone while walking.
3. Wear nitrile gloves when handling equipment. Level D personal protective equipment (PPE) shall be worn at all times within the work area. Wash hands with soap and water prior to using the restroom, eating or applying sunscreen. Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur. Adhere to the Air Quality Monitoring protocols outlined in Section 6.0 of the Remedial Action Implementation HASP. Calibrate and inspect monitoring equipment before each use.
4. Check monitoring readings remotely, when possible. Wear high visibility clothing. Always receive verbal or physical confirmation from equipment operators before crossing through their work area. Be diligent about staying outside of an operator's blind spot as well as the swing radius of heavy equipment.
5. Utilize caution tape, spray paint, signs or barricades to demarcate open excavations and increase visibility. Maintain a minimum distance of at least 2 feet from any open excavation. A competent person must approve all entries into excavations over 4 feet

deep. Do not enter excavations of any depth of standing water or signs of sloughing are present.
Avoid Struck-By injuries by making eye contact with equipment and vehicle operators to confirm they see you and are aware of your presence. Always be vigilant and watch for operators who might not be looking at you. Never place yourself between a vehicle and an immovable object.

Walk around perimeter of excavation, if possible. Confirm a competent person has inspected the excavation prior to excavation entry. Do note enter the excavation when standing water exists, sloughing present, or any other life-threating hazard present.

RATIONALE / COMMENT / ADDITIONAL INFORMATION

In accordance with GSI's Remedial Action Workplan[1], work will be stopped if engineering controls such as the application of water to soil and the installation of wind barriers cannot limit dust emissions to acceptable levels.

[1] GSI, 2025, Remedial Action Workplan, Santa Fe Trackbed to Park, Berkeley, California. April 7.

JOB HAZARD ANALYSIS

Santa Fe Trackbed to Park

Berkeley, California

Task: Trucking - Off-Hauling and Importing Soils

Job Hazard Analyst: Tiffany George, GSI Environmental, Inc.

Reviewed By: James Libby, GSI Environmental, Inc.

Review Date: April 3, 2025

HAZARD TYPES	HAZARD DESCRIPTIONS
1. Struck by/Caught between equipment 2. Pinch points 3. Falling soil/debris 4. Slips, trips and falls 5. Chemical exposure 6. Open excavations 7. Above ground utilities 8. General public 9. Excessive Noise	1. Onsite personnel are subject to being accidentally hit by or pinned by heavy equipment. 2. Personnel close to equipment could get pinched by rotating machinery. 3. Soil and or falling debris could fall from the excavation bucket when moving between the excavation and the truck or stockpile. 4. Uneven surfaces will be present throughout the work area. 5. Identified chemicals of potential concern include arsenic, lead, mercury and polycyclic aromatic hydrocarbons (PAHs). 6. Excavations to a minimum depth of 2 feet and a maximum depth of 6 feet below ground surface may be left open during work hours. 7. Although the parcels are vacant, above ground utilities may be present. 8. Trucks could encounter pedestrians on the sidewalks when entering and exiting the work area. 9. Excessive noise primarily causes hearing loss, but also contributes to stress, high blood pressure, and sleep disturbances, with long-term exposure leading to permanent hearing damage.

HAZARD CONTROLS

1. Nonessential personnel to stay clear of work area when loading and or backfilling are in progress. Equipment must be equipped with a back-up alarm. Always receive verbal or physical confirmation from equipment operators before crossing through their work area. Be diligent about staying outside of an operator's blind spot and the back of the vehicle. Always be vigilant and watch for operators who might not be looking at you. Never place yourself between a vehicle and an immovable object.
2. Wear Level D PPE, including leather or protective palmed gloves. Keep hands clear of potential pinch points. Refrain from wearing loose clothing or jewelry near moving equipment.

3. Level D personal protective equipment (PPE) shall be worn at all times within the work area. Wash hands with soap and water prior to using the restroom, eating or applying sunscreen. Eating, drinking, smoking, gum chewing and oral tobacco use are not permitted in areas where chemical exposure could occur.
4. Keep equipment stored unless in use. Maintain clear sight of the walkway. Refrain from using a cell phone while walking.
5. Utilize caution tape, spray paint, signs or barricades to demarcate open excavations and increase visibility. Maintain a minimum distance of at least 2 feet from any open excavation. A competent person must approve all entries into excavations over 4 feet deep. Do not enter excavations of any depth of standing water or signs of sloughing are present.
6. Maintain proper clearance and employ other appropriate precautions to avoid overhead utilities.
7. Utilize traffic control and flaggers to eliminate a potential collision between equipment and pedestrians.
8. Use a dedicated spotter while heavy equipment is in operation. Get acknowledgement from operator before approaching equipment in use.
9. Wear ear plugs or muffs as necessary around operating equipment and implement a system of hand signals understood by all. Limit the amount of time workers spend in noisy areas, as necessary. Increase distance between workers and loud equipment during breaks.

RATIONALE / COMMENT / ADDITIONAL INFORMATION

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENT 2

GSI Example Job Hazard Analysis Form

JOB HAZARD ANALYSIS FORM

Santa Fe Trackbed to Park

Berkeley, California

Task:_____

Job Hazard Analyst/Employer: _____

Reviewed By/Employer:_____

Date Reviewed:_____

XAMPLE

TASK DESCRIPTION:	
HAZARD TYPE	**HAZARD DESCRIPTION**
HAZARD CONTROLS	
RATIONALE / COMMENT / ADDITIONAL INFORMATION	

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENT 3

Daily Tailgate Safety Meeting Form

GSI ENVIRONMENTAL INC.
GSI PERSONNEL ONLY
DAILY TAILGATE SAFETY MEETING

Project/Location: _____ GSI Job No._____

_____ Date: _____

Site Safety Officer:_____

Meeting Conducted By: _____

Meeting Attended By:

NAME	SIGNATURE	TIME ONSITE-OFFSITE

_____ ***Non-GSI*** Personnel Present (Use Attachment A).

Task	Hazard(s)*	PPE

*Hazard	Hazard Description	How to Mitigate
Mechanical (M)		
Weather (W)		
Chemical (C)		
Biological (B)		
Other (O)		

Air Quality Monitoring: _____ Required (See record on Attachment B.) _____ Not Required

Site Safety Officer: _____ *"I have reviewed project tasks/hazards with the field team and have visually inspected the work area for proper housekeeping and other potential hazards (e.g., slip, trip, pinch points)."*

Signature: _____ Date: _____

HEAVY EQUIPMENT USE (IF APPLICABLE – USE ATTACHMENT A)

Type of Equipment & Model: _____ Company: _____

ACCIDENTS/INJURIES/INCIDENTS

(Description of incident and actions taken. Attach additional sheets as needed.)

GSI Job No._____
Date: _____

GSI ENVIRONMENTAL INC.

NON-GSI PERSONNEL ONLY

DAILY TAILGATE SAFETY MEETING – ATTACHMENT A

I, the undersigned, attended the daily site safety meeting conducted by GSI Environmental Inc. (GSI) and have had the opportunity to ask questions about health and safety issues relating to this project. I understand that by signing this Daily Site Safety Record (DSSR), GSI is not my supervisor or controlling contractor; and therefore, is not responsible for my health and safety, as my employer is solely responsible for my health and safety.

