

County of Santa Clara
Office of the County Clerk-Recorder
Business Division

County Government Center
70 West Hedding Street, E. Wing, 1st Floor
San Jose, California 95110 (408) 299-5688



Santa Clara County Clerk – Recorder's Office
State of California



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CEQA DOCUMENT DECLARATION

REGINA ALCOMENDRAS, County Clerk – Recorder
by **Laura Luna, Deputy Clerk – Recorder,**

ENVIRONMENTAL FILING FEE RECEIPT

PLEASE COMPLETE THE FOLLOWING:

1. LEAD AGENCY: City of Campbell
2. PROJECT TITLE: Dillon Avenue Townhomes and Apartments
3. APPLICANT NAME: Santa Clara Development / Robson Homes PHONE: (408) 345-1767
4. APPLICANT ADDRESS: 2185 The Alameda, San Jose, CA 95126
5. PROJECT APPLICANT IS A: ☐ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☒ Private Entity
6. NOTICE TO BE POSTED FOR 24 DAYS.

7. CLASSIFICATION OF ENVIRONMENTAL DOCUMENT

a. PROJECTS THAT ARE SUBJECT TO DFG FEES

☐ 1. <u>ENVIRONMENTAL IMPACT REPORT</u> (PUBLIC RESOURCES CODE §21152)	\$ 3,029.75	\$ <u>0.00</u>
☐ 2. <u>NEGATIVE DECLARATION</u> (PUBLIC RESOURCES CODE §21080(C))	\$ 2,181.25	\$ <u>0.00</u>
☐ 3. <u>APPLICATION FEE WATER DIVERSION</u> (STATE WATER RESOURCES CONTROL BOARD ONLY)	\$ 850.00	\$ <u>0.00</u>
☐ 4. <u>PROJECTS SUBJECT TO CERTIFIED REGULATORY PROGRAMS</u>	\$ 1,030.25	\$ <u>0.00</u>
☐ 5. <u>COUNTY ADMINISTRATIVE FEE</u> (REQUIRED FOR a-1 THROUGH a-4 ABOVE) Fish & Game Code §711.4(e)	\$ 50.00	\$ <u>0.00</u>

b. PROJECTS THAT ARE EXEMPT FROM DFG FEES

☐ 1. NOTICE OF EXEMPTION (\$50.00 COUNTY ADMINISTRATIVE FEE REQUIRED)	\$ 50.00	\$ <u>0.00</u>
☐ 2. A COMPLETED "CEQA FILING FEE NO EFFECT DETERMINATION FORM" FROM THE DEPARTMENT OF FISH & GAME, DOCUMENTING THE DFG'S DETERMINATION THAT THE PROJECT WILL HAVE NO EFFECT ON FISH, WILDLIFE AND HABITAT, OR AN OFFICIAL, DATED RECEIPT / PROOF OF PAYMENT SHOWING PREVIOUS PAYMENT OF THE DFG FILING FEE FOR THE *SAME PROJECT IS ATTACHED (\$50.00 COUNTY ADMINISTRATIVE FEE REQUIRED)		
DOCUMENT TYPE: ☐ ENVIRONMENTAL IMPACT REPORT ☐ NEGATIVE DECLARATION	\$ 50.00	\$ <u>0.00</u>

c. NOTICES THAT ARE NOT SUBJECT TO DFG FEES OR COUNTY ADMINISTRATIVE FEES

☐ NOTICE OF PREPARATION	☒ NOTICE OF INTENT	NO FEE	\$ <u>NO FEE</u>

8. OTHER: _____ FEE (IF APPLICABLE): \$ _____
9. TOTAL RECEIVED: _____ \$ 0.00

*NOTE: "**SAME PROJECT**" MEANS **NO** CHANGES. IF THE DOCUMENT SUBMITTED IS NOT THE SAME (OTHER THAN DATES), A "NO EFFECT DETERMINATION" LETTER FROM THE DEPARTMENT OF FISH AND GAME FOR THE **SUBSEQUENT** FILING OR THE APPROPRIATE FEES ARE REQUIRED.

THIS FORM MUST BE COMPLETED AND ATTACHED TO THE FRONT OF ALL CEQA DOCUMENTS LISTED ABOVE (*INCLUDING COPIES*) SUBMITTED FOR FILING. WE WILL NEED AN ORIGINAL (WET SIGNATURE) AND THREE COPIES. (*YOUR ORIGINAL WILL BE RETURNED TO YOU AT THE TIME OF FILING.*)

CHECKS FOR ALL FEES SHOULD BE MADE PAYABLE TO: SANTA CLARA COUNTY CLERK-RECORDER

PLEASE NOTE: FEES ARE ANNUALLY ADJUSTED (Fish & Game Code §711.4(b)); PLEASE CHECK WITH THIS OFFICE AND THE DEPARTMENT OF FISH AND GAME FOR THE LATEST FEE INFORMATION.

"... NO PROJECT SHALL BE OPERATIVE, VESTED, OR FINAL, NOR SHALL LOCAL GOVERNMENT PERMITS FOR THE PROJECT BE VALID, UNTIL THE FILING FEES REQUIRED PURSUANT TO THIS SECTION ARE PAID." Fish & Game Code §711.4(c)(3)

(FEES EFFECTIVE 01-01-2014)

ORIGINAL



File#:

825

8/29/2014

**NOTICE OF INTENT
INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION
CITY OF CAMPBELL, CALIFORNIA**

Notice is hereby given of the intent of the Campbell City Council to adopt a Mitigated Negative Declaration for the Dillon Avenue Townhomes and Apartments Project, an application for a Planned Development Permit (PLN2013-337), Vesting Subdivision Map (PLN2013-339), Parking Modification Permit (PLN2013-360), and a Tree Removal Permit (PLN2014-191) to allow construction of a residential infill project consisting of 81 townhomes and 19 apartment units, pursuant to Public Resources Code Secs. 21092(b)(1) and 21094.5, for properties located at **230, 280, 282, and 290 (portion) Dillon Avenue; 466 472, 482, and 488 Sam Cava Lane; and 186 Gilman Avenue, Campbell, CA, 95008.**

The project site of 4 ½ acres, consisting of ten parcels and a small portion of public property (Public Works Maintenance Corporation Yard), is generally located at the southeast corner of Dillon Avenue and Sam Cava Lane. The site consists of vacant land (formally a storage yard for a roofing company), industrial buildings, and single-family residences. Abutting land uses include Los Gatos Creek Trail to the east, the Public Works Maintenance Corporation Yard to the south, and residential and industrial uses to the north and west.

An Infill Environmental Checklist was prepared in compliance with State CEQA Guideline Sec. 15183.3 for the purposes of determining whether the infill project may have a significant effect on the environment not addressed in a previous Environmental Impact Report (EIR), not substantially mitigated by uniformly applicable development policies, or mitigated through project-specific measures. On the basis of the Infill Environmental Checklist, Community Development Department staff has determined that the project will not have a significant effect on the environment due to the incorporation of project-specific mitigation measures and application of uniformly applicable development policies, and therefore, has prepared a draft Mitigated Negative Declaration for consideration by the Campbell Planning Commission and Campbell City Council.

All interested parties are invited and encouraged to submit comments in writing regarding the draft Mitigated Negative Declaration and/or attend the below described public hearings. The public review period for the draft Mitigated Negative Declaration begins on **September 3, 2014** and ends on **September 23, 2014**. Any comments must be submitted in writing, including email, to the Community Development Department by 5:00 p.m. on **September 23, 2014**. The Infill Environmental Checklist and draft Mitigated Negative Declaration are available for review from 8:00 a.m. to 5:00 p.m. at the Community Development Department, City Hall, 70 North First Street, Campbell, CA or online at <http://www.cityofcampbell.com/501/Public-Notices> under 'Environmental Notices'.

The Campbell Planning Commission will consider the project and draft Mitigated Negative Declaration at a public hearing to be held on **September 23, 2014** and submit to the Campbell City Council a recommendation for approval or denial. The Campbell City Council is tentatively scheduled to hold a public hearing on **October 21, 2014**, to consider the Planning Commission's recommendation on the project and draft Mitigated Negative Declaration. Both meetings will be held at 7:30 p.m., or shortly thereafter, in the City Hall City Council Chambers, 70 North First Street, Campbell, CA.

Please be advised that if you challenge the decision on the Mitigated Negative Declaration and/or project in court, you may be limited to raising only those issues you or someone else raised at the public hearings described in this notice, or in written correspondence delivered to the City of Campbell prior to the public hearings. Questions and written comments may be addressed to Daniel Fama, Associate Planner at (408) 866-2193 or by email at danielf@cityofcampbell.com.

CITY OF CAMPBELL
ANNE BYBEE
CITY CLERK



CITY OF CAMPBELL
Community Development Department

DRAFT
MITIGATED NEGATIVE DECLARATION

The Community Development Department has prepared an Infill Environmental Checklist in compliance with State CEQA Guideline Sec. 15183.3 for the purposes of determining whether the proposed infill project described below may have a significant effect on the environment not addressed in a previous Environmental Impact Report (EIR), not substantially mitigated by uniformly applicable development policies, or mitigated through project-specific measures. "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

Project Title: Dillon Avenue Townhomes and Apartments

File Number(s): PLN2013-340 (CEQA Review), PLN2013-337 (Planned Development Permit), PLN2013-339 (Vesting Subdivision Map), PLN2013-360 (Parking Modification Permit), and PLN2014-191 (Tree Removal Permit)

Project Address: 230, 280, 282, and 290 (portion) Dillon Avenue; 466, 472, 482, and 488 Sam Cava Lane; and 186 Gilman Avenue

Project Sponsor: Santa Clara Development / Robson Homes
2185 The Alameda
Santa Jose, CA 95126

Zoning District: P-D (Planned Development)

General Plan: *Commercial/Med.-High Density Residential (14-27 units/gr. acre) and High Density Residential (21-27 units/gr. acre)*

Lead Agency: City of Campbell, Community Development Department
70 N. First Street, Campbell, CA 95008

Contact Person: Daniel Fama, Associate Planner
(408) 866-2193 | danielf@cityofcampbell.com

Date Posted: August 29, 2014

Surrounding Land Uses / General Plan / Zoning:

North: Townhome Residential / Commercial/Med.-High Residential / P-D (Planned Development)

South: Maintenance Yard / High-Density Residential / P-D (Planned Development)

East: Los Gatos Creek Trail / Open Space / P-F/OS (Public Facilities/Open Space)

West: Industrial / Commercial/Med.-High Residential / P-D (Planned Development)

Prior Environmental Document(s): On November 6, 2001, the City of Campbell adopted the Campbell General Plan and certified the Final Environmental Impact Report (EIR) (State Clearing House # 2001042063) for the project. The adopting City Council Resolution (CC Resolution No. 9940) for the EIR, summarized the potentially significant environmental impacts that would be mitigated to a level less than significant with the identified mitigation measures as well as those environmental impacts determined to be significant and unavoidable.

Location of Prior Environmental Document(s): City of Campbell City Hall, Community Development Department, 70 N. First Street, Campbell, CA 95008.

Project Description: The proposed project is an infill residential development consisting of 81 townhome units (fee title ownership) and 19 apartment (rental) units.

Finding: On the basis of the Infill Environmental Checklist, Community Development Department staff has determined that, based upon substantial evidence, the project will not have a significant effect on the environment due to mitigation measures adopted in a previous Environmental Impact Report (EIR), application of uniformly applicable development policies, and incorporation of the following project-specific mitigation measures agreed to by the project proponent.

Mitigation Measures Included in the Project to Reduce Potentially Significant Environmental Effects to a Less Than Significant Level:

Mitigation Measure AIR-1: The project applicant shall ensure that construction plans include the BAAQMD Best Management Practices for fugitive dust control. The following will be required for all construction activities within the project area. These measures will reduce fugitive dust emissions primarily during soil movement, grading and demolition activities, but also during vehicle and equipment movement on unpaved project sites:

- a. 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. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- c. All visible mud or dirt track-out 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.
- d. All vehicle speeds on unpaved roads shall be limited to 15 mph.
- e. All streets, 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.
- f. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne tox.ics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.
- g. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- h. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AIR-2: The project applicant shall ensure that construction contract specifications include a requirement that all off-road diesel-powered construction equipment used for project improvements be equipped with a Level3 Verified Diesel Emissions Control (VDEC).

Mitigation Measure BIO-1: Project-related activities that occur during the breeding season could be constrained in the vicinity of any active nests. If tree removal or ground disturbance activities are scheduled to commence during the breeding season (February 1st through August 31st), pre-construction nesting bird surveys should be conducted by a qualified biologist to identify possible nesting activity within 15 days prior to such activities. A construction-free buffer of suitable dimensions must be established around any active raptor and migratory bird nest (up to 250 feet, depending on the location and species) for the duration of the project, or until it has been determined that the chicks have fledged and are foraging independently from their parents.

Mitigation Measure BIO-2: The following mitigation measures will be implemented to ensure that no bats are harmed or killed as a result of the project.

- a. Within 30 days prior to the demolition of the four homes along Sam Cava Lane, and their associated outbuildings, a pre-construction survey will be conducted to confirm that the existing conditions of the homes have not changed. If existing conditions have not changed, no further surveys will be required.
- b. If existing conditions have changed and the biologist observes that one or more structures have openings that could provide entry for bats, then a more detailed bat survey will be conducted by a qualified biologist within all structures that provide potential openings for bats to enter. If no bats are found, then no further mitigations will be required. If roosting bats are found to be present, the following additional measures will be required:
- c. If a non-breeding bat colony is found within any of the structures, the individuals will be humanely evicted via the partial dismantlement of the buildings prior to demolition under the direction of a qualified bat specialist to ensure that no harm or “take” would occur to any bats as a result of demolition activities.
- d. If a maternity colony is detected in the structures, then a construction-free buffer should be established around the structure as determined by the biologist and remain in place until it has been determined that the nursery is no longer active. Demolition should preferably be done between March 1st and April 15th or August 15th and October 15th to avoid interfering with an active nursery.

PUBLIC REVIEW PERIOD

Any person may file a written protest of the draft Mitigated Negative Declaration before 5:00 p.m. on **September 23, 2014**. Such protest must be filed at the Community Development Department, City Hall, 70 North First Street, Campbell, California. The written protest should make a "fair argument" that the project will have one or more significant effects on the environment based on substantial evidence. However, please note that certain determinations made pursuant to CEQA Guidelines Sec. 15183.3 are questions of fact to be resolved by the lead agency.



Signature

August 29, 2014

Date

Daniel Fama, Associate Planner

Printed Name

City of Campbell

Agency

Encl: Infill Environmental Checklist Form



CITY OF CAMPBELL
Community Development Department

Infill Environmental Checklist Form

Project Title: Dillon Avenue Townhomes and Apartments

File Number(s): PLN2013-340 (CEQA Review), PLN2013-337 (Planned Development Permit), PLN2013-339 (Vesting Subdivision Map), PLN2013-360 (Parking Modification Permit), and PLN2014-191 (Tree Removal Permit)

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Lead Agency: City of Campbell, Community Development Department
70 N. First Street, Campbell, CA 95008

Contact Person: Daniel Fama, Associate Planner
(408) 866-2193 | danielf@cityofcampbell.com

Date Posted: August 29, 2014

Project Setting and Surrounding Land Use: The project site is an assemblage of ten privately owned parcels totaling 4.34 acres and a small portion of the City Public Works Maintenance Corporation Yard. The site is located on the east side of Dillon Avenue, wrapping around over to Sam Cava Lane (reference Page 5, Location Map). The project site consists of three properties associated with the former Biddle Roofing company, two properties encompassing the Haig Precision machining company, four single-family residential properties, and one property developed with multi-tenant industrial building. Much of the site lies within the boundaries of the South of Campbell Avenue Area (SOCA), except for the primary parcel (280 Dillon Ave.) of the former Biddle Roofing company site. The majority of the project site perimeter (80%) is adjacent to existing commercial, industrial, and/or residential uses. The easterly perimeter is adjacent to the Los Gatos Creek Trail.

Project Description: The proposed project is an infill residential development consisting of 81 townhome units (fee title ownership) and 19 apartment (rental) units. The townhomes are proposed in 13 buildings, each containing between three to ten individual townhomes. The apartment units are proposed in three buildings containing three, four, and twelve apartments units, respectively. Although the project is largely oriented to the interior, it will include an outward-facing presence along the adjacent public streets; a row of six townhomes and the 12-unit apartment building will front Sam Cava Lane, and Dillon Avenue, respectively. These buildings will be situated with a minimal setback close to the sidewalk to provide an urban presence.

A private roadway system in a "branching" configuration—where a primary road intersects with a series of short connecting roads—will provide vehicular access within the development. The private roadway will interface with the public street at the terminus of Dillon Avenue to the south (adjacent to the City's corporation yard) and at Sam Cava Lane to the north. Pedestrian access within the community is planned through an interconnected walkway system. Pedestrians will be able to access the public sidewalk at several points along Dillon Avenue and Sam Cava Lane allowing convenient access to the Downtown, light-rail, and Campbell Park.

The project presents two distinct architectural concepts. The townhomes, which make up much of the interior of the site, as well as the units along Sam Cava Lane, are depicted in a traditional design that takes cues from a "small-town" style exhibited by such projects as the Gilman Cottages across the street. These three-story townhomes (38 ½ feet tall) are characterized by use of simple hipped and gabled roof forms, composition roofing, varied wall planes and insets, recessed windows, and smooth stucco walls. The potential color palettes are all earth-tone combinations with an emphasis on tan-to-white body colors with contrasting brown trim. The townhomes will be contrasted with the apartment buildings that are depicted in a contemporary design evocative of the neighborhood's current industrial makeup incorporating standing seam metal roofing, asymmetric vertical massing, and varying articulation. The smaller of the two apartment buildings that will face Dillon Avenue is three stories at a height of 30-feet, while the other larger (and longer building) will be four stories at 39 feet tall. In keeping with the industrial flair, the color concept provided for these buildings emphasizes a vibrant rust color accented with industrial grays.

Since the project is located within ¼ mile of the Downtown Light Rail Station, it is considered a transit-oriented development (TOD), subject to the parking standard that requires 1 ½ spaces per unit for a studio/1-bedroom unit and 2 spaces for each unit with 2 or more bedrooms, as well as ½ space per unit as guest parking. Pursuant to this standard, the project is required to provide 195 parking spaces as well as 50 guest parking spaces, for an aggregate total of 245 parking spaces. The project proposes a total of 243 spaces, with resulting deficiency of three spaces, requiring approval of a Parking Modification Permit.

The project site exhibits a steep grading differential between the current Biddle Roofing properties and the additional parcel assemblage to the north. This differential, of approximately 12 feet, is evidenced by an existing retaining wall between the properties. The project's grading plan proposes to smooth the differential such that the project site will gradually slope up from south to north to create a visually level surface. However, interface with some adjacent properties will require use of retaining walls due to existing grade differentials. This will be most evident around the properties to the west, which sit up at street level (Dillon Ave.), approximately 8 feet higher from the finished grade of the project site. As a result, 7-ft to 8-ft tall retaining walls will surround this edge.

The Los Gatos Creek Trail runs parallel with the project site's eastern property line. Along this edge, the development's walkway, placed within a landscaped corridor, will create a park-like environment complimentary of the trail. Landscape plantings would be compliant with the State-mandated water efficiency standards (more drought tolerant vegetation) as well as regional guidelines for landscaping near riparian corridors (no invasive plant species). Directly behind the walkway, townhomes will face forward with their entries looking towards the creek trail. Interface with the trail will take two primary forms due to variations in embankment grade. Starting at the north side of the project site, and for about three quarters of the distance, a CMU (concrete masonry unit) retaining wall with a stucco finish, topped with a 3 ½ foot tall wrought-iron fencing, as shown on the following section and detail drawings, will meander alongside the property line. The barrier will then transition to a stacked stone base wall topped with 3 ½ foot tall wrought-iron fencing. Both wall designs will provide transparency at the project's grade level that will maintain visibility onto the creek. No direct public or private access to the creek trail is proposed.

Project Data

Net Lot Area:	4.51 acres (including 0.22 of City property)	
Gross Lot Area:	4.83 acres (approximate)	
Zoning:	P-D (Planned Development) / South of Campbell Avenue Area (portion)	
General Plan:	Commercial/Med.-High Density Residential (14-27 units/gr. acre) and High Density Residential (21-27 units/gr. acre)	
Proposed Units:	100 units (81 townhomes and 19 apartments)	
Allowable (Max) Units:	130 units	
Proposed Density:	20.7 units/gr. acre (100 units / 4.83 gross acres)	
Allowable (Max) Density:	27 units/gr. acre	
Unit Sizes		
Townhomes:	1,902 sq. ft. to 2,745 sq. ft.	
Apartments:	610 sq. ft. to 1,444 sq. ft.	
Building Coverage:	40% (78,162 square-foot building "footprint")	
Floor Area Ratio (FAR):	1.10 (216,968 square feet of total building area)	
Building Height		
Townhome Rows:	38 feet, 6 inches (from finished grade)	
Apartment Building	30 feet (from street level)	
	39 feet (from finished grade)	
Maximum Height Allowed:	75 Feet (Maximum Allowable within City)	
Parking Required:	<u>Provided</u>	<u>Minimum Required</u>
Garage Spaces:	195 spaces	195 spaces (1 ½ - 2 spaces per unit)
Surface (guest) Spaces:	47 spaces	50 (½ space per unit)

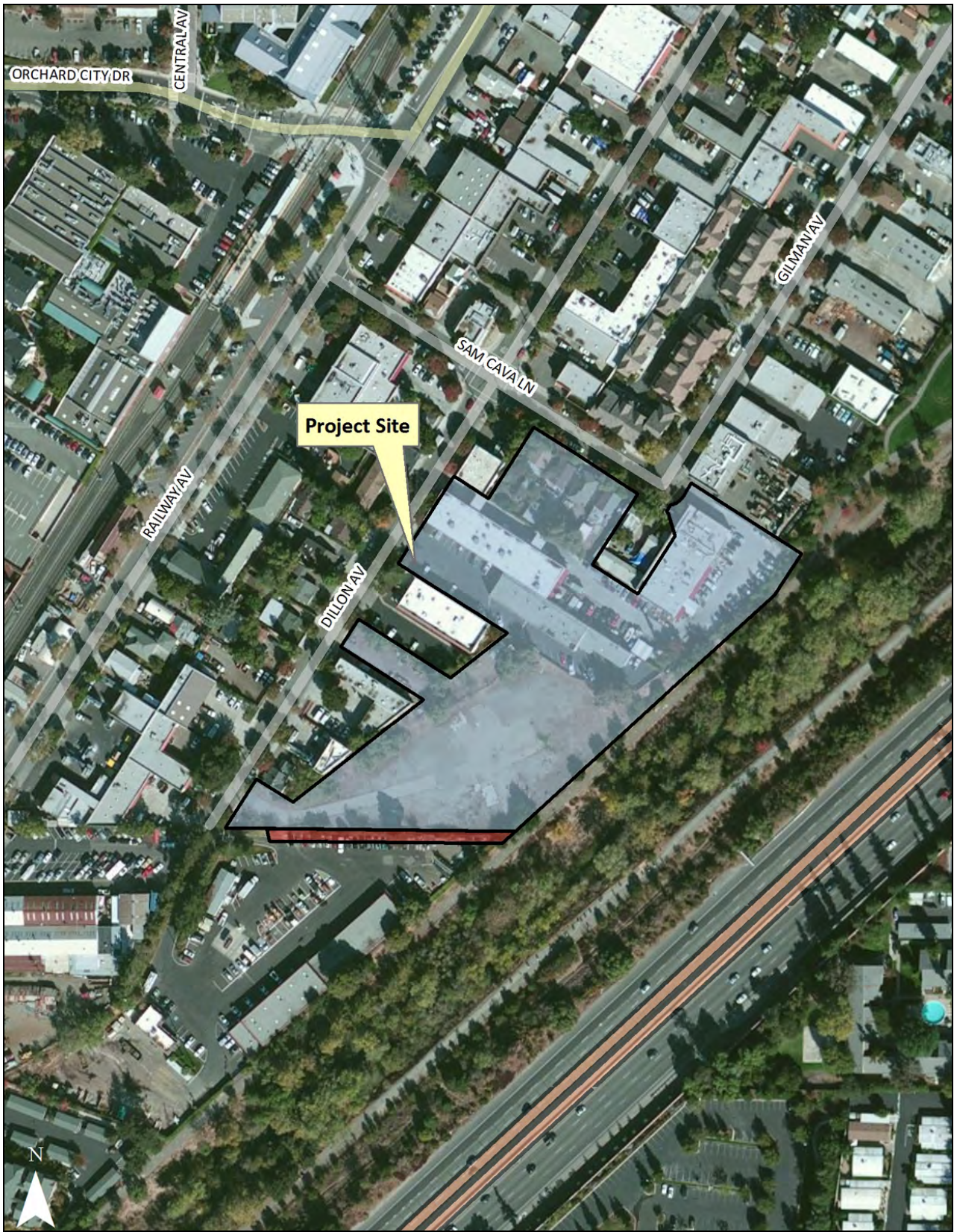
Project Entitlements: Required land use entitlements for the proposed project include a Planned Development Permit (approval of site configuration and architectural design), Vesting Tentative Subdivision Map (to create individual townhome lots and commonly owned lots), Tree Removal Permit (to allow removal of "protected trees"), and a Parking Modification Permit (to allow a minor reduction in parking).

Prior Environmental Document(s): On November 6, 2001, the City of Campbell adopted the Campbell General Plan and certified the Final Environmental Impact Report (EIR) (State Clearing House # 2001042063) for the project. The adopting City Council Resolution (reference Attachment 1 – CC Resolution No. 9940) for the EIR, summarizes the potentially significant environmental impacts that would be mitigated to a level less than significant with the identified mitigation measures as well as those environmental impacts determined to be significant and unavoidable.

Location of Prior Environmental Document(s): City of Campbell City Hall, Community Development Department, 70 N. First Street, Campbell, CA 95008.

Other public agencies whose approval is required: None

Location Map



Site Photographs

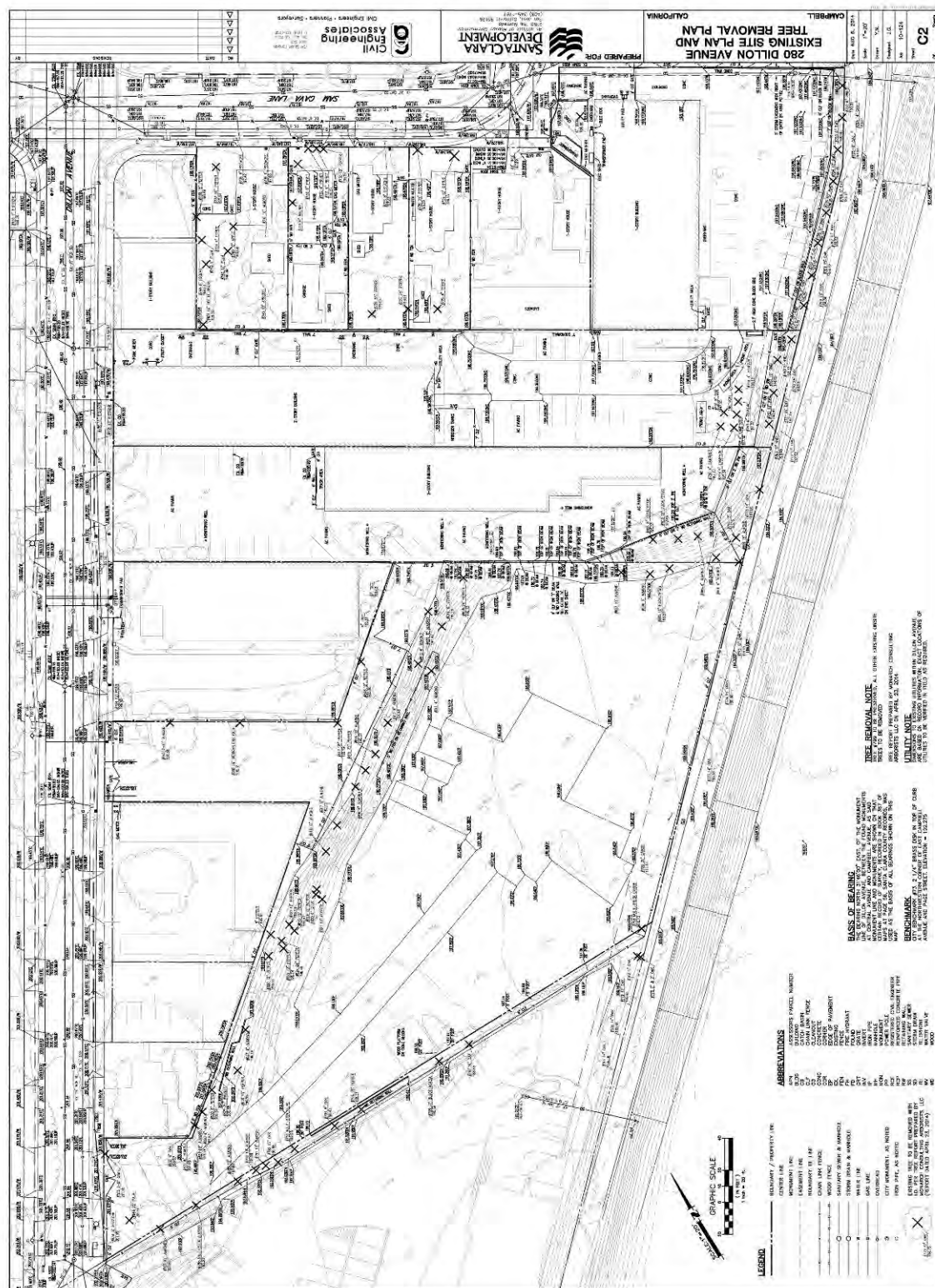


VIEW OF THE SITE LOOKING NORTHERLY



VIEW OF THE SITE LOOKING EASTERLY

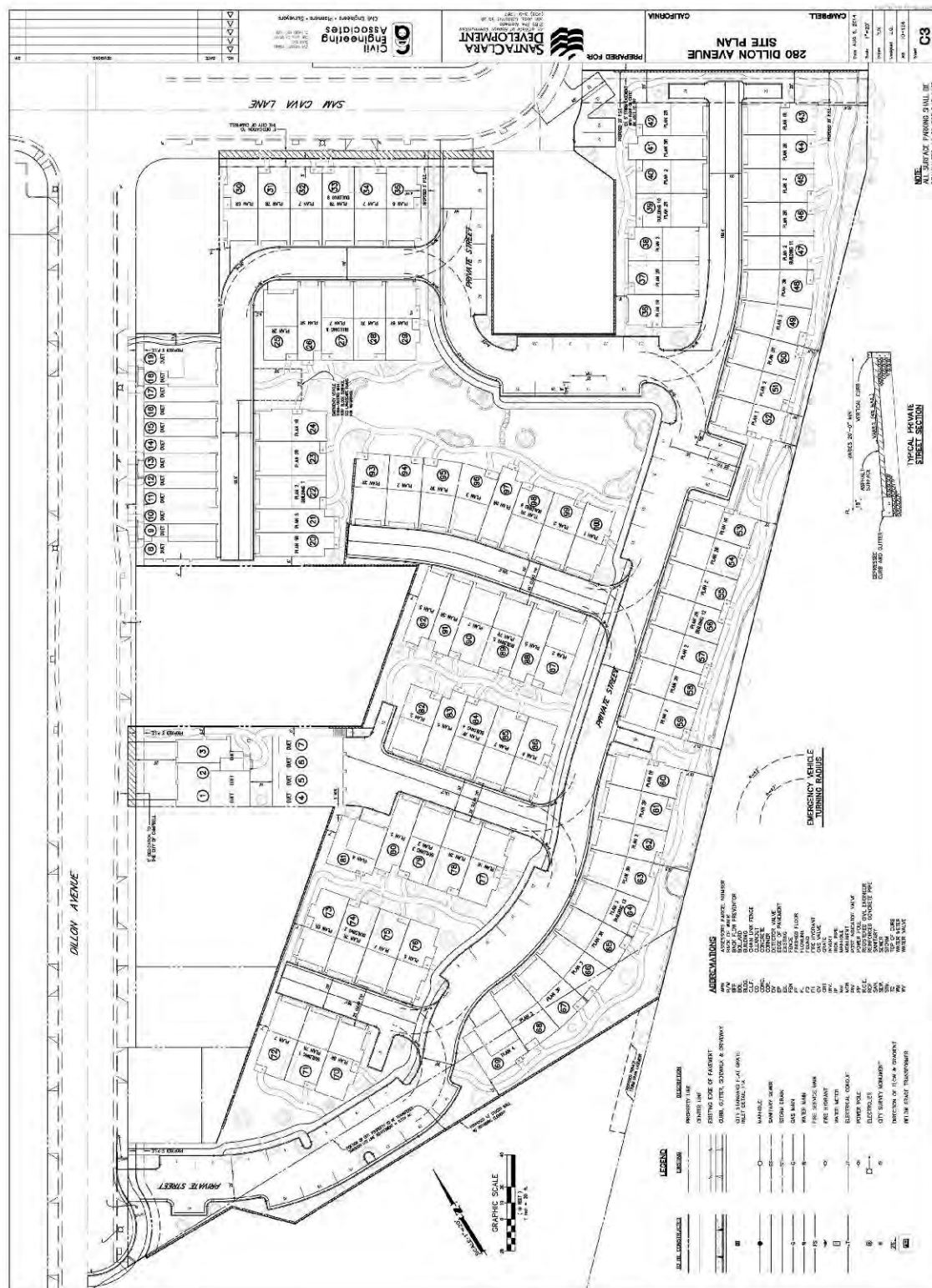
Existing Site Configuration



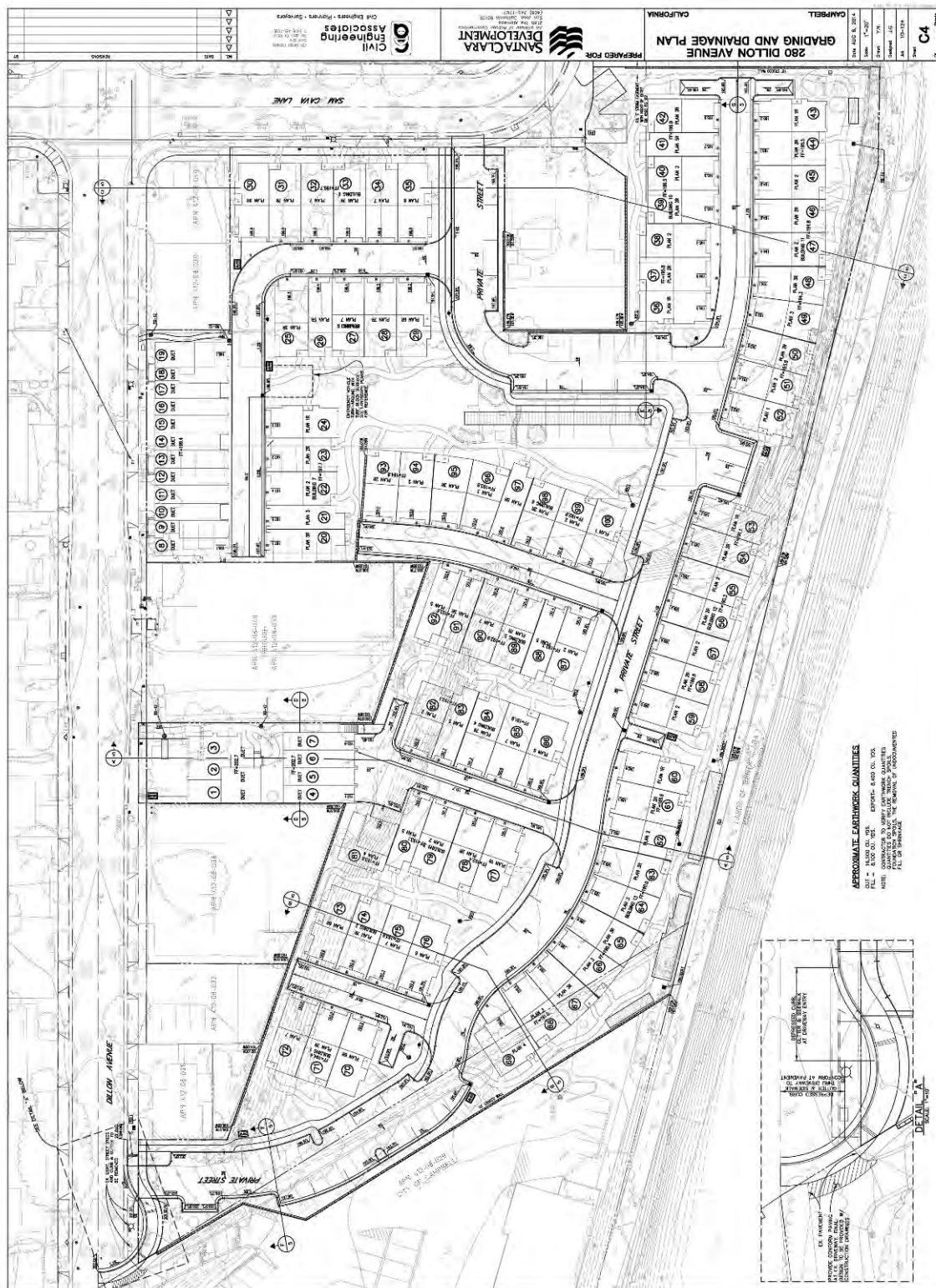
Tentative Vesting Subdivision Map



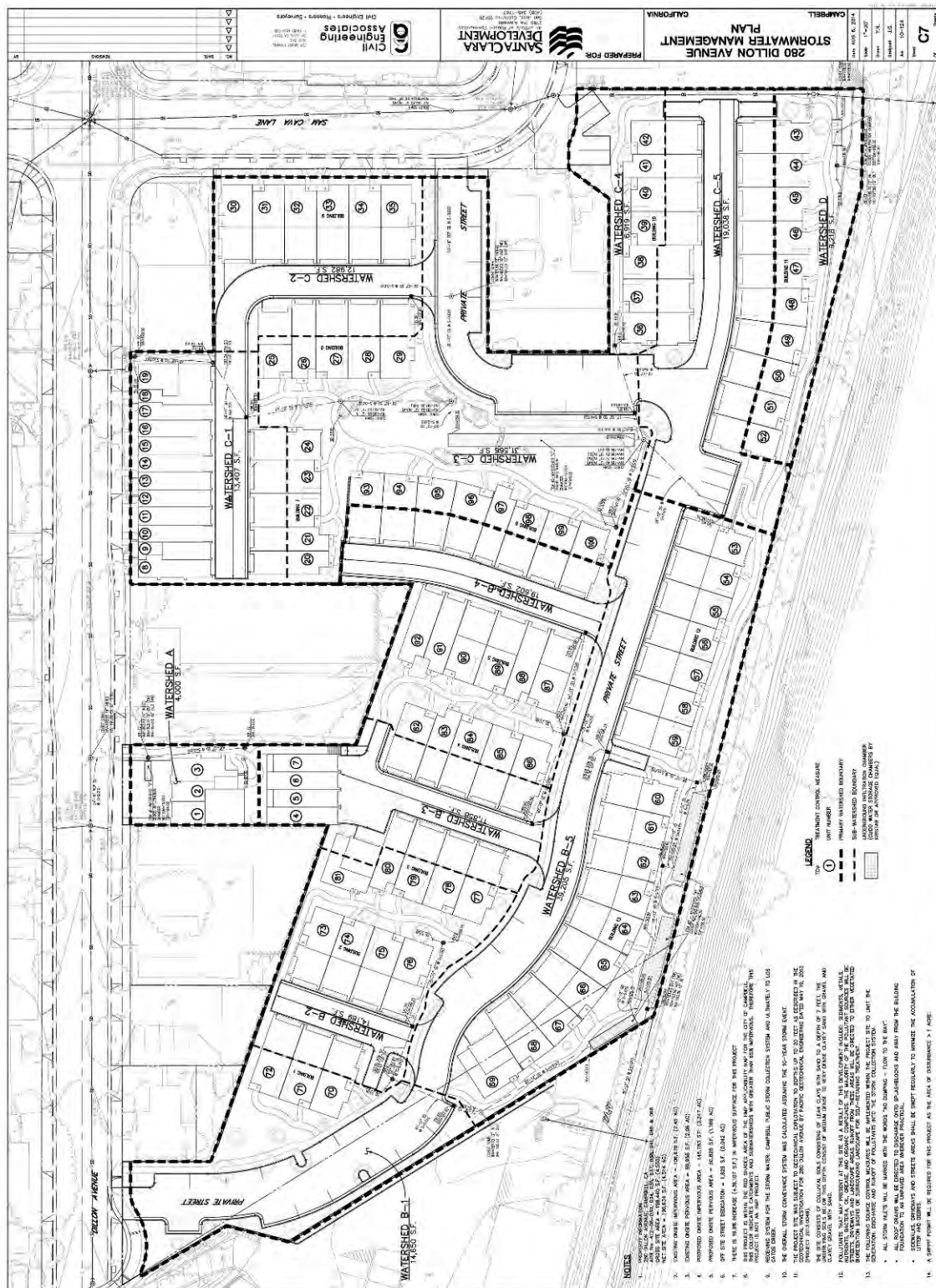
Preliminary Site Plan



Preliminary Grading and Drainage Plan



Preliminary Stormwater Treatment Plan



SATISFACTION OF PERFORMANCE STANDARDS

Provide the information demonstrating that the infill project satisfies the performance standards in Appendix M below. For mixed-use projects, the predominant use will determine which performance standards apply to the entire project.