NAME	COMPANY	SIGNATURE	TIME ON-SITE - OFF-SITE

Note: Non-GSI personnel include, but not limited to, GSI-subcontractors, 3rd party subcontractors, clients, site representatives, and/or regulatory representatives.

HEAVY EQUIPMENT USE (IF APPLICABLE)

Type of Equipment & Model: _____ Owned: ____ Rented: ____

Certification: *"I have been properly trained on the use of this equipment. I have inspected this equipment and confirmed it to be in good working condition."*

Signature: _____ Date: _____

GSI Job No.: 6272

SITE-SPECIFIC HEALTH AND SAFETY PLAN
Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

ATTACHMENT 4

Chemical Safety Data Sheets

SAFETY DATA SHEET

Revision Date 30-Mar-2024 **Revision Number** 3

1. Identification

Product Name **Arsenic powder**

Cat No. : **10101**

CAS No 7440-38-2
Synonyms No information available

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 3
Acute Inhalation Toxicity - Dusts and Mists	Category 3
Carcinogenicity	Category 1A

Label Elements

Signal Word
Danger

Hazard Statements
May cause cancer
Toxic if swallowed or if inhaled

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician
Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
WARNING. Cancer - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Arsenic	7440-38-2	<=100

4. First-aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and effects	None reasonably foreseeable.
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	approved class D extinguishers. Do not use water or foam.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products
arsenic oxides.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	0	-

6. Accidental release measures

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.
Environmental Precautions	Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.
Methods for Containment and Clean Up	Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

7. Handling and storage

Handling	Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.
Storage.	Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Oxidizing agent.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Arsenic	TWA: 0.01 mg/m³	(Vacated) TWA: 0.5 mg/m³	IDLH: 5 mg/m³ Ceiling: 0.002 mg/m³	TWA: 0.01 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended Filter type: Particulates filter conforming to EN 143.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	No information available
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	817 °C / 1502.6 °F
Boiling Point/Range	614 °C / 1137.2 °F
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	23 hPa @ 20 °C
Vapor Density	Not applicable
Specific Gravity	5.778 g/cm3
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	As
Molecular Weight	74.92

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Oxidizing agent

Hazardous Decomposition Products arsenic oxides

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Arsenic	LD50 = 15 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Arsenic	7440-38-2	Group 1	Known	A1	X	A1

IARC (International Agency for Research on Cancer)

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Persistence and Degradability Insoluble in water May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No	UN1558
Proper Shipping Name	ARSENIC
Hazard Class	6.1
Packing Group	II

TDG

UN-No	UN1558
Proper Shipping Name	ARSENIC
Hazard Class	6.1
Packing Group	II

IATA

UN-No	UN1558
Proper Shipping Name	ARSENIC
Hazard Class	6.1
Packing Group	II

IMDG/IMO

UN-No	UN1558
Proper Shipping Name	ARSENIC
Hazard Class	6.1
Packing Group	II

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Arsenic	7440-38-2	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Arsenic	7440-38-2	X	-	231-148-6	X	X		X	X	KE-01933

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Arsenic	7440-38-2	<=100	0.1 %	-

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Arsenic	-	-	X	X

Clean Air Act

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Arsenic	1 lb	-	1 lb 0.454 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Arsenic	7440-38-2	-	0.06 µg/day 10 µg/day	

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Arsenic	X	X	X	X	X

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Arsenic	7440-38-2	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links
https://echa.europa.eu/substances-restricted-under-reach

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Arsenic	7440-38-2	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Arsenic	7440-38-2	Not applicable	Not applicable	Not applicable	Annex I - Y24

16. Other information

Prepared By Health, Safety and Environmental Department
Email: chem.techinfo@thermofisher.com
www.thermofisher.com

Revision Date 30-Mar-2024
Print Date 30-Mar-2024
Revision Summary New emergency telephone response service provider.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

Creation Date 03-Apr-2012 **Revision Date** 09-Feb-2024 **Revision Number** 7

1. Identification

Product Name **Lead**

Cat No. : **AC198110000; AC198110010; AC198110050**

CAS No 7439-92-1
Synonyms Lead metal

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Carcinogenicity	Category 1B
Reproductive Toxicity	Category 1A
Effects on or via lactation	
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Kidney, Central nervous system (CNS), Blood.	

Label Elements

Signal Word
Danger

Hazard Statements
May damage fertility. May damage the unborn child

May cause harm to breast-fed children
Causes damage to organs through prolonged or repeated exposure
May cause cancer

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dust/fume/gas/mist/vapors/spray
Avoid contact during pregnancy/while nursing
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Response
IF exposed or concerned: Get medical attention/advice
Storage
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
WARNING. Cancer and Reproductive Harm - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Lead powder	7439-92-1	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms and effects None reasonably foreseeable.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products
Lead. lead oxides.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	0	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong acids. Ammonium nitrate: fertilizers capable of self-sustaining decomposition. Peroxides.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Lead powder	TWA: 0.05 mg/m³	TWA: 50 µg/m³	IDLH: 100 mg/m³ TWA: 0.050 mg/m³	TWA: 0.05 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type:	Particulates filter conforming to EN 143.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid Powder
Appearance	Grey
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	327.4 °C / 621.3 °F
Boiling Point/Range	1740 °C / 3164 °F @ 760 mmHg
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1.7 mmHg @ 1000 °C
Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Pb
Molecular Weight	207.19

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Exposure to air.
Incompatible Materials	Strong acids, Ammonium nitrate: fertilizers capable of self-sustaining decomposition, Peroxides
Hazardous Decomposition Products	Lead, lead oxides
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information
Component Information
Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization May cause sensitization by skin contact

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Lead powder	7439-92-1	Group 2A	Reasonably Anticipated	A3	X	A3

IARC (International Agency for Research on Cancer)
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)
NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens
Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects No information available

Reproductive Effects Contains a known or suspected reproductive toxin.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure Kidney Central nervous system (CNS) Blood

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea

Lead powder	Not listed	LC50: = 1.32 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 1.17 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: = 0.44 mg/L, 96h semi-static (Cyprinus carpio)	Not listed	EC50: = 600 µg/L, 48h (water flea)

Persistence and Degradability Insoluble in water

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Technical Name Lead powder
Hazard Class 9
Packing Group III

TDG

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

IATA

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

IMDG/IMO

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Lead powder	7439-92-1	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

Component	CAS No	**TSCA 12(b)** - Notices of Export
Lead powder	7439-92-1	Section 6

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Lead powder	7439-92-1	X	-	231-100-4	X	X		X	X	KE-21887

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. Note that PBT chemicals are not eligible for the de minimis exemption. For these chemicals, supplier notification limits are provided.