- 1. Does the *non-residential* infill project include a renewable energy feature? If so, describe below. If not, explain below why it is not feasible to do so.**

Not applicable. The proposed project is a residential development.

- 2. If the project site is included on any list compiled pursuant to Section 65962.5 of the Government Code, either provide documentation of remediation or describe the recommendations provided in a preliminary endangerment assessment or comparable document that will be implemented as part of the project.**

The project site is not listed on the Hazardous Waste and Substances Sites List (available at http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm), compiled pursuant to Government Code Section 65962.5. However, boring and soil sampling conducted as of the project's Phase I Site Environmental Assessment revealed concentrations of lead, arsenic, total petroleum hydrocarbons (TPH), and Polychlorinated Biphenyls (PCBs), above environmental regulatory screening levels for residential land use and applicable State and Federal standards. The contamination was linked to historic on-site solid waste disposal (rusted can lids, metal pipes, other metal objects, glass bottles, sheet metal, metal conduit and broken chunks of reinforced concrete).

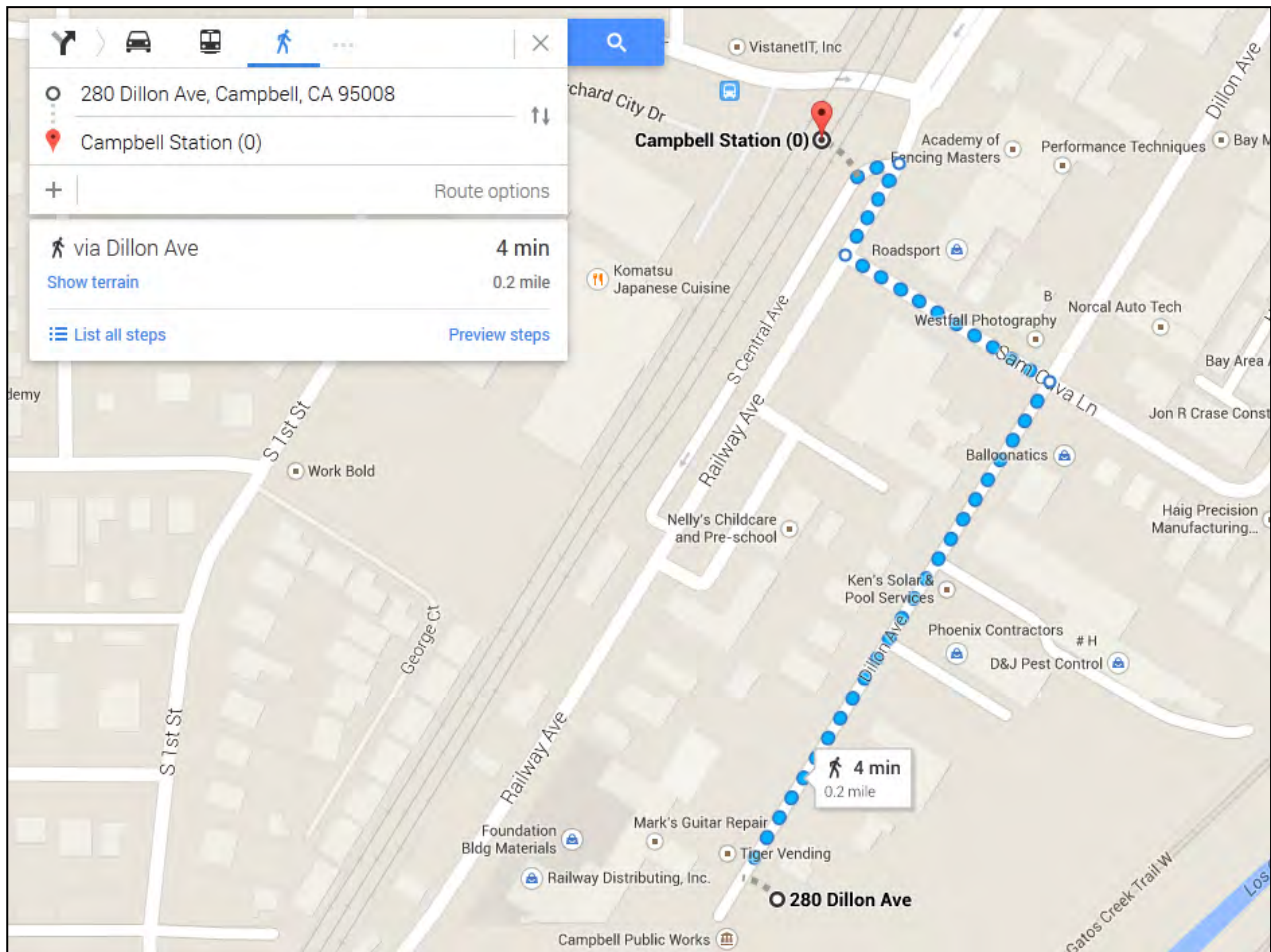
The project sponsor has prepared a remediation plan (reference Attachment 2) to excavate and remove the contaminated soil. The remediation is currently ongoing and is being conducted pursuant to the County of Santa Clara Voluntary Cleanup Program overseen by the Departmental of Environmental Health, which may be tracked through the California [Geotracker website](#).

- 3. If the infill project includes residential units located within 500 feet, or such distance that the local agency or local air district has determined is appropriate based on local conditions, a high volume roadway or other significant source of air pollution, as defined in Appendix M, describe the measures that the project will implement to protect public health. Such measures may include policies and standards identified in the local general plan, specific plans, zoning code or community risk reduction plan, or measures recommended in a health risk assessment, to promote the protection of public health. Identify the policies or standards, or refer to the site specific analysis, below. (Attach additional sheets if necessary.)**

The project site is located approximately 300 feet from California Highway 17. As discussed further in the Part 3 (Air Quality) of Environmental Impact Analysis, levels of toxic air contaminants (TACs) will be below acceptable levels established by the Bay Area Air Quality Management District (BAAQMD). As such, no specific measures are necessary to further protection of the public health.

4. For residential projects, the project satisfies which of the following?

- ☐ Located within a low vehicle travel area, as defined in Appendix M. (Attachment 3 - VMT Map.)
- ☒ Located within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor (reference map below):



- ☐ Consists of 100 or fewer units that are each affordable to low income households. (Attach evidence of legal commitment to ensure the continued availability and use of the housing units for lower income households, as defined in Section 50079.5 of the Health and Safety Code, for a period of at least 30 years, at monthly housing costs, as determined pursuant to Section 50053 of the Health and Safety Code.)

5. For commercial projects with a single building floor-plate below 50,000 square feet, the project satisfies which of the following?

- ☐ Located within a low vehicle travel area, as defined in Appendix M. (Attach VMT map.)
- ☐ The project is within one-half mile of 1800 dwelling units. (Attach map illustrating proximity to households.)

6. For *office building* projects, the project satisfies which of the following?

- ☐ Located within a low vehicle travel area, as defined in Appendix M. (Attach VMT map.)
- ☐ Located within ¼ mile of an existing major transit stop. (Attach map illustrating proximity to transit.)

7. For *school* projects, the project does all of the following:

- ☐ The project complies with the requirements in Sections 17213, 17213.1 and 17213.2 of the California Education Code.
- ☐ The project is an elementary school and is within one mile of 50% of the student population, or is a middle school or high school and is within two miles of 50% of the student population. Alternatively, the school is within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor. (Attach map and methodology.)
- ☐ The project provides parking and storage for bicycles and scooters

8. For *small walkable community* projects, the project must be a residential project that has a density of at least eight units to the acre or a commercial project with a floor area ratio of at least 0.5, or both.

Not applicable. The project is not a small walkable community project.

ENVIRONMENTAL IMPACT EVALUATION

This section describes the purpose of this infill environmental checklist. The checklist was developed by the Governor's Office of Planning and Research for general use in implementing the streamlined CEQA review for qualified infill projects as set forth in SB 226, signed by the Governor on October 4, 2011. This new streamlined option recognizes the benefits of infill development projects and provides flexibility in project design by basing eligibility on environmental performance rather than prescribing specific project characteristics. It also allows infill projects to avoid repeating analysis of environmental effects that have already been analyzed at a programmatic level.

This streamlined infill review applies to different types and sizes of projects, but the projects must be located within an incorporated city or other qualifying area. Additionally, the projects may include general plan amendments and zoning changes provided that the new effects are analyzed. This checklist is used to determine whether the effects of a specific project have been previously analyzed in a prior EIR for a planning level decision or if additional analysis is required. The following determinations are used in the checklist analysis for each effect.

No Impact: A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

Prior EIR Analysis: Analysis of the specific project level contributions to a significant effect previously analyzed need not be repeated. Instead, the checklist analysis shall be limited to: (A) environmental effects specific to the project or project site that were not addressed in the prior EIR or; (B) environmental effects that new information shows would be more significant than previously described (CEQA Guidelines §15183.3(d)(1)). Projects which are determined to have no impact or effects which were adequately analyzed in a prior EIR are exempt from further CEQA review.

Mitigated by Uniformly Applicable Development Standards: If an effect of the infill project was not previously analyzed or if an effect would be more significant than previously analyzed, the checklist can reference uniformly applicable development policies or standards which *substantially mitigate* that effect. Examples of uniformly applicable development policies include regulations governing construction activities, requirements in locally adopted building, grading, and storm water codes, design guidelines, requirements for protecting residents from air pollution sources such as high volume roadways and stationary sources, impact fee programs for public infrastructure and road improvements, requirements for reducing greenhouse gas emissions, and ordinances that protect urban trees and historic resources. A written finding is required to be adopted supporting this determination of the effect, but the project would be exempt from further CEQA review. Where applicable, specific sections of the Campbell Municipal Code (CMC) are cited.

Less than Significant with Mitigation/Significant Impact: If the infill project would result in new specific effects or more significant effects, and uniformly applicable development policies or standards would not substantially mitigate such effects, those effects are subject to CEQA review. If it is determined that the new specific effect(s) is less than significant or less than significant with mitigation it may result in a Negative Declaration or Mitigated Negative Declaration. If it is determined that the new specific effect(s) is potentially significant, it may result in an Infill EIR.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The infill project could potentially result in one or more of the following environmental effects, which would be less than significant with mitigation incorporated:

☐ Aesthetics	☐ Agricultural Resources	☒ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards/Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral/Energy Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Circulation	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed infill project WOULD NOT have any significant effects on the environment that either have not already been analyzed in a prior EIR or that are more significant than previously analyzed, or that uniformly applicable development policies would not substantially mitigate. Pursuant to Public Resources Code Section 21094.5, CEQA does not apply to such effects. A Notice of Determination (Section 15094) will be filed.
- ☐ I find that the proposed infill project will have effects that either have not been analyzed in a prior EIR, or are more significant than described in the prior EIR, and that no uniformly applicable development policies would substantially mitigate such effects. With respect to those effects that are subject to CEQA, I find that such effects WOULD NOT be significant and a NEGATIVE DECLARATION, or if the project is a Transit Priority Project a SUSTAINABLE COMMUNITIES ENVIRONMENTAL ASSESSMENT, will be prepared.
- ☒ I find that the proposed infill project will have effects that either have not been analyzed in a prior EIR, or are more significant than described in the prior EIR, and that no uniformly applicable development policies would substantially mitigate such effects. I find that although those effects could be significant, there will not be a significant effect in this case because revisions in the infill project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION, or if the project is a Transit Priority Project a SUSTAINABLE COMMUNITIES ENVIRONMENTAL ASSESSMENT, will be prepared
- ☐ I find that the proposed infill project would have effects that either have not been analyzed in a prior EIR, or are more significant than described in the prior EIR, and that no uniformly applicable development policies would substantially mitigate such effects. I find that those effects WOULD be significant, and an infill ENVIRONMENTAL IMPACT REPORT is required to analyze those effects that are subject to CEQA



Signature

August 29, 2014

Date

Daniel Fama, Associate Planner

Printed Name

City of Campbell

Agency

1. AESTHETICS

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☐	☒

(a-c) – No Impact: The project will alter the existing visual character of the site and its surroundings through demolition of existing structures and eventual development planned residential community. Although the Los Gatos Creek is not identified as a scenic vista, scenic resource, or view-corridor, its importance to the community and its adjacency to the creek was given special consideration. The project design is intended to compliment and respect to the creek corridor through appropriate building orientation, transparent fencing, and suitable landscape vegetation. As a result, the project would result in a substantial adverse effect on a scenic vista, or substantially damage scenic resources.

(d) – Substantially Mitigated by Uniformly Applicable Development Policies. The majority of the project site has very limited lighting. New site lighting is anticipated to include down-lit fixtures for new residences and freestanding lighting fixtures along the new public pathway and internal roadways. However, light and glare associated with new site lighting would be substantially mitigated by the Lighting Design Standards (CMC Sec. 21.18.090), which requires lighting to be designed and installed so that light rays are not emitted across property lines. This standard will be implemented through requirement of a photometric plan during building permit plan check.

2. AGRICULTURAL RESOURCES

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Programs of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land or timberland zoned Timberland Production?	☐	☐	☒	☐	☐
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐	☐
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐	☐

(a-e) – No Impact: The project site is not currently used for, nor zoned for, farmland or other agricultural or horticultural purpose. Neither the project site nor surrounding properties contain farmland or support agricultural activity that could be impacted by the project.

3. AIR QUALITY

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐	☐

Note: The following is excerpted from the 'Air Quality and Greenhouse Gas Technical Memorandum', prepared by Environmental Science Associates (ESA) for this project, and has been edited for brevity and clarity. The complete document, included tables and figures, is included as **Attachment 3**.

Under amendments to the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has classified air basins or portions thereof as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the national standards have been achieved. The California CAA, which is patterned after the federal CAA, also requires areas to be designated as "attainment" or "non-attainment" for the state standards. Thus, areas in California have two sets of (non) attainment designations: one set with respect to the national standards and one set with respect to the state standards. The San Francisco Bay Area Air Basin (Bay Area) is currently designated as a nonattainment area for state and national ozone standards, state particulate matter (PM₁₀ and PM_{2.5}) standards, and federal PM_{2.5} (24-hour) standard.

The Bay Area Air Quality Management District (BAAQMD) is the regional air quality authority in the project area. The most recently adopted air quality plan for the San Francisco Bay Area is the Bay

Area 2010 Clean Air Plan (BAAQMD, 2010). The 2010 Clean Air Plan (2010 CAP) is an update to the BAAQMD 2005 Ozone Strategy to comply with State air quality planning requirements. The 2010 CAP serves as a roadmap showing how the San Francisco Bay Area will achieve compliance with the State one-hour ozone standard as expeditiously as practicable, and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The 2010 CAP also serves as a multi-pollutant air quality plan to protect public health and the climate. The control strategy contained in the 2010 CAP includes revised, updated, and new measures in the three traditional control measure categories, including stationary source measures, mobile source measures, and transportation control measures. In addition, the 2010 CAP identifies two new categories of control measures, including land use and local impact measures, and energy and climate measures.

The air quality analysis below uses the previously-adopted 2011 thresholds of the BAAQMD to determine the potential impacts of the project. While the significance thresholds adopted by BAAQMD in 2011 are not currently recommended by the BAAQMD (based on court decision), these thresholds are based on substantial evidence identified in BAAQMD's 2009 Justification Report and are therefore used within this document. For the purposes of this air quality analysis, sensitive receptors are defined as facilities and land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and daycare centers. Residential areas are also considered sensitive to poor air quality because people usually stay home for extended periods of time, which results in greater exposure to ambient air quality.

(a) – Less than Significant with Mitigation: The 2010 CAP control strategy includes stationary source control measures to be implemented through BAAQMD regulations; mobile source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the Metropolitan Transportation Commission (MTC), local governments, transit agencies, and others. The 2010 CAP also represents the Bay Area's most recent assessment of the region's strategy to attain the State one-hour ozone standard.

BAAQMD guidance states that "if approval of a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation, the project would be considered consistent with the 2010 CAP." As indicated in the discussion below, the project would not result in significant and unavoidable air quality impacts. Construction-related toxic air containments (TAC) and fugitive dust emissions would be less than significant with implementation of Mitigation Measures *AIR-1* and *AIR-2*. Long-term operational emissions would be less than significant without mitigation. As a result, the project would not conflict with or obstruct implementation of the applicable air quality plan, with incorporation of the appropriate mitigation measures.

(b) – Less than Significant with Mitigation: The project would result in the generation of criteria pollutants and TACs during short-term construction activities. In regards to long-term operations, the proposed project would result in criteria pollutant emissions from sources including on-road vehicles, onsite area and energy sources (e.g., natural gas combustion for space and water heating, landscape maintenance, use of consumer products such as hairsprays, deodorants, cleaning products, etc.). However, since the proposed project consists of development of only residential land uses, it would not be a source of substantial TACs. These potential impacts are assessed below.

Construction – Criteria Air Pollutants. The project includes demolition of approximately 26,281 square-feet of existing buildings on-site and construction of the new 81 townhouses, 19 apartments, and associated parking. Project related demolition, soil transport, grading, and other construction activities at the project site may cause wind-blown dust that could generate particulate matter into the atmosphere. Fugitive dust includes not only PM10 and PM2.5 but also larger particles as well that can represent a nuisance impact. For mitigation of fugitive dust emissions, the BAAQMD recommends using specific best management practices, which has been a practical and effective approach to control fugitive dust emissions. The guidelines note that individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent and conclude that projects that implement construction best management practices would reduce fugitive dust emissions to a less than significant level. To ensure implementation of best management practices (BMPs) they are identified herein as a mitigation measure (*AIR-1*)

Project-related construction would generate air emissions through the use of heavy-duty construction equipment, from vehicle trips hauling materials, and from construction workers traveling to and from the project site. Mobile source emissions would be generated from the use of construction equipment such as excavators, bulldozers, wheeled loaders, and fork lifts. During the finishing phase, paving operations and the application of asphalt, architectural coatings (i.e., paints) and other building materials would release reactive organic gases (ROG). The assessment of construction air quality impacts considers each of these sources, and recognizes that construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions.

The CalEEMod model was used to quantify construction emissions associated with off-road equipment, paving, architectural coatings, haul trucks associated with demolition, on-road worker vehicle emissions, and vendor delivery trips. Project construction was assumed to occur from June 2015 through July 2016, based on the default active days in CalEEMod. The estimated emissions consider the following basic construction phases: demolition; excavation/grading; building construction; asphalt paving; and application of architectural coatings. Based on the modeling, the maximum average daily regional emissions would not exceed the BAAQMD daily significance thresholds during construction. Thus, the proposed project would have a less than significant impact in relation to regional construction emissions.

Construction – Toxic Air Contaminants and PM2.5. Project construction activities would produce diesel particulate matter (DPM) and PM2.5 emissions due to combustion equipment such as loaders, backhoes, and haul truck trips. These emissions could result in elevated concentrations of DPM and PM2.5 at nearby receptors. These elevated concentrations could lead to an increase in the risk of cancer or other health impacts. Consequently, a health risk assessment was performed to determine the extent of increased cancer risks and hazard indices at the maximally exposed receptors. The health risk assessment was based on recommended methodology of Office of Environmental of Health Hazard Assessment (OEHHA) and adopted by BAAQMD. The cancer risk to nearby residential receptors assumes exposure would occur 8 hours per day, five days per week, to account for the active construction duration. Additionally, cancer risk estimates also incorporate new age sensitivity factors and daily breathing rates recommended by OEHHA (2012). This approach provides updated calculation procedures of the BAAQMD that factor in the increased susceptibility of infants and children to carcinogens as compared to adults.

The maximally exposed receptor would be an adjacent residence to the project on Sam Cava Lane. The ISCST3 model was used to estimate maximum downwind concentrations and potential health risk at sensitive receptors resulting from construction activities. The incremental cancer risk at the maximum exposed residential receptor of 27 in one million (assuming child risk) would exceed the BAAQMD threshold of 10 in a million without mitigation. With incorporation of mitigation, the project would result in incremental cancer risk of 4 in one million. The unmitigated and mitigated chronic health index would be 0.01 and 0.002 at the MEI (maximally exposed individual), respectively, which would be below the BAAQMD threshold of 1. Finally, the maximum annual PM_{2.5} unmitigated and mitigated concentrations would be 0.27 µg/m³ and 0.041 µg/m³ for the MEI, respectively, which is below the BAAQMD threshold of 0.3 µg/m³. Project health risk impacts would thus be less than significant after mitigation.

Notably, unmitigated demolition activities could result in airborne entrainment of asbestos, a TAC, particularly where structures built prior to 1980 would be demolished. However, these materials would be removed in accordance with the procedures specified by Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing) of BAAQMD's regulations; therefore, with adherence to regulatory requirements, asbestos would not be emitted to any substantial degree during demolition. Implementation of the Mitigation Measures *AIR-1* and *AIR-2* would ensure that project-generated fugitive dust and exhaust (criteria pollutant and TACs) during construction would be reduced to a less than significant level.

Operations – Criteria Air Pollutants. Project site development would result in an increase in criteria air pollutant and precursor emissions, including ROG, NO_x, PM₁₀, and PM_{2.5} from a variety of emissions sources, including onsite area and energy sources and mobile on-road sources. Exhaust emissions from on-road vehicle traffic associated with the existing land uses on the project site as well as the proposed project development were calculated using the latest version of the CalEEMod program, which includes the updated EMFAC2011 emission factors for on-road vehicles. Project-related net operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5} would not exceed the BAAQMD significance thresholds during operations, and thus, the project would have a less than significant impact in relation to regional operational emissions.

In regards to localized CO concentrations, according to the 2011 thresholds of the BAAQMD, a project would result in a less-than-significant impact if the following screening criteria are met (1) The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans; (2) the project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and (3) the project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The project would generate minimal new traffic trips and would comply with these screening criteria. Based on the BAAQMD's criteria, project-related traffic would not exceed CO standards and therefore, no further analysis was conducted for CO impacts. This impact would be considered less than significant on a project-level and cumulative basis.

Mitigation Measures: The following mitigation measures will be incorporated into the project approval:

- *Mitigation Measure AIR-1:* The project applicant shall ensure that construction plans include the BAAQMD Best Management Practices for fugitive dust control. The following will be required for all construction activities within the project area. These measures will reduce fugitive dust emissions primarily during soil movement, grading and demolition activities, but also during vehicle and equipment movement on unpaved project sites:
 - a. 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. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
 - c. All visible mud or dirt track-out 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.
 - d. All vehicle speeds on unpaved roads shall be limited to 15 mph.
 - e. All streets, 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.
 - f. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne tox.ics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.
 - g. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
 - h. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
- *Mitigation Measure AIR-2:* The project applicant shall ensure that construction contract specifications include a requirement that all off-road diesel-powered construction equipment used for project improvements be equipped with a Level3 Verified Diesel Emissions Control (VDEC).

(c) – No Impact: The project would result in the generation of criteria pollutants during short-term construction activities. In regards to long-term operations, the project would result in criteria pollutant emissions primarily from motor vehicles and area sources. According to the BAAQMD, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards for

regional criteria pollutants. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. There are many projects throughout San Francisco Bay area that have been identified as having significant and unavoidable operational and construction-related regional pollutant impacts. Consequently, for assessment of cumulative regional pollutant impacts, BAAQMD has developed a methodology of assessing whether a project would have a cumulatively considerable contribution. According to the BAAQMD Justification Report, if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions (BAAQMD, 2009).

As described above, criteria pollutant emissions generated by short-term construction and long-term operations of the project would not exceed the BAAQMD significance thresholds. Thus, the project would have a less than significant cumulative impact in relation to regional emissions. In addition, project-related traffic would not exceed CO standards and would result in a less than significant cumulative impact in relation to localized CO.

(d) – Less than Significant with Mitigation:

Construction and Operations. As indicated in the discussion of above, the project would not result in significant and unavoidable localized air quality impacts associated with TACs, CO, or fugitive dust. Construction TAC and fugitive dust emissions would be less than significant with implementation of Mitigation Measures *AIR-1* and *AIR-2*. The project consists of development of residences and would not be a source of substantial TACs that would affect sensitive receptors in the area. Long-term operational emissions of TACs and CO would be less than significant without mitigation.

Land Use Compatibility for Proposed Sensitive Receptors. Unlike ozone and other regional pollutants, TACs are a localized pollution problem. TACs produced at distant locations do not readily combine to create concentrations at any single location that would cause health risks. The BAAQMD method for determining health risk requires the review of health risk from permitted sources, railroads, and major streets in the vicinity of a project site (i.e., within 1,000 feet of the proposed new sensitive residential receptors on the project site), then adding the project operational impacts to determine whether the cumulative health risk thresholds are exceeded. BAAQMD has developed a geo-referenced database of permitted and Highway TAC emissions sources throughout San Francisco Bay Area for estimating health risks to new sensitive receptors from existing permitted sources. Highway 17 is approximately 300 feet from the project site. Emissions from locomotives travelling on the nearby railroad were estimated based on EPA emission factors, and future emissions during the project build-out year were estimated based on ARB's assumption that, because of DPM regulations on locomotives and because of sulfur reductions in the fuel, emissions will decrease by 36% from the base year of 2000.

Unlike for a project level assessment, for the cumulative assessment the risks from all sources within 1,000 feet of project sensitive receptors are summed and compared to a cumulative significance threshold. Notably, no onsite stationary sources of TACs are assumed and project-generated traffic would be negligible. The cumulative MEI is assumed to be a proposed residence exposed to maximum risk from all sources, which would be a conservative assessment. Health impacts on the project sensitive receptors from existing sources (permitted sources, railroad, and Highway 17) in the area would have a cumulative impact below the BAAQMD thresholds for cancer risk, chronic health hazards, and PM_{2.5} concentrations.

The cumulative cancer risk from all sources within 1,000 feet of proposed sensitive receptors would be approximately 53 in one million, which would be below the BAAQMD cumulative threshold of 100 in one million and would be less than significant. The cumulative hazard index from all such sources would be approximately 0.06, which is well below the significance threshold of 10 and would be less than significant. The cumulative PM_{2.5} concentration would be approximately 0.3 µg/m³, which would be below the significance threshold of 0.8 µg/m³ and hence is considered less than significant.

(d) – No Impact: BAAQMD has identified typical sources of odor in the CEQA Air Quality Guidelines, a few examples of which include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally produced odors often exceeds regulatory thresholds. The project would not include uses that have been identified by BAAQMD as potential sources of objectionable odors; this is a less than significant impact.

4. BIOLOGICAL RESOURCES

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat	☐	☐	☒	☐	☐

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?					

Note: Portions of the following are excerpted from the 'Biological Evaluation of the Dillon Property Project Site', prepared by Live Oak Associates, Inc., for this project, and have been edited for brevity and clarity. The complete document, included tables and figures, is included as **Attachment 4**.

(a,d) – Less than Significant with Mitigation: According to the California Natural Diversity Database and the City's General Plan, no species identified as a candidate, sensitive or special status species, or habitat for such species are known to occupy the project site. However, due to the site's adjacency to the Los Gatos Creek, a biological evaluation was prepared for the project. The evaluation determined that most special status animal species would not occur on the site, or be unlikely to occur on the site, because habitats on the site are not suitable for them, the site is located outside of the species' known range, and/or there are no known occurrences in the vicinity of the site. However, a few special status species have been documented in the immediate project vicinity, including the California Red-legged Frog (Federally Threatened/State Species of Concern), Western Pond Turtle (State Species of Concern), Cooper's Hawk, Townsend's Big-eared Bat, Pallid Bat and other bat species, tree-nesting raptors and other nesting migratory birds. Of these, California Red-legged Frog and Western Pond Turtle would not be impacted as the project site supports no habitat for these species. As discussed below potential impacts to Cooper's Hawk, Townsend's Big-eared Bat, Pallid Bat and other bat species, and tree-nesting raptors and other nesting migratory birds, could occur as a result of the project. Such impacts would be less than significant with mitigation incorporated.

Cooper's Hawk. Cooper's hawks are known to occur in the project vicinity within the Los Gatos Creek riparian corridor. This species is not a special status species although it, along with all other raptors, is protected under state and federal law and any project impacts that resulted in harm or mortality to individuals, or in nest failure, would be a violation of such laws and would also be considered a significant impact under CEQA. This species likely occurs in the Los Gatos Creek corridor adjacent to the site from time to time and it may occasionally prey on songbirds within the landscaped areas of the site, although the prey base for this species is very marginal on the site due to the high level of development. The project is expected to result in a less-than-significant impact on foraging habitat for this species as this habitat is very minimal on the site and very abundant in the region. Potentially this species may nest in riparian trees adjacent to the site, or in large trees occurring in the landscaped areas of the site. Should Cooper's hawks, or any raptor species, nest in trees on or adjacent to the site prior to project demolition, tree removal or other project-related activities, those activities could result in nest abandonment and mortality to young, and this would be considered a violation of the law and a significant impact under CEQA. With incorporation of Mitigation Measure *BIO-1*, the potential of harm or mortality to nesting raptors and migratory birds would be precluded.

Tree-Nesting Raptors and Other Nesting Migratory Birds. Many large trees and shrubs occur on and adjacent to the site which could be used by tree-nesting raptors and other migratory birds for breeding, although the likelihood of raptors nesting on the site is considered very low due to the urban environment and lack of suitable prey base. Most nesting migratory birds, regardless of their status, are protected by state and federal laws. Therefore, development activities that adversely affect the nesting success of raptors and other migratory birds (i.e., grading and tree removal) or that result in the mortality of individual birds constitute a violation of state and federal laws. With incorporation of mitigation measure *BIO-1*, such potential impacts would be less than significant.

Townsend's Big-eared Bat, Pallid Bat and Other Bat Species. Both Townsend's big-eared bat which is currently a candidate for listing as threatened under the California Endangered Species Act; and pallid bat, a state species of concern, have been documented in the project region in California Natural Diversity Database (CNDDB), and these bats along with other non-special status bat species that occur regionally, may forage within the adjacent Los Gatos Creek corridor as well as on the site from time to time. These bats are protected under the California Fish and Wildlife Code (Sections 2000, 4150, and Title 14), and, in the case of Townsend's bats, under the California Endangered Species Act while it is under review as a candidate for listing.

Although loss of foraging habitat for these species would be a less-than-significant impact of the project under CEQA, several special status and non-special status bat species that occur regionally, are known to roost in vacant buildings. Although currently none of the structures of the site provide habitat for these species; in the future, prior to demolition activities, should the vacant homes along Sam Cava Lane not be maintained in a closed up condition, potentially bats could gain entry and use these dwellings for roosting habitat. If bats are roosting in these homes at the time of demolition, especially if demolition occurs during the winter torpor (hibernation) period, which is generally accepted to be mid-October through the end of February, or during the maternity season, which is generally accepted to be mid-April through the end of August, their demolition during those seasonal periods could result in harm or mortality to these individuals and their young, and this would be considered a violation of the law and a significant impact under CEQA. The other structures on the site, i.e. the commercial and industrial buildings, lack openings and crevices to allow for bat egress, and therefore have no potential as roosting habitat for bats; therefore, demolition of those buildings is not expected to result in any impacts to bats. Mitigation measure *BIO-2* would ensure to ensure that no bats are harmed or killed as a result of the project.

Mitigation Measures: The following mitigation measures will be incorporated into the project approval:

- *Mitigation Measure BIO-1:* Project-related activities that occur during the breeding season could be constrained in the vicinity of any active nests. If tree removal or ground disturbance activities are scheduled to commence during the breeding season (February 1st through August 31st), pre-construction nesting bird surveys should be conducted by a qualified biologist to identify possible nesting activity within 15 days prior to such activities. A construction-free buffer of suitable dimensions must be established around any active raptor and migratory bird nest (up to 250 feet, depending on the location and species) for the duration of the project, or until it has been determined that the chicks have fledged and are foraging independently from their parents.

- *Mitigation Measure BIO-2:* The following mitigation measures will be implemented to ensure that no bats are harmed or killed as a result of the project.
 - a. Within 30 days prior to the demolition of the four homes along Sam Cava Lane, and their associated outbuildings, a pre-construction survey will be conducted to confirm that the existing conditions of the homes have not changed. If existing conditions have not changed, no further surveys will be required.
 - b. If existing conditions have changed and the biologist observes that one or more structures have openings that could provide entry for bats, then a more detailed bat survey will be conducted by a qualified biologist within all structures that provide potential openings for bats to enter. If no bats are found, then no further mitigations will be required. If roosting bats are found to be present, the following additional measures will be required:
 - c. If a non-breeding bat colony is found within any of the structures, the individuals will be humanely evicted via the partial dismantlement of the buildings prior to demolition under the direction of a qualified bat specialist to ensure that no harm or “take” would occur to any bats as a result of demolition activities.
 - d. If a maternity colony is detected in the structures, then a construction-free buffer should be established around the structure as determined by the biologist and remain in place until it has been determined that the nursery is no longer active. Demolition should preferably be done between March 1st and April 15th or August 15th and October 15th to avoid interfering with an active nursery.

(b-c) – Substantially Mitigated by Uniformly Applicable Development Policies: The Los Gatos Creek riparian corridor occurs adjacent to the site, separated from the site by a cyclone fence and by the Los Gatos Creek trail, a paved recreational trail that is approximately 14 feet wide along the top of the creek bank. The creek in this location is approximately 120 feet wide between the tops of the banks, between 15 and 20 feet in depth, and has been straightened and channelized.. The creek supports mature riparian vegetation including trees, shrubs and an annual grassland understory. Another trail occurs on the opposite side of the creek along the top of the bank, and beyond that is Highway 17, which is approximately 150 feet across and eight lanes of traffic in this location.

Native chinook salmon and steelhead, as well as other native fish species are known to occur in the creek. The creek also likely supports several species of common amphibians, such as Pacific tree frogs and western toads; and reptiles such as the western pond turtle, a California Species of Concern. Numerous small mammals also likely occur in the creek corridor from time to time including Virginia opossum, raccoon, and striped skunk.

The proposed project will require grading, excavation, and vegetation removal, thereby resulting in the project site becoming vulnerable to sheet, rill or gully erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek/river beds, canals, and adjacent wetlands.

To avoid or minimize sedimentation to offsite waters, the applicant is required to comply with comply with standard erosion control measures, including preparation of an erosion control plan that

employ best management practices (BMPs), develop a Storm Water Pollution Prevention Plan (SWPPP) per State Water Quality Control Board Stormwater Permit, conform with City's stormwater and grading requirements (CMC Sec. 20.80.020 and 21.16.100), and obtain all necessary permits. As a result, potential impacts to downstream waters from erosion and polluted stormwater runoff, that could also affect riparian habitats, will be substantially mitigated.

(e) – Substantially Mitigated by Uniformly Applicable Development Policies: As part of the proposed development, the project will require removal of almost all on-site trees. A tree survey prepared for the project identified approximately 125 trees to be removed, of which approximately 30 will require approval of a Tree Removal Permit (reference Attachment 5). The City's Tree Protection Ordinance (CMC 21.32) requires a permit to remove any tree 12-inches in diameter or greater (with the exception of fruit and Eucalyptus trees). The tree survey indicates that the vast majority of the trees are of a fair to poor quality and are insignificant. Existing live oak trees along the creek trail within Water District property, as well live oak and redwood trees on the project site directly adjacent to the creek trail would not be removed. However, as required by CMC 21.32, all "protected trees" must be replaced with at a one-to-one ratio. The preliminary landscaping and irrigation plans depict a comprehensive landscaping scheme for the project site, showing planting of the required trees. As such, the potential tree loss would be substantially mitigated by uniformly applicable development policies, and would not conflict with the City's Tree Protection Ordinance.

(f) – No Impact: No adopted Habitat Conservation Plan, Natural Community Conservation Plan or approved local, regional or state habitat conservation plans apply to the project or the project site.

5. CULTURAL RESOURCES

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?	☐	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?	☐	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☐	☒

(a) – No Impact: The project site does not contain known historical resources as defined in §15064.5 of the CEQA Guidelines nor is any property within the project site identified as historically significant or potentially historical significantly by the Campbell Historic Resource Inventory (HRI).

(b-c) – Analyzed in Prior EIR: The Campbell General Plan EIR recognized that construction activity could result in the exposure of undocumented paleontological and archaeological resources (Impact CULT-1, Pg. 150). This potential impact was mitigated to a less than a significant level through incorporation of the following General Plan Strategy (CNR-1.1b). The requirement to properly handle any discovered archeological or paleontological resources will be incorporated into the project's conditions of approval.

Strategy CNR-1.1b: Archaeological Resources: In accordance with CEQA and the State Public Resources Code, require the discontinuation of all work in the immediate vicinity and the preparation of a resource mitigation plan and monitoring program by a licensed archaeologist if archaeological resources are found on any sites within the City.

(d) – Substantially Mitigated by Uniformly Applicable Development Policies: No human remains are known to exist on the project site. However, should human remains be discovered during excavation or construction, such remains shall be handled pursuant to § 7050.5 of the California Health and Safety Code and § 5097.94 of the California Public Resources Code. Specifically, in the event a human burial or skeletal element is identified during excavation or construction, work in that location shall stop immediately until the find can be properly treated. The Santa Clara County Coroner shall be notified and shall make a determination as to whether remains are Native American in origin and take such actions as required by law.

6. GEOLOGY AND SOILS

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☐	☐	☒
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☐	☒
iv. Landslides?	☐	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐	☐

(a,c-d) – Substantially Mitigated by Uniformly Applicable Development Policies: The project site is located within the seismically active San Francisco Bay Area. According to maps prepared under the Alquist-Priolo Earthquake Fault Zone Act, there are no zoned active faults within the City of Campbell. Therefore, ground rupture is not likely to occur at the site. According to the State Seismic Hazard Zones Map, the project site is not located in any hazard zone and therefore does not have the potential for liquefaction or earthquake-induced landslides. However, the nearest major earthquake faults are the Monte Vista Shannon Fault, San Andreas Fault, the Hayward-Rogers Creek Fault and the Calaveras Fault, all of which pose the greatest earthquake threat because of their high quake potential. The project will likely be subjected to at least one moderate to severe earthquake that will cause moderate to severe ground shaking during the useful life of the proposed residential buildings. Ground shaking on the site could damage buildings, roads and utilities.

As required by the CMC Sec. 21.18.130 all new development shall conform to the California Building Code provisions regarding engineering and geotechnical analysis. This project will require preparation of a geotechnical report, the conclusions and recommendations of which shall become the standards for review of the construction drawings for a building permit. A draft geotechnical report has been prepared for the report. Conformance with the recommendations of the draft geotechnical report for the project (reference Attachment 6) will substantially mitigate the potential for seismic damage and geologic instability and risk to future occupants.

(b) – No Impact: The potential for unstable soil conditions and erosion would not be significant because the project will be required to comply with the recommendations of the geotechnical analysis, as noted above. Measures to control construction dust, as discussed in Mitigation Measure *AIR - 1*, will also mitigate for wind-blown erosion.

(e) – No Impact: The project would not involve the use of septic tanks or alternative waste water disposal systems.

7. GREENHOUSE GAS EMISSIONS

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐	☐
b) Conflict with an adopted plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐	☐

Note: The following is excerpted from the 'Air Quality and Greenhouse Gas Technical Memorandum', prepared by Environmental Science Associates (ESA) for this project, and has been edited for brevity and clarity. The complete document, included tables and figures, is included as **Attachment 3**.

"Global warming" and "global climate change" are the terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its projected continuation. Increases in greenhouse gas (GHG) concentrations in the earth's atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature. Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be enhanced. CO₂, CH₄, and N₂O occur naturally, and are also generated through human activity. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with agricultural practices and landfills.

BAAQMD and the California Air Pollution Control Officers Association (CAPCOA) consider GHG impacts to be exclusively cumulative impacts (BAAQMD, 2012; CAPCOA, 2008); therefore, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere. This analysis uses both a quantitative and a qualitative approach. This analysis considers that, because the quantifiable thresholds developed by BAAQMD in its 2009 Justification Report were formulated based on AB 32 and California Climate Change Scoping Plan reduction targets for which its set of strategies were developed to reduce GHG emissions statewide, a project cannot exceed a numeric BAAQMD threshold without also conflicting with an applicable plan, policy, or regulation adopted for the purpose

of reducing the emissions of GHGs (the state Climate Change Scoping Plan). Therefore, if a project exceeds a numeric threshold and results in a significant cumulative impact, it would also result in a significant cumulative impact with respect to plan, policy, or regulation consistency, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

Separate thresholds of significance are established for operational emissions from stationary sources (such as generators, furnaces, and boilers) and non-stationary sources (such as on-road vehicles). As no threshold has been established for construction-related emissions, the operational emissions thresholds are applied in this analysis. The threshold for stationary sources is 10,000 metric tons of CO₂e per year (i.e., emissions above this level may be considered significant). For non-stationary sources, three separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be considered significant); or
- 1,100 metric tons of CO₂e per year (i.e., emissions above this level may be considered significant); or
- 4.6 metric tons of CO₂e per service population per year (i.e., emissions above this level may be considered significant). (Service population is the sum of residents plus employees expected for a development project.)