> 0 % = no low concentration cut-off set, supplier notification limit applies.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Lead powder	7439-92-1	>95	> 0 %	RT = 100 lb

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Lead powder	-	-	X	X

Clean Air Act

OSHA - Occupational Safety and Health Administration — Not applicable

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Lead powder	30 µg/m³ Action Level 50 µg/m³ TWA	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Lead powder	10 lb	-	10 lb 4.54 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Lead powder	7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive	15 µg/day	Developmental Carcinogen

U.S. State Right-to-Know

Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Lead powder	X	X	X	X	X

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Lead powder	7439-92-1	-	Use restricted. See item 72. (see link for restriction details) Use restricted. See item 30. (see link for restriction details) Use restricted. See item 63. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - 231-100-4 - Toxic for reproduction (Article 57c)

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

REACH links
https://echa.europa.eu/authorisation-list
https://echa.europa.eu/substances-restricted-under-reach
https://echa.europa.eu/candidate-list-table

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Lead powder	7439-92-1	Listed	Not applicable	Not applicable	0.1% (Max. Conc.)

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Lead powder	7439-92-1	Not applicable	Not applicable	Not applicable	Annex I - Y31

16. Other information

Prepared By

Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 03-Apr-2012
Revision Date 09-Feb-2024
Print Date 09-Feb-2024
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

Creation Date 20-Aug-2014 **Revision Date** 09-Feb-2024 **Revision Number** 5

1. Identification

Product Name **Mercury (Certified ACS)**

Cat No. : **M141-1LB; M141-6LB**

Synonyms Colloidal mercury; Hydrargyrum; Metallic mercury

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Inhalation Toxicity - Vapors	Category 2
Reproductive Toxicity	Category 1B
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Central nervous system (CNS), Kidney.	

Label Elements

Signal Word
Danger

Hazard Statements
Fatal if inhaled
May damage the unborn child
Causes damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
WARNING. Reproductive Harm - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Mercury	7439-97-6	100

4. First-aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and effects None reasonably foreseeable.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. approved class D extinguishers.

Unsuitable Extinguishing Media Water may be ineffective

Flash Point Not applicable
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Very toxic. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Keep product and empty container away from heat and sources of ignition. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products
Mercury oxide. Toxic fumes.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
4	0	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. No special precautions required. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Should not be released into the environment. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Pick up and transfer to properly labelled containers.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep in a dry place. Keep away from acids. Incompatible Materials. Strong oxidizing agents. Ammonia. Metals. Halogens.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Mercury	TWA: 0.025 mg/m³ Skin	(Vacated) TWA: 0.05 mg/m³ Ceiling: 0.1 mg/m³ (Vacated) STEL: 0.03 mg/m³ Skin (Vacated) Ceiling: 0.1 mg/m³	IDLH: 10 mg/m³ TWA: 0.05 mg/m³ Ceiling: 0.1 mg/m³	TWA: 0.025 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. None under normal use conditions.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection No special protective equipment required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Silver
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-38.87 °C / -38 °F
Boiling Point/Range	356.72 °C / 674.1 °F
Flash Point	Not applicable
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	0.002 mmHg @ 25 °C
Vapor Density	7.0
Specific Gravity	13.59 (H2O=1)
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Hg
Molecular Weight	200.59

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat.

Incompatible Materials Strong oxidizing agents, Ammonia, Metals, Halogens

Hazardous Decomposition Products Mercury oxide, Toxic fumes

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Mercury	Not listed	Not listed	LC50 < 27 mg/m³ (Rat) 2 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Mercury	7439-97-6	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects May cause harm to the unborn child.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure Central nervous system (CNS) Kidney

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Mercury	Not listed	0.9 mg/L LC50 96h	Not listed	Not listed

		0.18 mg/L LC50 96h 0.16 mg/L LC50 96h 0.5 mg/L LC50 96h		

Persistence and Degradability Insoluble in water May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Mercury - 7439-97-6	U151	-

14. Transport information

DOT

UN-No	UN2809
Proper Shipping Name	Mercury
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	III

TDG

UN-No	UN2809
Proper Shipping Name	Mercury
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	III

IATA

UN-No	UN2809
Proper Shipping Name	Mercury
Hazard Class	8
Subsidiary Hazard Class	6.1
Packing Group	III

IMDG/IMO

UN-No	UN2809
Proper Shipping Name	Mercury
Hazard Class	8
Packing Group	III

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Mercury	7439-97-6	X	ACTIVE	S;12C

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule.

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export

Component	CAS No	**TSCA 12(b)** - Notices of Export
Mercury	7439-97-6	Section 5

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Mercury	7439-97-6	X	-	231-106-7	X	X		X	X	KE-23117

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. Note that PBT chemicals are not eligible for the de minimis exemption. For these chemicals, supplier notification limits are provided.

> 0 % = no low concentration cut-off set, supplier notification limit applies.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Mercury	7439-97-6	100	> 0 %	RT = 10 lb

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Mercury	-	-	X	X

Clean Air Act

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Mercury	1 lb	-	1 lb 0.454 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Mercury	7439-97-6	Developmental	-	Developmental

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Mercury	X	X	X	X	X

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Mercury	7439-97-6	-	Use restricted. See item 18[a]. (see link for restriction details) Use restricted. See item 30. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	-

REACH links
https://echa.europa.eu/substances-restricted-under-reach

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Mercury	7439-97-6	Listed	Not applicable	Not applicable	0.1% (Max. Conc.)

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Mercury	7439-97-6	Not applicable	Not applicable	X	Annex I - Y29

16. Other information

Prepared By Regulatory Affairs

Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date	20-Aug-2014
Revision Date	09-Feb-2024
Print Date	09-Feb-2024
Revision Summary	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

SAFETY DATA SHEET

Revision Date 25-Mar-2024 **Revision Number** 4

1. Identification

Product Name **Benzo[a]pyrene**

Cat No. : **15856**

CAS No 50-32-8
Synonyms Benzo[def]chrysene.; 3,4-Benzopyrene; 3,4-Benzpyrene

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Sensitization	Category 1
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 1B

Label Elements

Signal Word
Danger

Hazard Statements
May cause an allergic skin reaction
May cause genetic defects

May cause cancer
May damage fertility. May damage the unborn child

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Response
IF exposed or concerned: Get medical attention/advice
Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
Storage
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
WARNING. Cancer - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Benzo[a]pyrene	50-32-8	> 96

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms and effects None reasonably foreseeable. . May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products
Carbon monoxide (CO). Carbon dioxide (CO_2).
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Oxidizing agent.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Benzo[a]pyrene		TWA: 0.2 mg/m³		

Legend

OSHA - Occupational Safety and Health Administration

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type:	Particulates filter conforming to EN 143.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Dark yellow
Odor	aromatic
Odor Threshold	No information available
pH	Not applicable
Melting Point/Range	175 - 179 °C / 347 - 354.2 °F
Boiling Point/Range	495 °C / 923 °F @ 760 mmHg
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	C20H12
Molecular Weight	252.31

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products.
Incompatible Materials	Oxidizing agent
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO_2)
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information
Component Information
Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization May cause sensitization by skin contact

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Benzo[a]pyrene	50-32-8	Group 1	Reasonably Anticipated	A2	X	A2

IARC (International Agency for Research on Cancer)

IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information

Component	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Benzo[a]pyrene	Group III Chemical	Not applicable	Not applicable

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Persistence and Degradability May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

Component	log Pow
Benzo[a]pyrene	6.06

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Benzo[a]pyrene - 50-32-8	U022	-

14. Transport information

DOT

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Technical Name Benzo[a]pyrene
Hazard Class 9
Packing Group III

TDG

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

IATA

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

IMDG/IMO

UN-No UN3077
Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
Hazard Class 9
Packing Group III

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Benzo[a]pyrene	50-32-8	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Benzo[a]pyrene	50-32-8	X	-	200-028-5	X	-		-	X	KE-05-0184

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. Note that PBT chemicals are not eligible for the de minimis exemption. For these chemicals, supplier notification limits are provided.
> 0 % = no low concentration cut-off set, supplier notification limit applies.