The quantitative threshold of 1,100 metric tons of CO₂e annually proposed by BAAQMD in its 2009 Justification Report is applied to this analysis. If the project construction or operational GHG emissions would exceed this threshold then, consistent with BAAQMD Guidelines, it would be considered to have a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact on climate change.

GHG emissions resulting from the project were estimated using CalEEMod version 2013.2.2. Construction emissions were estimated for equipment and truck exhaust and construction worker vehicles. In regards to operations, vehicle trips assumed default trip lengths for urban land uses, which are embedded in CalEEMod. The model makes adjustments for implementation of Pavley vehicle standards and Low Carbon Fuel Standards. Area and indirect sources associated with project operations would primarily result from electrical usage, water and wastewater transport (the energy used to pump water and wastewater to and from the project) and solid waste generation. GHG emissions from electrical usage are generated when energy consumed on the site is generated by fuel combustion.

GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste emissions are generated when the increased waste generated by the project are taken to a landfill to decompose.

(a) – No Impact: Application of BAAQMD’s project-specific GHG emissions thresholds is to include both direct emissions from a project’s vehicle trip generation and onsite water and space heating and other stationary sources, as well as indirect emissions from offsite electrical generation, solid waste generation, and water conveyance and treatment. The following activities associated with the proposed project could contribute to the generation of GHG emissions:

- **Construction Activities.** Construction equipment typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, methane, and N₂O. Methane is also emitted during the fueling of heavy equipment.
- **Solid Waste Disposal Emissions.** Resulting emissions associated with waste generation and disposal in landfills are indirect. Landfills emit anthropogenic methane from the anaerobic breakdown of material.
- **Gas, Electricity, and Water Use.** Natural gas use results in the emissions of two GHGs: methane (the major component of natural gas) and CO₂ from the combustion of natural gas. Methane is released prior to initiation of combustion of the natural gas (as before a flame on a stove is sparked), and from the small amount of methane that is uncombusted in a natural gas flame. Electricity use can result in GHG production if the electricity is generated by combustion of fossil fuel. GHG emissions associated with treatment and transport of water is also included in the analysis below.
- **Motor Vehicle Use.** Transportation associated with the project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips. However, not all of these emissions would be “new” to the region or state since drivers would likely have relocated from another area. To be conservative, however, all vehicle trips predicted to be generated by the project scenarios in the Transportation analysis were assumed to be new trips in this analysis.

Construction emissions over the full build-out duration were estimated using CalEEMod and amortized assuming a 30-year development life after completion of construction (which is likely low), and added to overall project emissions for comparison to significance thresholds. Amortized GHG emissions associated with project construction would result in annualized generation of 19 metric tons of CO₂e.

In regards to operations, the CalEEMod model was used to estimate GHG emissions from motor vehicle trips, grid electricity usage, solid waste, and other sources (including area sources, natural gas combustion, and water/wastewater conveyance). GHG emissions associated with the project would be below BAAQMD’s GHG threshold of 1,100 metric tons of CO₂e per year. This would represent a cumulatively less-than-significant GHG impact.

(b) – No Impact: The City of Campbell has not established a GHG reduction plan. However, since the project would result in less than significant GHG emissions, as described above, the project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. This would be a less than significant impact.

8. HAZARDS AND HAZARDOUS MATERIALS

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐	☐
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐	☐
g) Impair implementation of or physically interfere with an	☐	☐	☒	☐	☐

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
adopted emergency response plan or emergency evacuation plan?					
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐	☐

(a) – No Impact: No routine transport, use or disposal of hazardous materials would be associated with the project. A slight hazardous potential would exist during project construction when materials and construction equipment are at the site, however, long-term hazard risk is very low. Hazard risks during construction and demolition would be regulated by the City's standard conditions of approval and would be required to be performed in accordance with state and federal hazardous materials regulations and current Best Management Practices (BMPs) for construction activities as discussed in Section 2 – Air Quality. The use of toxic chemicals for landscaping (pesticides, herbicides, etc.) will not be above what is generally required for landscape maintenance and is not considered significant.

(b-d) – Substantially Mitigated by Uniformly Applicable Development Policies: The project site is not listed on the Hazardous Waste and Substances Sites List (available at http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm), compiled pursuant to Government Code Section 65962.5. However, boring and soil sampling taken from the former Biddle Roofing properties, conducted as of the project's Phase I Site Assessment and Phase II Soil Investigation (reference Attachment 7), revealed concentrations of lead, arsenic, total petroleum hydrocarbons (TPH), Polychlorinated Biphenyls (PCBs), above environmental regulatory screening levels for residential land use and applicable State and Federal standards. Phase I/II reports prepared for other properties that make up the project site (reference Attachments 8 and 9) did not identify any "recognized environmental conditions"—meeting the standard set forth by American Society for Testing and Materials (ASTM)—that could be considered "significant effect" under CEQA (Guideline § 21068).

The contamination on the former Biddle Roofing properties was linked to historic on-site solid waste disposal (rusty can lids, metal pipes, other metal objects, glass bottles, sheet metal, metal conduit and broken chunks of reinforced concrete). As required by the CMC Sec. 21.18.080.B, the project sponsor has prepared a remediation plan (reference Attachment 2) to excavate and remove the contaminated soil, which will substantially mitigate any hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Remediation is being conducted pursuant to the County of Santa Clara Voluntary Cleanup Program overseen by the Department of Environmental Health. As of the date of this Infill Checklist, County staff reports that the environmental excavation work has been completed. Confirmation of soil samples is still pending.

review. Additional work yet to be completed includes removal of construction debris (large pieces of concrete were encountered). Completion of all work will occur prior to issuance of building permits.

(c) – No Impact: The project site is not within ¼ mile of an existing or proposed school.

(e-f) – No Impact: The project site is not located within the Santa Clara County Airport Land Use Commission jurisdiction, within two miles of a public airport or within the vicinity of a private airstrip.

(g) – No Impact: The project would not interfere with emergency response or evacuation plans. Sufficient emergency access and emergency services staff would be provided for the project site in compliance with the State of California Building Code Standards and requirements of the Santa Clara County Fire and Health Departments.

(h) – No Impact: The project site is not located near any wildland areas and would not cause an increase in wildland fire hazard.

9. HYDROLOGY AND WATER QUALITY

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☐	☒

		Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
f)	Otherwise substantially degrade water quality?	☐	☐	☐	☐	☒
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☒	☐	☐
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐	☐
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐	☐
j)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐	☐

(a,c-f) – Substantially Mitigated by Uniformly Applicable Development Policies: The project would entirely alter the existing drainage pattern of the project site through demolition of all structures and re-grading to accommodate residential development. As discussed below, the project includes advanced stormwater treatment and retention that will prevent erosion, siltation, runoff related flooding, or increases in flow velocity or volume of stormwater runoff. The changes to the project site as a result of on-site improvements will not substantially alter the existing drainage pattern of the surrounding area, alter the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site.

In compliance with Provision C.3 of the National Pollution Discharge Elimination System (NPDES), (as implemented by CMC Sec.14.02 and 21.16.100), the project incorporates stormwater management measures. The project's stormwater treatment plan indicates use of bio-retention areas (vegetated swales) that allow water to percolate into the ground through a passive (natural) infiltration medium before flowing the public storm drain system or to an existing creek outfall located on the adjacent Public Works Maintenance Corporation Yard (accessed through an easement agreement with the City). As the proposed treatment system will treat and contain the majority of the stormwater on-site and it would, therefore, not exceed the capacity of existing or planned storm water drainage systems, provide substantial additional sources of polluted stormwater runoff, or otherwise substantially degrade water quality.

(b) – No Impact: The project will be adequately served by the existing water supplies, as confirmed in written correspondence ("will serve" letter") by San Jose Water Company (reference Attachment **10**), the local area water utility. As such, the project will not deplete or otherwise interfere with groundwater supplies.

(g-h) – No Impact: The Federal Emergency Management Agency Flood Insurance Rate Maps, as amended by a Letter of Map Amendment (LOMA) indicates the project is located in Zone X (reference Attachment **11**), an area determined to be outside the 500-year (.2%) annual chance floodplain. Therefore, the project would not place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

(i-j) – No Impact: The project site is located downstream of Lexington Reservoir, in an area defined by the Association of Bay Area Governments as a dam failure inundation area. As the project is not modifying flood protection measures or creating a condition where adjacent properties are exposed to a new significant risk of loss, injury or death involving flooding, no additional exposure to water-related hazards is expected as a result of the project construction or operation.

10. LAND USE and PLANNING

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Physically divide an established community?	☐	☐	☒	☐	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐	☐
c) Conflict with any applicable habitat conservation plan or, natural community conservation plan?	☐	☐	☒	☐	☐

(a) – No Impact: Projects that have the potential to physically divide an established community typically include construction that would eliminate formal or informal travel ways through a property. No such pathways or other forms of informal access through the project site currently exist.

(b) – No Impact: The project site covers to land use districts as described by the Campbell General Plan. A core component of the project, the largest parcel of the former Biddle Roofing Company, is designated *High Density Residential (up to 27 units/gr. acre)*. The remainder of the project site is designated *Commercial/Medium-High Density Residential (14-27 units/gr. acre)*, which is subject to the South of Campbell Avenue (SOCA) Plan. The SOCA Plan is designed to encourage the orderly transition of the South of Campbell Avenue area from its historic industrial use to a mixed commercial/residential district, supportive and complementary to Downtown Campbell. Development of the proposed residential infill project would also be consistent with the General Plan land use designations and with the SOCA Plan. The proposed development is also consistent with the General Plan Housing Element, which identified the SOCA Area as an "opportunity site" for new residential development. Lastly, the project would also be consistent with the following General Plan strategies that relate to support for high density residential development, and

Policy LUT-16.2: Building Orientation: Orient buildings to a public street.

Strategy LUT-16.2a: Residential Entries: Locate building entries facing the streets for all residential units located along a public street.

- Strategy LUT-16.2b: Non-Residential Entries: Ensure that all nonresidential developments are required to orient identifiable entryways toward public streets and provide street-level windows and glass front display bays for all street-level office and retail.
- Strategy LUT-16.2c: Visibility: Ensure that Residential projects are designed to provide visibility into the core of the project where the project adjoins streets or the Los Gatos Creek Trail. Public parking for trail users is encouraged.
- Policy LUT-16.3: Building and Site Design: Encourage high quality building and site design in the SOCA Area.
- Strategy LUT-1.5a: Transit-Oriented Development: Encourage transit-oriented development including employment centers such as office and research and development facilities and the city's highest density residential projects by coordinating the location, intensity, and mix of land uses with transportation resources, such as Light Rail.
- Policy LUT-2.4: Jobs and Housing Balance: Maintain Campbell's balance of jobs and housing units to encourage residents to work in Campbell, and to limit the impact on the regional transportation system.
- Strategy LUT-3.1c: High Density Residential: Allow higher residential densities in the NOCA, SOCA, and areas near the Light Rail stations as an incentive to redevelop older, less intensive uses.
- Strategy LUT-13.1: Variety of Uses: Attract and maintain a variety of uses that create an economic balance within the City while maintaining a balance with other community land use needs, such as housing and open space, and while providing high quality services to the community.
- Strategy LUT-16.1: Land Use: Allow commercial, industrial and/or residential land use uses in the accordance with adopted plan for each [SOCA] sub-area.

(c) – No Impact: No habitat conservation plan or natural community conservation plans are applicable to the project site.

11. MINERAL RESOURCES

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☒	☐	☐
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐	☐
c) Conflict with an adopted energy conservation plan or use non-renewable resources in a wasteful and inefficient manner?	☐	☐	☒	☐	☐

(a-c) – No Impact: No known mineral resources are present at the project site.

12. NOISE

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐	☐

(a-b) – Substantially Mitigated by Uniformly Applicable Development Policies: The City's Noise Ordinance (CMC Sec. 21.16.070.E) provides the following noise exposure standards for new residential development:

- Noise from stationary sources. New residential development shall conform to a stationary source noise exposure standard of 65 dBA for exterior noise levels and 45 dBA for interior noise levels.

- Traffic-related noise. New residential development shall conform to a traffic-related noise exposure standard of 60 dBA CNEL for outdoor noise in noise-sensitive outdoor activity areas and 45 dBA CNEL for indoor noise.

Acoustical studies are required for all new noise-sensitive projects that may be affected by existing noise from stationary sources, including all new residential developments with a noise exposure greater than 60 dBA CNEL. In compliance with this uniformly applicable development policy, an acoustical analysis was prepared for the project (reference Attachment 12). Based on the analysis, the project will be required to incorporate design features to reduce the ambient noise and vibration within the buildings to acceptable levels as defined by the California Building Code (CBC). Outdoor recreational areas will be shielded as necessary to comply with the noise standard. As a result, potential noise-related impacts would be substantially mitigated.

(c) – No Impact: Residential developments are classified as sensitive receptors of noise, and to this extent do not themselves generate noise of any appreciable level. As such, the project would not result in increase in ambient noise within the vicinity of the project site.

(d) – Substantially Mitigated by Uniformly Applicable Development Policies. Construction will eventually result in temporarily increasing ambient noise levels in the project vicinity. However, construction is governed by CMC Sec. 18.04.052, which limits construction activity from 8 AM to 5 PM., Monday through Friday, 9 AM to 4 PM on Saturday, and prohibits construction on Sunday. Additionally, loud environmentally disruptive noise over 50 dBA (e.g., air compressors without mufflers, continuously running motors or generators, loud playing musical instruments or radios) is prohibited. As such, temporary ambient noise level increases associated with construction will be substantially mitigated.

(e-f) – No Impact: The project is not located within the vicinity of an airport land use plan or within two miles of an airport. The project is not located within the vicinity of a private airstrip.

13. POPULATION AND HOUSING

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Induce substantial population growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	☒	☐	☐
b) Displace substantial numbers of existing housing, especially affordable housing and necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐	☐

(a) – No Impact: The development of 100 residential units is consistent with the planned residential densities of the General Plan and does not represent substantial growth inducing impacts. Stormwater infrastructure that is required to be upgraded (as discussed in Section 17 – Utilities and Service Systems) would not result in increased capacities that would induce substantial population growth.

(b-c) – No Impact: The project will require the demolition of the existing residences that has been vacated, and therefore will not result in the displacement of any people or housing units, which would necessitate the construction of replacement housing elsewhere.

14. PUBLIC SERVICES

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
Fire protection?	☐	☐	☒	☐	☐
Police protection?	☐	☐	☒	☐	☐
Schools?	☐	☐	☒	☐	☐
Parks?	☐	☐	☒	☐	☐
Maintenance of public facilities, including roads?	☐	☐	☒	☐	☐
Other public services or facilities?	☐	☐	☒	☐	☐

(a) – No Impact: The project will require public services such as fire, police services, schools, open space, and street maintenance; however, these services are currently provided to all other developments in the area. The project will not result in any significant changes to existing services or substantial adverse impacts to public services.

15. RECREATION

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐	☐

(a) – No Impact: The project will result in an increase in the use of existing neighborhood and regional parks and other recreational facilities. However, the increase demand for recreational facilities would not be significant and consistent with the planned density for the project and usage of the facilities.

(b) – No Impact: The City’s Subdivision Ordinance (CMC Sec. 20.24) requires the dedication of land or the payment of an in-lieu fee as a condition of approval for the Tentative Subdivision Map. The City’s Standard is three acres of open space, parkland and recreational facilities and one acre of school open space and recreational facilities for every 1,000 residents. The City’s Open Space Element prioritizes the acquisition and development of open space sites in neighborhoods which are deficient in open space and park acreage. The City’s access standard is to provide open space, parks, or recreation facilities within one-half mile radii of all City residents. The project site is located within one half-mile of Campbell Park and the Los Gatos Creek Trail; therefore, the residents of the proposed project are anticipated to use the existing facilities and the dedication of on-site parkland will not be required. The project sponsor is required to pay a Park Impact Fee for the development of the project and this fee will be used for the acquisition, improvement and/or expansion of parks and recreational facilities within the City.

16. TRANSPORTATION and CIRCULATION

	Significant Impact	Less Than Significant w/Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐	☐
c) Result in any rail, waterborne or air traffic impacts?	☐	☐	☒	☐	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐	☐

(a-b) – No Impact: As required by the regional Congestion Management Program (CMP), the City contracted for preparation of a traffic impact analysis (TIA) for the project (reference Attachment 13). The purpose of this study was to determine what affect the project would have on traffic along adjacent roadways and intersections. The traffic study's trip generation analysis anticipates that the project would generate 581 daily vehicular trips to and from the project site, including 44 trips during the AM peak hour (7:00 – 9:00) and 52 during the PM peak hour (4:00 – 6:00). Accounting for existing traffic trips associated with current businesses on the project site, the total *additional* trips over current levels (i.e., net increase) would be 406 daily trips, including 17 during the AM peak hour and 24 during the PM peak hour. According to the study, the increase in trips represents an incremental increase in traffic that would not result in a level of service (LOS) reduction at nearby intersections. Similarly, the study's TIRE (traffic infusion on residential environment) analysis determined that the project would not result in a noticeable change in traffic (this analysis is designed to determine if an increase in traffic would be *perceivable* to a neighborhood). As a result, the project would not conflict with applicable congestion management program or other applicable plans, ordinances or policies establishing measures of effectiveness for the performance of the circulation system.

(c) – No Impact: The project would not affect any rail, waterborne, or air traffic.

(d-e) – No Impact: The TIA reviewed the project's internal vehicular circulation and emergency access and determined it to be acceptable. The Fire Department has also determined the site circulation and roadway configuration would provide adequate emergency access.

(f) – No Impact: The proposed project is a transit-oriented development in that it will be located within ¼ mile of the Downtown Campbell light-rail station, as well as Downtown Campbell. The development of a higher density residential infill project in proximity to high quality transit and the City center is consistent with the applicable policies of the Campbell General Plan, below. As such, the project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Strategy LUT-1.5a: Transit-Oriented Development: Encourage transit-oriented development including employment centers such as office and research and development facilities and the city's highest density residential projects by coordinating the location, intensity, and mix of land uses with transportation resources, such as Light Rail.

Strategy LUT-3.1c: High Density Residential: Allow higher residential densities in the NOCA, SOCA, and areas near the Light Rail stations as an incentive to redevelop older, less intensive uses.

Policy H-4.3: Planned For Densities: To encourage the efficient and sustainable use of land, the City encourages residential development that is proposed near existing light rail stations (within 1/4 mile radius) and/or within the boundaries of the Winchester Boulevard Plan and East Campbell Avenue plan areas, to achieve at least 75 percent of the maximum General Plan Land Use category densities.

17. UTILITIES and SERVICE SYSTEMS

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐	☐

(a-b,e) – No Impact: The utilities for the proposed project, including sewage disposal, would require the construction of a private sanitary system that would connect to the existing waste water treatment system, which currently has sufficient capacity to receive the additional waste water generated from the proposed project. Therefore, the project would not impact the ability of the waste water treatment provider to meet its current commitments for service. The project would not generate significant amounts of wastewater, and would therefore not exceed wastewater treatment requirements for the Regional Water Quality Control Board. The West Valley Sanitation District has provided written correspondence ("will serve" letter) which indicates that the sewer facilities, with the construction of on- and off-site improvements, are adequate to support the site (reference Attachment 10).

(c) – No Impact: As previous noted, the project stormwater runoff generated by the project site would be collected and treated on-site in compliance with Provision C.3 of the National Pollution Discharge Elimination System (NPDES) requirements as discussed in Section 9 (Hydrology and Water Quality). Treated stormwater will directed either to the existing public roadway system within the street or to an existing creek outfall located on the adjacent Public Works Maintenance Corporation Yard (accessed through an easement agreement with the City).

In addition, as a condition of approval, the City intends to require replacement of an existing stormwater line that connects from the public street to an existing creek outfall. Based on a City Wide hydraulic study prepared by Barrett Consulting Group in the mid 1990's, the City will replacing the existing 30-inch corrugated metal pipe to a 48-inch reinforced concrete pipe. Although the physical pipe size will increase, the overall capacity will remain unchanged, as the flow volume is limited by the existing creek outfall that will not modified. The installation of the pipe will occur concurrent with project construction and would not

(d) – No Impact: The project will be adequately served by the existing water supplies, as confirmed in written correspondence ("will serve" letter) by San Jose Water Company (reference Attachment 10), the local area water utility.

(f-g) – No Impact: Existing capacity at local landfills can accommodate the amount of waste generated as a result of project operation. The project would comply with Federal, State and local statutes and regulations related to solid waste.

18. MANDATORY FINDINGS OF SIGNIFICANCE

	Significant Impact	Less Than Significant w/ Mitigation Incorporated	No Impact	Analyzed in the Prior EIR	Substantially Mitigated by Uniformly Applicable Development Policies
Would the project:					
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☐	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐	☐

(a) – No Impact: Based on the findings of the Infill Environmental Checklist Form, construction and operation of the project, with mitigation, would not substantially degrade the quality the environment; reduce the habitat, population, or range of species; nor eliminate important examples of California history or prehistory.

(b) – No Impact: The project would not cause any significant cumulative impacts to the following topical issues:

Traffic congestion at study intersections. The Traffic Study prepared for the project evaluated the operating conditions of key study intersections for existing, background, project, and cumulative traffic conditions. Based on the results of the Traffic Study, all study intersections are projected to operate at acceptable levels for each traffic condition.

Land Use and Planning. The project in combination with any development activity in the vicinity would not induce growth, because the project alone would not induce growth.

Geologic Problems. Seismic and soil conditions are site-specific, and will not contribute to cumulative impacts.

Water. No other development in the vicinity should cumulatively affect runoff and water quality as no other developments will occur concurrently.

Air Quality. The project would not exceed BAQMD thresholds and no other developments would occur in the vicinity of the project during the construction, so cumulative impacts would be less than significant. Construction dust would be handled on a site-specific basis.

Biological Resources. Although no other projects would be concurrently constructed in the vicinity, cumulative biological impacts may occur. However, measures to mitigate for project construction impacts on biological resources would also apply for cumulative biological impacts.

Energy. The project would have no impact on energy and mineral sources, so it would not contribute to cumulative impacts.

Hazards. All hazards discussed are site specific, and will not contribute to cumulative impacts.

Noise. Construction activity is substantially mitigated through uniform development policies on a project-by-project basis and therefore cannot result in a cumulative impact.

Public Services. Since the project would not make any significant demands on public services, it would not contribute to cumulative impacts to public services.

Utilities/Service Systems. Since the project would have less than significant or no impacts to public utilities, it would have no cumulative impact.

(C) – No Impact: Based on the findings of the Infill Environmental Checklist Form, there is no evidence to demonstrate that the project would cause a substantial adverse effect on human beings, either directly or indirectly. (a): Based on the findings of the Initial Study, construction and operation of the project, with mitigation, the project would not substantially degrade the quality the environment; reduce the habitat, population, or range of species; nor eliminate important examples of California history or prehistory.

SUMMARY OF MITIGATION MEASURES

1. **Aesthetics:** None Required
2. **Agricultural Resources:** None Required
3. **Air Quality:** The following mitigation measures will be incorporated into the project approval:

Mitigation Measure AIR-1: The project applicant shall ensure that construction plans include the BAAQMD Best Management Practices for fugitive dust control. The following will be required for all construction activities within the project area. These measures will reduce fugitive dust emissions primarily during soil movement, grading and demolition activities, but also during vehicle and equipment movement on unpaved project sites:

- a. 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. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- c. All visible mud or dirt track-out 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.
- d. All vehicle speeds on unpaved roads shall be limited to 15 mph.
- e. All streets, 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.
- f. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne tox.ics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.
- g. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- h. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AIR-2: The project applicant shall ensure that construction contract specifications include a requirement that all off-road diesel-powered construction equipment used for project improvements be equipped with a Level3 Verified Diesel Emissions Control (VDEC).

4. Biological Resources: The following mitigation measures will be incorporated into the project approval:

Mitigation Measure BIO-1: Project-related activities that occur during the breeding season could be constrained in the vicinity of any active nests. If tree removal or ground disturbance activities are scheduled to commence during the breeding season (February 1st through August 31st), pre-construction nesting bird surveys should be conducted by a qualified biologist to identify possible nesting activity within 15 days prior to such activities. A construction-free buffer of suitable dimensions must be established around any active raptor and migratory bird nest (up to 250 feet, depending on the location and species) for the duration of the project, or until it has been determined that the chicks have fledged and are foraging independently from their parents.

Mitigation Measure BIO-2: The following mitigation measures will be implemented to ensure that no bats are harmed or killed as a result of the project.

- a. Within 30 days prior to the demolition of the four homes along Sam Cava Lane, and their associated outbuildings, a pre-construction survey will be conducted to confirm that the existing conditions of the homes have not changed. If existing conditions have not changed, no further surveys will be required.
- b. If existing conditions have changed and the biologist observes that one or more structures have openings that could provide entry for bats, then a more detailed bat survey will be conducted by a qualified biologist within all structures that provide potential openings for bats to enter. If no bats are found, then no further mitigations will be required. If roosting bats are found to be present, the following additional measures will be required:
- c. If a non-breeding bat colony is found within any of the structures, the individuals will be humanely evicted via the partial dismantlement of the buildings prior to demolition under the direction of a qualified bat specialist to ensure that no harm or “take” would occur to any bats as a result of demolition activities.
- d. If a maternity colony is detected in the structures, then a construction-free buffer should be established around the structure as determined by the biologist and remain in place until it has been determined that the nursery is no longer active. Demolition should preferably be done between March 1st and April 15th or August 15th and October 15th to avoid interfering with an active nursery.

5. Cultural Resources: None Required

6. Geology and Soils: None Required

7. Greenhouse Gas Emissions: None Required

8. Hazards and Hazardous Materials: None Required

9. Hydrology and Water Quality: None Required

- 10. Land Use and Planning:** None Required
- 11. Mineral Resources:** None Required
- 12. Noise:** None Required
- 13. Population and Housing:** None Required
- 14. Public Services:** None Required
- 15. Recreation:** None Required
- 16. Transportation and Traffic:** None Required
- 17. Utilities and Service Systems:** None Required
- 18. Mandatory Findings of Significance:** None Required

REFERENCE MATERIALS

Attachments (May be viewed online on the City of Campbell 'Public Notices' web page (<http://www.cityofcampbell.com/501/Public-Notices>) under 'Environmental Notices' or at the Campbell Community Development Department office (70 N First St., Campbell, CA 95008) during normal business hours).

1. City Council Resolution No. 9949, adopted November 6, 2001
2. *Remedial Soil Excavation Plan* by Weber, Hayes, and Associates, dated August 1, 2013
3. *Air Quality and Greenhouse Technical Memorandum* by Environmental Science Associates (ESA), dated June 2014
4. *Biological Evaluation of the Dillon Property Project Site* by Live Oak Associates, Inc., dated April 28, 2014
5. *Tree Inventory and Arborist's Assessment* by Richard Gessner, dated May 28, 2014
6. *Geotechnical Investigation* by Pacific Geotechnical Engineering, dated May 16, 2014
7. *Phase I Site Assessment and Phase II Soil Investigation (Biddle Roofing Properties)* by ENVIRON International Corp., dated July 18, 2013
8. *Phase I Environmental Site Assessment and Subsurface Soil Investigation (190 Dillon Ave.)* by ENVIRON International Corp., dated June 2014
9. *Phase I Environmental Site Assessment and Subsurface Soil Investigation (Sam Cava Ln. properties)* by ENVIRON International Corp., dated May 23, 2014
10. *"Will Serve" Letters (PG&E, San Jose Water, and West Valley Sanitation District)*
11. *Letter of Map Amendment (LOMA)* by Federal Emergency Management Agency (FEMA), dated August 7, 2014
12. *Draft Environmental Noise Feasibility Study* by Charles Salter Associates, Inc., dated May 15, 2014
13. *Traffic Impact Analysis for the Dillon Avenue Residential Project* by W-Trans, dated June 17, 2014

Reference Documents:

1. Bay Area Air Quality Management District (BAAQMD), June 2010, *CEQA Air Quality Guidelines*.
2. Bay Area Air Quality Management District (BAAQMD), December 2008, *Source Inventory of Bay Area Greenhouse Gas Emissions*.
3. California Environmental Protection Agency (CEPA) California Air Resources Board (CARB), April 2005, *Air Quality and Land Use Handbook: A Community Health Perspective*.
4. California Environmental Protection Agency (CEPA) California Air Resources Board (CARB), November 16, 2007, *Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*.

5. California Natural Diversity Database, 2000.
6. California Office of Planning and Research (OPR), June 19, 2008, *Technical Advisory: CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*.
7. CEQA Guidelines, 2012 version.
8. City of Campbell General Plan.
9. Campbell General Plan EIR.
10. City of Campbell Zoning Code.
11. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, Community Map Number 06085C0241H, Effective Date May 18, 2009.
12. State of California, Seismic Hazard Zones Map, San Jose West Quadrangle, February 7, 2002.
13. U.S. Environmental Protection Agency, April 15, 2009, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007*.

ATTACHMENT 1

CITY COUNCIL RESOLUTION NO. 9940

RESOLUTION NO. 9949

**BEING A RESOLUTION OF THE CITY COUNCIL OF THE CITY
OF CAMPBELL CERTIFYING THE FINAL ENVIRONMENTAL
IMPACT REPORT FOR THE *DRAFT GENERAL PLAN*.**

IT IS HEREBY RESOLVED THAT after notification and public hearing, as specified by law on the proposed amendments to the *Draft General Plan* of the City of Campbell, and after presentation by the Community Development Director, proponents and opponents, the City Council did determine that the certification of the Final Environmental Impact Report for the City of Campbell *Draft General Plan* is warranted based upon the following findings:

1. Fehr and Peers Associates, Inc. of San Jose, California prepared a Transportation Impact Analysis to evaluate the potential impacts of the *Draft General Plan* and found potentially significant traffic impacts.
2. The environmental consulting firm of LSA Associates, Inc. of Berkeley, California has prepared an Environmental Impact Report (EIR) - State Clearinghouse #20011042063; that evaluates the environmental impacts of the *Draft General Plan* and Zoning Map Amendments.
3. The Final EIR for the *Draft General Plan* has been prepared to serve as the CEQA document for Planning Commission and City Council consideration of the General Plan Update.
4. The Final EIR for the *Draft General Plan* has been completed in compliance with the California Environmental Quality Act (Section 21000 et seq. of the California Public Resources Code).
5. The City Council has reviewed and considered the information within the Final EIR for the *Draft General Plan* prior to approving the proposed changes to the General Plan and Zoning Map and finds that it adequately addresses the environmental issues of the *Draft General Plan*.
6. Notice of availability of the Draft EIR for the *Draft General Plan* was prepared and published pursuant to Section 21092 of the Public Resources Code, advising the public that a 45-day public review period would end on September 10, 2001.
7. The City Council hereby finds and determines that the Final EIR reflects the independent judgment of the City Council.
8. The City Council hereby identifies the significant effects, adopts the mitigation measures, adopts the mitigation monitoring and reporting program to be implemented for such mitigation measures, and make the findings set forth in detail in the attached Attachment 5 for the adoption of a Statement of Overriding Considerations. The statements, findings and determinations set forth below and in Attachment 5 are based on the Final EIR and other

information available to the City Council, and are made in compliance with Section 15091 of the State CEQA Guidelines and Section 21081(a) of CEQA.

9. As detailed in the Final EIR, and listed below, approval and implementation of the *Draft General Plan* may have significant environmental impacts, unless mitigated to a level of less than significant, related to Geologic and Seismic Hazards, Noise and Hazards, and, as a result, the City Council, as applicable, may approve the *Draft General Plan* only if, in connection with such approvals, the City Council, as applicable, approves the Mitigation Monitoring and Reporting Program as contained in the Final EIR.

The following potentially significant environmental impacts will be mitigated to a level less than significant with the mitigation measures indicated.

- **Impact Noise-3:** New development, particularly residential uses on and adjacent to major transit corridors, could be exposed to excessive traffic-related noise levels.

Mitigation Measure: To further ensure that all new noise-sensitive proposals are carefully reviewed with respect to potential noise impacts, the City shall review new development using the following guidelines in combination with the land use compatibility standards:

Strategy CNR-10.c shall be revised to include performance standards related to traffic-related noise that state all new residential development should conform to a noise exposure standard of 60 dBa CNEL for outdoor noise in noise-sensitive outdoor activity areas and 45 dBa CNEL for indoor noise. New development, which does not and cannot be made to conform to this standard, should not be permitted.

Acoustical studies, describing how the exterior and interior noise standards will be met, should be required for all new residential development with a noise exposure greater than 60 dBa CNEL. The studies should also satisfy the requirements set forth in Title 24, part 2, of the California Administrative Code, Noise Insulation Standards, for multiple-family attached, hotels, motels, etc., regulated by Title 24. The noise exposure table (Table IV.H-5 of the EIR) should be used as the basis to initially identify areas with potential excessive noise exposure.

- **Impact Geologic and Safety Hazards-2:** The strategies in the *Draft General Plan* do not include notification of the public of the potential hazards associated with the unreinforced masonry structures in the City.

Mitigation Measure: A new strategy should be added to the *Draft General Plan*, as follows:

Strategy HS-3.2h: Posting of potential hazards associated with Unreinforced Masonry Buildings. Require that all URM structures within the City be posted with signs informing the public of the potential hazards associated with occupancy of these buildings. Property owners are responsible for implementing and maintaining such signage.

- **Impact Hazard-1:** Redevelopment of former industrial properties could potentially expose Campbell workers and residents to hazardous materials from historic releases.

Mitigation Measure: The following strategy should be added to the Health and Safety Element of the Draft General Plan:

Strategy HS-7.1f: Development Projects Involving Potential Historical Hazardous Materials Use. Require that applications for discretionary development projects that will involve a change in land use (i.e., from industrial to commercial or residential) provide detailed information regarding potential historical hazardous materials use, including soil and/or groundwater sampling results, if warranted.

The City Council finds that changes have been incorporated into the *Draft General Plan*, and are outlined in the Mitigation Monitoring and Reporting Program, which is contained in the Final EIR, which will avoid or substantially lessen the significant environmental effects as identified in the Final EIR.

10. As detailed in EIR, and listed below, approval and implementation of the General Plan Update may have Significant Unavoidable environmental impacts related to Geologic and Seismic Hazards and Transportation and Circulation facilities, and, as a result, the City Council, as applicable, may approve the *Draft General Plan* only if, in connection with such approvals, the City Council, as applicable, makes a statement of overriding considerations in accordance with Sections 15092 and 15093 of the State CEQA Guidelines and Section 21081(b) of CEQA.

These impacts and the respective reasons why mitigation measures or project alternatives would be infeasible are as follows:

- **Impact: Geologic & Seismic Hazards - Geologic-1:** Construction of new residential and commercial facilities under the *Draft General Plan* would result in an increase in the number of people potentially exposed to severe seismic ground shaking hazards.

The City Council finds that specific technological considerations make the implementation of the mitigation measures infeasible for the following reasons:

Implementation of Strategies HS-3.1a, HS-3.1c, HS-3.2a, HS-3.2d, HS-3.2f, and HS-3.2g would result in existing and proposed programs, including, but not limited to programs requiring site-specific geotechnical reports, compliance with the guidelines of the Uniform

Building Code, earthquake preparedness and response programs, and seismic-retrofitting programs, that would reduce the severity, but not eliminate this impact. Seismic shaking hazards cannot be completely eliminated; therefore, this impact remains an unavoidable adverse impact, even after mitigation. The relative risk are no greater than any other community in the Bay Area and therefore the City is willing to accept this risk.

The City Council hereby finds that in regards to the Significant Unavoidable Geologic & Seismic Hazard impact identified in the Final EIR and herein, the City has chosen the Industrial Alternative which is the environmentally superior alternative, and that the Significant Unavoidable Geologic & Seismic Hazard impact would exist under any of the alternatives analyzed, including the No Project and Increased Housing Alternative, with the exception of the No Growth Alternative. The No Growth alternative would not increase the number of people in the City exposed to geologic or seismic hazards. As a result, no significant impact would result. However, the No Growth alternative would not result in any of the beneficial impacts that would result from implementation of the Draft General Plan, including increasing the housing stock to fulfill the City's fair share housing needs allocation; the consolidation of areas with various land use designations into a single, more cohesive designation to minimize land use conflicts (i.e., the South of Campbell Area). In addition, the City does not have any mechanism to essentially stop any development from occurring as a result, it would be difficult, if not impossible, to implement the No Growth alternative.

- **Impact: Transportation and Circulation - Transportation-4:** Build out of the *Draft General Plan* would increase traffic and adversely impact four intersections (Bascom/Hamilton, Campbell/Union, Winchester/Hacienda and Winchester/Knowles) and two roadway sections (northbound Union between Apricot and Campbell and between Bascom and McGlincey Lane during the AM peak hour).

The City Council finds that specific economic and technological considerations make the implementation of the mitigation measures infeasible for the following reasons:

- Bascom/Hamilton – This intersection is built out, and there are no feasible physical improvements that could improve the projected LOS F condition. Additional lane capacity would require acquisition of property, removal of parking and buildings, utilities and other private improvements that would be cost prohibitive.

This intersection is fully developed, with relatively new (3 to 10 years) commercial retail buildings on three corners, and a gas station on the remaining corner. Additionally, the northeast corner is in the jurisdiction of the City of San Jose. Street widening would affect private landscaping, parking and buildings on all four corners. The City, based on past experience, estimates that adding through and/or turn lanes, sufficient to mitigate the impact, at this location would cost, on an order of magnitude of several million dollars. This includes payment for property acquisition for right-of-way purposes, payment of severance damages to property and business owners and possible relocation of businesses. This magnitude of expenditure would require reducing essential City services or exceeding revenues or creating an unbalanced budget.

- Campbell/Union - This intersection is built out, and there are no feasible physical improvements that could improve the projected LOS E condition. The construction of additional lane capacity would require acquisition of property, removal of parking and buildings, including properties listed on the City's Historic Resource Inventory, utilities and other private improvements that would be cost prohibitive.

This intersection is fully built out, with one new (2 to 3 years) bank building on the southwest corner, and a historic property on the southeast corner used as a tuxedo rental business. Street widening would affect private landscaping, parking and buildings on both corners. The City, based on past experience, estimates that adding through and/or turn lanes, sufficient to mitigate the impact, at this location would cost, on an order of magnitude, of several million dollars. This includes payment for property acquisition for right-of-way purposes, payment of severance damages to property and business owners, and possible relocation of businesses. This magnitude of expenditure would require reducing essential City services or exceeding revenues or creating an unbalanced budget.

- Winchester/Hacienda – The addition of a second eastbound through lane at this intersection would reduce this impact to a less than significant level by reducing the change in the v/c ratio to less than .05, but the intersection would still operate at a LOS F. The City has determined that this mitigation measure would not be feasible as the construction of a second eastbound through lane would require the elimination of a left-turn pocket and acceleration lane on Hacienda Avenue east of Winchester Boulevard which serves an existing development and is necessary for the safe egress from the property. Additionally, the cost of extending the capacity to Dell Avenue would require the acquisition of property, dislocation of private parking facilities and landscaping that would cost several million dollars. This magnitude of expenditure would require reducing essential City services or exceeding revenues or creating an unbalanced budget.
- Winchester/Knowles - The addition of a westbound left-turn lane would decrease the reduction in the v/c ratio to a less than significant level (i.e., with the mitigation the v/c ratio change would no longer exceed .05), but the intersection would still operate at a LOS E. The majority of this intersection is located within the Town of Los Gatos and would require cooperation between the City of Campbell and the Town of Los Gatos to design, approve and fund the construction of such improvements. Impacts at this intersection are designated as unavoidable because the recommended mitigation measures are beyond the jurisdiction of the City of Campbell to implement unilaterally.
- Northbound Union Avenue between Apricot and Campbell Avenue and between Bascom and McGlincey Lane during the AM peak hour (two roadway segments) – These roadway segments along Union Avenue serve existing development consisting mainly of multistory apartments and condominium complexes. Any additional lane capacity would require the acquisition of private property, partial demolition of residential structures and related parking and utility facilities. The City has determined that this would be both economically and socially infeasible.

The properties along these street segments are fully built out, with predominately two and three story apartment and condominium developments located in close proximity to the existing street right-of-way line.. Street widening would affect private landscaping, parking and buildings on at least one side of the street. The City, based on past experience, estimates that adding through lanes, sufficient to mitigate the impact, at these locations would cost, on an order of magnitude, of at least ten (10) million dollars. This includes payment for property acquisition for right-of-way purposes, payment of severance damages to property and business owners, and possible relocation of residential tenants and businesses. This magnitude of expenditure would require either reducing essential City services or exceeding revenues and creating an unbalanced budget.