Component	CAS No	Weight %	SARA 313 - Threshold Values %	SARA 313 - Reporting threasholds
Benzo[a]pyrene	50-32-8	> 96	> 0 %	RT = 100 lb

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Benzo[a]pyrene	-	-	X	X

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

Component	Hazardous Substances RQs	CERCLA Extremely Hazardous Substances RQs	SARA Reportable Quantity (RQ)
Benzo[a]pyrene	1 lb	-	1 lb 0.454 kg

California Proposition 65 This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Benzo[a]pyrene	50-32-8	Carcinogen	0.06 µg/day	Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Benzo[a]pyrene	X	X	X	X	X

U.S. Department of Transportation
Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Benzo[a]pyrene	50-32-8	-	Use restricted. See item 72. (see link for restriction details) Use restricted. See item 30. (see link for restriction details) Use restricted. See item 28. (see link for restriction details) Use restricted. See item 50[a]. (see link for restriction details) Use restricted. See item 29. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - 200-028-5 - Carcinogenic (article 57a); Mutagenic (Article 57b); Toxic for reproduction (Article 57c); PBT (Article 57d); vPvB (Article 57e)

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

REACH links
https://echa.europa.eu/authorisation-list
https://echa.europa.eu/substances-restricted-under-reach
https://echa.europa.eu/candidate-list-table

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Benzo[a]pyrene	50-32-8	Not applicable	Annex III - Substance subject to release reduction	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
See table for values

PFAS Legend
Listed = Meets the PFAS definition of the named authority

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities	Seveso III Directive (2012/18/EC) - Qualifying Quantities	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)

		for Major Accident Notification	for Safety Report Requirements		
Benzo[a]pyrene	50-32-8	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By
Health, Safety and Environmental Department
Email: chem.techinfo@thermofisher.com
www.thermofisher.com

Revision Date 25-Mar-2024
Print Date 25-Mar-2024
Revision Summary New emergency telephone response service provider.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX F

Administrative Record

Department of Toxic Substances Control

Yana Garcia
Secretary for
Environmental Protection

Katherine M. Butler, MPH, Director
8800 Cal Center Drive
Sacramento, California 95826-3200
https://dtsc.ca.gov/

Gavin Newsom
Governor

ADMINISTRATIVE RECORD
BERKELEY SANTA FE TRACKBED TO PARK
REMOVAL ACTION WORKPLAN

This Administrative Record List is provided in accordance with Subpart I of the National Contingency Plan to identify all documents that were relied on or considered when approving the subject remedial action. An information repository has been established at the Department file room to contain the documents constituting the Administrative Record. The information is available for review by appointment at:

Department of Toxic Substances Control, Region 1
8800 California Center Drive
Sacramento, California 95826
(916) 255-3758

Administrative Record List

1) 16 United States Code (U.S.C.) §1531 et seq. (Endangered Species Act of 1973)
2) California Air Resources Control Board (CARB), 2023. Particulate Matter and Health Fact Sheet, March.
3) California Code of Regulations (CCR) Title 8 Section (§) 5155. October 2. (Airborne Contaminants)
4) CCR Title 8 § 5192 California Occupational Safety and Health. (Hazardous Waste Operations and Emergency Response)
5) CCR Title 22 Chapter 30 Hazardous Waste Haulers Act (Hazardous Waste Transporter Requirements)
6) CCR Title 22, Division 4.5, Chapter 11, Article 3, § 66261.24 (Characteristic of Toxicity)
7) CCR Title 22 § 12000 et seq. Safe Drinking Water and Toxic Enforcement Act (Proposition 65)
8) CCR Title 22 § 66262.1 et seq. (Hazardous Waste Generator Requirements)

9) CCR Title 22 § 66268.7 et seq. (Testing, Tracking, and Recordkeeping Requirements for Generators, Treaters, and Disposal Facilities)

10) CCR Title 22 §69021 (Toxicity Criteria Rule)

11) California Department of Toxic Substances Control (DTSC), 1998, Memorandum: Removal Action Workplans (RAWs), September 23.

12) DTSC, 2001. Information Advisory: Clean Imported Fill Material, October.

13) DTSC, 2008, Removal Action Workplan DTSC Guidance Template, February 13.

14) DTSC, 2009, Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process, July 1. DTSC, 2015, Preliminary Endangerment Assessment Guidance Manual, October.

15) DTSC, 2019a, Human Health Risk Assessment Note 1, Default Human Health Exposure Factors, April.

16) DTSC, 2019b, Human Health Risk Assessment Note 10, Toxicity Criteria, February 25.

17) DTSC, 2022a, Human Health Risk Assessment Note 4, Guidance for Screening Level Human Health Risk Assessments, March 29.

18) DTSC, 2025, Human and Ecological Risk (HERO) Human Health Risk Assessment Note 3 – DTSC-Modified Screening Levels (DTSC SLs), April.

19) DTSC, 2023, Docket Number HAS-FY22/23-069 Standard Voluntary Agreement, March.

20) DTSC, 2023. Department of Toxic Substances Control Site Visit Report. Berkeley Santa Fe Trackbed to Park. January 11.

21) DTSC, 2023. Department of Toxic Substances Control – Community Survey - Site Visit Report. Berkeley Santa Fe Trackbed to Park (Site). October.

22) DTSC, 2023. Approval of Revised Additional Soil Sampling Work Plan At Santa Fe Trackbed to Park Property, Berkeley, Alameda County, California, December. December 13.

23) DTSC, 2024. Department of Toxic Substances Control Community Profile - Berkeley Santa Fe Trackbed to park. March 15.

24) DTSC, 2024. Department of Toxic Substances Control Site Visit Report. Berkeley Santa Fe Trackbed to park. April 18.

25) DTSC, 2024. Approval of the Addendum Additional Soil Sampling Work Plan at Santa Fe Trackbed to Park Property, Berkeley, Alameda County, California, December. April 24.

26) DTSC, 2024. Approval of Final Additional Soil Investigation Report at Santa Fe Trackbed to Park Property, Berkeley, Alameda County, California, September. September 24.