One possible mitigation measure analyzed in the Final EIR is the conversion of the existing two-way left turn lane into a reversible northbound through lane during the AM peak period. The City Council finds that this measure would likely cause driver confusion and unsafe conditions and therefore is determined to be infeasible.

- Additionally, the McGlincey Lane to Bascom Avenue segment of Union Avenue is predominately (81 percent as measured along right-of-way frontage) located within the City of San Jose jurisdiction. Impacts at this street segment are designated as unavoidable because of both the recommended mitigation measures are beyond the jurisdiction of the City of Campbell to implement unilaterally.

11. The City Council hereby finds that in regards to the Significant Unavoidable Geologic or Seismic Impact identified in the Final EIR and herein, the City has chosen the Industrial Alternative which is the environmentally superior alternative, and that the Significant Unavoidable Geologic or Seismic impact would exist under any of the alternatives analyzed, including the No Project and Increased Housing Alternative, with the exception of the No Growth Alternative. The No Growth alternative would not result in any of the beneficial impacts that would result from implementation of the Draft General Plan, including increasing the housing stock to fulfill the City's Regional Housing Needs Determination; the consolidation of areas with various land use designations into a single, more cohesive designation to minimize land use conflicts (i.e., the South of Campbell Area). In addition, the City does not have any mechanism to essentially stop any development from occurring as a result, it would be difficult, if not impossible, to implement the No Growth alternative.

The other alternatives identified (No Project, Increased Housing) would not result in the elimination of the Significant Unavoidable impacts. As identified in the Final EIR, projected increases in congestion in the City are partly due to increased traffic throughout the Bay Area, and the South Bay region in particular, and not merely a result of land uses in the City.

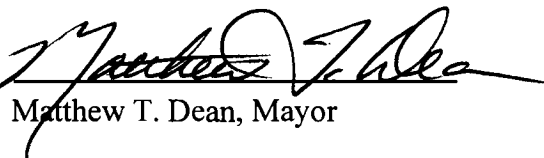
12. Based on the information set forth in the Final EIR, the City Council finds pursuant to 14 California Code of Regulations Section 753.5(c) that, considering the record as a whole, approval and implementation of the *Draft General Plan* involves no potential for adverse

effect, either individually or cumulatively, on vegetation or wildlife, and that therefore no fee is required in connection with the filing of a Notice of Determination.

13. The Custodian of the Record for this *Draft General Plan* and Final Environmental Impact Report is the City Clerk of the City of Campbell, located at 70 North First Street, Campbell, California.

PASSED AND ADOPTED this 6th day of November, 2001, by the following roll call vote:

AYES:	COUNCILMEMBERS:	Furtado, Kennedy, Burr, Watson, Dean
NOES:	COUNCILMEMBERS:	None
ABSENT:	COUNCILMEMBERS:	None
ABSTAIN:	COUNCILMEMBERS:	None

APPROVED: 
Matthew T. Dean, Mayor

ATTEST: 
Anne Bybee, City Clerk

ATTACHMENT 2

REMEDIAL SOIL EXCAVATION PLAN

County of Santa Clara

Department of Environmental Health

1555 Berger Drive, Suite 300
San Jose, California 95112-2716
(408) 918-3400
www.EHinfo.org



September 24, 2013

Mr. Mark Bittle, Trustee
David R. Bittle 1989 Living Trust
41 Burritt Road
Hilton, New York 14468

SUBJECT: Voluntary Cleanup Program, Dillon Avenue Property, 230, 280 & 282 Dillon Avenue, Campbell, CA; SCCo Case No. 07S1W35C06s

Dear Mr. Bittle:

Thank you for submitting the Work Plan for Remedial Soil Excavation prepared by your consultant Weber, Hayes & Associates (WHA) and dated August 12, 2013 and the new Figure 8 received by email on September 19, 2013. In general, we concur with the proposed scope of work.

Please notify us at least two weeks prior to the planned field work, such that we can be present to observe the work.

TECHNICAL REPORT REQUEST

Please submit the following technical report to DEH (Attention: Ms. Lani Lee), according to the following schedule:

Remedial Completion Report

January 31, 2014

This technical report is being requested pursuant to our authority under Section 101480 of the California Health and Safety Code. Each report shall include conclusions and recommendations for the next phases of work required to protect water resources, human health and safety, and the environment at the site. We request that all required work be performed in a prompt and timely manner. Revisions to the schedule shall be requested at least two weeks prior to the due date in writing with appropriate justification for the anticipated delays and a proposed revised schedule.

The California Business and Professions Code (Sections 6735, 7835, and 7835.1) require that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments must be performed under the direction of an appropriately registered or certified professional.

PERJURY STATEMENT

All proposals and reports submitted to this office must be accompanied by a cover letter from the responsible party which states, at a minimum, the following:

"I declare, under penalty of perjury, that the information and/or recommendations contained in the attached proposal or report is true and correct to the best of my knowledge."

This letter must be signed by an officer or legally authorized representative of your company. Future submittals made without the perjury statement may be returned as insufficient.

ELECTRONIC SUBMITTAL OF INFORMATION

In accordance with the terms of the Remedial Action Agreement, you are required to make all required submittals to the State of California Geotracker database.

Pursuant to the California Code of Regulations (CCR) Title 23: Division 3, Chapter 30, Section 3895:

- (a) Beginning July 1, 2005, submittal of complete copies of reports in PDF format into the State Water Board's Geotracker database will be required and will replace the paper copy requirements of these reports. The electronic copy is intended to replace the need for a paper copy and is expected to be relied upon for all public information requests, regulatory review, and compliance/enforcement activities.

The Global ID for your case in Geotracker is **T10000005138**.

If you have any questions, please feel free to contact me at (408) 918-1977 or via email.

Sincerely,



Lani Lee
Senior Hazardous Materials Specialist
Site Mitigation Program
lani.lee@deh.sccgov.org

cc: Jered Chaney, Weber, Hayes & Associates (jered@weber-hayes.com)
Richard Yee, Robson Homes (rye@robsonhomes.com)
File





Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Drive, Watsonville, CA 95076
(831) 722-3580 // www.weber-hayes.com

DRAFT Work Plan for Remedial Soil Excavation

Transition to Residential Land Use

Site Location:
230, 280, & 282 Dillon Avenue
Campbell, CA

August 1, 2013
Project: 2X328



<i>For Submittal to:</i>	<i>On Behalf of:</i>
Lani Lee <i>County of Santa Clara</i> <i>Department of Environmental Health</i> 1555 Berger Drive, Suite 300 San Jose, CA 95112	David R. Bittle 1989 Living Trust By: Mark Bittle, Trustee 41 Burritt Road Hilton NY 14468

Protecting California's Groundwater Resources Since 1988.

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- Figure 1: Location Map
- Figure 2: Site Map showing Soil Sample Locations & Defined Waste Areas
- Figure 3: Site Map showing Proposed Hazardous Waste Level Lead & Arsenic Soil Excavation Locations
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- Figure 6: Site Map showing Proposed Residential Development
- Figure 7: Site Map showing Proposed Confirmation Soil Sampling Plan – Post Remedial Soil Excavation

TABLES

(from ENVIRON's Phase I Environmental Site Assessment and Phase II Soil Investigation report, dated June 18, 2013)

- Table 1: Metals in Soil – Soil Boring and Test Pits
- Table 2: Total Petroleum Hydrocarbons, Organochlorine Pesticides, and PCBs in Soil – Soil Borings and Test Pits
- Table 4: Results of Exploratory Trench Soil Samples

APPENDICES

- Appendix A: ENVIRON: Phase I Environmental Site Assessment and Phase II Soil Investigation, dated June 18, 2013
- Appendix B: Site Health & Safety Plan
- Appendix C: Field Methodology for Shallow Soil Sampling



1.0 EXECUTIVE SUMMARY

The following *Work Plan* presents remedial soils excavation tasks designed to remove recently identified shallow soil impacts in order facilitate a transition to residential land use for the properties located at 230, 280 and 282 Dillon Avenue, Campbell, California (see Figure 1, the “Site”). Specifically:

- A Phase I Environmental Site Assessment and Phase II Soil Investigation¹ recently completed by ENVIRON identified wide-spread shallow soil impacts across the Site related to historic on-site waste disposal (e.g., rusted can lids, metal pipes, other metal objects, glass bottles, sheet metal, metal conduit, and broken chunks of reinforced concrete). Soil samples collected from ninety-six (96) locations across the identified waste disposal areas (i.e., soil samples collected 0.5 to 2.5 feet below the ground surface with some collected as deep as 7 feet below the ground surface from either soil borings, test pits, or trenches) generally revealed elevated concentrations of lead, arsenic, and to a much lesser extent cadmium, zinc, TPH-diesel & motor oil, dieldrin, and PCBs that exceed Residential Environmental Screening Levels (ESLs) and/or California Human Health Screening Levels (CHHSLs).
- Santa Clara Development is proposing to develop thirty-three (33) 3-story townhome units and twelve (12) 3-story duplexes for a total of 45 residential units at the Site. The project design is consistent with the City's goals to revitalize the area by providing new housing opportunities within walking distance to Downtown, the Los Gatos Creek Trail, and the Vasona Light Rail Corridor (see Figure 6).

The following Executive Summary subsections provide a brief synopsis of proposed remedial excavation plans. **The goal of the proposed remedial soils excavation will be to remove the well-defined Site COCs that exceed residential screening levels (ESL and/or CHHSLs) in order to facilitate the transition of the Site for residential development with no land use restrictions.**

1.1 Results of Previous Soil Characterization & Identified Site Contaminants of Concern

Based on the extensive soil sample analysis conducted at the Site, Contaminants of Concern (COCs) that exceed the conservative ESLs/CHHSLs are confirmed to be Lead and Arsenic, and to a much lesser extent Cadmium, Zinc, TPH-diesel/motor oil, Dieldrin and/or PCBs. In general, concentrations of these Site COCs that exceed conservative Residential Screening Levels appear to be directly related to, and confined to the defined “Waste Areas”. A brief synopsis of key findings of relevance to the proposed remedial soils excavation is bulleted below:

¹ ENVIRON: Phase I Environmental Site Assessment and Phase II Soil Investigation, dated June 18, 2013



- Of the ninety-six (96) sample locations (i.e., soil borings, Test Pit and Trench sample locations combined – see Figure 2) forty-seven (47) of these locations exceed the Residential ESLs/CHHSLs for at least one or some of the Site COCs (see Figures 3,4 & 5).
- Fifteen (15) of the forty-seven (47) sample locations that exceed the Residential ESLs/CHHSLs yielded “clean” (i.e., below Residential ESLs/CHHSLs) COC concentrations at a depth of 2.5 feet bgs.
- Sixteen (16) of the forty-seven (47) sample locations that exceed the Residential ESLs/CHHSLs yielded “elevated” (i.e., above Residential ESLs/CHHSLs) COC concentrations at total sample depths of either 2.5, 5 or 7 feet bgs, with no deeper samples to confirm “clean” vertical delineation.
- Thirteen (13) of the forty-seven (47) sample locations that exceed the Residential ESLs/CHHSLs, yielded concentrations of Lead (12 locations) and Arsenic (1 location) that meet the classification criteria for Hazardous Waste levels based on either the total concentration, the Soluble Threshold Limit Concentration (STLC) and/or the Toxicity Characteristic Leaching Procedure (TCLP), extending to approximate depths of 2.5 to 6 feet bgs.

The results of this extensive vertical and lateral soil characterization investigation provide sufficient data to adequately guide a remedial soils excavation effort aimed at removing all impacted soils that exceed Residential ESLs/CHHSLs for transition to residential land use with no use restrictions.

1.2 Proposed Remedial Excavation

Based on our review of the existing comprehensive vertical and lateral Site soil data set with respect to residential screening levels we have reasonably determined pre-defined soil and debris removal areas designed to achieve the goal of residential land use transition with no use restriction. In general:

- We have identified thirteen (13) sample locations situated within the larger proposed remedial excavation areas that yielded concentrations of Lead (12 locations) and Arsenic (1 location) that meet the classification criteria for Hazardous Waste levels based on either the total concentration, the Soluble Threshold Limit Concentration (STLC) and/or the Toxicity Characteristic Leaching Procedure (TCLP), and will need to be treated and disposed of at a Class I landfill. We propose to “surgically” remove these few locations prior to conducting removal of the larger volumes of non-hazardous level soils. This strategy will be employed in order to avoid inadvertent mixing of the hazardous waste level soils with soils that will be acceptable to either a Class II or III landfill. Removal of the hazardous waste level soils will be confirmed by a confirmation sampling program prior to advancing the larger excavation areas. The minimum estimated volume of hazardous waste level soils is approximated to be 178 yds³ (see Figure 3).

- We have identified four (4) areas across the Site ranging in size from approximately 800 ft² to 31,400 ft² that yielded concentrations of COCs that exceed residential screening levels, and generally correspond to the defined "Waste Areas (i.e., buried debris)". The vast majority of impacted soils across these areas extend to depths of less than 2.5 feet bgs, with a few localized areas that extend to depths ranging from approximately 4.5 feet bgs to as deep as approximately 9 feet bgs (see Figures 4 & 5). We propose to remove soils to a depth of 2.5 feet across all four areas (i.e., Areas 1 through 4; see Figure 4) as well as remove smaller Sub-Areas within these proposed excavation footprints to remove the deeper soil impacts (Sub-Areas 1a through 1i, 2a, 3a through 3c, and 4a & 4b; see Figure 5).

In total, we estimate the removal of approximately 180 yds³ of hazardous waste level soils and approximately 4,000 yds³ of soil having concentrations of COCs above residential screening levels. The soils will be stockpiled on-Site and sampled in accordance with landfill acceptance profiling. Once the soil has been approved for disposal at either a Class I, II or III landfill, it will be loaded onto end-dump trucks for direct transport to the approved disposal facility. Documentation of proper soil disposal will be submitted in a follow-up summary report.

1.3 Proposed Confirmation Soil Sampling Plan

The following proposed confirmation soil sampling program is designed to confirm that following remedial soils excavation activities the Site COCs have been reasonably removed from the Site to concentrations that are below or approximate residential screening levels (ESLs/CHHSLs). The sampling strategy also takes into consideration the proposed housing development. The density of confirmation samples will be greater in those areas where future slab-on-grade homes, driveways and roadways will not be present (i.e., greater sampling density will be employed at unpaved, landscaped areas). Specifically:

- Sixteen (16) confirmation soil samples will be collected from the base of the fourteen (14) pre-defined Sub-Areas where sixteen (16) previous sample locations exhibited elevated soil impacts that have not been vertically defined below 2.5 feet bgs. These proposed soil samples will reasonably confirm whether or not the soil impacts have been removed, or whether additional excavation below the proposed depths will need to occur to further reduce concentrations of previously detected COCs.
- Because the remainder of the Site has been fairly well characterized (i.e., previous soil sampling along approximate 25 foot by 25 foot grids) we propose to collect excavation base samples in an approximate 30 foot grid within areas that will be developed as landscaped areas, and approximate 50 foot grids for areas that will be capped with either a slab-on-grade homes or paved surface areas (i.e., roadways/driveways).

- In total, we estimate the collection of approximately 51 confirmation soil samples. Proposed confirmation soil sampling locations are shown on Figure 7, and have been overlain onto the future Site landscape rendering.

A discussion of confirmation soil sample analysis is included in Section 4.5 of this report.

1.4 Schedule and Documentation Reporting

Following *Work Plan* approval and authorization to proceed, the above tasks can be completed according to the following schedule (start-up pending approval of grading permit and subcontractor availability):

- We anticipate that the remedial excavation, soil/debris off-hauling and confirmation soil sampling tasks can be completed within approximately three (3) weeks.

Within four (4) to six (6) weeks following receipt of all laboratory analytical data we will provide a report summarizing field activities, analytical results and conclusions.

If confirmation soil sample analytical results meet or approximate residential screening levels we will:

- **Conclude that the Site may be transitioned for residential land use with no restrictions, and**
- **Request “Case Closure” from the County of Santa Clara Department of Environmental Health**

This concludes the Executive Summary.

2.0 SITE DESCRIPTION & BACKGROUND OF PREVIOUSLY COMPLETED ENVIRONMENTAL ASSESSMENT

The following information regarding the Site description and completed environmental assessment work has been solely gleaned and summarized from ENVORONS’ *Phase I Environmental Site Assessment and Phase II Soil Investigation* report, dated June 18, 2013. A complete copy of this report is included as Appendix A of this *Work Plan*.

2.1 Site Description

The Site is located at 230, 280, and 282 Dillon Avenue, Campbell, Santa Clara County, California, approximately 0.5-miles south of downtown Campbell (see Figure 1). The Site is situated in an area of mixed residential and light commercial use; bound to the north by commercial businesses, to the south by the City of Campbell Public Works, to the west by Dillon Avenue which is lined with both commercial businesses and residences, and to the east by Los Gatos Creek and the Los Gatos Creek Trail. The 280/282 Dillon Avenue parcel (APN 412-08-034 & -035) comprises the main portion of the Site, while the 230 Dillon Avenue parcel (APN 412-08-030) spans a smaller rectangular area between Dillon Avenue and the main portion of the Site (see Figure 2). The combined parcels total an area of approximately 1.9

acres. In general, Site topography gently slopes towards the east-northeast towards Los Gatos Creek. Elevation ranges from approximately 200 feet MSL on the western end of the 280/282 Dillon Ave parcel to approximately 186 feet MSL at the lower, northeastern end of the 280/282 Dillon Ave parcel.

2.2 Site Hydrogeologic Setting

Local hydrogeology is likely controlled by the nearby Los Gatos Creek which is situated approximately 100 feet from the southeast property boundary and flows to the northeast. Measurements of groundwater depth and flow direction at the Site have not been investigated; however depth to groundwater measured at a nearby fuel release investigation site² (located less than 0.5 mile NW of the Site) has ranged from approximately 79 to 110 feet below the ground surface (bgs) with flow ranging from northwest to east. The proximity of the Site to the Los Gatos Creek likely results in a somewhat shallower groundwater depth beneath the Site.

2.3 Current & Historical Property Use

The 280/282 Dillon Ave parcel is currently vacant with no improvements other than concrete and asphalt surfacing throughout the main portion of the Site. Until about 2007, the Site was developed with one small office and five sheds with a combined area of approximately 1,900 square feet. These structures were situated along the southern boundary of the Site. Two additional sheds were situated in the central portion of the Site, along the northwest boundary of the 280/282 Dillon Avenue parcel. The 230 Dillon Ave parcel is currently leased to West Valley Arborists which uses the parcel to store tools, equipment, and firewood. The 230 Dillon Ave parcel does not contain any structures.

Historical use of the Site is generally unknown until 1964 when the land was bought by David R. Bittle and used as a storage yard for his roofing company. Historical aerial photos of the Site prior to the 1940's show the site was unused and part of the natural bank along the Los Gatos Creek. At some point prior to 1958 the Site appears to be in use as a gravel pit, apparently explaining the relatively lower elevation (approximately 15 feet lower than nearby flat areas) at the northeast end of the 280/282 Dillon Ave parcel. By 1958 photos show a row of small structures on the site, possibly residential trailers or small domiciles.

Facility personnel recount that the first official land use began in 1964 when David R. Bittle bought the property (apparently from the City of Campbell or Santa Clara County) to use as a storage yard for his roofing company. Between approximately 1970 and 1990 the eastern portion of the 280/282 Dillon Ave parcel was leased to a construction sanitation company, which used the Site to store rental outhouses. Between the 1960's to approximately 2007, parts of the yard were leased to a roofing supply company who during this time had five small buildings on the parcel including a yard office, a pole barn used for shingles and other roofing supply materials, a metal shed used for storing furniture and personal items,

² Arco #6147, 2015 Winchester Blvd., Campbell - GeoTracker Global I.D. No. T0608554641

another separate metal shed used for storing paints, oils, and caulking, and an additional small wooden shed who's use in unknown. All other previous structures were removed in 2007 in preparation for the sale of the property.

According to facility personnel, the Bittle family acquired the 230 Dillon Ave property in the 1960's or 1970's from the previous landowner. The property contained a residential house which was subsequently torn down. The land was then leased to a hot-roofing company for storage of roofing tar blocks, tar heating trailers, and vehicles. The lease ended in the 1990's but several vehicles remained stored on the property until approximately 2007. The 230 Dillon Ave property is currently on a one-year lease to the West Valley Arborists for vehicle and equipment storage, as mentioned above.

Current use of adjacent properties includes residential and commercial buildings to the north along Dillon Ave. To the east a pedestrian walkway runs above the Los Gatos Creek. The property to the south is owned by the City of Campbell and is in use as a storage and service yard for various city departments. It includes a fueling area containing fuel pumps and an aboveground storage tank (AST) for natural gas, located near the center of the property. A multi-tenant automotive repair facility is in use on the adjacent property to the west.

2.4 Recently Completed Soil Sampling Investigations

ENVIRON recently conducted several soil investigations at the Site as part of its Limited Phase II Environmental Site Assessment. Soil investigations included shallow soil sampling, in situ screening for Volatile Organic Compounds (VOCs), test pits excavation and sampling, and exploratory trenching.

2.4.1 Initial Phase II Soil Borings

On March 19, 2013 ENVIRON conducted initial shallow soil sampling at the Site. Soil samples were collected and analyzed from boring locations SB-4, and SB-7 through SB-13 from depths of 0.5 to 1.0 feet bgs. After the initial shallow sample was collected, the borings were advanced to depths of 2-3 feet bgs and the soil was screened for VOCs using a calibrated photoionization detector (PID) at one foot intervals. Soil observations were recorded at each borehole to document soil lithology and any indications of staining or other visual impacts.

Laboratory analyzed soil samples included the following:

Sample ID	Depth	Location
SB-4-0.5	0.5-1.0'	Current storage location of one-gallon and five-gallon containers of waste oil
SB-7-0.5	0.5-1.0'	Area previously used for roofing material storage
SB-8-0.5	0.5-1.0'	Location of former metal shed which was used for motor oil, shingle oil, and spray paint storage
SB-9-0.5	0.5-1.0'	On eastern portion of site at location of former portable outhouse storage supply
SB-10-0.5	0.5-1.0'	On eastern portion of site at location of former water truck fill pad

Sample ID	Depth	Location
SB-11-0.5	0.5-1.0'	Adjacent to concrete foundation of pole barn where roofing materials were previously stored and where former employee had prepared small quantities of methamphetamine during the 1990's
SB-12-0.5	0.5-1.0'	Additional sample adjacent to concrete foundation of pole barn
SB-13-0.5	0.5-1.0'	At location of former Site office

All shallow soil samples were collected using direct-push technology (DPT) and hand-auger (SB-4 only) methods. Samples were properly sealed, labeled, and transported to a state-certified laboratory (McC Campbell Analytical) for analytical sampling. All soil samples were analyzed for the following compounds:

- California Assessment Manual 17 (CAM17) Metals by EPA Method 6010/6020/7470
- Organochlorine Pesticides by EPA Method 8081A
- PCBs by EPA Method 8082

In addition:

- Sample SB-4 (collected in the area where waste oil was stored) was additionally analyzed for Total Petroleum Hydrocarbons (TPH) as Gasoline, Diesel, and Motor Oil by EPA Method 8015.
- Samples SB-8 and SB-10 through SB-13 were additionally analyzed for TPH-D and TPH-MO (EPA Method 8015) in order to evaluate potential impacts in areas of the Site historically or currently associated with storage or use of petroleum hydrocarbons (e.g., diesel fuel, motor oil, or hydraulic oil).

2.4.2 Test Pits Observations & Soil Sampling

In March 2013, a geophysical survey at 280/282 Dillon Avenue was performed by JR Associates Inc. which revealed eleven (11) metallic anomalies throughout the Site. On April 3, 2013, ENVIRON directed a backhoe operated by Phase III Communications to excavate test pits in the identified locations to investigate the anomalies and collect soil samples for laboratory analysis (see Figure 2 for test pit locations).

Test pit samples, depths and investigation observations are shown in the table below:

Sample ID	Depth	Location	Observations of Sampled Soil
A1-2	2.0'	Metallic Anomaly 1	Discolored soil in can lids
A2-2	2.0'	Metallic Anomaly 2	Discolored soil in can lids
A3-3	3.0'	Metallic Anomaly 3	Native Soil
A5-5	5.0'	Metallic Anomaly 5	Loose fine sand below sheet metal
A6-3	3.0'	Metallic Anomaly 6	Discolored soil in waste
A7-5	1.0'	Metallic Anomaly 7	Discolored soil in waste
A8-1	2.0'	Metallic Anomaly 8	Native Soil
A9-5	5.0'	Metallic Anomaly 9	Native soil near concrete debris

Sample ID	Depth	Location	Observations of Sampled Soil
A10-2	4.0'	Metallic Anomaly 10	Discolored soil in waste
A10-4	2.5'	Metallic Anomaly 10	Discolored soil in waste
A10-5	5.0'	Metallic Anomaly 10	Native soil
A11-4	4.0'	Metallic Anomaly 11	Native soil near concrete debris
Center-2.5	2.5'	Between anomaly clusters "A1/A4" and "A2/A3"	--

Note: Test pit that was used to explore Anomaly 4 was identified as A1 because Anomaly 1 was adjacent to Anomaly 4 and the test pit extended through both anomalies.

This investigation identified abundant buried metallic debris and concrete rubble with some associated soil discoloration, with the most concentrated areas of metallic debris observed in Test Pits A1, A2, and A3, and Center. Debris observed at these locations was concentrated in a layer ranging in thickness from approximately 6-inches to 1.5 feet, with a maximum depths ranging from 6-inches bgs to approximately 2 to 3 feet bgs. Observed debris included: rusted can lids, metal pipes, nails, other metal objects, glass bottles or glass fragments, and dark-brown to rusty discolored soil. Similar debris (minus the can lids) was observed in Test Pits A6, A7, and A10, with debris and discolored soils encountered in Test Pit A10 to at least 4 feet bgs. Debris encountered in Test Pits A5, A8, A9, and A11 resembled construction debris (i.e., sheet metal, metal conduit, and broken chunks of reinforced concrete).

In order to characterize waste materials and soils that were encountered in the pits ENVIRON collected soil samples at depths ranging from 2 to 5 feet bgs. Samples were properly sealed, labeled, and transported to a state-certified laboratory (McC Campbell Analytical) for analytical sampling. All Test Pit soil samples were tested for the following compounds:

- California Assessment Manual 17 (CAM17) Metals by EPA Method 6010/6020/7470
- Total Petroleum Hydrocarbons (Gasoline, Diesel, and Motor Oil) by EPA Method 8015
- Organochlorine Pesticides by EPA Method 8081A
- PCBs by EPA Method 8082

2.4.3 Exploratory Trenching Observations & Soil Sampling

Based on the results of the Test Pits, further exploratory trenching and sampling was coordinated by ENVIRON with the goal of defining lateral and vertical limits of the buried waste material at the Site.

Trenching and soil sampling activities were conducted on April 18-24, 2013. Specifically, five parallel trenches (T1 through T5) were excavated, generally spanning the length of the 280/282 Dillon Avenue parcel in a northeast-southwest orientation (i.e., trenches ranging in length for approximately 250 to 370 feet long across the Site). Trench 1 (T1) was situated along the northwestern edge of the Site, followed by trenches T2, T3, T4 and T5 situated in parallel to T1 approximately 25 feet apart. All

trenches were advanced to a minimum of approximately 2.5 feet bgs, or as deep as was required to reach the native soils beneath the waste material (maximum depth of seven feet bgs; Trench 3 at the northeastern portion of the Site). Soil samples were collected along the length of each trench (see trench and sample locations on Figure 2).

Waste materials were observed throughout the trenches, primarily in trenches T1 through T4, with minimal waste material observed in T5. In general, waste material was dominantly comprised of that mentioned in the observed in the Test Pits (i.e., metal debris, glass bottles and glass fragments, rusty can lids, and chunks of reinforced concrete). See ENVIRON Table 4 for specific soil and waste material observations at each sample location.

Soil samples were collected at approximate 25 foot intervals along each of the five trenches, generally at depths of 0.5 and 2.5 feet bgs (seventy sample locations total). In some locations additional samples were collected if significant changes were observed. Samples were properly sealed, labeled, and transported to a state-certified laboratory (McC Campbell Analytical) for analytical sampling. All trench soil samples were tested for the following compounds:

- Lead & Arsenic by EPA Method 6020

Additionally,

- Soil samples from T2-K were analyzed for TPH-D and TPH-MO after field personnel reported a petroleum-like odor and soil discoloration at this location.
- Soil samples from T1-B were analyzed for PCB's by EPA 8082 because of debris containing electrical components.
- Soil samples from T3-E, T2-A, T2-AB, and T2-B were analyzed for PCB's by EPA 8082 in order to further delineate PCB impacts detected at previous soil boring location SB-13

2.5 Soil Sample Analysis & Laboratory Analytical Results – Identified Contaminants of Concern

Laboratory analytical results for all soil samples as tabulated by ENVIRON have been extracted from their *Phase I Environmental Site Assessment and Phase II Soil Investigation report*, dated June 18, 2013, and are included in the Tables section of this report for ease of reference. The following presents a brief synopsis of soil sample analytical results, specifically noting soil sample concentrations that exceed the conservative Residential Environmental Screening Levels (ESLs) or California Human Health Screening Levels (CHHSLs) as listed by identified Site Contaminant of Concern (COC).

CAM 17 Metals:

- **Lead:** Exceedences of the Residential ESLs and Residential CHHSLs (both set at 80 mg/kg) for lead ranged between approximately 81 to 2,500 mg/kg at fifty-four (54) sampling locations collected

from soil borings, test pit, and trench sample locations at depths ranging from approximately 0.5 to 7 feet bgs. Nine (9) of these locations exhibited lead concentrations exceeded 1,000 mg/kg which is the threshold considered to be hazardous waste by Title 22 California Hazardous Waste Criteria (i.e., Cal Haz-Waste). Some of these samples with total lead concentrations detected between 100 and 1,000 mg/kg were additionally analyzed for the Soluble Threshold Limit Concentration method (STLC), of which four (4) exceeded the STLC threshold of 5 mg/L, also classifying them as Cal Haz-Waste. Further, some of the samples that exceeded either the total lead concentrations of 1,000 mg/kg, or STLC concentration of 5 mg/L were additionally analyzed by the Toxicity Characteristic Leaching Procedure (TCLP) method. Two of the samples exceeded the TCLP threshold of 5 mg/L, indicating that some of the hazardous waste level lead impacted soils at the Site will require additional treatment/stabilization at a Class I landfill.

- **Arsenic:** All 161 samples collected from soil borings, test pit, and trench sample locations at depths ranging from approximately 0.5 to 7 feet bgs exceeded the Residential CHHSL (0.07 mg/L) and Residential ESL (0.39 mg/L) for Arsenic. However, 142 (or 88%) of the arsenic concentrations ranged from 2.6 to 10 mg/kg with an average concentration of 5.9 mg/kg. We note that several recent California and Bay Area specific studies³ have shown acceptable and/or naturally occurring background concentrations of arsenic to range as high as 11 to 12 mg/kg. Nineteen (19) samples (or 12%) exhibited concentrations of arsenic ranging from 11 mg/kg to as high as 100 mg/kg. The one sample (T4-I-2.5) that exhibited a total concentration of 100 mg/kg was further analyzed by STLC method which yielded a concentration of 5.6 mg/L, exceeded the California hazardous waste criteria.
- **Zinc:** Of the twenty-seven (27) samples analyzed for zinc (collected from soil boring and test pits at depths ranging from 0.5 to 7 feet bgs), only five (5) samples exceeded the Residential ESL of 600 mg/kg. The concentrations that exceeded the ESL ranged from 670 mg/kg to a maximum detected concentration 23,000 mg/kg (A10-4 at 2.5 feet).
- **Cadmium:** Of the twenty-seven (27) samples analyzed for cadmium (collected from soil boring and test pits at depths ranging from 0.5 to 7 feet bgs), only three (3) samples exceeded the Residential ESL (12 mg/kg) or Residential CHHSL (1.7 mg/kg). The concentrations that exceeded the ESLs/CHHSLs ranged from 5.1 to 18 mg/kg.

In general, the vast majority of shallow soils impacted by metals can be attributed to lead contamination, and to a much lesser extent arsenic, zinc and cadmium. Approximately half of the impacted locations do not extend to 2.5 feet bgs.

³ DTSC Interim Guidance for Sampling Agricultural Properties (3rd Revision, 2008), has established 12 mg/kg as an acceptable screening concentration for school sites. In addition, background arsenic in the San Francisco Bay Region has been set at 11 mg/kg (<http://www.swrcb.ca.gov/sanfranciscobay/esl.shtml>).

Total Petroleum Hydrocarbons

- **TPH-Gas:** SB-4 (collected in an area where waste oil was stored) was the only soil sample analyzed for TPH-G. TPH-G was not detected.
- **TPH-Diesel:** Of the twenty-seven (27) samples analyzed for TPH-diesel (collected from soil boring , test pits and trenches at depths ranging from 0.5 to 7 feet bgs), only five (5) sample locations exhibited concentrations above the Residential ESL of 83 mg/kg. The concentrations that exceeded the ESLs ranged from 85 to 280 mg/kg.
- **TPH-Motor Oil:** Of the twenty-seven (27) samples analyzed for TPH-motor oil (collected from soil borings , test pits and trenches at depths ranging from 0.5 to 7 feet bgs), only eight (8) sample locations exhibited concentrations above the Residential ESL of 500 mg/kg. The concentrations that exceeded the ESLs ranged from 790 to 2,600 mg/kg.

The elevated concentrations of TPH-diesel/motor oil were detected in shallow soils at 0.5-1 foot bgs., with only one sample location extending to 5 feet bgs (A10-5).

Organochlorine Pesticides

- **Dieldrin:** Of the twenty-one (21) samples analyzed for Organochlorine Pesticides (collected from soil borings and test pits at depths ranging from 0.5 to 7 feet bgs), only two (2) sample locations exhibited concentrations of Dieldrin above the Residential ESL (0.0023 mg/kg) and/or Residential CHHSL (0.035). The concentrations that exceeded the ESLs/CHHSLs ranged from 0.0038 and 0.02 mg/kg. **These slightly elevated concentrations were detected in shallow soils at 0.5-1 foot bgs.**

Polychlorinated Biphenyls (PCBs)

- **Total PCBs:** Of the thirty-three (33) samples analyzed for PCBs (collected from soil boring and test pits at depths ranging from 0.5 to 7 feet bgs), only two (2) sample locations exhibited elevated concentrations above the Residential ESL (0.22 mg/kg) and/or Residential CHHSL (0.0089). The concentrations that exceeded the ESLs/CHHSLs ranged from 0.1 to 4.5 mg/kg. **These elevated concentrations were detected in shallow soils at 0.5-1 foot bgs.**

2.6 Discussion of Soil Sample Analytical Results

Based on the extensive soil sample analysis conducted at the Site, Contaminants of Concern (COCs) that exceed the conservative ESLs/CHHSLs are confirmed to be Lead and Arsenic, and to a much lesser extent Cadmium, Zinc, TPH-diesel/motor oil, Dieldrin and/or PCBs. In general, concentrations of these Site COCs that exceed conservative Residential Screening Levels appear to be directly related to, and

confined to the defined "Waste Areas". A brief synopsis of key findings of relevance to the proposed remedial soils excavation is bulleted below:

- Of the ninety-six (96) sample locations (i.e., soil borings, Test Pit and Trench sample locations combined) forty-seven (47) of these locations exceed the Residential ESLs/CHHSLs for at least one or some of the Site COCs.
- Fifteen (15) of the forty-seven (47) sample locations that exceed the Residential ESLs/CHHSLs yielded "clean" (i.e., below Residential ESLs/CHHSLs) COC concentrations at a depth of 2.5 feet bgs.
- Sixteen (16) of the forty-seven (47) sample locations that exceed the Residential ESLs/CHHSLs yielded "elevated" (i.e., above Residential ESLs/CHHSLs) COC concentrations at total sample depths of either 2.5, 5 or 7 feet bgs, with no deeper samples to confirm "clean" vertical delineation.
- Thirteen (13) of the forty-seven (47) sample locations that exceed the Residential ESLs/CHHSLs, yielded concentrations of Lead (12 locations) and Arsenic (1 location) that meet the classification criteria for Hazardous Waste levels based on either the total concentration, the Soluble Threshold Limit Concentration (STLC) and/or the Toxicity Characteristic Leaching Procedure (TCLP), extending to approximate depths of 2.5 to 6 feet bgs.

The results of this extensive vertical and lateral soil characterization investigation provide sufficient data to adequately guide a remedial soils excavation effort aimed at removing all impacted soils above Residential ESLs/CHHSLs for transition to residential land use with no use restrictions.

The plans for residential development and proposed remedial excavation tasks are described in the following sections.

3.0 SITE RESIDENTIAL DEVELOPMENT PLANS

The project is a 1.92 acre site in the City of Campbell, comprised of three separate but contiguous parcels. The main large parcel (1.69 acres) is adjacent to the City Corp Yard and Los Gatos Creek Trail and the two smaller parcels are on Dillon Avenue. The subject parcels are zoned Planned Development (P-D), and the General Plan designation is High Density Residential for the large parcel and Commercial/Medium Density Residential for the two smaller parcels. Santa Clara Development is proposing to develop thirty-three (33) 3-story townhome units and twelve (12) 3-story duplexes for a total of 45 residential units. The project design is consistent with the City's goals to revitalize the area by providing new housing opportunities within walking distance to Downtown, the Los Gatos Creek Trail, and the Vasona Light Rail Corridor.

The proposed development plan is shown on Figure 6.

4.0 PROPOSED REMEDIAL SOILS EXCAVATION

The goal of the proposed remedial soils excavation will be to remove the well-defined Site COCs that exceed residential screening levels (ESL and/or CHHSLs) in order to facilitate the transition of the Site for residential development (as described in Section 3.0 of this report) with no land use restrictions. Based on our review of the existing comprehensive vertical and lateral Site soil data set with respect to residential screening levels we have reasonably determined pre-defined soil and debris removal areas designed to achieve this goal. In general, we have identified four (4) areas across the Site ranging in size from approximately 800 ft² to 31,400 ft² that yielded concentrations of COC that exceed residential screening levels, and generally correspond to the defined "Waste Areas (i.e., buried debris)". The vast majority of impacted soils across these areas extend to depths of less than 2.5 feet bgs, with a few localized areas that extend to depths ranging from approximately 4.5 feet bgs to as deep as approximately 9 feet bgs.

We note that during the course of all remedial excavation work at the Site, all encountered debris previously described (e.g., rusted can lids, metal pipes, other metal objects, glass bottles, sheet metal, metal conduit, and broken chunks of reinforced concrete) will be segregated and separately handled and disposed of as construction debris.

The following subsections describe predefined remedial soil excavation areas and associated volumes, fieldwork tasks and methodology, confirmation soil sampling plan, and soil disposal profiling for landfill acceptance. We note that all previous investigation locations have been professionally surveyed which will help accurately guide removal of impacted soils within the proposed excavation footprints.

4.1 Remedial Excavation of Hazardous Waste Level Soils

As described in Sections 2.5 and 2.6 of this report, we have identified thirteen(13) sample locations that yielded concentrations of Lead (12 locations) and Arsenic (1 location) that meet the classification criteria for Hazardous Waste levels based on either the total concentration, the Soluble Threshold Limit Concentration (STLC) and/or the Toxicity Characteristic Leaching Procedure (TCLP). These locations are shown on Figure 3. This soil will need to be treated and disposed of at a Class I landfill.

All of the identified hazardous waste soil locations are situated within the larger footprints of proposed remedial excavation areas; therefore, prior to conducting mass removal of non-hazardous soils at the Site, we propose to first remove and segregate soil at these thirteen locations that exhibit hazardous waste levels of lead/arsenic in order to avoid inadvertent blending of these soils with surrounding non-hazardous soils. Specifically, we propose to excavate an approximate 10 x 10 foot area at each location to a predefined depth where either a non-hazardous vertical base sample has already been established

during the previous Site soil characterization activities, or to at a depth of at least 2 feet below any sample that has been shown to exceed hazardous waste levels. Proposed excavation depths based on these criteria are presented on Figure 3, and range from 2.5 feet to 6 feet bgs. The minimum estimated volume of hazardous waste level soils is approximated to be 178 yds³. Once removed, these soils will be stockpiled on-site and profiled with a Class I landfill for subsequent disposal.

4.1.1 Confirmation of Hazardous Waste Removal

In order to confirm that the hazardous waste levels of lead/arsenic have been successfully removed from these locations we will collect and laboratory analyze the following soil samples from each of the thirteen (13) locations:

- Confirmation samples will be collected from each excavation sidewall (i.e., 4 soil samples per 10 x 10 foot excavation).
- If a non-hazardous waste level base has already been pre-defined during the previous soil characterization mobilizations (six of the thirteen samples – see figure 3) than no base sample will be collected.
- One base sample will be collected from excavations that do not already have a pre-defined non-hazardous waste level base (seven of the thirteen locations – see Figure 3).