27) California Division of Occupational Safety and Health (Cal/OSHA), 2019. Table AC-1, Permissible Exposure Limits (PELs)

28) Cal/OSHA, https://www.osha.gov/dsg/annotated-pels/tablez-1.htm (Annotated PELs Tables)

29) Cal/OSHA, https://www.osha.gov/chemicaldata/801 (Particulates Not Otherwise Regulated, Total and Respirable Dust)

30) California Health and Safety Code (HSC), Chapter 6.5, section 25100 et seq., 22 CCR 66260.1 et seq. (Hazardous Waste Control Act)

31) HSC 25123.3(a)(2) (Stockpiling Requirements for Contaminated Soil)

32) California Regional Water Quality Control Board, 2019, San Francisco Bay Region, Environmental Screening Levels, January.

33) City of Berkeley, 2022. Application for Oversight – Berkeley Santa Fe Trackbed to Park, Berkeley, California. December 15.

34) City of Berkeley, 2025. Berkeley Municipal Code, A Codification of the General Ordinances of the City of Berkeley, California, Title 13, Chapter 13.40, Community Noise, April 15. (Local noise ordinance)

35) Code of Federal Regulations (CFR) Title 29 Occupational Safety and Health Act (1910.120 et seq.) (Hazardous Waste Operations and Emergency Response)

36) CFR Title 40 (42 USC 7401-7642, 50 – 69) (Clean Air Act)

37) CFR Title 40 Part 122 §402 [Clean Water Act: The National Pollutant Discharge Elimination System (NPDES)]

38) CFR Title 40 Part 260 to 299, 42 USC 7401-7642 (Resource Conservation and Recovery Act)

39) CFR Title 40 Part 261 (Identification and Listing of Hazardous Waste)

40) CFR Title 40, Part 261, Subpart C, Section 261.24 (Characteristics of Hazardous Waste)

41) CFR Title 40 Part 262 (Standards Applicable to Generators of Hazardous Waste)

42) CFR Title 40 Part 263 “Consolidated Checklist C4: Standard Applicable to Transporters of Hazardous Waste”

43) CFR Title 40 Part 263 (Standards Applicable to Transporters of Hazardous Waste)

44) Duverge, Dylan Jacques, 2011, Establishing background Arsenic in soil for the Urbanized San Francisco Bay Region, December.

45) Environmental Protection Agency (USEPA), 2024. Regional Screening Level (RSL) Resident Ambient Air Table (TR=1E-06, HQ=1). May.

46) USEPA, 2020, National Functional Guidelines for Organic Superfund Methods Data Review (EPA 540-R-20-005), November.

47) USEPA, 2020, National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA 542-R-20-006), November.

48) USEPA, 2024, Regional Screening Levels, https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables, November.

49) GSI, 2022. Santa Fe Right-of-Way Phase II Environmental Site Assessment – Report of Findings. Historic Santa Fe Right-of-Way, Berkeley, California. November 22.

50) GSI, 2023. Additional Soil Sampling Work Plan. Santa Fe Trackbed to Park, Berkeley, California. December 7.

51) GSI, 2024. Addendum to the Additional Soil Sampling Work Plan. Santa Fe Trackbed to Park, Berkeley, California. April 9.

52) GSI, 2024. Final Additional Soil Investigation Report. Santa Fe Trackbed to Park, Berkeley, California. September 9.

53) GSI, 2025. Remedial Action Work Plan. Santa Fe Trackbed to Park, Berkeley, California. June 17.

54) San Francisco Bay Regional Water Quality Control Board (Water Board), 2019, Environmental Screening Levels, Summary Tables, January (Rev. 2).

GSI Job No.: 6272

Remedial Action Workplan
Santa Fe Trackbed to Park
Berkeley, California

APPENDIX G

Air Quality Analysis

APPENDIX G
TECHNICAL MEMORANDUM

TO: Stacey Rutherford
City of Berkeley, Department of Parks, Recreation, and Waterfront
1947 Center Street, 5th Floor
Berkeley, CA 94704
SRutherford@berkeleyca.gov

FROM: Tiam Novin, Environmental Scientist
Jennifer P. Duffield, PE, Principal Engineer

COPY: Daniel Brannick, Department of Toxic Substances Control
Yang Dong, Department of Toxic Substances Control
Candace Hill, Department of Toxic Substances Control

SITE: Santa Fe Trackbed to Park Conversion Project
Four Non-Contiguous Parcels

RE: Air Quality Analysis of Site Remediation Activities

INTRODUCTION

On behalf of the City of Berkeley Department of Parks, Recreation, and Waterfront (the City), GSI Environmental Inc. (GSI) performed an analysis to assess the air quality and greenhouse gas (GHG) emissions associated with the remediation of the Site, which consists of four vacant non-contiguous parcels identified by Alameda County Assessor's Office Assessor Parcel Numbers 54-1790-28, 54-1794-28, 54-1793-27, and 54-1735-20. The four parcels encompass approximately 1.32-acres. The Site is currently vacant land that was historically the Santa Fe Railroad Right-of-Way (ROW). The Site is located within a residential neighborhood and adjacent to residential properties. Previous assessments of the Site indicated elevated concentrations of arsenic, lead, mercury, and polycyclic aromatic hydrocarbons (PAHs). The City has entered into a voluntary cleanup agreement with the California Department of Toxic Substances Control (DTSC) to oversee environmental characterization and remediation of the Site. The City plans to develop the Site into a community asset, which will include a community garden, dog park, children's play area, and teaching garden.

This air quality assessment estimates criteria pollutant emissions associated with the remedial actions of the Site as described in the Remedial Action Work Plan (RAW), prepared by GSI, dated April 7, 2025.[1] GHG emissions were not evaluated as Bay Area Air Quality Management District (BAAQMD) significance thresholds are not applicable to the remediation activities described in the RAW, as described in the Air Quality Analysis section below.2

GSI estimated criteria air pollutant emissions using the California Emissions Estimator Model (CalEEMod) Version 2022.1. Remediation activities included in the air quality emissions

[1] GSI, 2025, Remedial Action Workplan, Santa Fe Trackbed to Park, Berkeley, California, April 7.

[2] Bay Area Air Quality Management District, 2022, California Environmental Quality Act, Air Quality Guidelines.

estimation include demolition of a small detached garage and shed, excavation of impacted soils and backfill with clean, imported soil. Emissions associated with grading and construction of the Site will be addressed as part of the California Environmental Quality Act (CEQA) process for the redevelopment of the Site.

Project Description

The Site encompasses four non-contiguous parcels that were historically used as a railroad. The Site extends north-to-south between Blake Street and Ward Street and east-to-west between Sacramento Street and Mabel Street and includes four parcels, shown on Figure G-1, attached:

- Parcel 1 – located between Blake and Parker Streets (APN: 54-1790-28)
- Parcel 2 – located between Parker and Carleton Streets (APN: 54-1794-28)
- Parcel 3 – located between Carleton and Derby Streets (APN: 54-1793-27)
- Parcel 4 – located between Derby and Ward Streets (APN: 54-1735-20)

Remediation activities evaluated in this assessment include excavation of soil and backfilling with clean, imported soil at each parcel. Pre-excavation demolition activities include removal of perimeter fences, at all parcels, a concrete driveway at Parcel 1, and a small detached garage and shed at Parcel 2.