Confirmation samples will be submitted to a State certified laboratory to be analyzed for either total lead (12 locations) or arsenic (1 location) based on previous confirmation of the hazardous waste COC detected. Determination of the complete removal of each hazardous waste “hot-spot” will be based on the following analytical criteria:

- If the total concentrations for either lead or arsenic are less than 50 mg/kg, then that sidewall or base sample will be considered non-hazardous.
- If the total concentrations for either lead or arsenic are greater than 50 mg/kg, then additional testing for that sample will include the STLC. If the STLC for either lead or arsenic is less than 5 mg/L, then that base or sidewall sample will be considered non-hazardous.
- If the STLC is greater than 5 mg/L, then that base or sidewall location will be advanced/excavated and resampled until non-hazardous waste analytical criteria is achieved.

By completing this “surgical” removal and confirmation sampling of these hazardous waste “hot-spot” locations, the inadvertent blending of the Class I waste material with potential Class II or III waste material will be avoided during proposed mass grading of non-hazardous soils.

4.2 Remedial Excavation of Soils Exceeding Residential Screening Levels

As described in Sections 2.5 and 2.6 of this report, we have identified that forty-seven (47) of the ninety-six (96) sample locations across the Site (i.e., soil borings, Test Pits and/or Trenches) exceed the Residential ESLs/CHHSLs for at least one or some of the Site COCs (including the hazardous waste soils described above). Approximately half of the non-hazardous impacted soils are confirmed to be at depths of less than 2.5 feet bgs, with a few localized areas that extend to depths of approximately 4.5, 7 and 9 feet bgs. Specifically:

- Fifteen (15) of the forty-seven (47) sample locations that exceed the Residential ESLs/CHHSLs yielded “clean” (i.e., below Residential ESLs/CHHSLs) COC concentrations at a depth of 2.5 feet bgs.
- Sixteen (16) of the forty-seven (47) sample locations that exceed the Residential ESLs/CHHSLs yielded “elevated” (i.e., above Residential ESLs/CHHSLs) COC concentrations at total sample depths of either 2.5, 5 or 7 feet bgs, with no deeper samples to confirm “clean” vertical delineation.

The following proposed remedial excavation areas will be advanced once the removal and segregation of all hazardous waste level soils at the Site has occurred.

4.2.1 Shallow Soil Excavation Areas – 2.5 Feet Deep

Based on this soil delineation data we have defined four (4) areas across the Site that will require soil removal to a depth of 2.5 feet bgs in order to remove COCs concentrations that exceed residential screening limits. Specifically:

- **Area 1:** Generally encompasses the central portion of the Site where the majority of land use occurred and much of the buried waste was encountered. This proposed excavation area has a defined footprint of approximately 31,389 ft² totaling a volume of approximately 2,906 yds³
- **Area 2:** A small area situated along the northeastern property line with a defined footprint of approximately 812 ft² totaling a volume of approximately 75 yds³.
- **Area 3:** A small area situated near the northeastern property line where an isolated pocket of buried waste was observed. This proposed excavation area has a defined footprint of approximately 1,977 ft² totaling a volume of approximately 183 yds³.
- **Area 4:** A small area situated along the eastern property line where an isolated pocket of buried waste was observed. This proposed excavation area has a defined footprint of approximately 2,471 ft² totaling a volume of approximately 229 yds³.

The proposed Shallow Soil Excavation Areas are shown on Figure 4. In total, we estimate that approximately 3,393 yds³ will be removed to a depth of 2.5 feet bgs.

4.2.2 Deeper Soil Excavation Sub-Areas – from 2.5 Feet to 4.5, 7, and 9 Feet Deep

As described above, there are sixteen (16) sample locations within each of the four excavation Areas described above that exhibited soil impacts above residential screening levels that have not been vertically defined below 2.5 feet bgs. Therefore, we propose to advance fourteen (14) predefined “Sub-Area” excavations within the larger shallow excavation footprints to depths of approximately 2 feet beyond previously identified COCs that exceed residential screening levels. The lateral limits of deeper excavation Sub-Area footprints have been conservatively estimated by splitting half the distance to surrounding borings that show low-level concentrations of COCs below residential screening levels at depths of 2.5 feet. Specifically:

Sub-Areas within Area 1:

- **Sub-Areas 1a through 1f:** These six (6) proposed excavation Sub-Areas are situated within the larger proposed excavation Area 1 and will be advanced to a depth of 4.5 feet bgs. The total approximate additional volume to remove these soils from 2.5 feet to 4.5 feet bgs at these locations is approximately 218 yds³.
- **Sub-Areas 1g through 1i:** These three (3) proposed excavation Sub-Areas are also situated within the larger proposed excavation Area 1 and will be advanced to a depth of 7 feet bgs. The total approximate additional volume to remove these soils from 2.5 feet to 7 feet bgs at these locations is approximately 227 yds³.

Sub-Areas within Area 2:

- **Sub-Area 2a:** This one (1) proposed excavation Sub-Area is situated within the larger proposed excavation Area 2 and will be advanced to a depth of 4.5 feet bgs. The total approximate additional volume to remove these soils from 2.5 feet to 4.5 feet bgs at this location is approximately 35 yds³.

Sub-Areas within Area 3:

- **Sub-Area 3a:** This one (1) proposed excavation Sub-Area is situated within the larger proposed excavation Area 3 and will be advanced to a depth of 4.5 feet bgs. The total approximate additional volume to remove these soils from 2.5 feet to 4.5 feet bgs at this location is approximately 42 yds³.
- **Sub-Area 3b:** This one (1) proposed excavation Sub-Area is also situated within the larger proposed excavation Area 3 and will be advanced to a depth of 7 feet bgs. The total

approximate additional volume to remove these soils from 2.5 feet to 7 feet bgs at this location is approximately 55 yds³.

- **Sub-Area 3c:** This one (1) proposed excavation Sub-Area is also situated within the larger proposed excavation Area 3 and will be advanced to a depth of 9 feet bgs. The total approximate additional volume to remove these soils from 2.5 feet to 9 feet bgs at this location is approximately 108 yds³.

Sub-Areas within Area 4:

- **Sub-Areas 4a & 4b:** These two (2) proposed excavation Sub-Areas are situated within the larger proposed excavation Area 4 and will be advanced to a depth of 4.5 feet bgs. The total approximate additional volume to remove these soils from 2.5 feet to 4.5 feet bgs at these locations is approximately 125 yds³.

The proposed Deeper Soil Excavation Sub-Areas are shown on Figure 5. In total, we estimate that approximately 810 yds³ will be removed from depths below 2.5 feet bgs.

We note that of these total estimated volumes for Areas 1 through 4 and associated Sub-Areas approximately 178 yds³ will have been removed from these footprints as hazardous waste.

4.3 Pre-Excavation Activities

Pre-excavation tasks will include the following:

- Preparation of a Site Health & Safety Plan in accordance with State and Federal hazardous waste operations regulations (California Code of Regulations, Title 8, Section 5192 and 29 Code of Federal Regulations 1910.120) (included in Appendix B).
- Obtain a Grading Permit through the City of Campbell Building Department.
- Prior to beginning excavation activities, Underground Service Alert (USA) will be contacted at least 48 hours in advance to identify the location of utilities that enter the property. All proposed excavation areas will be clearly marked with white paint or surveyors flagging as required by USA. USA will contact all utility owners of record within the Site vicinity and notify them of the intent to excavate. All utility owners of record will be expected to clearly mark the position of their utilities on the ground surface throughout the designated area. In addition, a private utility locating firm will be retained to examine the Site with geophysical tools to locate on-Site, privately owned utilities.

4.4 Excavation Activities

We will contract with a Haz-certified licensed excavation contractor (Triton Construction: License #693807) to excavate, stockpile and subsequently load the removed soils onto ~15 yard capacity end

dump trucks for direct transport to approved landfills. Excavation area, depths and associated volumes are described in Sections 4.1 and 4.2 of this report, and shown on Figures 3, 4, and 5. The soil will be removed using standard earthmoving equipment (e.g., excavator, backhoe, front end loader).

4.4.1 Surveying Activities

A survey of the Site including locations of all soil sample locations has been completed. This existing survey information will be used to accurately establish the boundaries of the proposed hazardous waste excavation locations, excavation Areas and excavation Sub-Areas prior to soil removal activities. The final lateral limits and depth of the proposed remedial excavations will be confirmed by using standard elevation control equipment (laser transit level).

4.4.2 Dust Control

During excavation activities, depending on soil conditions, there is potential to generate airborne dust. The following Dust control measures will be employed to protect on-Site and off-site receptors from chemicals in soil and nuisance dust.

- Dust suppression will be performed by lightly spraying or misting the work areas (such as the excavation, soil handling areas and haul roads) with water. Misting may also be used on soil placed in the transport trucks. During soil load-out activities efforts will be made to minimize the soil drop height from the excavator's bucket into the transport trucks. The excavator will be positioned so as to load soil from the leeward side when possible. After the soil is loaded into the transport trucks, the soil will be covered with fabric tarp to prevent soil from spilling out of the truck during transport to the disposal facility.
- While on the property, all vehicles will maintain slow speeds (e.g., less than 5 miles per hour) for safety purposes and for dust control measures. Before exiting the job Site, the vehicle's tires will be inspected and brushed, if necessary, to ensure that potentially impacted soil remains on-Site. In addition, street sweeping may be employed if dust/sediment is being inadvertently tracked off-site.
- Weather will be monitored to prepare for potential rainfall during excavation activities. If precipitation is anticipated Best Management Practices (i.e., additional engineering controls such as wattles, clean sand berming, silt traps installed in storm drains, etc.) will be implemented to minimize the migration of sediment from the Site.

4.4.3 Air Monitoring

Air monitoring strategies and methodologies will be implemented during the removal action to achieve several goals:

1. Construction Worker Health & Safety

- Identify and measure the air contaminants generated in the work zone during the soil removal.
- Provide feedback to Site personnel regarding potential hazards from exposure to hazardous air contaminants generated through excavation activities.

2. Off-Site Health & Safety

- Identify and measure air contaminants at points along the perimeter of the Site. Air monitoring will be conducted to monitor the effectiveness of dust control measures implemented during excavation and soil removal activities, and ensure that off-Site migration of airborne contaminants is not occurring.

A respirable dust hazard evaluation of potential airborne contaminants of concern has shown concentrations at the Site to have negligible impact to human health and safety if airborne. OSHA has established Permissible Exposure Limits (PEL) for these COCs (i.e. Lead, Arsenic, Cadmium, Zinc, Dieldrin, and PCBs) which are time weighted averages for an 8 hour workday. Based on the highest concentration of these COCs (i.e., worst case scenario) we have estimated Dust Action Levels for each contaminant based on ½ their respective PEL. The Action Level is the exposure level at which OSHA regulations take effect, and is generally considered to be one-half of the PEL. The Dust Action Levels for each COC is presented in the table below. We note that the Dust Action Levels presented for each COC represents the amount of dust that would need to be generated over an 8-hour workday needed to exceed ½ of the respective PEL. The PEL for nuisance dust not otherwise classified is 10 mg/m³, and this is indicative of extremely dusty conditions.

Respirable Dust Evaluation

Contaminant of Concern	*Highest Concentrations in Soil (mg/kg)	OSHA PEL (mg/m ³)	Dust Action Level (mg/m ³)
Lead	2,500	0.05	10
Arsenic	100	0.01	50
Cadmium	18	0.005	139
Zinc	23,000	5	109
Dieldrin	0.020	**0.25	6.25 x10 ⁶
PCBs	4.5	**0.5	5.6 x10 ⁴
Nuisance Dust	--	10	5

Table notes:

* - Highest concentrations detected in soil samples-- considered "worst case scenario"

Table notes (cont.)

** - PEL for dermal contact – specified for dermal contact only

OHSA PEL- Occupational Safety and Health Administration (OHSA) Permissible Exposure Limit (PEL)

Dust Action Level for based on ½ the PEL for arsenic, lead, antimony, cadmium, and PAHs. The Action Level is the exposure level at which OSHA regulations take effect, which is generally considered to be one-half of the PEL.

Based on this evaluation, the Dust Action Level of 5 mg/m³ for nuisance dust will be the “not to exceed” threshold for evaluating effective dust control at the Site.

Particulate monitoring equipment (i.e., Thermo pDR-1000) will be set up at the Site for continuous monitoring of particulate concentrations throughout each workday. Specifically, one work zone, one upwind, and two downwind perimeter particulate monitoring stations will be positioned around the property. The work zone monitor will be positioned at breathing height level (approximately 5 feet above the ground surface) in the work zone and the up and downwind perimeter monitoring stations will be positioned just above the Site exclusion zone fencing in order to measure background particulate concentrations and potential off-Site dust migration concentrations.

4.4.4 Soil Management, Stockpiling, Profiling and Disposal

Excavated soil and debris will be segregated based on existing sampling data. Specifically:

- The minimum estimated volume of hazardous waste level soils is approximated to be 178 yds³ (see Figure 3). As previously described, this soil will be removed first and stockpiled at a pre-designated location at the Site for subsequent Class I landfill acceptance sampling.
- Once confirmation sample analytical results have confirmed that all hazardous waste level soils have been removed from the larger pre-designated excavation Areas, approximately 4,000 yds³ of non-hazardous soils expected to have elevated COCs above residential screening levels will then be excavated and be deposited in one contiguous stockpile at a pre-designated location at the Site for subsequent Class II and III landfill acceptance sampling.
- All debris encountered during the proposed excavations will be segregated from the soils and stockpiled at a pre-designated location at the Site for subsequent disposal as construction debris at a local landfill.

All stockpiled soils will be covered with plastic sheeting at all times in order to avoid inadvertent dust nuisance or an airborne particulate hazard. In the event of wet weather conditions the perimeter of the soils stockpiled may be lined with straw wattles.

Once all excavated soils have been stockpiled, a stockpile soil sampling strategy will be employed to satisfy specific landfill acceptance criteria which may vary from facility to facility. Prior to employing the

sampling strategy we will confirm acceptance criteria and required soil analysis with some or all of the following facilities:

Class I landfill disposal facilities may include:

- Clean Harbor's Class I Landfill (Buttonwillow, CA)
- Waste Management's Class I Landfill (Kettleman Hills, CA)

Class II landfill disposal facilities may include:

- Waste Management's Class II landfills (Altamont, CA; Kirby Canyon – Morgan Hill, CA; Guadalupe – San Jose, CA)
- Clean Harbors Class II landfills (Forward – Manteca, CA)

Class III landfill disposal facilities may include:

- Marina Regional Waste Management District's Class III landfill (Marina, CA)
- Waste Management's Class III Landfill (Tri Cities, Fremont, CA)

Once landfill acceptance has been confirmed, the stockpiled soils will be loaded onto 15 yard end dump trucks for direct transport to the approved landfill facility. All hazardous waste material will be hauled by a licensed has-waste hauler. Documentation of proper soil disposal will be provided in a follow-up letter report (i.e., manifests and landfill receipts).

4.5 Confirmation Soil Sampling

The following proposed confirmation soil sampling program is designed to confirm that following remedial soils excavation activities the Site COCs have been reasonably removed from the Site to concentrations that are below or approximate residential screening levels (ESLs/CHHSLs). The sampling strategy also takes into consideration the proposed housing development. The density of confirmation samples will be greater in those areas where future slab-on-grade homes, driveways and roadways will not be present (i.e., greater sampling density will be employed at unpaved, landscaped areas). Proposed confirmation soil samples will be collected from the base of the excavation Areas and Sub-Areas as follows:

- Sixteen (16) confirmation soil samples will be collected from the base of the fourteen (14) pre-defined Sub-Areas where sixteen (16) previous sample locations exhibited elevated soil impacts that have not been vertically defined below 2.5 feet bgs. These proposed soil samples will reasonably confirm whether or not the soil impacts have been removed, or whether additional excavation below the proposed depths will need to occur to further reduce concentrations of previously detected COCs. We note that confirmation samples collected from these Sub-Area excavation locations will address the specific COC that were previously found to be elevated at

each of the sixteen (16) previously collected sample locations (i.e., either lead, arsenic, and/or zinc).

- Because the remainder of the Site has been fairly well characterized (i.e., previous soil sampling along approximate 25 foot by 25 foot grids) we propose to collect excavation base samples in an approximate 30 foot grid within areas that will be developed as landscaped areas, and approximate 50 foot grids for areas that will be capped with either a slab-on-grade homes or paved surface areas (i.e., roadways/driveways).

In total, we estimate the collection of approximately 51 confirmation soil samples. Proposed confirmation soil sampling locations are shown on Figure 7, and have been overlain onto the future Site landscape rendering.

We note that confirmation soil sampling will be conducted as the excavation progresses. By doing so, we will have the opportunity to revisit and remove additional soils from any area that may still contain elevated concentrations of COCs.

Soil sampling will follow procedures outlined in a Field Methodology for Shallow Soil Sampling, which is included in Appendix C. All collected confirmation soil samples will be submitted to a State certified laboratory for analysis of some or all of the following Site COCs (i.e., as noted above, Sub-Area excavation locations will include confirmation sampling for either lead, arsenic and/or zinc only):

- **Metals:** Lead, Arsenic, Cadmium, and Zinc by EPA Method 6010B
- **Total Petroleum Hydrocarbons as Diesel and Motor Oil** by EPA Method 8015M w/ silica gel cleanup
- **Deildrin** (Organochlorine Pesticide) by EPA Method 8081A
- **Polychlorinated Biphenyls (PCBs)** by EPA Method 8082

4.6 Excavation Backfilling

Excavation backfilling and Site finish grade elevation will be achieved by importing clean compactable fill material and depositing it according to Site development plans. This operation will be conducted by other grading contractors under separate contract and is not part of this *Work Plan* scope.

5.0 PROPOSED SCHEDULE & SUMMARY REPORTING

Following *Work Plan* approval and authorization to proceed, the above tasks can be completed according to the following schedule (start-up pending approval of grading permit and subcontractor availability):

- We anticipate that the remedial excavation, soil/debris off-hauling and confirmation soil sampling tasks can be completed within approximately three (3) weeks.

Within four (4) to six (6) weeks following receipt of all laboratory analytical data we will provide a report summarizing field activities, analytical results and conclusions.

If confirmation soil sample analytical results meet or approximate residential screening levels we will:

- **Conclude that the Site may be transitioned for residential land use with no restrictions, and**
- **Request "Case Closure" from the County of Santa Clara Department of Environmental Health**

6.0 LIMITATIONS

Our service consists of professional opinions and recommendations made in accordance with generally accepted geologic and engineering principles and practices. This warranty is in lieu of all others, either express or implied. The analysis and conclusions in this report are based on sampling and testing which are necessarily limited. Additional data from future work may lead to modification of the opinions expressed herein.

All work related to this investigation and remediation at this Site is done under the direct supervision of a Professional Geologist or Engineer, registered in California, and experienced in environmental assessment and remediation.

Thank you for the opportunity to participate in the assessment of this site. If you have any questions regarding this report, or any aspect of this project, please contact us at (831) 722-3580.

Sincerely,

Weber, Hayes and Associates

By: DRAFT
Jered Chaney, PG # 8452
Project Geologist

cc Santa Clara Development
c/o: Mark Robson / Jake Lavin
2185 The Alameda, Suite 150
San Jose, California 95126

Figures

Tables

Appendix A

ENVIRON: Phase I Environmental Site Assessment and Phase II Soil Investigation, dated June 18, 2013

Appendix B

Site Health & Safety Plan

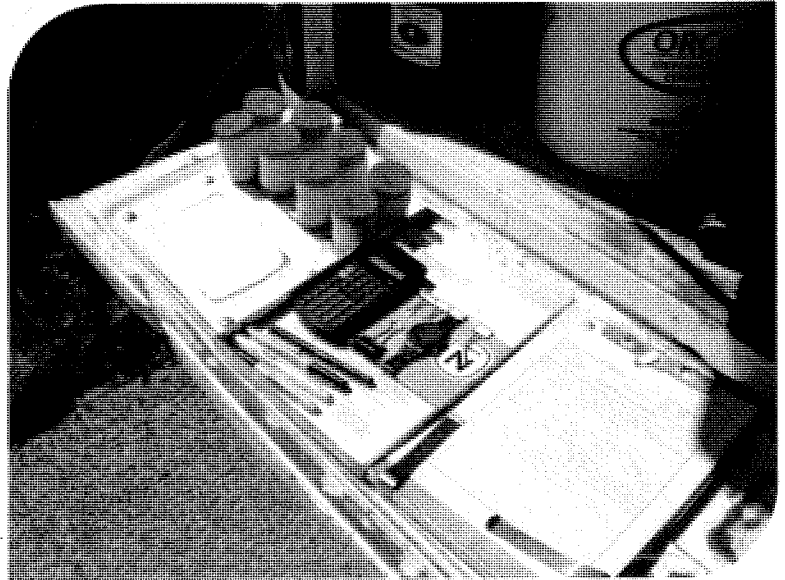
Appendix C

Field Methodology for Shallow Soil Sampling

Field Methodology for Shallow Soil Sampling

This field methodology describes the methods used during shallow soil sampling investigations. Included are specifications for shallow soil sampling with a slide hammer, and decontamination procedures.

Shallow Soil Sampling Procedures: A backhoe, two person power auger, or a hand auger will be used to get to a point immediately above the sampling depth. Once at the desired sampling depth, a slide hammer will be used to drive a clean stainless steel liner encased in the slide hammer sampling shoe to obtain a relatively undisturbed sample. The slide hammer consists of a metal rod with one end containing a sampling shoe and cutting head with which a sample



liner can be installed. At the other end of the metal rod there is a handle that is constrained on the rod, but slides up and down the rod allowing force to be applied to the sampling shoe. Manual operation is used to slide the handle down the rod to force the sampling shoe equipped with the liner into native soils.

Materials retrieved from the sampler will be logged on an as-needed basis by the experienced field geologist using the Unified Soil Classification System (USCS), noting in particular, the lithology of the soils, moisture content, and any unusual odor or discoloration. The liner and relatively undisturbed soils will then be removed from the sampling shoe. The liner is then protected at both ends with Teflon tape, sealed with non-reactive caps, taped, and immediately stored in an insulated container cooled with blue ice at a temperature of 4 degree Celsius or less. Selected samples will be transported under appropriate chain-of-custody documentation to a State certified laboratory performing the targeted analysis.

Samples scheduled to be composited prior to analyses will be composited by the analytical laboratory according to their procedures prior to analyses.

Upon completion of sampling at the designated location, the location will be backfilled and compacted with the materials that were removed prior to sampling, supplemented by clean imported fill as necessary.

Equipment Decontamination and Containerization Procedures: All sampling equipment will be cleaned prior to arriving on site to prevent possible transfer of contamination from another site. Additionally, sampling equipment will be thoroughly cleaned between each sampling run with a Liqui-Nox[®] or Alconox[®] solution followed by a double rinsing with distilled water to prevent the vertical transfer of contamination, and/or contamination from location to location onsite. Accordingly, all sampling equipment will be cleaned following sampling operations to prevent the possible transfer of contamination to another site.

ATTACHMENT 3

AIR QUALITY AND GREENHOUSE TECHNICAL MEMORANDUM

AIR QUALITY AND GREENHOUSE GAS TECHNICAL MEMORANDUM: DILLON AVENUE RESIDENTIAL PROJECT IN CAMPBELL, CALIFORNIA

Prepared for
Robson Homes

June 2014



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1. Air Quality Analysis

1.1 Setting

Under amendments to the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has classified air basins or portions thereof as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the national standards have been achieved. The California CAA, which is patterned after the federal CAA, also requires areas to be designated as “attainment” or “non-attainment” for the state standards. Thus, areas in California have two sets of attainment / non-attainment designations: one set with respect to the national standards and one set with respect to the state standards. The San Francisco Bay Area Air Basin (Bay Area) is currently designated as a nonattainment area for state and national ozone standards, state particulate matter (PM10 and PM2.5) standards, and federal PM2.5 (24-hour) standard.

The Bay Area Air Quality Management District (BAAQMD) is the regional air quality authority in the project area. The most recently adopted air quality plan for the San Francisco Bay Area is the *Bay Area 2010 Clean Air Plan* (BAAQMD, 2010). The 2010 Clean Air Plan (2010 CAP) is an update to the BAAQMD 2005 Ozone Strategy to comply with State air quality planning requirements. The 2010 CAP also serves as a multi-pollutant air quality plan to protect public health and the climate. The 2010 CAP control strategy includes revised, updated, and new measures in the three traditional control measure categories, including stationary source measures, mobile source measures, and transportation control measures. In addition, the 2010 CAP identifies two new categories of control measures, including land use and local impact measures, and energy and climate measures.

BAAQMD adopted updated *CEQA Air Quality Guidelines*, including new thresholds of significance in June 2010, and revised them in May 2011. The Air Quality Guidelines advise lead agencies on how to evaluate potential air quality impacts, including establishing quantitative and qualitative thresholds of significance. The BAAQMD resolutions adopting and revising the significance thresholds in 2011 were set aside by a judicial writ of mandate on March 5, 2012.¹ In May of 2012, BAAQMD updated its CEQA Air Quality Guidelines to continue to provide direction on recommended analysis methodologies, but without recommended quantitative significance thresholds (BAAQMD, 2012). On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD’s CEQA thresholds.² BAAQMD has not formally re-instated the thresholds or otherwise responded to this Appellate Court reversal at this time.

¹ The thresholds BAAQMD adopted were called into question by a minute order issued January 9, 2012 in *California Building Industry Association v. BAAQMD*, Alameda Superior Court Case No. RG10548693. The minute order states that “The Court finds [BAAQMD’s adoption of thresholds] is a CEQA Project, the court makes no further findings or rulings.” The claims made in the case concerned the CEQA impacts of adopting the thresholds, particularly, how the thresholds would affect land use development patterns. Petitioners argued that the thresholds for Health Risk Assessments encompassed issues not addressed by CEQA.

² *California Building Industry Ass’n v. Bay Area Air Quality Mgmt. Dist.*, Case No. A135335 & A136212 (Court of Appeal, First District, August 13, 2013)

The air quality analysis below uses the previously-adopted 2011 thresholds of the BAAQMD to determine the potential impacts of the project. While the significance thresholds adopted by BAAQMD in 2011 are not currently recommended by the BAAQMD, these thresholds are based on substantial evidence identified in BAAQMD's 2009 *Justification Report* and are therefore used within this document.

For the purposes of this air quality analysis, sensitive receptors are defined as facilities and land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and daycare centers. Residential areas are also considered sensitive to poor air quality because people usually stay home for extended periods of time, which results in greater exposure to ambient air quality.

The project site is located in the City of Campbell. The surrounding properties are mainly commercial and residential. Primary existing sources of air pollutant emissions include Highway 17 (about 300 feet from the project's southern boundary) and the UPRR railroad (about 100 feet from the project's northern boundary).

1.2 Approach to Analysis

The project includes demolition of approximately 26,281 square-feet of existing buildings on-site and construction of the new 81 townhouses, 19 apartments, and associated parking. Potential impacts are assessed by modeling the estimated daily emissions generated by project construction and project operations the project using the CalEEMod land use emissions model version 2013.2.2. Project emissions are then compared to the BAAQMD 2011 significance criteria, which include the following:

- Result in total construction emissions of Reactive Organic Gases (ROG), nitrogen oxide (NO_x), or PM_{2.5} (exhaust) of 10 tons per year or greater or 54 pounds per day or greater.
- Exceed a construction emission threshold for PM₁₀ (exhaust) of 15 tons per year or greater, or 82 pounds per day or greater.
- For PM₁₀ and PM_{2.5} as part of fugitive dust generated during construction, the BAAQMD Guidelines specify compliance with Best Management Practices as the threshold.
- Result in total operational emissions of ROG, NO_x, or PM_{2.5} of 10 tons per year or greater, or 54 pounds per day or greater.
- Exceed an operational emission threshold for PM₁₀ of 15 tons per year or greater, or 82 pounds per day.
- Result in carbon monoxide (CO) concentrations of 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average) as estimated by roadway vehicle volumes exceeding 44,000 vehicles per hour at any intersection.
- For risks and hazards during construction and operations, the BAAQMD Guidelines specify an increase in cancer risk exposure by 10 in one million, contribute hazard indices

by a ratio of 1.0, or increase local concentrations of PM_{2.5} by 0.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

A project's contribution to cumulative impacts for criteria pollutants are considered significant if the project's impact individually would be significant (i.e., if it exceeds the BAAQMD's quantitative thresholds).

With regard to cumulative impacts from PM_{2.5}, a significant cumulative air quality impact would be considered to occur if localized annual average concentrations of PM_{2.5} would exceed 0.8 micrograms per cubic meter at any receptor from project operations in addition to existing emission sources and cumulative emissions sources within a 1,000-foot radius of the property line of the source or receptor.

With regard to cumulative impacts from toxic air contaminants (TACs), a significant cumulative air quality impact would be considered to occur if the probability of contracting cancer for the maximally exposed individual (MEI) would exceed 100 in one million or if the project would expose persons to TACs such that a non-cancer chronic Hazard Index (HI) of 10.0 would be exceeded at any receptor as a result of project operations, in addition to existing emission sources and cumulative emissions sources within a 1,000 foot radius of the project site. However, a project's construction or operational impacts would be considered to result in a considerable contribution to an identified cumulative health risk impact if the project's construction or operation activities would exceed the project-level health risk significance thresholds identified above.

1.3 Impact Assessment

Impact AIR-1: Would the project conflict with or obstruct implementation of the applicable air quality plan? (Less than Significant with Mitigation)

The most recently adopted air quality plan in the Bay Area is the BAAQMD's 2010 CAP (BAAQMD, 2010). The 2010 CAP is a roadmap showing how the San Francisco Bay Area will achieve compliance with the State one-hour ozone standard as expeditiously as practicable, and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The control strategy includes stationary source control measures to be implemented through BAAQMD regulations; mobile source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the Metropolitan Transportation Commission (MTC), local governments, transit agencies, and others. The 2010 CAP also represents the Bay Area's most recent triennial assessment of the region's strategy to attain the State one-hour ozone standard.

BAAQMD guidance states that "if approval of a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation, the project would be considered consistent with the 2010 CAP." As indicated in the discussion of Impacts AIR-2, -3, and -4 below, the project would not result in significant and unavoidable air quality impacts.

As discussed under Impact AIR-2, below, construction TAC and fugitive dust emissions would be less than significant with implementation of **Mitigation Measures AIR-2a and AIR-2b**. Long-term operational emissions would be less than significant without mitigation.

Impact AIR-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? (Less than Significant with Mitigation)

The project would result in the generation of criteria pollutants and TACs during short-term construction activities. In regards to long-term operations, the proposed project would result in criteria pollutant emissions from sources including on-road vehicles, onsite area and energy sources (e.g., natural gas combustion for space and water heating, landscape maintenance, use of consumer products such as hairsprays, deodorants, cleaning products, etc.). However, since the proposed project consists of development of only residential land uses, it would not be a source of substantial TACs. These potential impacts are assessed below.

Construction

Criteria Air Pollutants. The project includes demolition of approximately 26,281 square-feet of existing buildings on-site and construction of the new 81 townhouses, 19 apartments, and associated parking. Project related demolition, soil transport, grading, and other construction activities at the project site may cause wind-blown dust that could generate particulate matter into the atmosphere. Fugitive dust includes not only PM10 and PM2.5 but also larger particles as well that can represent a nuisance impact. For mitigation of fugitive dust emissions, the BAAQMD recommends using specific best management practices, which has been a practical and effective approach to control fugitive dust emissions. The guidelines note that individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent and conclude that projects that implement construction best management practices would reduce fugitive dust emissions to a less than significant level. To ensure implementation of best management practices (BMPs) they are identified herein as a mitigation measure.

Project-related construction would generate air emissions through the use of heavy-duty construction equipment, from vehicle trips hauling materials, and from construction workers traveling to and from the project site. Mobile source emissions, primarily NO_x, would be generated from the use of construction equipment such as excavators, bulldozers, wheeled loaders, and fork lifts. During the finishing phase, paving operations and the application of asphalt, architectural coatings (i.e., paints) and other building materials would release ROG. The assessment of construction air quality impacts considers each of these sources, and recognizes that construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions.

The CalEEMod model was used to quantify construction emissions associated with off-road equipment, paving, architectural coatings, haul trucks associated with demolition, on-road worker vehicle emissions, and vendor delivery trips. Project construction was assumed to occur from June 2015 through July 2016, based on the default active days in CalEEMod. Unmitigated and

construction-related criteria pollutant exhaust emissions for the project are presented in **Table 1-1**. The estimated emissions consider the following basic construction phases: demolition; excavation/grading; building construction; asphalt paving; and application of architectural coatings.

TABLE 1-1
AVERAGE DAILY CONSTRUCTION-RELATED POLLUTANT EMISSIONS (pounds/day)^a

Scenario	ROG	NOx	Exhaust PM10 ^b	Exhaust PM2.5 ^b
Project Emissions	12.7	32.2	2.0	1.9
<i>BAAQMD Construction Threshold</i>	54	54	82	54
Significant Impact?	No	No	No	No

^a Emissions include results modeled with CalEEMod. Total construction emissions were divided by the active days (299 days) of construction in order to determine the average daily construction emissions. Additional data and assumptions are described in Appendix A.

^b BAAQMD's construction-related significance thresholds for PM10 and PM2.5 apply to exhaust emissions only and not to fugitive dust.

As shown in Table 1-1, maximum average daily regional emissions would not exceed the BAAQMD daily significance thresholds during construction. Thus, the proposed project would have a less than significant impact in relation to regional construction emissions.

Toxic Air Contaminants and PM2.5. Project construction activities would produce diesel particulate matter (DPM) and PM2.5 emissions due to combustion equipment such as loaders, backhoes, and haul truck trips. These emissions could result in elevated concentrations of DPM and PM2.5 at nearby receptors. These elevated concentrations could lead to an increase in the risk of cancer or other health impacts. Consequently, a health risk assessment was performed to determine the extent of increased cancer risks and hazard indices at the maximally exposed receptors. The health risk assessment was based on recommended methodology of Office of Environmental of Health Hazard Assessment (OEHHA) and adopted by BAAQMD. The cancer risk to nearby residential receptors assumes exposure would occur 8 hours per day, five days per week, to account for the active construction duration. Additionally, cancer risk estimates also incorporate new age sensitivity factors and daily breathing rates recommended by OEHHA (2012). This approach provides updated calculation procedures of the BAAQMD that factor in the increased susceptibility of infants and children to carcinogens as compared to adults.

The maximally exposed receptor would be an adjacent residence to the project on Sam Cava Lane. The ISCST3 model was used to estimate maximum downwind concentrations and potential health risk at sensitive receptors resulting from construction activities, which are shown in **Table 1-2** below.

TABLE 1-2
CONSTRUCTION-RELATED HEALTH IMPACTS^a

Residential MEI	Cancer Risk (persons per million)	Chronic Impact	PM2.5 Concentration (µg/m³)
Unmitigated Project Construction Scenario	27	0.01	0.27
<i>BAAQMD Significance Criteria</i>	10	1	0.3
Significant Impact?	Yes	No	No
Mitigated Project Construction Scenario	4	0.002	0.041
<i>BAAQMD Significance Criteria</i>	10	1	0.3
Significant Impact?	No	No	No

^a Detailed assumptions and methodology of the health risk assessment are included in Appendix A. Notably, mitigation includes incorporation of Level 3 Verified Diesel Emissions Control (VDEC), which would reduce diesel particulate emissions by at least 85 percent.

As shown in Table 1-2, the incremental cancer risk at the maximum exposed residential receptor of 27 in one million (assuming child risk) would exceed the BAAQMD threshold of 10 in a million without mitigation. With incorporation of mitigation, the project would result in incremental cancer risk of 4 in one million. The unmitigated and mitigated chronic HI would be 0.01 and 0.002 at the MEI, respectively, which would be below the BAAQMD threshold of 1. Finally, the maximum annual PM2.5 unmitigated and mitigated concentrations would be 0.27 µg/m³ and 0.041 µg/m³ for the MEI, respectively, which is below the BAAQMD threshold of 0.3 µg/m³. Project health risk impacts would thus be less than significant after mitigation.

Notably, unmitigated demolition activities could result in airborne entrainment of asbestos, a TAC, particularly where structures built prior to 1980 would be demolished. However, these materials would be removed in accordance with the procedures specified by Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing) of BAAQMD's regulations; therefore, with adherence to regulatory requirements, asbestos would not be emitted to any substantial degree during demolition. Implementation of the **Mitigation Measures AIR-2a and AIR-2b** would ensure that project-generated fugitive dust and exhaust (criteria pollutant and TACs) during construction would be reduced to a less than significant level.

Operations

Criteria Air Pollutants. Project site development would result in an increase in criteria air pollutant and precursor emissions, including ROG, NOx, PM10, and PM2.5 from a variety of emissions sources, including onsite area and energy sources and mobile on-road sources. Exhaust emissions from on-road vehicle traffic associated with the existing land uses on the project site as well as the proposed project development were calculated using the latest version of the CalEEMod program, which includes the updated EMFAC2011 emission factors for on-road vehicles.

Table 1-3 summarizes the average daily mobile, energy, and area emissions of criteria pollutants that would be generated by project development and compares the emissions to BAAQMD thresholds. **Table 1-4** summarizes the annual emissions from project operations. As indicated in Tables 1-3 and

1-4, project-related net operational emissions of ROG, NO_x, PM₁₀, and PM_{2.5} would not exceed the BAAQMD significance thresholds during operations, and thus, the project would have a less than significant impact in relation to regional operational emissions.

TABLE 1-3
DAILY OPERATIONAL-RELATED POLLUTANT EMISSIONS (pounds/day)^a

Scenario	ROG	NO _x	PM ₁₀	PM _{2.5}
Project Unmitigated Operational Emissions	9.9	5.5	3.6	1.1
<i>BAAQMD Operational Threshold</i>	54	54	82	54
Significant Impact?	No	No	No	No

^a Emissions include results modeled with CalEEMod for project operations during the Winter season. Additional data and assumptions are in Appendix A.

TABLE 1-4
ANNUAL OPERATIONAL-RELATED POLLUTANT EMISSIONS (tons/year)^a

Scenario	ROG	NO _x	PM ₁₀	PM _{2.5}
Project Unmitigated Operational Emissions	1.7	0.9	0.6	0.2
<i>BAAQMD Operational Threshold</i>	10	10	15	10
Significant Impact?	No	No	No	No

^a Emissions include results modeled with CalEEMod for project operations. Additional data and assumptions are in Appendix A.

In regards to localized CO concentrations, according to the 2011 thresholds of the BAAQMD, a project would result in a less-than-significant impact if the following screening criteria are met:

1. The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The project would generate minimal new traffic trips and would comply with these screening criteria. Based on the BAAQMD's criteria, project-related traffic would not exceed CO standards and therefore, no further analysis was conducted for CO impacts. This impact would be considered less than significant on a project-level and cumulative basis.

Mitigation Measures

Mitigation Measure AIR-2a: The project applicant shall ensure that construction plans include the BAAQMD Best Management Practices for fugitive dust control. The following will be required for all construction activities within the project area. These measures will reduce fugitive dust emissions primarily during soil movement, grading and demolition activities, but also during vehicle and equipment movement on unpaved project sites:

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.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out 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.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All streets, 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.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AIR-2b: The project applicant shall ensure that construction contract specifications include a requirement that all off-road diesel-powered construction equipment used for project improvements be equipped with a Level 3 Verified Diesel Emissions Control (VDEC).

Impact AIR-3: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (Less than Significant)

The project would result in the generation of criteria pollutants during short-term construction activities. In regards to long-term operations, the project would result in criteria pollutant emissions primarily from motor vehicles and area sources. According to the BAAQMD, no single

project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards for regional criteria pollutants. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. There are many projects throughout San Francisco Bay area that have been identified as having significant and unavoidable operational and construction-related regional pollutant impacts. Consequently, for assessment of cumulative regional pollutant impacts, BAAQMD has developed a methodology of assessing whether a project would have a cumulatively considerable contribution. According to the BAAQMD *Justification Report*, if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions (BAAQMD, 2009).

As described in Impact AIR-2 above, criteria pollutant emissions generated by short-term construction and long-term operations of the project would not exceed the BAAQMD significance thresholds. Thus, the project would have a less than significant cumulative impact in relation to regional emissions. In addition, project-related traffic would not exceed CO standards and would result in a less than significant cumulative impact in relation to localized CO.

Impact AIR-4: Would the project expose sensitive receptors to substantial pollutant concentrations? (Less than Significant with Mitigation)

Construction and Operations. As indicated in the discussion of Impact AIR-2 above, the project would not result in significant and unavoidable localized air quality impacts associated with TACs, CO, or fugitive dust. Construction TAC and fugitive dust emissions would be less than significant with implementation of **Mitigation Measures AIR-2a and AIR-2b**. The project consists of development of residences and would not be a source of substantial TACs that would affect sensitive receptors in the area. Long-term operational emissions of TACs and CO would be less than significant without mitigation.