AIR QUALITY ANALYSIS

GSI used the California Emissions Estimator Model (CalEEMod) Version 2022.1 to estimate emissions associated with implementation of the RAW. The input assumptions and model output are described below.

CalEEMod Input Assumptions

The contractor to perform the work has not yet been selected. Therefore, GSI used default parameters, information from the City, and knowledge from prior experience to select input parameters for the model. The following inputs/assumptions were made in CalEEMod:

1. Land use for the Site is a recreational city park, totaling 1.32 acres.
2. There will be two construction phases:
    a. Demolition, which includes the removal of a concrete driveway, a small detached garage, a small shed and perimeter fencing.
    b. Site preparation, which includes Site preparation and excavation of contaminated soil and backfilling excavation areas with clean, imported soil.
3. It is estimated that remedial construction activities will take approximately 41 days to complete. Work is anticipated to being in September 2025 and end in November 2025.
4. Default off-road construction equipment were included in each phase of construction, including additional construction equipment in the demolition phase to account for dismantling fencing, if necessary.
    a. The off-road construction equipment are estimated to operate on Site for 9.5 hours per day.
5. An estimated 4,900 cubic yards of contaminated soil will be excavated and the same amount of clean, imported soil will be backfilled in those locations.

6. When handling materials for import and export, watering of exposed areas will be used twice a day to reduce fugitive dust.
7. Imported and exported materials will not be phased, meaning one truck arrives empty and departs full of export material and a different truck arrives full of import material and departs empty, for a total of two round trips.
8. An estimated 235 square feet of small structures (a detached garage and a shed) will be demolished at the Site. During demolition activities, water will be used at least twice per day for fugitive dust suppression.
9. The default number of truck trips and vehicle miles traveled for each phase of construction was used in the model except for demolition hauling trucks, vendor trucks, and onsite trucks for each phase.
    a. One hauling truck is assumed to be used per day during the demolition phase.
    b. Two water trucks (vendor trucks) are assumed to be used on Site per day.
    c. Two onsite trucks assumed to be used per day and conservatively traverse the total length of each parcel.
10. The following emissions control strategies are assumed to be implemented for on-road fugitive dust:
    a. Watering unpaved areas twice daily.
    b. Limiting vehicle speeds on unpaved areas to 25 mph.
    c. Sweep paved roads once per month.
11. One construction emission reduction strategy is included in the model – limiting heavy-duty diesel vehicle idling.
12. Vegetation removal was not included in the emissions estimate as this primarily affects GHG emissions, which are not considered in this evaluation as discussed in the Air Quality Analysis, below.
13. Planting of new trees were not included in the emissions model as this activity is not part of remediation and will be considered as part of the CEQA process for the redevelopment of the Site.

Criteria Air Pollutants Significance Thresholds and Emissions Output

CalEEMod emission results are compared to BAAQMD significance thresholds for criteria pollutants, where established.[2] A copy of the CalEEMod detailed model report is included in Attachment G-1. Planned remediation activities as part of this analysis would generate short-term emissions of criteria pollutants and greenhouse gases. As shown in the table below, the emissions from the remedial activities are significantly lower than BAAQMD thresholds, which indicates the proposed project will not significantly affect the environment. As such, the model results quantifiably supports an exemption from CEQA pursuant to Section 15061(b)(3).

Project Criteria Pollutant Emissions Table

Maximum Daily Criteria Air Pollutant Emissions (pounds per day)				
	ROG	NO_x	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Project Emissions	2	20	0.8	0.7
BAAQMD Thresholds	54	54	82	54
BAAQMD Thresholds Exceeded?	**No**	**No**	**No**	**No**

Abbreviations:
ROG = Reactive Organic Gases
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter 10 microns in diameter or less
$PM_{2.5}$ = Particulate Matter 2.5 microns in diameter or less

Fugitive Dust

In lieu of establishing a threshold for fugitive dust, the BAAQMD has established best management practices (BMPs) to control fugitive dust emissions.[2] As the project will implement all of the applicable basic BMPs outlined in the BAAQMD CEQA Air Quality Guidelines, Chapter 5, Section 5.2.2, the project will have a less-than significant criteria air pollutant impact related to construction-related fugitive dust emissions. These basic BMPs are outlined below:

BMP ID	Basic Best Management Practice
B-1	All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
B-2	All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
B-3	All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
B-4	All vehicle speeds on unpaved roads shall be limited to 15 mph.
B-5	All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
B-6	All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
B-7	All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
B-8	Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
B-9	Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Greenhouse Gases

BAAQMD has established thresholds of significance in Chapter 3, Table 3-2 of its CEQA Air Quality Guidelines that specify minimum project design elements for project GHG emissions to be considered insignificant. The design elements focus on buildings and transportation (reduction of vehicle miles traveled for residential, office and retail projects). Since the focus of this air quality analysis is the remediation portion of a planned city park and does not include the construction of buildings or long-term operations of residential, office, retail facilities, the climate impacts thresholds of significance are not applicable to this project. Therefore, GHG emissions are not further evaluated.

CONCLUSIONS

Results of the emissions modeling using CalEEMod indicate that estimated criteria pollutant emissions resulting from the proposed demolition, remediation, and backfilling activities proposed in the RAW will be significantly lower than BAAQMD thresholds. Additionally, fugitive dust emissions will be controlled using the basic BMPs outlined in the BAAQMD's CEQA Air Quality Guidelines.[2] Therefore, implementation of the RAW will have no significant impact on air quality, which supports an exemption from CEQA pursuant to Section 15061(b)(3).

Attachments: Figure G-1 – Site Overview
Attachment G-1 – CalEEMod Detailed Model Report

GSI ENVIRONMENTAL

GSI job No.	6272	Drawn By:	AV
Issued:	5-Oct-2023	Chk'd By:	TRK
		Appv'd By:	JPD
Map ID:	SFROW_SiteOverview		FIGURE G-1

SITE OVERVIEW

Santa Fe Trackbed to Park
Berkeley, California

Santa Fe Trackbed to Park Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

3.2. Demolition (2025) - Mitigated

3.3. Site Preparation (2025) - Unmitigated

3.4. Site Preparation (2025) - Mitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Santa Fe Trackbed to Park
Construction Start Date	9/15/2025
Lead Agency	DTSC
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	17.0
Location	37.85923184091673, -122.28222539174433
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1531
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
City Park	1.32	Acre	1.32	0.00	57,499	57,499	—	Four parcel remediation