Land Use Compatibility for Proposed Sensitive Receptors. Unlike ozone and other regional pollutants, TACs are a localized pollution problem. TACs produced at distant locations do not readily combine to create concentrations at any single location that would cause health risks. The BAAQMD method for determining health risk requires the review of health risk from permitted sources, railroads, and major streets in the vicinity of a project site (i.e., within 1,000 feet of the proposed new sensitive residential receptors on the project site), then adding the project operational impacts to determine whether the cumulative health risk thresholds are exceeded. BAAQMD has developed a geo-referenced database of permitted and Highway TAC emissions sources throughout San Francisco Bay Area for estimating health risks to new sensitive receptors from existing permitted sources. Highway 17 is approximately 300 feet from the project site. Emissions from locomotives travelling on the nearby railroad were estimated based on EPA emission factors, and future emissions during the project buildout year were estimated based on ARB's assumption that, because of DPM regulations on locomotives and because of sulfur reductions in the fuel, emissions will decrease by 36% from the base year of 2000. Details of the emission estimates for locomotives are given in Appendix A.

Unlike for a project level assessment, for the cumulative assessment the risks from all sources within 1,000 feet of project sensitive receptors are summed and compared to a cumulative significance threshold. Notably, no onsite stationary sources of TACs are assumed and project-generated traffic would be negligible. A summary of the cumulative health impacts is found in **Table 1-5**. The cumulative MEI is assumed to be a proposed residence exposed to maximum risk from all sources, which would be a conservative assessment. As demonstrated in Table 1-5, health impacts on the project sensitive receptors from existing sources (permitted sources, railroad, and Highway 17) in the area would have a cumulative impact below the BAAQMD thresholds for cancer risk, chronic health hazards, and PM2.5 concentrations.

As shown in Table 1-5, the cumulative cancer risk from all sources within 1,000 feet of proposed sensitive receptors would be approximately 53 in one million, which would be below the BAAQMD cumulative threshold of 100 in one million and would be less than significant. The cumulative hazard index from all such sources would be approximately 0.06, which is well below the significance threshold of 10 and would be less than significant. The cumulative PM2.5 concentration would be approximately 0.3 $\mu\text{g}/\text{m}^3$, which would be below the significance threshold of 0.8 $\mu\text{g}/\text{m}^3$ and hence is considered less than significant.

TABLE 1-5
CUMULATIVE HEALTH IMPACTS^a

Facility	Distance from Project (Feet)	Cancer Risk (persons per million)	Chronic Hazard Impact	PM2.5 Concentration ($\mu\text{g}/\text{m}^3$)
City of Campbell (290 Dillon Ave)	75	12.2 ^a	0.004 ^a	0.021 ^a
City of Campbell Dept of Public Works	75	0.53	0.001	--
Benson's Cleaners	775	7.49	0.02	0
Orchard Valley Coffee	675	0	0	0.076
Mike's Auto Body	200	0	0.004	0
City of Campbell (77 Harrison Ave)	950	2.4 ^a	0.00084 ^a	0.00056 ^a
	Permitted Sources Total	22.62	0.030	0.098
	Railroad ^b	3.36	0.0	0.004
	Highway 17 ^c	26.95	0.025	0.198
	Grand Total	52.93	0.055	0.3
	<i>BAAQMD Cumulative Significance Criteria (new receptor)</i>	100	10	0.8
	Significant Impact?	No	No	No

^a Cancer Risk, Chronic Hazard, and PM2.5 Concentration values for the source generator was adjusted using the BAAQMD Diesel Generator Distance Multiplier.

^b Railroad diesel concentrations and risk based on the assumption of three diesel locomotives passing by on a weekly basis. The ISCST3 model was used to estimate maximum downwind concentrations and potential health risk at sensitive receptors from the rail line source. Additional information is provided in Appendix A.

^c Highway 17 risk for 6 foot height estimates provided by the BAAQMD developed geo-referenced database of permitted and Highway TAC emissions.

Impact AIR-5: Would the project create objectionable odors affecting a substantial number of people? (Less than Significant)

BAAQMD has identified typical sources of odor in the *CEQA Air Quality Guidelines*, a few examples of which include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally produced odors often exceeds regulatory thresholds. The project would not include uses that have been identified by BAAQMD as potential sources of objectionable odors; this is a less than significant impact.

2. Greenhouse Gas Analysis

2.1 Setting

“Global warming” and “global climate change” are the terms used to describe the increase in the average temperature of the earth’s near-surface air and oceans since the mid-20th century and its projected continuation. Increases in greenhouse gas (GHG) concentrations in the earth’s atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the earth’s surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature. Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be enhanced. CO₂, CH₄, and N₂O occur naturally, and are also generated through human activity. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing³ associated with agricultural practices and landfills. Other human-generated GHGs include fluorinated gases such as SFCs, PFCs, and SF₆, which have much higher heat-absorption potential than CO₂, and are byproducts of certain industrial processes.

CO₂ is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO₂. CH₄ and N₂O are substantially more potent GHGs than CO₂, with 100-year GWPs of 28 and 265 times that of CO₂, respectively.

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO₂ equivalents (CO₂e). CO₂e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH₄ and N₂O have much higher GWPs than CO₂, CO₂ is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO₂e, both from residential developments and human activity in general.

2.2 Approach to Analysis

The project includes demolition of approximately 26,281 square-feet of existing buildings on-site and construction of the new 81 townhouses, 19 apartments, and associated parking. With regard to impacts from GHGs, both BAAQMD and the California Air Pollution Control Officers Association (CAPCOA) consider GHG impacts to be exclusively cumulative impacts (BAAQMD, 2012; CAPCOA, 2008); therefore, assessment of significance is based on a

³ Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.

determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere. This analysis uses both a quantitative and a qualitative approach. This analysis considers that, because the quantifiable thresholds developed by BAAQMD in its 2009 Justification Report were formulated based on AB 32 and California Climate Change Scoping Plan reduction targets for which its set of strategies were developed to reduce GHG emissions statewide, a project cannot exceed a numeric BAAQMD threshold without also conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (the state Climate Change Scoping Plan). Therefore, if a project exceeds a numeric threshold and results in a significant cumulative impact, it would also result in a significant cumulative impact with respect to plan, policy, or regulation consistency, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

Separate thresholds of significance are established for operational emissions from stationary sources (such as generators, furnaces, and boilers) and non-stationary sources (such as on-road vehicles). As no threshold has been established for construction-related emissions, the operational emissions thresholds are applied in this analysis. The threshold for stationary sources is 10,000 metric tons of CO₂e per year (i.e., emissions above this level may be considered significant). For non-stationary sources, three separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be considered significant); or
- 1,100 metric tons of CO₂e per year (i.e., emissions above this level may be considered significant); or
- 4.6 metric tons of CO₂e per service population per year (i.e., emissions above this level may be considered significant). (Service population is the sum of residents plus employees expected for a development project.)

The quantitative threshold of 1,100 metric tons of CO₂e annually proposed by BAAQMD in its 2009 *Justification Report* is applied to this analysis. If the project construction or operational GHG emissions would exceed this threshold then, consistent with BAAQMD Guidelines, it would be considered to have a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact on climate change.

GHG emissions resulting from the project were estimated using CalEEMod version 2013.2.2, with model data and assumptions included in **Appendix A**. Construction emissions were estimated for equipment and truck exhaust and construction worker vehicles. In regards to operations, vehicle trips assumed default trip lengths for urban land uses, which are embedded in CalEEMod. The model makes adjustments for implementation of Pavley vehicle standards and Low Carbon Fuel Standards. Area and indirect sources associated with project operations would primarily result from electrical usage, water and wastewater transport (the energy used to pump water and wastewater to and from the project) and solid waste generation. GHG emissions from electrical usage are generated when energy consumed on the site is generated by fuel combustion.

GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste emissions are generated when the increased waste generated by the project are taken to a landfill to decompose.

2.3 Impact Assessment

Impact GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than Significant)

Application of BAAQMD's project-specific GHG emissions thresholds is to include both direct emissions from a project's vehicle trip generation and onsite water and space heating and other stationary sources, as well as indirect emissions from offsite electrical generation, solid waste generation, and water conveyance and treatment. The following activities associated with the proposed project could contribute to the generation of GHG emissions:

- **Construction Activities.** Construction equipment typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO₂, methane, and N₂O. Methane is also emitted during the fueling of heavy equipment.
- **Solid Waste Disposal Emissions.** Resulting emissions associated with waste generation and disposal in landfills are indirect. Landfills emit anthropogenic methane from the anaerobic breakdown of material.
- **Gas, Electricity, and Water Use.** Natural gas use results in the emissions of two GHGs: methane (the major component of natural gas) and CO₂ from the combustion of natural gas. Methane is released prior to initiation of combustion of the natural gas (as before a flame on a stove is sparked), and from the small amount of methane that is uncombusted in a natural gas flame. Electricity use can result in GHG production if the electricity is generated by combustion of fossil fuel. GHG emissions associated with treatment and transport of water is also included in the analysis below.
- **Motor Vehicle Use.** Transportation associated with the project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips. However, not all of these emissions would be "new" to the region or state since drivers would likely have relocated from another area. To be conservative, however, all vehicle trips predicted to be generated by the project scenarios in the Transportation analysis were assumed to be new trips in this analysis.

Construction emissions over the full buildout duration were estimated using CalEEMod and amortized assuming a 30-year development life after completion of construction (which is likely low), and added to overall project emissions for comparison to significance thresholds. Amortized GHG emissions associated with project construction would result in annualized generation of 19 metric tons of CO₂e.

In regards to operations, the CalEEMod model was used to estimate GHG emissions from motor vehicle trips, grid electricity usage, solid waste, and other sources (including area sources, natural

gas combustion, and water/wastewater conveyance). **Table 2-1** presents an estimate of the proposed project's unmitigated construction and operational CO₂e emissions.

**TABLE 2-1
ESTIMATED EMISSIONS OF GREENHOUSE GASES**

Source ^a	Emissions (metric tons of CO ₂ e per year)
Project Construction (Amortized)	19
Project Operations	878
Total Project GHG Emissions (Construction + Operations)	897
<i>BAAQMD GHG Threshold</i>	<i>1,100</i>
<i>Significant (Yes or No)?</i>	<i>No</i>

^a GHG emissions were calculated using the CalEEMod model for the project construction and operations. Additional assumptions and data are included in Appendix A.

Table 2-1 indicates that the net GHG emissions associated with the project would be below BAAQMD's GHG threshold of 1,100 metric tons of CO₂e per year. This would represent a cumulatively less-than-significant GHG impact.

Impact GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less than Significant)

The City of Campbell has not established a GHG reduction plan. However, since the project would result in less than significant GHG emissions, as described above, the project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. This would be a less than significant impact.

3. References

- Bay Area Air Quality Management District (BAAQMD), 2009. *Revised Draft Options and Justification Report California Environmental Quality Act Thresholds of Significance*, October 2009.
- Bay Area Air Quality Management District (BAAQMD), 2010. *Bay Area 2010 Clean Air Plan*, adopted September 15, 2010. Available at <http://www.baaqmd.gov>.
- Bay Area Air Quality Management District (BAAQMD), 2012, *BAAQMD CEQA Guidelines, California Environmental Quality Act Air Quality Guidelines*, May 2012, http://www.baaqmd.gov/pln/ceqa/ceqa_guide.pdf.
- California Air Pollution Control Officers Association (CAPCOA), *CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, January 2008.

ATTACHMENT 4

BIOLOGICAL EVALUATION OF THE DILLON PROPERTY PROJECT SITE



LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

April 28, 2014

Mr. Richard Yee
Robson Homes
2185 The Alameda, Suite 150
San Jose, CA 95126

RE: Biological Evaluation of the Dillon Property project site, City of Campbell, Santa Clara County, California (PN 1855-01).

Dear Richard:

At your request, Live Oak Associates, Inc. (LOA) completed a biological evaluation on the approximately 4.55-acre Dillon Avenue project site. The project site is comprised of several different parcels located along Dillon Avenue, Gilman Avenue, and Sam Cava Lane in the City of Campbell, Santa Clara County, CA. Parcels comprising the project site include APNs 412-8-30, 34, 35, 37, 38, 41, 42, 43, 44, 46, and 68. Not all of the parcels are contiguous. As we understand it, the proposed project involves the removal of existing structures, including existing commercial development and removal of four single-family homes, and then re-development with townhomes, apartments and retail shops. The project will include some substantial grading in the vicinity of APN 35 because this parcel of the abrupt change in elevation between this parcel and the surrounding parcels, so as to make the elevation change more gradual.

LOA ecologist Pamela Peterson conducted a reconnaissance-level site visit on April 21, 2014. The primary objective of the site visit was to 1) identify the constituent species and habitats of the site, and 2) assess the potential of the site to support sensitive habitats (e.g., wetland and riparian habitats) or suitable habitat for special status plant or animal species. Background sources of information reviewed in the preparation of this analysis included the Natural Resource Conservation Service's websoil survey (accessed on-line on April 17, 2014), the on-line National Wetlands Inventory (accessed on-line on April 17, 2014), the *California Natural Diversity Data Base* (accessed on-line on April 17, 2014), special status species lists prepared by the California Department of Fish and Wildlife (CDFW 2014), U.S. Fish and Wildlife Service (USFWS 2014), and California Native Plant Society (CNPS 2014), and manuals and references related to plants and animals found in and around Santa Clara County.

EXISTING CONDITIONS

Regional Setting

The approximately 4.55-acre site is located within an urban setting in the eastern portion of the City of Campbell, immediately northwest of Highway 17 and Los Gatos Creek. The Los Gatos Creek Trail is immediately adjacent to and just along the southeastern boundary of four of the parcels that are on Dillon Avenue. The parcels are separated from the riparian corridor by a tall cyclone fence. Most of the parcels comprising the site are already developed with buildings, parking lots and landscaping, with the exception of APN 35 (282 Dillon Avenue). The latter parcel consists of an open lot, with asphalt covering more than half the parcel and with the remaining portions consisting of ruderal habitat. Aside from frontage of some of the parcels onto the Los Gatos Creek Trail and Los Gatos Creek, the project site is surrounded by urban development. The project site is located in the San Jose West 7.5" U.S. Geological Survey (USGS) quadrangle. With the exception of APN 35, which is between 8 and 15 feet below grade due to its history as an old quarry site, the remaining portions of the site are topographically level, at approximately 200 ft.(61 m) National Geodetic Vertical Datum (NGVD). Surrounding land uses include older single-family homes, commercial and retail development, transportation uses including Highway 17 and a light rail station, and the Los Gatos Creek trail.

Soils

Only one soil type occurs on the site and this is Urbanland/Elder Complex, 0 to 2 percent slopes (NRCS 2014; accessed on-line on April 21, 2014).

Habitats

The site consists of two land types: developed/landscaped and ruderal. These are described in greater detail below.

Developed/Landscaped. As indicated above, the majority of the site is already developed. Development includes industrial and commercial buildings, paved parking areas, and landscaping supporting mature trees and shrubs. In addition to the industrial and commercial development, four existing single-family homes occur on APNs 41 through 44. These homes consist of older bungalow type, single-story homes on small lots, some with outbuildings such as garden sheds, and with small landscaped yards. Until recently, these homes were occupied but are now vacant (Pers. Comm Richard Yee, Robson Homes).

Trees occurring within landscaped areas of the site included typical horticultural and fruiting varieties, such as almond (*Prunus amygdala*), Peruvian pepper (*Schinus molle*), fan palm (*Washingtonia filifera*), tree-of-heaven (*Ailanthus altissima*), coast redwood (*Sequoia sempervirens*), elm (*Ulmus* sp.), and gum (*Eucalyptus* sp.). Other shrubs and plants observed included, but was not limited to, English ivy (*Hedera helix*), periwinkle (*Vinca* sp.), star jasmine (*Trachelospermum jasminoides*), and cultivated roses (*Rosa* sp.).

Ruderal/Non-native Annual Grassland. This habitat occurs on APN 35 (282 Dillon) in the northeastern portion of the site where vegetation consists of common non-native species for the

area which are adapted to human disturbance including grasses such as wild oat (*Avena* sp.), foxtail barley (*Hordeum murinum*), ripgut (*Bromus diandrus*), and rat-tail fescue (*Vulpia myuros*); and forbs such as wild radish (*Raphanus sativa*), black mustard (*Brassica nigra*), field mustard (*Brassica rapa*), redstem filaree (*Erodium cicutarium*), summer mustard (*Hirschfeldia incana*), serrated lettuce (*Lactuca serriola*), common mallow (*Malva neglecta*), and bur clover (*Medicago polymorpha*). No native plant species were observed in this habitat. Vegetation at the time of the site visit was approximately 18 to 24 inches in height. This habitat is heavily disturbed by human activities including asphalt, concrete debris piles, and rubbish.

Off-site Riparian Habitat

Although located off-site, the Los Gatos Creek riparian corridor occurs adjacent to the site, separated from the site by a cyclone fence and by the Los Gatos Creek trail, a paved recreational trail that is approximately 14 feet wide along the top of the creek bank. The creek in this location is approximately 120 feet wide between the tops of the banks, between 15 and 20 feet in depth, and has been straightened and channelized. . The creek supports mature riparian vegetation including trees, shrubs and an annual grassland understory. Another trail occurs on the opposite side of the creek along the top of the bank, and beyond that is Highway 17, which is approximately 150 feet across and eight lanes of traffic in this location.

Both native chinook salmon (*Onchorhynchus tshawytscha*) and steelhead (*Onchorhynchus mykiss*) are known to occur in the creek. Other fish species likely to occur in the creek include native species such as rainbow trout (*Onchorhynchus mykiss*), threespine stickleback (*Gasterosteus aculeatus*), California roach (*Hesperoleucus symmetricus*), Sacramento sucker (*Catostomus occidentalis*) and prickly sculpin (*Cottus asper*); and non-native species such as the common carp (*Cyprinus carpio*), goldfish (*Carassius auratus*), western mosquitofish (*Gambusia affinis*), green sunfish (*Lepomis cyanellus*), and largemouth bass (*Micropterus salmoides*). The creek also likely supports several species of common amphibians, such as Pacific tree frogs (*Hyla regilla*) and western toads (*Bufo boreas*); and reptiles such as the western pond turtle (*Emys marmorata*), a California Species of Concern. Numerous small mammals also likely occur in the creek corridor from time to time including Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

Wildlife

Due to the site's urban setting and the lack of native vegetation, the only wildlife observed on the site, and that would be expected to occur on the site on a regular basis, consists of species that are tolerant of human noise and disturbance. Reptiles that might be expected to occur here would be limited to common species such as the western fence lizard (*Sceloporus occidentalis occidentalis*).

Several species of birds were observed on the site and these included species common to urban environments, either as residents or seasonal migrants, such as mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), American crow (*Corvus brachyrhynchos*), western scrub jay (*Aphelocoma californica*), Brewer's blackbird (*Euphagus cyanocephalus*), golden-crowned sparrow (*Zonotrichia atricapilla*), house sparrow (*Passer domesticus*) and house finch (*Carpodacus mexicanus*).

California ground squirrels (*Otospermophilus beechey*) and approximately two dozen burrows were observed in the northeastern portion of the site in the ruderal habitat. Other mammals observed included domestic cats (*Felis catus*), domestic dogs (*Canis lupis familiaris*), and eastern fox squirrels (*Sciurus niger*). In addition to the mammals observed, due to the site's vicinity to the Los Gatos Creek riparian corridor, several other small mammal species might also occur on the site from time to time including the Virginia opossum, raccoon, and striped skunk, although foraging habitat for these species is extremely limited on the site. Several species of bats may be expected to forage over Los Gatos Creek and on the project site from time to time and these may include hoary bats (*Lasiurus cinereus*), pallid bats (*Antrozous pallidus*), and both Yuma and long-eared myotis (*Myotis yumanensis* and *M. evotis*). Some of these bat species are known to roost in abandoned buildings. The commercial and industrial buildings of the site are currently occupied and were examined for potential use by roosting bats and were determined not suitable due to a lack of openings or crevices for bats to enter. The four homes that will be demolished have been occupied until very recently and therefore also at this time do not provide habitat for roosting bats; however, potentially if openings in the homes and associated outbuildings are not kept tightly secured, these structures could become occupied by roosting bats in the future prior to their demolition.

Special Status Species

Special status species include plants and animals that are listed as threatened or endangered under the state and federal Endangered Species Acts, as well as other species considered to be species of concern or fully protected species in California, and plants maintained on lists compiled by CDFW and the California Native Plant Society.

A search of published accounts for all relevant special status plant and animal species was conducted for the San Jose West USGS 7.5" quadrangle in which the project site occurs and for the eight surrounding quadrangles (San Jose East, Santa Teresa Hills, Los Gatos, Castle Rock Ridge, Cupertino, Mountain View, Milpitas, and Calaveras Reservoir) using the California Natural Diversity Data Base (CNDDB) Rarefind (CDFW 2014; accessed on-line on April 17, 2014). Special status species documented as occurring, or historically occurring, within a five-mile radius of the project site are depicted in Figure 1.

The site provides no natural habitat for sensitive plant species; therefore, no special status plants are expected to occur on the site and the project will have no impact on special status plants.

Additionally, due to the site's urban setting and lack of native vegetation, most special status wildlife species would also be expected to be absent from the site. However, vacant homes may provide future roosting habitat for special status bats and mature landscape trees could potentially provide nesting habitat for special status birds, as well as other birds protected under the federal Migratory Bird Treaty. Impacts to special status animals, bats and nesting birds will be discussed in greater detail below.

Figure 1. CNDDDB

Jurisdictional Waters

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the California Regional Water Quality Control Board (RWQCB). Hydrologic features are absent from the site; therefore, jurisdictional waters will not be impacted by the project.

City of Campbell Zoning Code - Municipal Code – Significant Tree Removal

The City of Campbell has a tree removal ordinance; Chapter 21.32 of the City's zoning code, requiring a permit for the removal of protected trees.

Protected Trees: The following trees are considered "protected" and require approval of a Tree Removal Permit:

- a. **All Properties:** (1) Any tree shown on an approved landscaping plan or required to be planted or retained as a condition of approval of a development application, a building permit, or a tree removal permit; (2) Any tree designated as a "Heritage Tree" by the Historic Preservation Board.
- b. **Single-Family Residential Properties.** Any Oak, Redwood, Cedar, or Ash tree measuring 12-inches in diameter or greater (as measured 4-feet above grade).
- c. **All Other Properties.** Any tree measuring 12-inches in diameter or greater (as measured 4-feet above grade).

Exceptions: Regardless of size, fruit trees and Eucalyptus trees, are not considered "protected" and do not require a Tree Removal Permit.

Several trees on the site would be considered protected trees under the ordinance, and, although their removal would be considered a less-than-significant biological impact, a tree removal permit may be required for their removal. These trees include, but are not limited to, coast redwood and Peruvian pepper trees. As we understand it, Robson Homes is in the process of having a tree survey completed on the site.

BIOLOGICAL IMPACTS AND MITIGATIONS

The following analysis of biological impacts is based on the proposed project, which will include the demolition of several commercial, industrial and single-family home structures (along with associated parking lots, landscaping, and outbuildings), as well as the development of a small amount of ruderal habitat, with new townhomes, apartment buildings and retail development.

Jurisdictional Waters

Impact. No hydrologic features were observed to be present on the site; therefore, Waters of the U.S. are considered absent from the site and the project is expected to have no impact on jurisdictional waters.

Mitigation. None required.

Special Status Plants

Impact. Due to its urban setting and lack of natural vegetation, the site provides no habitat for special status plants; therefore, special status plants are considered absent from the site, and the project will have no impact on special-status plants.

Mitigation. None required.

Special Status Wildlife

Most special status animal species would not occur on the site, or be unlikely to occur on the site, because habitats on the site are not suitable for them, the site is located outside of the species' known range, and/or there are no known occurrences in the vicinity of the site. However, a few special status species have been documented in the immediate project vicinity (Figure 1). These latter species, their likelihood to occur on the site, and any potential project impacts are discussed further below.

California Red-legged Frog (Federally Threatened/State Species of Concern).

Impact. There are only two occurrences of California red-legged frogs (*Rana draytonii*) documented in the CNDDB within the Los Gatos Creek watershed and both of those occurrences are more than nine miles upstream from the site on the other side of the Lexington Reservoir. However, there is an occurrence documented by the CDFW (Pers. Comm. Mark Jennings on April 22, 2014), within approximately two miles upstream from the site. The creek, in the vicinity of the project site, supports no breeding habitat for this species; however, this species may use the creek corridor near the site during migration movements. However, the project site supports no habitat for this species and is separated from the aquatic environs of the creek by more than 100 feet and steeply incised banks. Therefore, the project would not be expected to impact California red-legged frogs.

Mitigation. None required.

Western Pond Turtle (State Species of Concern).

Impact. Western pond turtles (*Emys marmorata*) are known to occur in Los Gatos Creek in the vicinity of the project site. However, the site is separated from the creek corridor by a chain link fence and the site provides no foraging or breeding habitat for this species; therefore, it is considered highly unlikely that turtles would occur on the site and the project is expected to have a less-than-significant impact on pond turtles.

Mitigation. None required.

Cooper's Hawk

Impact. Cooper's hawks (*Accipiter cooperii*) are known to occur in the project vicinity within the Los Gatos Creek riparian corridor (Figure 1). This species is not a special status species although it, along with all other raptors, is protected under state and federal law and any project impacts that resulted in harm or mortality to individuals, or in nest failure, would be a violation of such laws and would also be considered a significant impact under CEQA. This species likely occurs in the Los Gatos Creek corridor adjacent to the site from time to time and it may occasionally prey on songbirds within the landscaped areas of the site, although the prey base for this species is very marginal on the site due to the high level of development. The project is expected to result in a less-than-significant impact on foraging habitat for this species as this habitat is very minimal on the site and very abundant in the region. Potentially this species may nest in riparian trees adjacent to the site, or in large trees occurring in the landscaped areas of the site. Should Cooper's hawks, or any raptor species, nest in trees on or adjacent to the site prior to project demolition, tree removal or other project-related activities, those activities could result in nest abandonment and mortality to young, and this would be considered a violation of the law and a significant impact under CEQA.

Mitigation. Mitigation measures to preclude harm or mortality to nesting raptors and migratory birds is provided in the section "Tree-Nesting Raptors and Other Nesting Migratory Birds", below.

Townsend's Big-eared Bat, Pallid Bat and Other Bat Species.

Impact. Both Townsend's big-eared bat (*Corynorhinus townsendii*), which is currently a candidate for listing as threatened under the California Endangered Species Act; and pallid bat (*Antrozous pallidus*), a state species of concern, have been documented in the project region in CNDDDB, and these bats along with other non-special status bat species that occur regionally, may forage within the adjacent Los Gatos Creek corridor as well as on the site from time to time. These bats are protected under the California Fish and Wildlife Code (Sections 2000, 4150, and Title 14), and, in the case of Townsend's bats, under the California Endangered Species Act while it is under review as a candidate for listing.

Although loss of foraging habitat for these species would be a less-than-significant impact of the project under CEQA, several special status and non-special status bat species that occur regionally, are known to roost in vacant buildings. Although currently none of the structures of the site provide habitat for these species; in the future, prior to demolition activities, should the vacant homes along Sam Cava Lane not be maintained in a closed up condition, potentially bats could gain entry and use these dwellings for roosting habitat. If bats are roosting in these homes at the time of demolition, especially if demolition occurs during the winter torpor (hibernation) period, which is generally accepted to be mid-October through the end of February, or during the maternity season, which is generally accepted to be mid-April through the end of August, their demolition during those seasonal periods could result in harm or mortality to these individuals and their young, and this would be considered a violation of the law and a significant impact under CEQA. The other structures on the site, i.e. the commercial and industrial buildings, lack openings and crevices to allow for bat egress, and therefore have no potential as roosting habitat for bats; therefore, demolition of those buildings is not expected to result in any impacts to bats.

Mitigation. If demolition of the four homes on Sam Cava Lane does not occur within 30 days of the date of our site visit on April 21, 2014 (i.e. by May 20, 2014) then the following mitigation measures will be implemented to ensure that no bats are harmed or killed as a result of the project.

- Within 30 days prior to the demolition of the four homes along Sam Cava Lane, and their associated outbuildings, a pre-construction survey will be conducted to confirm that the existing conditions of the homes have not changed. If existing conditions have not changed, no further surveys will be required.
- If existing conditions have changed and the biologist observes that one or more structures have openings that could provide entry for bats, then a more detailed bat survey will be conducted by a qualified biologist within all structures that provide potential openings for bats to enter. If no bats are found, then no further mitigations will be required. If roosting bats are found to be present, the following additional measures will be required:
- If a non-breeding bat colony is found within any of the structures, the individuals will be humanely evicted via the partial dismantlement of the buildings prior to demolition under the direction of a qualified bat specialist to ensure that no harm or “take” would occur to any bats as a result of demolition activities.
- If a maternity colony is detected in the structures, then a construction-free buffer should be established around the structure as determined by the biologist and remain in place until it has been determined that the nursery is no longer active. Demolition should preferably be done between March 1st and April 15th or August 15th and October 15th to avoid interfering with an active nursery.

Tree-Nesting Raptors and Other Nesting Migratory Birds

Impact. Many large trees and shrubs occur on and adjacent to the site which could be used by tree-nesting raptors and other migratory birds for breeding, although the likelihood of raptors nesting on the site is considered very low due to the urban environment and lack of suitable prey base. Most nesting migratory birds, regardless of their status, are protected by state and federal laws. Therefore, development activities that adversely affect the nesting success of raptors and other migratory birds (i.e., grading and tree removal) or that result in the mortality of individual birds constitute a violation of state and federal laws.

Mitigation. Project-related activities that occur during the breeding season could be constrained in the vicinity of any active nests. If tree removal or ground disturbance activities are scheduled to commence during the breeding season (February 1st through August 31st), pre-construction nesting bird surveys should be conducted by a qualified biologist to identify possible nesting activity within 15 days prior to such activities. A construction-free buffer of suitable dimensions must be established around any active raptor and migratory bird nest (up to 250 feet, depending on the location and species) for the duration of the project, or until it has been determined that the chicks have fledged and are foraging independently from their parents.

Loss of Protected Trees

Impact. As indicated previously, several trees occur on the site that would qualify as protected trees under the City's ordinance. The loss of these non-native, landscape trees would not be considered a biologically-significant impact due to the urban setting, and no mitigation would be required under CEQA; however, removal will likely require a permit from the City and the City has established specific ratios for replacement trees.

Mitigation. None required.

Degradation of Water Quality in Los Gatos Creek

Impact. The proposed project will require grading, excavation, and vegetation removal, thereby resulting in the project site becoming vulnerable to sheet, rill or gully erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek/river beds, canals, and adjacent wetlands.

To avoid or minimize sedimentation to offsite waters, the applicant will be required to develop an erosion control plan. The applicant must also comply with standard erosion control measures that employ best management practices (BMPs), develop a SWPPP per State Water Quality Control Board Stormwater Permit, and conform with City's stormwater and grading requirements. If the applicant abides by the above requirements and obtains the required permits prior to starting the project, impacts to downstream waters from erosion and polluted stormwater runoff will be reduced to a less than significant level.

Mitigation. The applicant must comply with the provisions of a City grading permit, including standard erosion control measures that employ best management practices (BMPs). Projects involving the grading of large tracts of land must also be in compliance with provisions of a General Construction permit (a type of NPDES permit) available from the California Regional Water Quality Control Board. Compliance with the above permits should result in no impact to water quality in Los Gatos Creek.

Conclusion

In summary, the proposed Dillon Property project will result in either no impacts, or in less-than-significant impacts, to most sensitive biological resources that are known to occur in the project vicinity. Exceptions include the potential for the project to impact special status and non-special status roosting bats, nesting birds, and water quality in adjacent Los Gatos Creek. However, mitigation measures have been provided in all cases to ensure that the project results in no significant impacts to these sensitive biological resources.

If you have any questions regarding our conclusions, please contact me at ppeterson@loainc.com or (408) 281-5884.

Sincerely,

A handwritten signature in black ink that reads "Pamela E. Peterson". The signature is written in a cursive style with a large, looping initial "P".

Pamela Peterson
Senior Project Manager
Plant and Wetland Ecologist

Persons Contacted

Mark Jennings PhD. By phone on April 22, 2014.

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APPENDIX A:

SIGNIFICANCE CRITERIA AND RELEVANT GOALS, POLICIES, AND LAWS

Significance Criteria

Approval of general plans, area plans, and specific projects is subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the significance of a proposed project's impacts on the environment before they are carried out. Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures.

According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest."

Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory findings of significance" if the project has the potential to "substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten

to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.”

Relevant Goals, Policies, and Laws

Threatened and Endangered Species

State and federal “endangered species” legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as “species of special status.” Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the “take” of a listed species. “Take” is defined by the state of California as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Game Code, Section 86). “Take” is more broadly defined by the federal Endangered Species Act to include “harm” (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

Migratory Birds

Most birds are also protected by state and federal law. The Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, 1992), which states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto”. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

Wetlands and Other Jurisdictional Waters

Natural drainage channels and adjacent wetlands may be considered “Waters of the United States” (hereafter referred to as “jurisdictional waters”) subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As recently determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. However, the U.S Supreme Court decisions *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* (referred together as the Rapanos decision) impose a "significant nexus" test for federal jurisdiction over wetlands. In June 2007, the USACE and Environmental Protection Agency (EPA) established guidelines for applying the significant nexus standard. This standard includes 1) a case-by-case analysis of the flow characteristics and functions of the tributary or wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters and 2) consideration of hydrologic and ecologic factors (EPA and USACE 2007).

The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction under the SWANCC decision, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Wildlife has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Wildlife Code (2011). Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented that protect the habitat values of the drainage in question.

ATTACHMENT 5

TREE INVENTORY AND ARBORIST'S ASSESSMENT

**Tree Inventory
and
Arborist's Assessment**

**280, 230, 190, and 180 Dillon Avenue,
186 Gilman Avenue,
and
488, 482, 472, 466, and 426 Sam Cava Lane.**

Prepared for:

**Santa Clara Development
2185 The Alameda
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May 28, 2014

Prepared By:

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Summary

There are ten parcels comprised of nine addresses along Dillon Avenue, Sam Cava Lane, and Gilman Avenue in Campbell that Santa Clara Development is planning to improve. The sites combined contain 118 trees comprised of 25 different species. Most of the trees are in fair condition with poor suitability for preservation. Of the 118 trees, 50 have trunk diameters greater than 12 inches and 6 street trees are street trees. Thirty trees are adjacent to the Los Gatos Creek Trail. Sixty-four trees have trunk diameters less than twelve inches, with the exception of the street trees, are not protected by the City of Campbell tree protection ordinance.

Introduction

Background

Santa Clara Development asked me to provide a tree inventory and assessment for ten parcels in Campbell where they are planning a development project. I agreed to assess the trees and provide a report outlining my findings and recommendations.

Assignment

- Provide an arborist's report that includes an assessment of the trees within the project area. The assessment is to include the species, size (trunk diameter/circumference), condition (health and structure), and suitability for preservation.
- Provide maximum encroachment distances and tree protection measures.
- Affix aluminum number tags on the trees for on-site identification.
- Place the approximate locations and corresponding numbers on a provided map.

Limits of the assignment

- No **tree risk assessments** were performed.
- No Site Plans, Grading, Drainage, or Utility Plans were provided.
- No construction influence ratings or tree protection specifications were established.
- The information in this report is limited to the condition of the trees during my inspections on April 15 and 18, 2014.

Purpose and use of the report

The report is intended to identify all the trees within the development area that could be affected by the project and to document their current condition. The report is to be used by Santa Clara Development, their agents, and the City of Campbell as a reference to help determine what should be removed or retained.



Observations

There are ten parcels comprised of nine addresses along Dillon Avenue, Sam Cava Lane, and Gilman Avenue in Campbell. The property addresses are as follows: 280, 230, 190, and 180 Dillon Avenue, 186 Gilman Avenue, and 488, 482, 472, 466, and 426 Sam Cava Lane.

The parcels within 280 and 230 Dillon Avenue contain the largest area comprised of three different parcels adjacent to the Los Gatos Creek Trail. The City of Campbell Public Works yard is to the south. 280 Dillon Avenue contains the largest quantity of trees all located around the perimeter of the property, and are primarily comprised of old almonds (*Prunus dulcis*), peppers (*Schinus molle*), carob (*Ceratonia siliqua*), and eucalyptus (*Eucalyptus rudis*).

The parcels located at 190 and 180 Dillon Avenue contain only two street trees that are both Chinese pistache (*Pistachia chinensis*).

The interior of 186 Gilman Avenue contains six small trees all with trunk diameters less than eight inches. The trees are growing in an outdoor eating area which are as follows: camphor (*Camphora cinnamomum*), zelkova (*Zelkova serrata*), and Chinese elm (*Ulmus parvifolia*). The east portion of 186 Gilman Avenue is also adjacent to the Los Gatos Creek Trail and there are twelve small drought stressed coast redwoods (*Sequoia sempervirens*) growing between the privacy fence and several oaks (*Quercus lobata* and *Quercus agrifolia*) and bay laurels (*Umbellularia californica*) next to the creek trail.

The four properties located at 488, 482, 472, and 466 Sam Cava Lane are old single family residences. All four of these sites are relatively unmaintained and there are several large pepper trees throughout the parcels. There are a few Chinese pistache street trees along with **volunteer** peppers and privets (*Ligustrum lucidum*) growing in the front yards.

Along the creek trail interface there are a total of 30 trees comprised of coast redwood, coast live oak, valley oak, and bay laurel not including the two carob inside 280 Dillon Avenue.



The image below shows the locations of the properties highlighted in yellow and orange (Image 1).

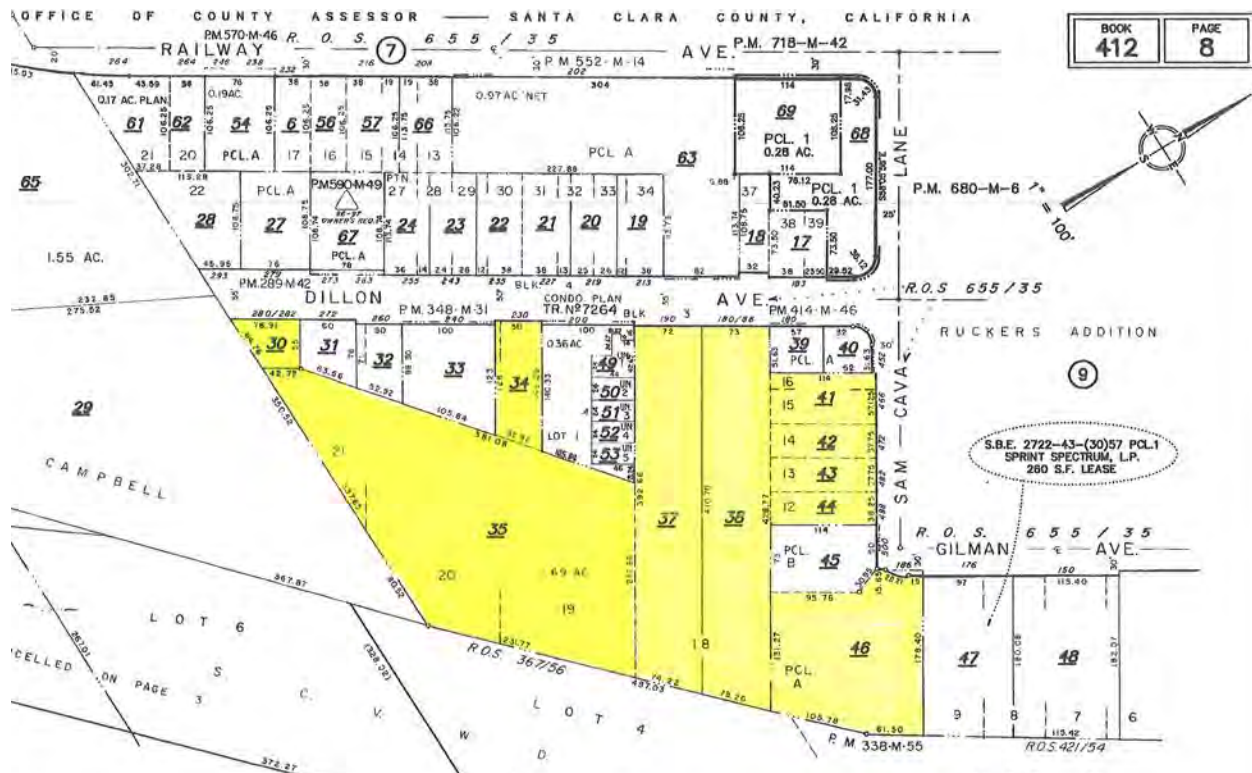


Image courtesy of Santa Clara Development and the Santa Clara County Assessor's Office (Book 412 page 8).