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.29	1.80	19.5	17.4	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,800	5,800	0.27	0.52	7.13	5,968
Mit.	2.29	1.80	19.5	17.4	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,800	5,800	0.27	0.52	7.13	5,968
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.28	1.79	19.7	17.3	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,797	5,797	0.27	0.52	0.19	5,958
Mit.	2.28	1.79	19.7	17.3	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,797	5,797	0.27	0.52	0.19	5,958
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.20	2.06	1.88	< 0.005	0.08	2.79	2.87	0.08	0.39	0.47	—	551	551	0.03	0.04	0.26	565
Mit.	0.25	0.20	2.06	1.88	< 0.005	0.08	2.79	2.87	0.08	0.39	0.47	—	551	551	0.03	0.04	0.26	565
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04	0.04	0.38	0.34	< 0.005	0.02	0.51	0.52	0.01	0.07	0.09	—	91.3	91.3	< 0.005	0.01	0.04	93.6
Mit.	0.04	0.04	0.38	0.34	< 0.005	0.02	0.51	0.52	0.01	0.07	0.09	—	91.3	91.3	< 0.005	0.01	0.04	93.6
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	54.0	54.0	—	—	82.0	—	82.0	54.0	—	54.0	—	—	—	—	—	—	—
Unmit.	Yes	No	No	—	—	No	—	No	No	—	No	—	—	—	—	—	—	—
Mit.	Yes	No	No	—	—	No	—	No	No	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	54.0	54.0	—	—	82.0	—	82.0	54.0	—	54.0	—	—	—	—	—	—	—
Unmit.	Yes	No	No	—	—	No	—	No	No	—	No	—	—	—	—	—	—	—
Mit.	Yes	No	No	—	—	No	—	No	No	—	No	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.29	1.80	19.5	17.4	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,800	5,800	0.27	0.52	7.13	5,968
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.28	1.79	19.7	17.3	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,797	5,797	0.27	0.52	0.19	5,958

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.25	0.20	2.06	1.88	< 0.005	0.08	2.79	2.87	0.08	0.39	0.47	—	551	551	0.03	0.04	0.26	565
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.04	0.04	0.38	0.34	< 0.005	0.02	0.51	0.52	0.01	0.07	0.09	—	91.3	91.3	< 0.005	0.01	0.04	93.6

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.29	1.80	19.5	17.4	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,800	5,800	0.27	0.52	7.13	5,968
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.28	1.79	19.7	17.3	0.04	0.78	31.6	32.4	0.73	4.56	5.29	—	5,797	5,797	0.27	0.52	0.19	5,958
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.25	0.20	2.06	1.88	< 0.005	0.08	2.79	2.87	0.08	0.39	0.47	—	551	551	0.03	0.04	0.26	565
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.04	0.04	0.38	0.34	< 0.005	0.02	0.51	0.52	0.01	0.07	0.09	—	91.3	91.3	< 0.005	0.01	0.04	93.6

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.05	1.72	16.2	16.1	0.03	0.71	—	0.71	0.65	—	0.65	—	2,679	2,679	0.11	0.02	—	2,688
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.25	9.25	< 0.005	< 0.005	0.01	9.78
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.49	0.49	< 0.005	0.02	—	0.02	0.02	—	0.02	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.03	0.02	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	86.6	86.6	< 0.005	< 0.005	0.34	87.9
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.29	112
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.76	0.76	< 0.005	0.08	0.08	—	140	140	0.01	0.02	0.31	148
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	< 0.005	2.47
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.35	0.35	< 0.005	0.03	0.03	—	3.21	3.21	< 0.005	< 0.005	< 0.005	3.36
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	4.23	4.23	< 0.005	< 0.005	< 0.005	4.44
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.56
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.70	0.70	< 0.005	< 0.005	< 0.005	0.74

3.2. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.05	1.72	16.2	16.1	0.03	0.71	—	0.71	0.65	—	0.65	—	2,679	2,679	0.11	0.02	—	2,688
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.25	9.25	< 0.005	< 0.005	0.01	9.78

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.49	0.49	< 0.005	0.02	—	0.02	0.02	—	0.02	—	80.7	80.7	< 0.005	< 0.005	—	81.0
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.4
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	86.6	86.6	< 0.005	< 0.005	0.34	87.9
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.29	112
Hauling	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.76	0.76	< 0.005	0.08	0.08	—	140	140	0.01	0.02	0.31	148
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	< 0.005	2.47

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.35	0.35	< 0.005	0.03	0.03	—	3.21	3.21	< 0.005	< 0.005	< 0.005	3.36
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	4.23	4.23	< 0.005	< 0.005	< 0.005	4.44
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.56
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.70	0.70	< 0.005	< 0.005	< 0.005	0.74

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	1.70	15.7	15.5	0.02	0.73	—	0.73	0.67	—	0.67	—	2,656	2,656	0.11	0.02	—	2,665
Dust From Material Movement	—	—	—	—	—	—	3.29	3.29	—	1.59	1.59	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.25	9.25	< 0.005	< 0.005	0.01	9.78
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	1.70	15.7	15.5	0.02	0.73	—	0.73	0.67	—	0.67	—	2,656	2,656	0.11	0.02	—	2,665

Dust From Material Movement	—	—	—	—	—	—	3.29	3.29	—	1.59	1.59	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.40	9.40	< 0.005	< 0.005	< 0.005	9.92
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.25	1.23	< 0.005	0.06	—	0.06	0.05	—	0.05	—	211	211	0.01	< 0.005	—	212
Dust From Material Movement	—	—	—	—	—	—	0.26	0.26	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.74	0.74	< 0.005	< 0.005	< 0.005	0.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.9	34.9	< 0.005	< 0.005	—	35.1
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.13
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	64.9	64.9	< 0.005	< 0.005	0.26	66.0
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.29	112
Hauling	0.23	0.07	3.58	1.43	0.02	0.06	16.0	16.1	0.06	1.73	1.78	—	2,963	2,963	0.16	0.48	6.58	3,116

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.2	60.2	< 0.005	< 0.005	0.01	61.1
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.01	111
Hauling	0.22	0.06	3.78	1.45	0.02	0.06	16.0	16.1	0.06	1.73	1.78	—	2,964	2,964	0.16	0.48	0.17	3,111
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.82	4.82	< 0.005	< 0.005	0.01	4.89
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.92	0.92	< 0.005	0.09	0.09	—	8.47	8.47	< 0.005	< 0.005	0.01	8.85
Hauling	0.02	0.01	0.29	0.11	< 0.005	< 0.005	1.21	1.22	< 0.005	0.13	0.14	—	235	235	0.01	0.04	0.23	247
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	1.40	1.40	< 0.005	< 0.005	< 0.005	1.47
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.22	0.22	< 0.005	0.02	0.02	—	39.0	39.0	< 0.005	0.01	0.04	40.9

3.4. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	1.70	15.7	15.5	0.02	0.73	—	0.73	0.67	—	0.67	—	2,656	2,656	0.11	0.02	—	2,665
Dust From Material Movement	—	—	—	—	—	—	3.29	3.29	—	1.59	1.59	—	—	—	—	—	—	—

Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.25	9.25	< 0.005	< 0.005	0.01	9.78
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.02	1.70	15.7	15.5	0.02	0.73	—	0.73	0.67	—	0.67	—	2,656	2,656	0.11	0.02	—	2,665
Dust From Material Movement	—	—	—	—	—	—	3.29	3.29	—	1.59	1.59	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.06	0.04	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	9.40	9.40	< 0.005	< 0.005	< 0.005	9.92
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.25	1.23	< 0.005	0.06	—	0.06	0.05	—	0.05	—	211	211	0.01	< 0.005	—	212
Dust From Material Movement	—	—	—	—	—	—	0.26	0.26	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.74	0.74	< 0.005	< 0.005	< 0.005	0.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.23	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.9	34.9	< 0.005	< 0.005	—	35.1
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.12	0.12	< 0.005	< 0.005	< 0.005	0.13