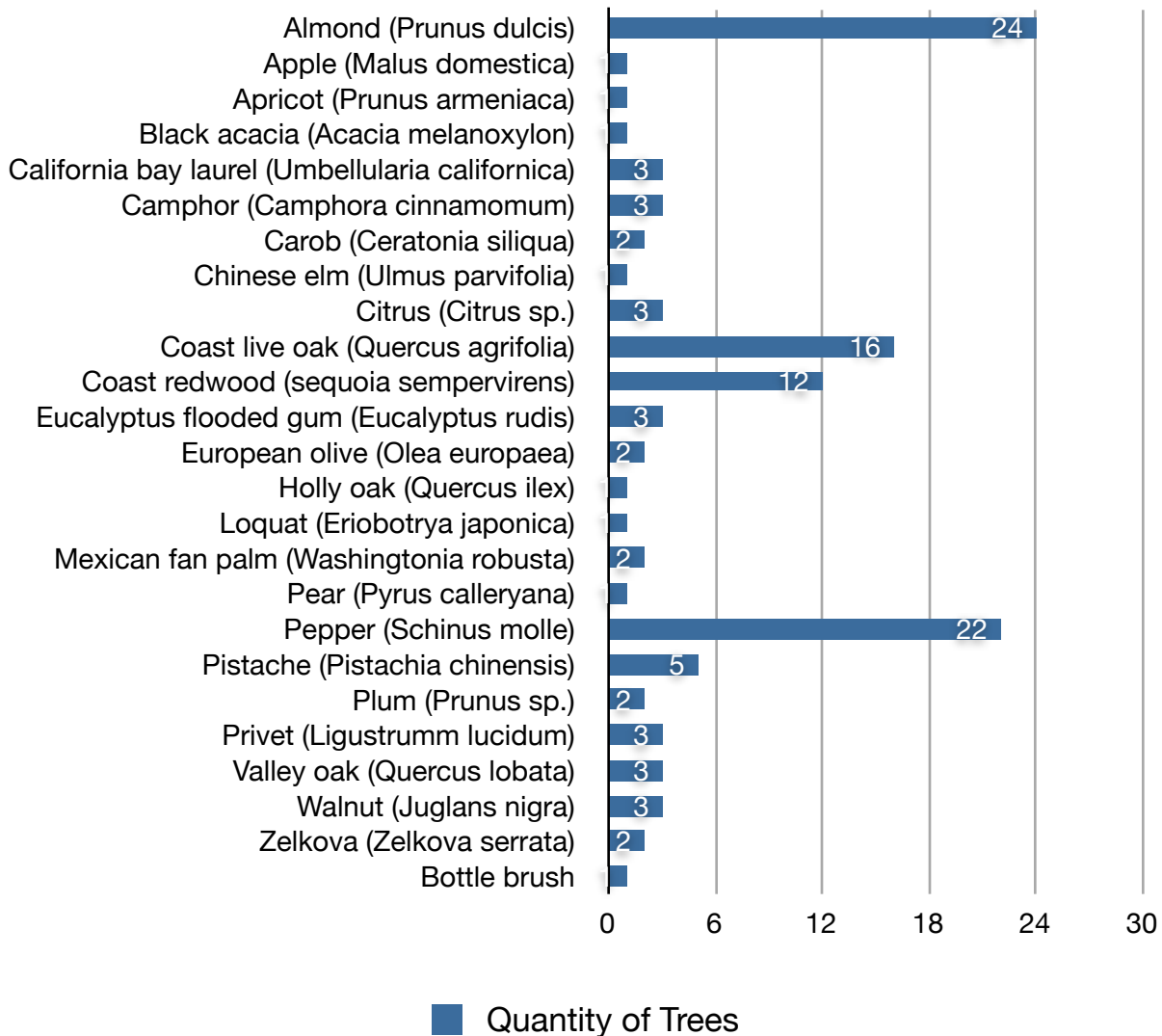
Discussion

Tree Inventory

I inventoried all the trees with **trunk** diameters greater than four inches at four feet above grade that may be affected by the project. The lots contain several trees “Protected” by the City of Campbell municipal ordinance 21.32.050. The City of Campbell protects all trees with trunk diameters greater than twelve inches at four feet above grade. Heights and **crown** radii were estimated. The ten parcels contain 118 trees comprised of 25 different species.

The chart below shows the relative quantity of trees for each species inventoried (Chart 1).

Chart 1: Species Distribution



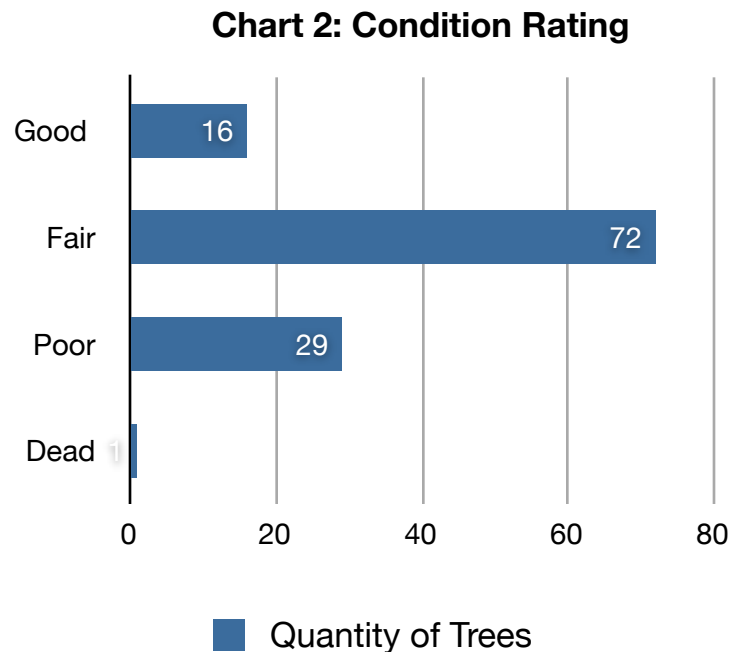
Condition Rating

A tree's condition is a determination of its overall health and structure based on five aspects: Roots, trunk, **scaffold branches**, twigs, and foliage. The assessment considered both the health and structure of the trees for a combined condition rating. The crown, trunk, **trunk flare**, and above ground roots were inspected from the ground.

- Exceptional = Good health and structure with significant size, location or quality.
- Good = No apparent problems, good structure and health, good longevity for the site.
- Fair = Minor problems, at least one structural **defect** or health concern, problems can be mitigated through cultural practices such as pruning or a plant health care program.
- Poor = Major problems with multiple structural defects or declining health, not a good candidate for retention.
- Dead/Unstable = Extreme problems, irreversible decline, failing structure, or dead.

The majority of trees are in fair condition with many of the old almonds listed as poor. Trees that are in fair condition can typically be improved through proper maintenance or watering.

The chart below shows the condition rating and relative quantity of trees in each category (Chart 2).



Suitability for Preservation

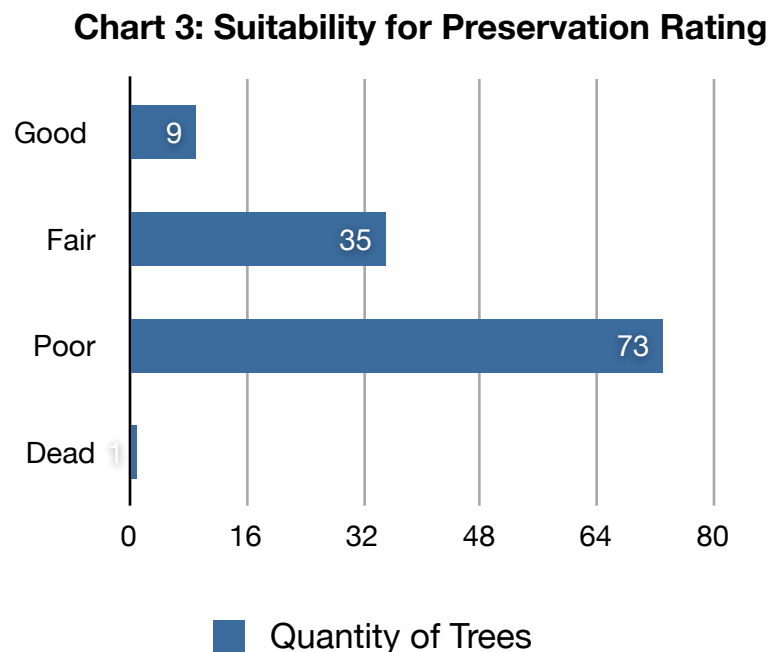
A tree's suitability for preservation is determined based on its health, structure, age, species characteristics, and longevity using a scale of good, fair, or poor. The following list defines the rating scale:

- Good = Trees with good health, structural stability and longevity.
- Fair = Trees with moderate health or structural defects that can be mitigated through treatment.
- Poor = Trees in fair or poor condition with significant structural defects, declining, poor longevity, or growing in locations that are incompatible for the future site use.

Because the condition rating takes into account both structural components and health problems some trees may rate to be in fair overall condition but potentially not suitable for retention. For example, a tree could be structurally sound but declining in health, structurally compromised, **suppressed**, or have other conditions or defects where retention may not be advisable based on new site occupancy.

The majority of trees are not suitable for preservation primarily because there are quite a few stressed or neglected trees, volunteers, and remnant fruit trees. There are several oaks along the creek trail that are young and could have good longevity for the site while still functioning as a screen and providing noise attenuation. Most of the street trees have fair suitability.

The chart below shows the suitability rating and relative quantity of trees in each category (Chart 3).



Tree Protection

Tree protection focuses on protecting trees from damage to the roots, trunk, or scaffold branches from heavy equipment (Appendix D). Two zones of protection need to be determined to protect the tree's health and structure, the **tree protection zone** and the **critical root zone** (Figure 1).

The tree protection zone (TPZ) is the defined area in which certain activities are prohibited to minimize potential injury to the tree. The TPZ can be determined by a formula based on species tolerance, tree age, and diameter at breast height (DBH) (Matheny, N. and Clark, J. 1998) or as the **drip line** in some instances. Most of the trees are young to mature in age with moderate tolerance to construction influences and an appropriate tree protection radius would be .75 inches per 1 inch trunk diameter (Matheny, N. and Clark, J. 1998) or the drip line in most cases.

Preventing **mechanical damage** to the main stems from equipment or hand tools can be accomplished by wrapping the main stem with **straw wattle** (Figure 2). The wattle will create a porous barrier around the trunk and prevent damage to the bark and vascular tissues underneath.

Trees that are moderately influenced by the project or too close to erect fencing around should be wrapped with wattle.

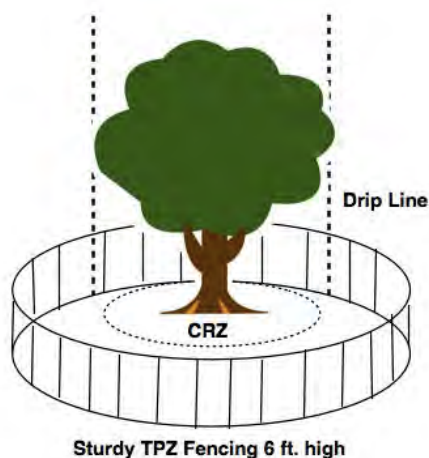


Figure 1: The image above depicts the drip line, CRZ and TPZ.

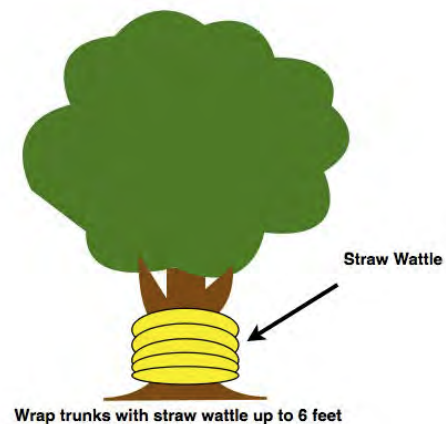


Figure 2: The image above depicts wrapping the trunk with straw wattle.

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Critical Root Zone

Because the trees will only be influenced on one side the CRZ will in effect be the TPZ for this project. The CRZ distances are listed in "Appendix B".

The critical root zone (CRZ) is the area of soil around the trunk of a tree where roots are located that provide stability and uptake of water and nutrients required for the tree's survival. The CRZ is the minimum distance from the trunk that trenching or root cutting can occur and will be defined by the trunk diameter as a distance of three times the DBH in feet, and preferably, five times (Smiley, E.T., Fraedrich, B. and Hendrickson, N. 2007). For example if the tree is two feet in diameter, the minimum CRZ distance would be six to ten feet from the stem on one side of the tree.

The recommended maximum encroachment distance into the root zone of oaks on one side is five times the trunk diameter (Coate, B.)(Costello, L., Hagan, B., Jones, K. 2011)(Figure 3).

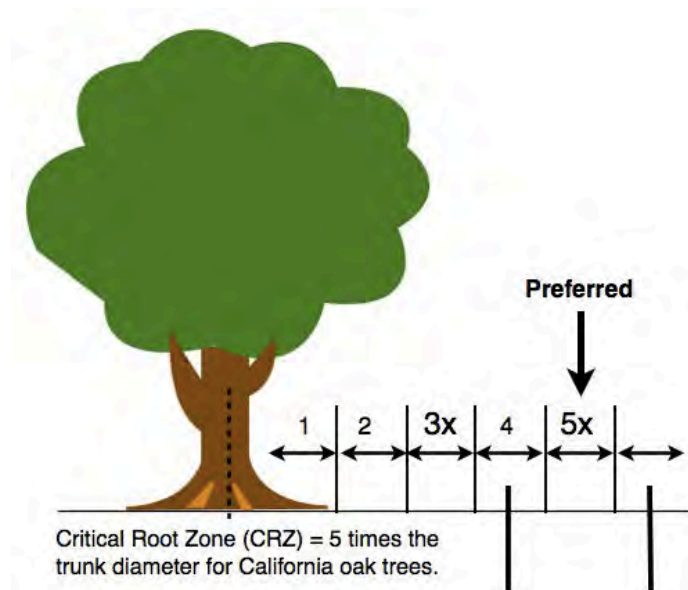


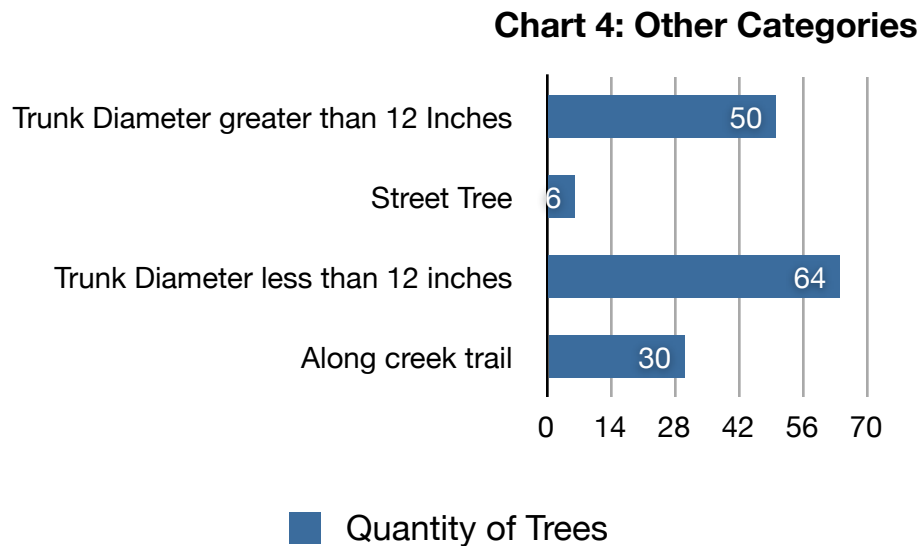
Figure 3: The image above depicts the preferred Critical Root Zone distance for oaks.

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Other Statistics of Value

The chart below is comprised of other statistics that may be of value to the City of Campbell or development managers (Chart 4).



Conclusion

There are ten parcels comprised of nine street addresses which contain 118 trees of 25 different species. Most of the trees are in fair condition with some structural defects that can be mitigated through cultural practices such as pruning and watering. Seventy-two trees are in fair condition, sixteen good, and twenty-nine poor with one dead. Many trees are poorly suited for preservation with significant defects or incompatibility with the future use. Seventy-three are poorly suited due to undesirable species, declining conditions, invasiveness, or have poor longevity based on any future use of the sites. The poorly suited trees are primarily comprised of peppers, eucalyptus, and remnant almonds. There are six dedicated street trees and thirty trees growing in close proximity to the creek trail interface. Fifty trees are protected by the city ordinance by virtue of having a trunk larger than twelve inches in diameter, while sixty-four are less than 12 inches.

Recommendations

1. Once a design plan is established have a qualified arborist assess construction and demolition influence on the trees and use establish tree protection guidelines.
2. Obtain the necessary permits prior to removing or damaging any trees or their roots.



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Glossary of Terms

Crown: Upper part of a tree, measured from the lowest branch, including all the branches and foliage.

Critical root zone (CRZ): Area of soil around a tree where the majority of roots are located and that provide stability as well as uptake water and minerals. CRZ determination is sometimes based on the drip line or multiple of DBH, but because root growth is often asymmetric due to site conditions, on-site investigation is preferred.

Defect: An imperfection, weakness, or lack of something necessary. In trees defects are injuries, growth patterns, decay, or other conditions that reduce the tree's structural strength.

Diameter at breast height (DBH): Measures at 1.4 meters (4.5 feet) above ground in the United States, Australia (arboriculture), New Zealand, and when using the *Guide for Plant Appraisal*, 9th edition; at 1.3 meters (4.3 feet) above ground in Australia (forestry), Canada, the European Union, and in UK forestry; and at 1.5 meters (5 feet) above ground in UK arboriculture.

Drip Line: Imaginary line defined by the branch spread or a single plant or group of plants.

Mechanical damage: Physical damage caused by outside forces such as cutting, chopping or any mechanized device that may strike the tree trunk, roots or branches.

Scaffold Branches: Permanent or structural branches that form the scaffold architecture or structure of a tree.

Straw wattle: also known as straw worms, bio-logs, straw noodles, or straw tubes are man made cylinders of compressed, weed free straw (wheat or rice), 8 to 12 inches in diameter and 20 to 25 feet long. They are encased in jute, nylon, or other photo degradable materials, and have an average weight of 35 pounds.

Suppressed: Growth severely restricted by competing trees. Stand classification term.

Tree Protection Zone (TPZ): Defined area within which certain activities are prohibited or restricted to prevent or minimize potential injury to designated trees, especially during construction or development.

Tree Risk Assessment: Process of evaluating what unexpected things could happen, how likely it is, and what the likely outcomes are. In tree management, the systematic process to determine the level of risk posed by a tree, tree part, or group of trees.



Trunk: The stem of a tree, bole or stem. Woody structure bearing foliage and buds that give rise to other branches or stems.

Trunk flare: Transition zone from trunk to roots where the trunk expands into the buttress or structural roots.

Volunteer: A tree, not planted by human hands, that begins to grow on residential or commercial property. Unlike trees that are brought in and installed on property, volunteer trees usually spring up on their own from seeds placed onto the ground by natural causes or accidental transport by people. Normally, volunteer trees are considered weeds and removed, but many desirable and attractive specimens have gone on to become permanent residents on many public and private grounds.

This Glossary of terms was adapted from the *Glossary of Arboricultural Terms* (ISA, 2011).



Appendix A: Tree Inventory Map

Scale tree inventory maps provided by civil engineer on separate documents.



Appendix B: Tree Inventory Table

B1: Tree Inventory and Assessment Table

Tree	Number	Dimeter at 48 Inches above Grade	Height	Canopy Radius	Condition Rating	Suitability Rating	Notes
Citrus (Citrus sp.)	724	12	25	10	Fair	Poor	
Citrus (Citrus sp.)	725	6	10	6	Poor	Poor	
Pepper (Schinus molle)	726	24	25	10	Fair	Poor	
Pepper (Schinus molle)	727	24	35	15	Fair	Fair	
Pepper (Schinus molle)	728	55	35	25	Fair	Fair	Codominant stems
Pistache (Pistachia chinensis)	729	8	20	8	Good	Fair	
Pepper (Schinus molle)	730	12	20	8	Fair	Poor	
Privet (Ligustrum lucidum)	731	6	20	6	Fair	Poor	
Privet (Ligustrum lucidum)	732	4	20	6	Fair	Poor	
Privet (Ligustrum lucidum)	733	6	20	6	Fair	Poor	
Walnut (Juglans nigra)	734	6	15	6	Poor	Poor	
Pistache (Pistachia chinensis)	735	6	20	6	Fair	Fair	
Pistache (Pistachia chinensis)	736	6	15	8	Poor	Poor	Suppressed with asymmetric crown over road
Pepper (Schinus molle)	737	50	35	20	Fair	Fair	Codominant stems



Tree	Number	Dimeter at 48 Inches above Grade	Height	Canopy Radius	Condition Rating	Suitability Rating	Notes
Pepper (Schinus molle)	738	15	25	10	Fair	Poor	
Citrus (Citrus sp.)	739	4	25	8	Fair	Poor	
Apple (Malus domestica)	740	10	20	6	Poor	Poor	
Almond (Prunus dulcis)	741	10	20	6	Poor	Poor	
Plum (Prunus sp.)	742	12	20	6	Poor	Poor	
Plum (Prunus sp.)	743	6	20	5	Dead	Dead	Dead
Loquat (Eriobotrya japonica)	744	8	25	8	Fair	Poor	
Apricot (Prunus armeniaca)	745	10	10	6	Poor	Poor	
Zelkova (Zelkova serrata)	746	8	25	10	Fair	Fair	Picnic area
Zelkova (Zelkova serrata)	747	6	15	8	Fair	Fair	Picnic area
Camphor (Camphora cinnamomum)	748	4	15	8	Fair	Fair	Picnic area
Camphor (Camphora cinnamomum)	749	4	15	8	Fair	Fair	Picnic area
Camphor (Camphora cinnamomum)	750	4	15	8	Fair	Fair	Picnic area
Chinese elm (Ulmus parvifolia)	751	8	25	10	Fair	Fair	Picnic area
Coast redwood (sequoia sempervirens)	752	6	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	753	6	25	6	Fair	Poor	Drought stressed



Tree	Number	Dimeter at 48 Inches above Grade	Height	Canopy Radius	Condition Rating	Suitability Rating	Notes
Coast redwood (sequoia sempervirens)	754	12	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	755	10	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	756	10	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	757	8	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	758	6	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	759	10	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	760	6	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	761	10	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	762	10	25	6	Fair	Poor	Drought stressed
Coast redwood (sequoia sempervirens)	763	10	25	6	Fair	Poor	Drought stressed
Coast live oak (Quercus agrifolia)	764	14	25	12	Fair	Fair	
Coast live oak (Quercus agrifolia)	765	18	25	12	Fair	Fair	



Tree	Number	Dimeter at 48 Inches above Grade	Height	Canopy Radius	Condition Rating	Suitability Rating	Notes
California bay laurel (Umbellularia californica)	766	8	25	12	Fair	Fair	
California bay laurel (Umbellularia californica)	767	10	25	12	Fair	Fair	Three stems
Valley oak (Quercus lobata)	768	15	25	15	Good	Good	
Coast live oak (Quercus agrifolia)	769	20	25	15	Good	Good	
Coast live oak (Quercus agrifolia)	770	24	25	15	Good	Good	
California bay laurel (Umbellularia californica)	771	15	25	15	Good	Fair	Multi stem
Valley oak (Quercus lobata)	772	12	25	15	Good	Good	
Coast live oak (Quercus agrifolia)	773	14	25	10	Good	Good	
Coast live oak (Quercus agrifolia)	774	12	15	8	Fair	Fair	Borers
Coast live oak (Quercus agrifolia)	775	12	20	10	Good	Good	
Coast live oak (Quercus agrifolia)	776	14	20	10	Fair	Fair	Codominant stems
Coast live oak (Quercus agrifolia)	777	14	20	10	Fair	Fair	Codominant stems, borers
Coast live oak (Quercus agrifolia)	778	7, 2	10	6	Fair	Fair	
Valley oak (Quercus lobata)	779	10	25	8	Good	Good	



Tree	Number	Dimeter at 48 Inches above Grade	Height	Canopy Radius	Condition Rating	Suitability Rating	Notes
Coast live oak (Quercus agrifolia)	780	14	25	10	Good	Good	
Coast live oak (Quercus agrifolia)	781	14	25	10	Good	Good	
Coast live oak (Quercus agrifolia)	782	8	15	6	Fair	Poor	Corner of corp yard
Walnut (Juglans nigra)	783	8, 8	20	10	Fair	Fair	
Pear (Pyrus calleryana)	784	15	25	10	Fair	Poor	Heaving sidewalk
Pistache (Pistachia chinensis)	785	10	25	10	Poor	Fair	Declining, under transformer
Pistache (Pistachia chinensis)	786	11	25	10	Fair	Fair	
Almond (Prunus dulcis)	787	18	35	12	Fair	Poor	
Almond (Prunus dulcis)	788	20 multi stem	25	10	Fair	Poor	
Almond (Prunus dulcis)	789	6, 4	15	10	Poor	Poor	
Almond (Prunus dulcis)	790	10	15	6	Poor	Poor	
Almond (Prunus dulcis)	791	10	20	8	Fair	Fair	6, 6, 5 multi stem
Coast live oak (Quercus agrifolia)	792	16	20	8	Fair	Fair	6, 6, 5 multi stem
European olive (Olea europaea)	793	16	15	6	Fair	Poor	Multi stem
Holly oak (Quercus ilex)	794	8	20	8	Good	Fair	
Pepper (Schinus molle)	795	14, 8	25	8	Fair	Poor	Split



Tree	Number	Dimeter at 48 Inches above Grade	Height	Canopy Radius	Condition Rating	Suitability Rating	Notes
Black acacia (Acacia melanoxylon)	796	17	35	10	Fair	Poor	
Coast live oak (Quercus agrifolia)	797	10	20	8	Poor	Poor	Fence in tree trunk
Carob (Ceratonia siliqua)	798	10, 10, 8, 8, 6	25	15	Fair	Poor	Multi trunk
Carob (Ceratonia siliqua)	799	28	25	15	Fair	Poor	
Almond (Prunus dulcis)	800	13	15	8	Poor	Poor	
Almond (Prunus dulcis)	801	4	10	4	Poor	Poor	
Almond (Prunus dulcis)	802	4	12	4	Poor	Poor	
Eucalyptus flooded gum (Eucalyptus rudis)	803	14, 6, 6, 8	45	15	Good	Fair	
Eucalyptus flooded gum (Eucalyptus rudis)	804	8	25	8	Good	Fair	
Eucalyptus flooded gum (Eucalyptus rudis)	805	15	20	8	Fair	Fair	
Almond (Prunus dulcis)	806	5	10	6	Poor	Poor	
Almond (Prunus dulcis)	807	10	10	6	Poor	Poor	Multi stem
Pepper (Schinus molle)	808	24	35	15	Fair	Poor	
Almond (Prunus dulcis)	809	8	10	4	Poor	Poor	



Tree	Number	Dimeter at 48 Inches above Grade	Height	Canopy Radius	Condition Rating	Suitability Rating	Notes
Pepper (Schinus molle)	810	16	25	10	Fair	Poor	
Almond (Prunus dulcis)	811	4	8	4	Poor	Poor	
Almond (Prunus dulcis)	812	4	8	4	Poor	Poor	
Almond (Prunus dulcis)	813	8	8	4	Poor	Poor	
Almond (Prunus dulcis)	814	10	8	4	Poor	Poor	
Pepper (Schinus molle)	815	22	25	10	Fair	Poor	
Almond (Prunus dulcis)	816	8	10	8	Poor	Poor	
Almond (Prunus dulcis)	817	8	10	8	Poor	Poor	
Almond (Prunus dulcis)	818	10	10	8	Poor	Poor	
Pepper (Schinus molle)	819	12	20	8	Poor	Poor	
European olive (Olea europaea)	820	4	10	6	Fair	Poor	
Pepper (Schinus molle)	821	12	15	8	Fair	Poor	
Pepper (Schinus molle)	822	10	15	8	Fair	Poor	
Pepper (Schinus molle)	823	12	15	8	Fair	Poor	
Pepper (Schinus molle)	824	24	25	12	Fair	Poor	



Tree	Number	Dimeter at 48 Inches above Grade	Height	Canopy Radius	Condition Rating	Suitability Rating	Notes
Pepper (Schinus molle)	825	22	25	12	Fair	Poor	
Pepper (Schinus molle)	826	12	15	6	Poor	Poor	Leans
Almond (Prunus dulcis)	827	8	15	6	Poor	Poor	
Pepper (Schinus molle)	828	15	25	10	Fair	Poor	
Walnut (Juglans nigra)	829	29	35	20	Good	Fair	
Pepper (Schinus molle)	830	8	15	6	Fair	Poor	
Almond (Prunus dulcis)	831	12	20	8	Fair	Poor	
Almond (Prunus dulcis)	832	8	12	6	Fair	Poor	
Coast live oak (Quercus agrifolia)	833	6	25	8	Fair	Poor	
Almond (Prunus dulcis)	845	unknown	25	10	Fair	Fair	Small site west valley arb yard.
Mexican fan palm (Washingtonia robusta)	846	unknown	25	8	Fair	Fair	Small site west valley arb yard.
Pepper (Schinus molle)	847	unknown	25	10	Fair	Fair	Small site west valley arb yard.
Pepper (Schinus molle)	848	unknown	25	10	Fair	Fair	Small site west valley arb yard.



Tree	Number	Dimeter at 48 Inches above Grade	Height	Canopy Radius	Condition Rating	Suitability Rating	Notes
Mexican fan palm (Washingtonia robusta)	849	10	6	5	Good	Poor	Small volunteer palm, invasive plant should be removed
Almond (Prunus dulcis)	850	8	10	5	Fair	Fair	
Bottle Brush (Callistemon citrinus)	851	10	30	10	Poor	Poor	Covered in ivy
Pepper (Schinus molle)	852	6	15	10	Poor	Poor	



B2: Tree Protection and Maximum Encroachment Distances

Tree Species	Number	Dimeter at 48 Inches above Grade	Estimated Height	Estimated Crown Radius/Drip Line	TPZ >75 Inches = Radius in Feet	CRZ 5x Trunk Diameter = Radius on One Side
Citrus (Citrus sp.)	724	12	25	10	9	5
Citrus (Citrus sp.)	725	6	10	6	4.5	2.5
Pepper (Schinus molle)	726	24	25	10	18	10
Pepper (Schinus molle)	727	24	35	15	18	10
Pepper (Schinus molle)	728	55	35	25	41.25	22.9
Pistache (Pistachia chinensis)	729	8	20	8	6	3.3
Pepper (Schinus molle)	730	12	20	8	9	5.0
Privet (Ligustrum lucidum)	731	6	20	6	4.5	2.5
Privet (Ligustrum lucidum)	732	4	20	6	3	1.7
Privet (Ligustrum lucidum)	733	6	20	6	4.5	2.5
Walnut (Juglans nigra)	734	6	15	6	4.5	2.5
Pistache (Pistachia chinensis)	735	6	20	6	4.5	2.5
Pistache (Pistachia chinensis)	736	6	15	8	4.5	2.5
Pepper (Schinus molle)	737	50	35	20	37.5	20.8
Pepper (Schinus molle)	738	15	25	10	11.25	6.3
Citrus (Citrus sp.)	739	4	25	8	3	1.7
Apple (Malus domestica)	740	10	20	6	7.5	4.2
Almond (Prunus dulcis)	741	10	20	6	7.5	4.2
Plum (Prunus sp.)	742	12	20	6	9	5.0
Plum (Prunus sp.)	743	6	20	5	4.5	2.5



Tree Species	Number	Dimeter at 48 Inches above Grade	Estimated Height	Estimated Crown Radius/Drip Line	TPZ >75 Inches = Radius in Feet	CRZ 5x Trunk Diameter = Radius on One Side
Loquat (Eriobotrya japonica)	744	8	25	8	6	3.3
Apricot (Prunus armeniaca)	745	10	10	6	7.5	4.2
Zelkova (Zelkova serrata)	746	8	25	10	6	3.3
Zelkova (Zelkova serrata)	747	6	15	8	4.5	2.5
Camphor (Camphora cinnamomum)	748	4	15	8	3	1.7
Camphor (Camphora cinnamomum)	749	4	15	8	3	1.7
Camphor (Camphora cinnamomum)	750	4	15	8	3	1.7
Chinese elm (Ulmus parvifolia)	751	8	25	10	6	3.3
Coast redwood (sequoia sempervirens)	752	6	25	6	4.5	2.5
Coast redwood (sequoia sempervirens)	753	6	25	6	4.5	2.5
Coast redwood (sequoia sempervirens)	754	12	25	6	9	5.0
Coast redwood (sequoia sempervirens)	755	10	25	6	7.5	4.2
Coast redwood (sequoia sempervirens)	756	10	25	6	7.5	4.2
Coast redwood (sequoia sempervirens)	757	8	25	6	6	3.3
Coast redwood (sequoia sempervirens)	758	6	25	6	4.5	2.5
Coast redwood (sequoia sempervirens)	759	10	25	6	7.5	4.2



Tree Species	Number	Dimeter at 48 Inches above Grade	Estimated Height	Estimated Crown Radius/Drip Line	TPZ >75 Inches = Radius in Feet	CRZ 5x Trunk Diameter = Radius on One Side
Coast redwood (sequoia sempervirens)	760	6	25	6	4.5	2.5
Coast redwood (sequoia sempervirens)	761	10	25	6	7.5	4.2
Coast redwood (sequoia sempervirens)	762	10	25	6	7.5	4.2
Coast redwood (sequoia sempervirens)	763	10	25	6	7.5	4.2
Coast live oak (Quercus agrifolia)	764	14	25	12	10.5	5.8
Coast live oak (Quercus agrifolia)	765	18	25	12	13.5	7.5
California bay laurel (Umbellularia californica)	766	8	25	12	6	3.3
California bay laurel (Umbellularia californica)	767	10	25	12	7.5	4.2
Valley oak (Quercus lobata)	768	15	25	15	11.25	6.3
Coast live oak (Quercus agrifolia)	769	20	25	15	15	8.3
Coast live oak (Quercus agrifolia)	770	24	25	15	18	10.0
California bay laurel (Umbellularia californica)	771	15	25	15	11.25	6.3
Valley oak (Quercus lobata)	772	12	25	15	9	5.0
Coast live oak (Quercus agrifolia)	773	14	25	10	10.5	5.8



Tree Species	Number	Dimeter at 48 Inches above Grade	Estimated Height	Estimated Crown Radius/Drip Line	TPZ >75 Inches = Radius in Feet	CRZ 5x Trunk Diameter = Radius on One Side
Coast live oak (Quercus agrifolia)	774	12	15	8	9	5.0
Coast live oak (Quercus agrifolia)	775	12	20	10	9	5.0
Coast live oak (Quercus agrifolia)	776	14	20	10	10.5	5.8
Coast live oak (Quercus agrifolia)	777	14	20	10	10.5	5.8
Coast live oak (Quercus agrifolia)	778	7, 2	10	6	6.75	3.8
Valley oak (Quercus lobata)	779	10	25	8	7.5	4.2
Coast live oak (Quercus agrifolia)	780	14	25	10	10.5	5.8
Coast live oak (Quercus agrifolia)	781	14	25	10	10.5	5.8
Coast live oak (Quercus agrifolia)	782	8	15	6	6	3.3
Walnut (Juglans nigra)	783	8, 8	20	10	12	6.7
Pear (Pyrus calleryana)	784	15	25	10	11.25	6.3
Pistache (Pistachia chinensis)	785	10	25	10	7.5	4.2
Pistache (Pistachia chinensis)	786	11	25	10	8.25	4.6
Almond (Prunus dulcis)	787	18	35	12	13.5	7.5
Almond (Prunus dulcis)	788	20 multi stem	25	10	15	8.3
Almond (Prunus dulcis)	789	6, 4	15	10	7.5	4.2
Almond (Prunus dulcis)	790	10	15	6	7.5	4.2



Tree Species	Number	Dimeter at 48 Inches above Grade	Estimated Height	Estimated Crown Radius/Drip Line	TPZ >75 Inches = Radius in Feet	CRZ 5x Trunk Diameter = Radius on One Side
Almond (Prunus dulcis)	791	10	20	8	7.5	4.2
Coast live oak (Quercus agrifolia)	792	16	20	8	12	6.7
European olive (Olea europaea)	793	16	15	6	12	6.7
Holly oak (Quercus ilex)	794	8	20	8	6	3.3
Pepper (Schinus molle)	795	14, 8	25	8	16.5	9.2
Black acacia (Acacia melanoxylon)	796	17	35	10	12.75	7.1
Coast live oak (Quercus agrifolia)	797	10	20	8	7.5	4.2
Carob (Ceratonia siliqua)	798	10, 10, 8, 8, 6	25	15	31.5	17.5
Carob (Ceratonia siliqua)	799	28	25	15	21	11.7
Almond (Prunus dulcis)	800	13	15	8	9.75	5.4
Almond (Prunus dulcis)	801	4	10	4	3	1.7
Almond (Prunus dulcis)	802	4	12	4	3	1.7
Eucalyptus flooded gum (Eucalyptus rudis)	803	14, 6, 6, 8	45	15	25.5	14.2
Eucalyptus flooded gum (Eucalyptus rudis)	804	8	25	8	6	3.3
Eucalyptus flooded gum (Eucalyptus rudis)	805	15	20	8	11.25	6.3
Almond (Prunus dulcis)	806	5	10	6	3.75	2.1
Almond (Prunus dulcis)	807	10	10	6	7.5	4.2



Tree Species	Number	Dimeter at 48 Inches above Grade	Estimated Height	Estimated Crown Radius/Drip Line	TPZ >75 Inches = Radius in Feet	CRZ 5x Trunk Diameter = Radius on One Side
Pepper (Schinus molle)	808	24	35	15	18	10.0
Almond (Prunus dulcis)	809	8	10	4	6	3.3
Pepper (Schinus molle)	810	16	25	10	12	6.7
Almond (Prunus dulcis)	811	4	8	4	3	1.7
Almond (Prunus dulcis)	812	4	8	4	3	1.7
Almond (Prunus dulcis)	813	8	8	4	6	3.3
Almond (Prunus dulcis)	814	10	8	4	7.5	4.2
Pepper (Schinus molle)	815	22	25	10	16.5	9.2
Almond (Prunus dulcis)	816	8	10	8	6	3.3
Almond (Prunus dulcis)	817	8	10	8	6	3.3
Almond (Prunus dulcis)	818	10	10	8	7.5	4.2
Pepper (Schinus molle)	819	12	20	8	9	5.0
European olive (Olea europaea)	820	4	10	6	3	1.7
Pepper (Schinus molle)	821	12	15	8	9	5.0
Pepper (Schinus molle)	822	10	15	8	7.5	4.2
Pepper (Schinus molle)	823	12	15	8	9	5.0
Pepper (Schinus molle)	824	24	25	12	18	10.0
Pepper (Schinus molle)	825	22	25	12	16.5	9.2
Pepper (Schinus molle)	826	12	15	6	9	5.0
Almond (Prunus dulcis)	827	8	15	6	6	3.3
Pepper (Schinus molle)	828	15	25	10	11.25	6.3
Walnut (Juglans nigra)	829	29	35	20	21.75	12.1



Tree Species	Number	Dimeter at 48 Inches above Grade	Estimated Height	Estimated Crown Radius/Drip Line	TPZ >75 Inches = Radius in Feet	CRZ 5x Trunk Diameter = Radius on One Side
Pepper (Schinus molle)	830	8	15	6	6	3.3
Almond (Prunus dulcis)	831	12	20	8	9	5.0
Almond (Prunus dulcis)	832	8	12	6	6	3.3
Coast live oak (Quercus agrifolia)	833	6	25	8	4.5	2.5
Almond (Prunus dulcis)	845	Unknown	25	10	Unknown	Unknown
Mexican fan palm (Washingtonia robusta)	846	Unknown	25	8	Unknown	Unknown
Pepper (Schinus molle)	847	Unknown	25	10	Unknown	Unknown
Pepper (Schinus molle)	848	Unknown	25	10	Unknown	Unknown
Mexican fan palm (Washingtonia robusta)	849	10	6	5	7.5	4.2
Almond (Prunus dulcis)	850	8	10	5	6	3.3
Bottle Brush (Callistemon citrinus)	851	10	30	10	7.5	4.2
Pepper (Schinus molle)	852	6	15	10	4.5	2.5



Appendix C: Photographs

C1: 280 Dillon Avenue







C2: 488, 482, 472, 466 Sam Cava Lane



C3: 186 Gilman Avenue



C4: Creek Trail



Appendix D: Tree protection specifications

Tree protection locations should be marked before any fencing contractor arrives.

Pre-Construction Meeting with the Project Arborist

Prior to beginning work, all contractors involved with the project should attend a pre construction meeting with the project arborist to review the tree protection guidelines. Access routes, storage areas, and work procedures will be discussed.