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	64.9	64.9	< 0.005	< 0.005	0.26	66.0
Vendor	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.29	112
Hauling	0.23	0.07	3.58	1.43	0.02	0.06	16.0	16.1	0.06	1.73	1.78	—	2,963	2,963	0.16	0.48	6.58	3,116
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.2	60.2	< 0.005	< 0.005	0.01	61.1
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	12.1	12.1	< 0.005	1.21	1.21	—	107	107	< 0.005	0.02	0.01	111
Hauling	0.22	0.06	3.78	1.45	0.02	0.06	16.0	16.1	0.06	1.73	1.78	—	2,964	2,964	0.16	0.48	0.17	3,111
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.82	4.82	< 0.005	< 0.005	0.01	4.89
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.92	0.92	< 0.005	0.09	0.09	—	8.47	8.47	< 0.005	< 0.005	0.01	8.85
Hauling	0.02	0.01	0.29	0.11	< 0.005	< 0.005	1.21	1.22	< 0.005	0.13	0.14	—	235	235	0.01	0.04	0.23	247
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	1.40	1.40	< 0.005	< 0.005	< 0.005	1.47
Hauling	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.22	0.22	< 0.005	0.02	0.02	—	39.0	39.0	< 0.005	0.01	0.04	40.9

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	9/15/2025	9/29/2025	5.00	11.0	Demolition of various small structures, perimeter fencing, and trees
Site Preparation	Site Preparation	9/30/2025	11/7/2025	5.00	29.0	Prepare and excavate soils, then backfill excavations with clean, imported soil

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	9.50	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	9.50	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.50	84.0	0.37
Demolition	Other Construction Equipment	Diesel	Average	1.00	9.50	82.0	0.45
Site Preparation	Graders	Diesel	Average	1.00	9.50	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	9.50	367	0.40

Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.50	84.0	0.37

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	9.50	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	9.50	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.50	84.0	0.37
Demolition	Other Construction Equipment	Diesel	Average	1.00	9.50	82.0	0.45
Site Preparation	Graders	Diesel	Average	1.00	9.50	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	9.50	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.50	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	4.00	8.40	HHDT,MHDT
Demolition	Hauling	2.00	20.0	HHDT
Demolition	Onsite truck	4.00	0.18	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	8.40	HHDT,MHDT
Site Preparation	Hauling	42.2	20.0	HHDT

Site Preparation	Onsite truck	4.00	0.18	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	4.00	8.40	HHDT,MHDT
Demolition	Hauling	2.00	20.0	HHDT
Demolition	Onsite truck	4.00	0.18	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	4.00	8.40	HHDT,MHDT
Site Preparation	Hauling	42.2	20.0	HHDT
Site Preparation	Onsite truck	4.00	0.18	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	235	—
Site Preparation	4,900	4,900	22.6	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
City Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	7.10	annual days of extreme heat
Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	2	2	2
Sea Level Rise	1	2	1	3
Wildfire	2	2	2	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	3	3	3

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	2	2	2
Sea Level Rise	1	2	1	3
Wildfire	2	2	2	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	3	3	3

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.12
AQ-PM	39.9
AQ-DPM	78.9
Drinking Water	4.21
Lead Risk Housing	80.7
Pesticides	0.00
Toxic Releases	58.3

Traffic	52.3
Effect Indicators	—
CleanUp Sites	75.3
Groundwater	92.2
Haz Waste Facilities/Generators	95.8
Impaired Water Bodies	83.0
Solid Waste	0.00
Sensitive Population	—
Asthma	87.4
Cardio-vascular	59.9
Low Birth Weights	5.03
Socioeconomic Factor Indicators	—
Education	24.1
Housing	75.7
Linguistic	25.6
Poverty	42.8
Unemployment	81.7

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	57.43616066
Employed	45.74618247
Median HI	64.04465546
Education	—
Bachelor's or higher	75.77312973
High school enrollment	100

Preschool enrollment	72.75760298
Transportation	—
Auto Access	6.159373797
Active commuting	97.15128962
Social	—
2-parent households	49.08250994
Voting	74.15629411
Neighborhood	—
Alcohol availability	20.08212498
Park access	81.35506224
Retail density	66.26459643
Supermarket access	70.30668549
Tree canopy	44.7324522
Housing	—
Homeownership	44.15501091
Housing habitability	63.59553445
Low-inc homeowner severe housing cost burden	39.61247273
Low-inc renter severe housing cost burden	62.04285898
Uncrowded housing	68.66418581
Health Outcomes	—
Insured adults	67.2783267
Arthritis	14.1
Asthma ER Admissions	8.4
High Blood Pressure	18.2
Cancer (excluding skin)	22.7
Asthma	27.9
Coronary Heart Disease	34.0
Chronic Obstructive Pulmonary Disease	42.5

Diagnosed Diabetes	31.9
Life Expectancy at Birth	37.4
Cognitively Disabled	44.8
Physically Disabled	45.1
Heart Attack ER Admissions	73.5
Mental Health Not Good	57.3
Chronic Kidney Disease	27.1
Obesity	43.5
Pedestrian Injuries	81.3
Physical Health Not Good	53.6
Stroke	15.1
Health Risk Behaviors	—
Binge Drinking	68.3
Current Smoker	61.3
No Leisure Time for Physical Activity	60.4
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	62.5
Elderly	47.3
English Speaking	68.8
Foreign-born	23.9
Outdoor Workers	40.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	32.3
Traffic Density	35.9
Traffic Access	87.4
Other Indices	—

Hardship	39.3
Other Decision Support	—
2016 Voting	58.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	62.0
Healthy Places Index Score for Project Location (b)	75.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Proposed site construction includes demolition and site preparation (remediation of soil - excavation and backfill with clean, imported soil).
Construction: Off-Road Equipment	Included one "other construction equipment" to demolition for the dismantling of fencing in the four parcel boundaries, where necessary.
Construction: Trips and VMT	Vendor trips assume two water trucks per day. Assumed two onsite trucks on site per day and conservatively traversing the total length of each construction area.

Construction: On-Road Fugitive Dust	Mean vehicle speed changed to 15 mph to conform to BAAQMD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions.
Construction: Dust From Material Movement	Excavated impacted soils will be removed and clean, imported soil will be used to backfill these areas.

APPENDIX D

Tentative Schedule

Tentative Schedule
(Dates Subject to Change)

Bid Advertisement	October 31, 2025
Non-Mandatory Pre-Bid Conference	November 13, 2025
Bid Opening	November 20, 2025
Notice of Intent to Award	December 18, 2025
Award	January 20, 2026
Contract Documents Due	January 23, 2026
Executed Contract	February 10, 2026
Start Construction (Notice to Proceed)	March 2, 2026
Substantial Completion	July 20, 2026
Final Completion	August 3, 2026