Tree Protection Zones and Fencing

Tree protection fencing should be established prior to the arrival of construction equipment or materials on site. Fencing should be comprised of six-foot high chain link fencing mounted on eight-foot tall, 1 7/8-inch diameter galvanized posts, driven 24 inches into the ground and spaced no more than 10 feet apart. Once established, the fencing must remain undisturbed and be maintained throughout the construction process until final inspection.

The fencing should be maintained throughout the site during the construction period and should be inspected periodically for damage and proper functions.

Fencing should be repaired, as necessary, to provide a physical barrier from construction activities.

Monitoring

Any trenching, construction or demolition that is expected to damage or encounter tree roots should be monitored by the project arborist or a qualified ISA Certified Arborist and should be documented.

The site should be evaluated by the project arborist or a qualified ISA Certified Arborist after construction is complete, and any necessary remedial work that needs to be performed should be noted.

Restrictions Within the Tree Protection Zone

No storage of construction materials, debris, or excess soil will be allowed within the Tree Protection Zone. Spoils from the trenching shall not be placed within the tree protection zone either temporarily or permanently. Construction personnel and equipment shall be routed outside the tree protection zones.



Root Pruning

When roots over two inches in diameter are encountered they should be pruned by hand with loppers, handsaw, reciprocating saw, or chain saw rather than left crushed or torn. Roots should be cut beyond sinker roots or outside root branch junctions and be supervised by the project arborist. When completed, exposed roots should be kept moist with burlap or backfilled within one hour.

Boring or Tunneling

Boring machines should be set up outside the drip line or established Tree Protection Zone. Boring may also be performed by digging a trench on both sides of the tree until roots one inch in diameter are encountered and then hand dug or excavated with an Air Spade® or similar air or water excavation tool. Bore holes should be adjacent to the trunk and never go directly under the main stem to avoid oblique (heart) roots. Bore holes should be a minimum of three feet deep.

Timing

If the construction is to occur during the summer months supplemental watering and bark beetle treatments should be applied to help ensure survival during and after construction.

Tree Pruning and Removal Operations

All tree pruning or removals should be performed by a qualified arborist with a C-61/D-49 California Contractors License. Tree pruning should be according to ANSI A-300A pruning standards and adhere to ANSI Z133.1 safety standards. Trees that need to be removed or pruned should be identified in the pre-construction walk through.

Tree Protection Signs

All sections of fencing should be clearly marked with signs stating that all areas within the fencing are Tree Protection Zones and that disturbance is prohibited. Text on the signs should be in both English and Spanish (Appendix E).



Appendix E: Tree Protection Signs

E1: English

WARNING
Tree Protection Zone

**This Fence Shall not be moved without
approval. Only authorized personnel
may enter this area!**

Project Arborist



E2: Spanish

CUIDADO
Zona De Arbol Pretejido
Esta cerca no sera removida sin
aprobacion. Solo personal autorizado
entrara en esta area!

Project Arborist



Qualifications, Assumptions, and Limiting Conditions

Any legal description provided to the consultant is assumed to be correct. Any titles or ownership of properties are assumed to be good and marketable. All property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

All property is presumed to be in conformance with applicable codes, ordinances, statutes, or other regulations.

Care has been taken to obtain information from reliable sources. However, the consultant cannot be responsible for the accuracy of information provided by others.

The consultant shall not be required to give testimony or attend meetings, hearings, conferences, mediations, arbitration, or trials by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.

This report and any appraisal value expressed herein represent the opinion of the consultant, and the consultant's fee is not contingent upon the reporting of a specified appraisal value, a stipulated result, or the occurrence of a subsequent event.

Sketches, drawings, and photographs in this report are intended for use as visual aids, are not necessarily to scale, and should not be construed as engineering or architectural reports or surveys. The reproduction of information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is only for coordination and ease of reference. Inclusion of said information with any drawings or other documents does not constitute a representation as to the sufficiency or accuracy of said information.

Unless otherwise expressed: a) this report covers only examined items and their condition at the time of inspection; and b) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that structural problems or deficiencies of plants or property may not arise in the future.



Certification of Performance

I Richard Gessner, Certify:

That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of the evaluation and/or appraisal is stated in the attached report and Terms of Assignment;

That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved;

That the analysis, opinions and conclusions stated herein are my own;

That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted Arboricultural practices;

That no one provided significant professional assistance to the consultant, except as indicated within the report.

That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any other subsequent events;

I further certify that I am a Registered Consulting Arborist® with the American Society of Consulting Arborists, and that I acknowledge, accept and adhere to the ASCA Standards of Professional Practice. I am an International Society of Arboriculture Board Certified Master Arborist® and Tree Risk Assessor Qualified. I have been involved with the practice of Arboriculture and the care and study of trees since 1998.

Richard J. Gessner



ASCA Registered Consulting Arborist® #496
ISA Board Certified Master Arborist® WE-4341B
ISA Tree Risk Assessor Qualified

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ATTACHMENT 6

GEOTECHNICAL INVESTIGATION

**GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
DILLON AVENUE, SAM CAVA LANE
AND GILMAN AVENUE
CAMPBELL, CALIFORNIA**

PROJECT 2014.0005

DRAFT FOR CLIENT REVIEW ONLY

For

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By

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May 16, 2014

**GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
DILLON AVENUE, SAM CAVA LANE
AND GILMAN AVENUE
CAMPBELL, CALIFORNIA**

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**GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
DILLON AVENUE, SAM CAVA LANE AND GILMAN AVENUE
CAMPBELL, CALIFORNIA**

1. INTRODUCTION

DRAFT FOR CLIENT REVIEW ONLY

1.1 GENERAL

This report presents the results of our geotechnical investigation for the proposed residential development at the parcels identified below, in Campbell, California. The combined property is referred as “site,” “project site” or “project area” in this report. The approximate location of the site is shown on the Vicinity Map included with Figure 1 of this report. Figure 1 shows a layout of the proposed development with the exception of the 426 Sam Cave Lane parcel. Figure 2 shows a layout of the existing site surface features on all eight parcels.

Address	Assessor Parcel Number
426 Sam Cava Lane	412-08-068
180 Dillon Avenue	412-08-037
190 Dillon Avenue	412-08-038
186 Gilman Avenue	412-08-046
466 Sam Cava Lane	412-08-041
472 Sam Cava Lane	412-08-042
482 Sam Cava Lane	412-08-043
488 Sam Cava Lane	412-08-044

This report presents our conclusions and geotechnical recommendations for project design and construction. These conclusions and recommendations are based on subsurface information collected during this investigation and in previous investigations by others discussed in Section 1.4 below. The conclusions and recommendations in this report should not be extrapolated to other areas or used for other projects without our review.

1.2 PROJECT DESCRIPTION

The property at 426 Sam Cava Lane is a standalone parcel covering an area of about 0.28 acre. The other seven parcels are adjoining (see Figure 1), with a combined area of approximately 2.4 acres.

We understand the project will involve construction of three or four-story, attached townhomes. The proposed buildings are anticipated to have wood-frame construction and post-tensioned slab foundations. We understand this project will likely be developed in conjunction with the adjoining 230, 280 and 282 Dillon Avenue project for which we previously performed a geotechnical investigation.

Associated improvements will include exterior flatwork, underground utilities, landscaping, and vehicular pavement areas.

Details regarding site grading are not available at the time when we prepared this report. But we understand that some of the buildings will be constructed at grade and some of the buildings will be constructed roughly 2 to 5 feet below grade. Excavations will be required for removal and re-compaction of existing fills, and for construction of subterranean structures and underground utilities.

The above project descriptions are based on information provided to us. If the actual project differs from those described above, Pacific Geotechnical Engineering (PGE) should be contacted to review our conclusions and recommendations and present any necessary modification to address the different project development schemes.

1.3 INFORMATION PROVIDED

For this investigation, we were provided with the following by Robson Homes.

- Preliminary project information and proposed site development layout.
- ALTA/ACSM Land Title Survey, 180 & 190 Dillon Avenue, 186 Gilman Avenue, 426 Sam Cava Lane, Sheets 1 through 3, prepared by Civil Engineering Associates, dated December 20, 2013.
- EDR Aerial Photo Decade Package, prepared by EDR Environmental Data Resources, dated March 11, 2013.
- EDR Historical Topographic Map Report, prepared by EDR Environmental Data Resources, dated March 7, 2013.
- A report titled "Environmental Soil Borings and Analytical Results, 190 Dillon Avenue, Campbell, California," prepared by Environmental Geotechnical Consultants, dated June 01 25, 1990.
- A report titled "Foundation Investigation, Haig Precision Manufacturing Building, 426 Sam Cava Lane, Campbell, California," prepared by Donald E Banta & Associates, dated March 8, 1996.

1.4 PREVIOUS INVESTIGATIONS

In 1996, Donald E. Banta & Associates (DBA) performed a geotechnical investigation for the 426 Sam Cava Lane parcel and prepared a report listed in Section 1.3 above. In 1990, Environmental Geotechnical Consultants (EGC) performed an environmental evaluation for the 190 Dillon Avenue parcel and prepared a report listed in Section 1.3 above. Information in these reports was considered in prepared of our report.

In 2013, our firm performed a geotechnical investigation for the adjoining parcels on 230, 280, and 282 Dillon Road. A draft geotechnical investigation report dated May 9, 2013 was prepared for that project.

1.5 PURPOSE AND SCOPE OF SERVICES

The purpose of this investigation was to explore subsurface conditions underlying the site and to develop geotechnical recommendations for design and construction of the proposed project. The following work was performed.

1. Reconnoitering of the site to observe existing site conditions and to mark locations of our exploration.
2. Notifying Underground Service Alert (USA) and our client of our drilling schedule.
3. Subsurface exploration by means of twelve exploratory borings.
4. Laboratory testing of selected soil samples obtained from the borings to evaluate pertinent engineering properties of the samples, and on a selected bulk sample.
5. Engineering analysis of the field and laboratory testing data.
6. Preparation of this report.

2. SITE INVESTIGATION AND LABORATORY TESTING

Our field investigation consisted of a site reconnaissance and a subsurface exploration program. The site reconnaissance was to observe existing site surface conditions. The subsurface exploration was to explore soil conditions at selected locations on the site.

2.1 SUBSURFACE EXPLORATION

Our subsurface exploration program consisted of twelve exploratory drill holes (DH-1 through DH-12). The drill holes were located in the field by referencing to existing site features and pacing; therefore, their locations are approximate. The approximate locations of the drill holes are shown on Figures 1 and 2.

The drill holes were advanced on January 9 and 29, 2014, using a truck-mounted Mobile B53 drilling rig (DH-1 through DH-6 and DH-9 through DH-12) and a portable minuteman drilling rig (DH-7 and DH-8). The Mobile B53 rig is equipped with 8-inch diameter hollow-stem augers and the minuteman rig is equipped with 4-inch diameter solid flight augers. The depth of exploration ranged between roughly 10 and 45 feet below ground surface (bgs). In the field, our personnel visually classified the materials encountered and maintained a log of each drill holes.

Soil samples were obtained from the drill holes using a 2-inch outside diameter (1.4-inch inside diameter) split-barrel sampler (also called a Standard Penetration Test sampler) and a 3-inch outside diameter (2½-inch inside diameter) split barrel sampler with 6-inch-long liners. Soil samples were obtained by driving the sampler up to 18 inches into the earth material using a 140-pound hammer falling 30 inches. The hammer on the Mobile B53 rig was operated using a wire winch and pulley system. The hammer on the minuteman rig is operated by a rope and cathead system on a tripod. The number of blows required to drive the sampler was recorded for each 6-inch penetration interval. The number of blows required to drive the sampler the last 12 inches, or the penetration interval indicated on the log when harder material was encountered, is shown as blows per foot (blow count) on the drill hole logs.

Visual classification of soils encountered in our drill holes was made in general accordance with the Unified Soil Classification System (ASTM D 2487 and D 2488). The results of our laboratory tests were used to refine our field classifications. Two Keys to Soil Classification, one for fine grained soils and one for coarse grained soils, are included in Appendix A together with the logs of the drill holes.

2.2 LABORATORY TESTING

Laboratory testing was conducted on selected soil samples to evaluate their properties. The geotechnical testing included natural moisture content, dry density, Atterberg limits, grain size distribution, and percent passing a No. 200 sieve. An R-value test was performed on a bulk sample of near-surface soil to provide data for pavement design. In addition to geotechnical testing, three selected soil samples were sent to CERCO Analytical for corrosivity analysis.

Most of the geotechnical laboratory test results are presented on the drill hole logs. Graphic presentation of the results of the Atterberg limits, grain size and R-value tests are presented in Appendix B. A brief report from CERCO Analytical with the corrosivity test results is also included in Appendix B.

3. FINDINGS

3.1 SURFACE CONDITIONS

The 426 Sam Cava Lane parcel is bordered by Sam Cava Lane on the northeast, Dillon Avenue on the southeast, Railway Avenue on the northwest and existing developments on the southwest. The T-shaped project site is occupied by an existing L-shaped building in the south and part of the west leg of the T, and a Portland cement concrete parking lot in the east leg of the T. Ground surface across the site is essentially flat-lying. Existing landscaping includes isolated trees, bushes and lawns.

The four parcels located east of Dillon Avenue and south of Sam Cava Lane (466, 472, 482 and 488 Sam Cava Lane) are occupied by existing residential developments. Existing surface features include houses, detached garages, sheds, driveways, and landscaping. Ground surface across these parcels are essentially flat.

The parcels on 180 and 190 Dillon Avenue and 186 Gilman Avenue are occupied by commercial and industrial developments. Existing surface features include buildings, paved parking lots and driveways, and landscaping. Ground surface across these parcels are essentially flat. There is a roughly 13-foot high H-beam and timber lagging retaining wall along the southwest portion of the 190 Dillon Avenue parcel. There are also retaining walls along the east sides of the 180 Dillon, 190 Dillon and 186 Gilman parcels, bordered by the Los Gatos Creek trail and Los Gatos Creek. The creek bank in the vicinity is about 17 feet high and heavily vegetated.

3.2 SUBSURFACE CONDITIONS

Subsurface materials encountered in our borings can generally be described as alluvial soils with local fills and debris, as discussed below. For a more detailed description of the subsurface materials encountered in our drill holes, refer to the drill hole logs in Appendix A. For a more detailed description of the subsurface materials encountered in the DBA and EGC borings, refer to the boring logs in Appendix B.

426 Sam Cava Lane: Drill hole DH-1 from this investigation and borings EB-1 and EB-2 from the 1996 DBA investigation were located on this parcel. In our DH-1, the concrete pavement was about 6 inches thick. Below the concrete is a layer of very stiff clay with sand to a depth of about 6½ feet below ground surface (bgs). This clay has an intermediate plasticity which generally corresponds to a moderate expansion potential. The clay is underlain by medium dense clayey sand with gravel to a depth of about 12 feet bgs, and dense well graded gravel with sand and clay to the maximum explored depth of about 20 feet bgs.

In EB-1 and EB-2, the upper 1½ to 2 feet of soils were fills consisting of clayey gravel. The fills were underlain by stiff clay to depths of about 7 to 8 feet bgs, and medium dense to very dense gravelly sand and sandy gravel to the maximum explored depth of 30 and 15 feet bgs, in EB-1 and EB-2, respectively. The fills were likely removed and/or re-compacted during construction of the existing development.

466, 472, 482 and 488 Sam Cava Lane: Drill holes DH-7 and DH-8 from this investigation were advanced in the area. Alluvial soils consisting of very stiff to hard lean clays were encountered below ground surface to a depth of about 7 to 7½ feet bgs. The clays are underlain by medium dense to dense clayey sand to the maximum explored depth of about 10 feet bgs.

180 Dillon Avenue and 186 Gilman Avenue: Drill holes DH-2 through DH-6 and DH-9 through DH-12 were located on these parcels, with depth of exploration between roughly 10 and 45 feet bgs. Concrete pavement, about 5 to 7 inches thick, was encountered in DH-2, DH-5, DH-9, DH-10, DH-11 and DH-12. Asphalt concrete pavement, consisting of roughly 2 to 3 inches of asphalt over 2 to 4 inches of base, was encountered in DH-3, DH-4 and DH-6. Fills were encountered under the pavements. The thinner fill section was in DH-3 and DH-5 which extended to a depth of about 2 feet bgs. The thicker fill section was in DH-4, DH-10, DH-11 and DH-12 which extended to depths of about 12 to 14.5+ feet bgs (the maximum explored depth in DH-10). The fills consist of clay, clayey sand and clayey gravel with variable amounts of debris including concrete fragments, asphalt fragments, wood fragments, white powdery material, etc. Native soils below the fills are predominantly granular soils consisting of well graded gravel with sand and clay, clayey sand, silty sand and clayey gravel. The granular soils are medium dense to very dense in relative density.

190 Dillon Avenue: No subsurface exploration was performed during this investigation for this parcel. The subsurface conditions described below are based on three borings (MW-1 through MW-3) drilled on May 30, 1990 by EGC during their study on the parcel. These borings extended to depths of roughly 39.5 to 45 feet bgs and their approximate locations are shown on Figures 1 and 2 of this report.

Fills were reported in the three borings. In MW-1, a roughly 3½-foot thick layer of silty clay fill was encountered over gypsum-based sheetrock fill which extended to a depth of about 11 feet bgs. Below the sheetrock fill, subsurface soils were described as clayey silt, silty gravel and clay.

In MW-2, the upper soil layers were described as pebbly silt, gravelly clay and clayey gravel fills with abundant bricks. The bottom of these fills was not noted on the boring log. Soils below the fills were described as silty-clayey gravel, gravel, and silty clay.

In MW-3, the upper soil layers were described as asphaltic and clayey gravel fills with asphalt, abundant brick debris, and chalky gypsum interbeds. The bottom of these fills was not noted on the boring log. Soils below the fills were described as silty gravel and silty clay.

3.3 GROUNDWATER

Groundwater was not encountered in our drill holes, or in the DBA and EGC borings, the deepest of which extended to a depth of about 45 feet bgs. Historical high groundwater was estimated to be about 40 to 50 feet based on our review of Plate 1.2, "Depth to historically high ground water, historical liquefaction sites, and locations of boreholes, San Jose West 7.5-minute Quadrangle, California," Seismic Hazard Zone Report 058, prepared by California Geological Survey, Department of Conservation, 2002.

Please note that fluctuations in groundwater level may occur due to seasonal variations in rainfall and temperature, water level in adjacent water courses, pumping from wells, irrigation, regional groundwater recharge program, or other factors that were not evident at the time of this investigation.

3.4 VARIATIONS IN SUBSURFACE CONDITIONS

Our interpretations of soil and groundwater conditions, as described in this report, are based on data obtained from our subsurface exploration and laboratory testing for this study, as well as subsurface and laboratory testing data from previous investigations discussed in this report. Our conclusions and geotechnical recommendations are based on these interpretations. Please realize the project site has undergone previous development and grading. Therefore, it is likely that undisclosed variations in subsurface conditions exist at the site, such as old foundations, abandoned utilities and areas of deep and loose fill.

Careful observations should be made during construction to verify our interpretations. Should variations from our interpretations be found, we should be notified to evaluate whether any revisions should be made to our recommendations.

4. SEISMIC CONSIDERATIONS

4.1 EARTHQUAKE FAULTS AND SEISMICITY

The San Francisco Bay Area is seismically dominated by the active San Andreas Fault system, the tectonic boundary between the northward moving Pacific Plate (west of the fault) and the North American Plate (east of the fault). This movement is distributed across a complex system of generally strike-slip, right-lateral, subparallel faults.

Regional faults that have a potential to generate large magnitude earthquakes and significant ground shaking at the site are listed below. Map distances are derived from the USGS Quaternary Fault and Fold database (accessed at <http://earthquake.usgs.gov/regional/qfaults/>).

Fault Name	Approximate Distance	Orientation from Site
Monte Vista-Shannon	3¾ km (2¼ mi)	Southwest
San Andreas (Peninsula Segment)	11½ km (7¼ mi)	Southwest
Hayward (Southeast Extension)	14½ km (9 mi)	Northeast
Calaveras (Central Section)	19 km (11¾ mi)	Northeast
San Gregorio	36¼ km (22¾ mi)	Southwest
Sargent	16 km (10 mi)	Southeast

According to the 2013 CBC and ASCE 7-10, the spectral response acceleration at any period can be taken as the lesser of the spectral response accelerations from the probabilistic and deterministic ground motion approaches. We used the US Seismic Design Maps Application at the USGS website for this purpose to retrieve seismic design parameter values for design of buildings at the subject site. Two levels of ground motions are considered in the Application: Risk-targeted Maximum Considered Earthquake (MCE_R) and Design Earthquake (DE), with both probabilistic and deterministic values defined in terms of maximum-direction rather than geometric-mean, horizontal spectral acceleration. The probabilistic MCE_R spectral response accelerations are represented by a 5 percent damped acceleration response spectrum having a 1 percent probability of collapse within a 50-year period and in the direction of the maximum horizontal response. The probabilistic Design Earthquake (DE) S_a value at any period can be taken as two-thirds of the MCE_R S_a value at the same period.

Using the latitudes and longitudes of the different project areas (latitudes 37.2841 to 37.2852, longitudes -121.9413 to -121.9426) and a Site Class D, the calculated geometric mean peak ground acceleration adjusted for site class effects (PGA_M) is 0.62g for the MCE_G (Geometric Mean Maximum Considered Earthquake). PGA_M is for use in evaluation of soil liquefaction, lateral spreading, seismic settlements and other soil issues per ASCE 7-10.

The WGCEP's estimates of the probabilities of major earthquakes are now in their fourth iteration, with the greatest changes in approach being the treatment of major faults as segmented, unsegmented or capable of different rupture scenarios; in the progressive consideration of more potential seismic sources, and in use of time-independent versus time-dependent models. Current estimates (WGCEP, 2003, 2008) are most detailed for the greater San Francisco Bay Area; WGCEP (2008) estimated a 63% probability of a large (magnitude 6.7 or greater) earthquake in the San Francisco Bay area as a whole over a 30-year period; this overall probability differed only slightly from the previous (WGCEP, 2003) probability of 62%. The estimate for the Calaveras fault alone is 7% (revised down from the 11% presented by

WGCEP, 2003); for the (northern) San Andreas fault alone, 21%; and for the Hayward fault, 31% (revised upward from the WGCEP (2003) value of 27%).

4.2 LIQUEFACTION

Soil liquefaction is a phenomenon in which saturated granular soils, and certain fine-grained soils, lose their strength due to the build-up of excess pore water pressure during cyclic loading, such as that induced by earthquakes. Soils most susceptible to liquefaction are saturated, clean, loose, fine-grained sands and non-plastic silts. Certain gravels, plastic silts, and clays are also susceptible to liquefaction. The primary factors affecting soil liquefaction include: 1) intensity and duration of seismic shaking; 2) soil type; 3) relative density of granular soils; 4) moisture content and plasticity of fine-grained soils; 5) overburden pressure; and 6) depth to ground water.

The project areas are generally not located in a County of Santa Clara Liquefaction Hazard Zone except for the eastern portion of the parcels on 180 and 190 Dillon Avenue and 186 Gilman Avenue. Based on the lack of groundwater in the upper 45 feet and the medium dense to very dense relative density of the granular soils, we judge the potential for liquefaction at the site is low.

4.3 SEISMIC DESIGN PARAMETERS

The following seismic design parameters were developed based on the 2013 California Building Code, ASCE 7-10, subsurface information collected during this investigation, and longitudes and latitudes of the project site. Code parameters were calculated using the US Seismic Design Maps Application Version 3.0.1 available at the USGS website.

Parameter	Value
Site Class	D
Site Coefficient F_a	1.0
Site Coefficient F_v	1.5
S_s	1.627g
S_1	0.603g
S_{Ms}	1.627g
S_{M1}	0.904g
S_{Ds}	1.085g
S_{D1}	0.603g

5. DISCUSSION AND CONCLUSIONS

5.1 GENERAL

The geotechnical issues we have considered for this project are discussed below. Detailed recommendations for design and construction of the project are presented in the "RECOMMENDATIONS" section of this report.

5.2 SURFACE FAULT RUPTURE

The project areas are not located in an Alquist-Priolo Earthquake Fault Zone. Because no active or potentially active faults are known to cross the project areas, it is reasonable to conclude the risk of fault rupture across the project areas is low.

5.3 SEISMIC GROUND SHAKING

The project areas are in an area of high seismicity. Based on general knowledge of regional seismicity, it should be anticipated that, during the design life of the improvements, the project areas will be subject to high intensity ground shaking. The proposed improvements should be designed accordingly using applicable building codes and experience of the design professionals.

5.4 EXPANSION POTENTIAL OF SITE SOIL

The results of our Atterberg Limits test indicate the near-surface soils have an intermediate plasticity which generally corresponds to a low to moderate expansion potential. The recommendations in this report for earthwork and foundation design take into account the low to moderate potential for soil expansion.

5.5 EXISTING FILLS AND DEBRIS FILLS

The parcels on 180 Dillon Avenue, 190 Dillon Avenue and 186 Gilman Avenue are underlain by existing fills which contain variable amounts of debris. Prior to construction, the fills should be removed and the excavations restored to design grades with engineered fill. Special disposal and handling of the debris fills and associated soil will be required as recommended by the project environmental consultant. It is anticipated most of the existing fills and debris fills would not be suitable for re-used as engineered fill.

5.6 EXISTING IMPROVEMENTS

Prior to construction, existing improvements should be demolished. Excavations resulting from site demolition should be properly backfilled with engineered fill under the observation of the geotechnical engineer. If the excavations are not properly backfilled, it may cause settlement and distress to the new site improvements.

5.7 SOIL CORROSIVITY

Three selected soil samples were tested by CERCO Analytical for general soil corrosivity. The test results and a brief report from CERCO Analytical are included in Appendix B. The project design engineers should review the information for their designs. Additional testing may be necessary if soil corrosivity at specific locations is required.

The test results may be used in conjunction with ACI 318 in the selection of concrete for use at this site, especially for concrete that will be in direct contact with soil.

If necessary, a corrosion engineer may be consulted for additional recommendations on mitigation of soil corrosion.

6. RECOMMENDATIONS

6.1 EARTHWORK

6.1.1 Clearing and Stripping

Site clearing should include removal of designated improvements, deleterious materials, debris and obstructions, including existing structures, foundations, flatwork, pavements, underground improvements, and stumps and primary roots of trees and brush. Roots about 1 inch or larger in diameter or about 3 feet or longer in length should be removed. Depressions, voids and holes that extend below proposed finish grade should be cleaned and backfilled with engineered fill compacted to the recommendations in this report. The backfill operations should be observed and tested by the project geotechnical engineer. Refer to Sections 3.2 and 5.5 of this report regarding fills and debris fills in the project areas.

Surface vegetation, where present, should be stripped to sufficient depth to remove the vegetation and organic-laden topsoil. Organic laden soils are defined as soils with more than 3 percent by weight of organic content. Stripped material may be stockpiled for use in future landscape areas if approved by the project landscape architect; otherwise, it should be removed from the site. For planning purposes, average stripping depth may be assumed to be about 3 inches. The actual stripping depth should be determined by the Geotechnical Engineer at the time of construction.

6.1.2 Excavations

Excavations are anticipated for removal of existing underground structures and improvements, fills and debris fills, for achieving design grades, and for construction of new underground utilities, foundations and retaining walls.

The walls of excavation in clayey soils and less than 5 feet in height should be able to stand near vertical with proper bracing, provided proper moisture content in the soil is maintained. Excavations in granular soils will require more extensive shoring and bracing because granular soils are prone to sudden collapse. Excavations and temporary construction slopes should be constructed in accordance with the current OSHA safety standards and local jurisdiction. The stability and safety of excavations, braced or unbraced, is the responsibility of the contractor. The on-site granular soils may be considered as Type C soil in OSHA 29 CFR Part 1926, Appendix A to Subpart P.

Trench excavations adjacent to existing or proposed foundations should be above an imaginary plane having an inclination of 1½:1 (horizontal to vertical) extending down from the bottom edge of the foundations.

6.1.3 Over-excavation and Re-compaction of Existing Fills

The existing fills should be over-excavated and portions of the fills containing debris, unsuitable or hazardous materials should be properly disposed. Soil surfaces at the bottom of the over-excavations should be scarified, moisture conditioned and compacted as recommended under "Subgrade Preparation" before raising the areas to design grades with engineered fill.

Other loose soils, if encountered during construction, should also be over-excavated and re-compacted as recommended for engineered fill. We recommend a unit price be obtained

from the contractor prior to the start of site grading for over-excavation and re-compaction of any loose fills.

6.1.4 Subgrade Preparation

Subgrade soil in areas to receive engineered fill, foundations, concrete slabs-on-grade and pavements should be scarified to a minimum depth of 8 inches, moisture conditioned and compacted to the recommendations given under "Engineered Fill Placement and Compaction." Prepared soil subgrades should be non-yielding.

Subgrade preparation should extend a minimum of 5 feet beyond the outermost limits of the proposed buildings and adjoining flatwork. For exterior flatwork not connected to buildings and for pavement areas, subgrade preparation should extend a minimum of 3 feet beyond the limits of exterior flatwork or pavements. After the subgrades have been prepared, the areas may be raised to design grades by placement of engineered fill.

Soil with moisture content above the laboratory optimum value should be anticipated in existing pavement areas. Wet soils will require special handling as discussed below.

Where encountered, unstable, wet or soft soil will require processing before compaction can be achieved. If construction schedule does not allow for air-drying, other means such as lime or cement treatment of the soil or excavation and replacement with suitable material may be considered. Geotextile fabrics may also be used to help stabilize the subgrade. The method to be used should be determined at the time of construction based on the actual site conditions. We recommend obtaining unit prices for subgrade stabilization during the construction bid process.

6.1.5 Materials for Engineered Fill

In general, on-site soils with an organic content of less than 3 percent by weight, free of any hazardous, debris or deleterious materials, and meeting the gradation requirements below may be used as engineered fill to achieve project grades, except when special material (e.g. capillary break material) is required.

In general, engineered fill material should not contain rocks or lumps larger than 3 inches in greatest dimension, should not contain more than 15 percent of the material larger than 1½ inches, and should contain at least 20 percent passing the No. 200 sieve. In addition to these requirements, import fill, including "non-expansive" fill, should have a low expansion potential as indicated by Plasticity Index of 15 or less, or Expansion Index of less than 20.

All import fills should be approved by the project geotechnical engineer prior to delivery to the site. At least five (5) working days prior to importing to the site, a representative sample of the proposed import fill should be delivered to our laboratory for evaluation.

6.1.6 Engineered Fill Placement and Compaction

Engineered fill should be placed in horizontal lifts each not exceeding 8 inches in thickness, moisture conditioned to the required moisture content, and mechanically compacted to the recommendations below. Relative compaction or compaction is defined as the in-place dry density of the compacted soil divided by the laboratory maximum dry density as determined by ASTM Test Method D1557, latest edition, expressed as a percentage. Moisture conditioning of

soils should consist of adding water to the soils if they are too dry and allowing the soils to dry if they are too wet.

Engineered fills consisting of on-site soils of low to moderate expansion potential and imported soils should be compacted to a minimum of 90 percent relative compaction with moisture content between about 1 and 3 percent above the laboratory optimum value.

In pavement areas, the upper 8 inches of subgrade soil should be compacted to a minimum of 95 percent relative compaction at soil moisture content of 1 to 3 percent above optimum value. Aggregate base materials in pavement areas should be compacted at slightly above the optimum moisture content to at least 95 percent relative compaction.

Behind retaining walls, care should be taken to avoid over-compaction of the backfill materials. Lightweight, hand-operated equipment should be used to compact backfill within 3 feet behind retaining walls.

6.1.7 Utility Trench Backfill

Trenches in public right-of-way should comply with the City of Campbell Standard Specifications and Details for Public Works Construction. An exception would be if a utility company has its own special requirements for bedding and backfilling trenches and such requirements are approved by the City of Campbell.

The backfill material should be placed in lifts not exceeding about 6 inches in uncompacted thickness. Thinner lifts may be necessary to achieve compaction due to equipment limitations. Compaction should be performed by mechanical means only. Water jetting or flooding to attain compaction of backfill is not allowed.

Below are recommendations for backfilling trenches in private right-of-way.

Pipe zone backfill, extending from the bottom of the trench to 1 foot above the top of pipe, should consist of free-draining sand unless concrete or sand-cement slurry is specified. The sand should be compacted to a minimum of 90 percent relative compaction. Above the pipe zone, utility trenches should be backfilled with free-draining sand, on-site soil or imported soil, compacted as recommended in the section of "Engineered Fill Placement and Compaction."

Trench backfill should be capped with a minimum of 12 inches of compacted soil similar to that of the adjoining subgrade. The backfill material should be placed in lifts not exceeding 6 inches in uncompacted thickness. Thinner lifts may be necessary to achieve the recommended level of compaction of the backfill due to equipment limitations. Compaction should be performed by mechanical means only. Water jetting or flooding to attain compaction of backfill should not be permitted.

6.1.8 Considerations for Soil Moisture and Seepage Control

Subgrade soil and engineered fill should be compacted at moisture content meeting our recommendations. Consideration should be given to reducing the potential for water infiltration from the exterior to under the buildings through utility lines crossing the building perimeter. In utility lines crossing beneath perimeter foundations, permeable backfill should be terminated at least 1 foot outside of the perimeter foundation. Impermeable material, such as concrete or clay soil, should be used for the entire trench depth to act as a seepage cutoff.

Where concrete slabs or pavements abut against landscaped areas, the base rock layer and subgrade soil should be protected against saturation. Water if allowed to seep into the subgrade soil or pavement section could reduce the service life of the improvements. Methods that may be considered to reduce infiltration of water include: 1) subdrains installed behind curbs and slabs in landscape areas; 2) vertical cut-offs, such as a deepened curb section, or equivalent, extending at least 2 inches into the subgrade soil; and 3) use of a drip or controlled irrigation system for landscape watering.

6.1.9 Wet Weather Construction

If earthwork construction is to be performed during the winter rainy months, the owner and contractors should be fully aware of the potential impact of wet weather. Rainstorms can cause delay to construction and damage to previously completed work by saturating compacted pads or subgrades, or flooding excavations.

Earthwork during rainy months will require extra effort and caution by the contractors who should be responsible to protect their work to avoid damage by rainwater. Standing water should be pumped out immediately. Construction during wet weather conditions should be addressed in the project construction bid documents and/or specifications. We recommend the grading contractor submits a wet weather construction plan outlining procedures they will employ to protect their work and to minimize damage to their work by rainstorms.

6.2 FOUNDATIONS

General recommendations for foundation design are presented below. The geotechnical engineer should review the foundation plans and details before construction and observe the foundation excavations during construction to determine if the excavations extend into suitable bearing material. Prior to placement of concrete, foundation excavations should be cleaned of loose soils.

6.2.1 Post-tensioned Slabs

The proposed residential structures may be constructed on post-tensioned (PT) slab foundations founded on properly moisture conditioned and compacted subgrade soil. Preparation of soil subgrade, and moisture conditioning and compaction of engineered fills should be as recommended in the "Earthwork" section of this report.

The following parameters may be used with the 2004 PTI "Design of Post-Tensioned Slabs-on-Ground, Third Edition" manual for design of the PT slabs.

- e_m (center lift) = 9 feet
- e_m (edge lift) = 5 feet
- y_m (center lift) = 0.8 inch
- y_m (edge lift) = 1 inch
- Allowable soil bearing pressure = 2,000 psf for dead plus live loads, with a one-third increase when including transient loads, such as wind or seismic

A deepened edge, minimum 6 inches wide, should be constructed along the perimeter of the PT slabs. The deepened edge should extend to a minimum of 12 inches below the lowest adjacent

finish grade. The deepened edge can help reduce moisture infiltration to under the PT slabs. The attached Figure 3 shows the thickened edge for the PT slabs.

Where interior building grades are higher than the exterior grades, the perimeter foundation elements should be designed to resist the lateral soil pressure and surcharge loads acting on the foundations. The bottom of the perimeter foundations should extend to a minimum depth of 18 inches below the lowest finish grades, excluding landscaping soils which are typically not compacted and should not be considered for structural support.

The PT slabs will be constructed on 1 to 2 inches of sand over a 15-mil visqueen vapor barrier over the “non-expansive” fill. A lower water-cement ratio (0.45 to 0.50) will help reduce the permeability of the concrete and, hence, vapor transmission through the slabs.

Settlements are expected to be primarily elastic. Post construction total and differential settlements of the PT slabs are anticipated to be less than 1 and ½ inch, respectively.

6.2.2 Footings

Footings, continuous or isolated, may be considered for miscellaneous structures and landscaping retaining walls. Footings should bear on undisturbed native soil and/or properly compacted engineered fill. Footings should extend a minimum of 18 inches below pad grade or lowest adjacent finish grade, whichever provides a deeper embedment. Footings should be a minimum of 12 inches wide.

For dead plus live loads, footings may be designed using a net allowable soil bearing pressure of 2,500 pounds per square foot. This value may be increased by one-third when considering short-term loads such as wind and seismic forces. Reinforcement for the foundations should be determined by the project structural engineer.

Resistance to lateral loads may be developed from a combination of friction between the bottom of foundations and the supporting subgrade, and by passive resistance acting against the vertical sides of the foundations. Footings bearing on soil or engineered fill may be designed using an ultimate friction coefficient of 0.3 between the foundations and supporting subgrade, and an ultimate passive resistance of 300 pounds per cubic foot (pcf, equivalent fluid weight) acting against the embedded sides of the foundations. The passive pressure can be assumed to act starting at the top of the lowest adjacent grade in paved areas. In unpaved areas, the passive pressure can be assumed to act starting at a depth of 1 foot below grade. It should be noted that the passive resistance value discussed above is only applicable where the concrete is placed directly against undisturbed soil or engineered fills. Voids created by the use of forms should be backfilled with properly compacted engineered fill or with concrete.

To maintain foundation support, footings located near utility trenches should be deepened so that the bearing surfaces are below an imaginary plane having an inclination of 1½:1 (horizontal to vertical). This imaginary plane should be drawn extending upward from the bottom edge of the adjacent utility trench.

6.2.1 Drilled, Cast-in-place, Reinforced Concrete Piers

Drilled, cast-in-place, reinforced concrete piers may be considered for support of the proposed retaining walls along the north and west sides of the site, as well as other site structures. Piers should be designed to derive their vertical supporting capacity from “skin friction” between the pier shafts and the surrounding earth materials. Piers for the retaining walls on the north and

west sides of the site should have a diameter of 24 inches or greater. Piers for other landscaping retaining walls and structures, such as sound walls, should have a diameter of 18 inches or greater. Center to center spacing of the piers should be a minimum of 3 pier diameters. Reinforcement in the piers should be determined by the structural engineer.

For dead plus live loading, a net allowable adhesion value of 500 pounds per square foot may be assumed along the pier shafts. This value may be increased by one-third when including transient loads, such as wind or seismic. End bearing capacity should be ignored.

Resistance to lateral loads may be calculated based on passive soil pressure acting against the piers. For dead plus live loads, the ultimate passive soil resistance may be calculated using an equivalent fluid weight of 300 pounds per cubic foot acting on 1.5 times the pier diameter, for level ground surface in front of the piers in the direction of load application. The upper 1 foot of soil should be ignored in the calculation of passive pressure. It should be noted that passive resistance is only applicable where the concrete is placed directly against undisturbed soil or engineered fill.

The contractor should be aware of the presence of sandy soils at the site which, depending on the pier depth, may require steel casing to prevent caving in the pier holes. If water is encountered in the pier holes, concrete should be placed using the "tremie" method to displace the water to the surface.

6.3 CONCRETE SLABS-ON-GRADE

Concrete slabs-on-grade for this project will be limited to driveways and exterior flatwork. The building ground floor and garage slabs will consist of the PT slab foundations.

The driveway and exterior concrete slabs-on-grade should be constructed on property moisture conditioned and compacted native soil, as recommended in the "Earthwork" section of this report. Soil subgrades MUST be maintained in a moist condition prior to placement of concrete for the concrete slabs. Design of reinforcement, joint spacing, etc. is the responsibility of the design engineer.

Exterior concrete slabs-on-grade may be cast free from adjacent foundations or other non-heaving edge restraints. This may be accomplished by using a strip of 1/2-inch asphalt-impregnated felt divider material between the slab edges and the adjacent structure.

6.4 RETAINING WALLS

Retaining walls for this project are anticipated to include walls along the north and west sides of the site, and other landscaping retaining walls not defined at this time. Retaining walls should be designed to resist lateral earth pressure and surcharge forces acting on the walls. Lateral pressures will depend on the degree of movement the walls are allowed (or desired), the type of backfill, the magnitude of external loads, and subsurface drainage provisions.

For static loading conditions, the walls may be designed using at-rest or active soil pressure. At-rest soil pressure should be used for walls where movement at the top of walls is restrained or undesirable (such as the walls along the north and west side of the site). Wall movements could cause settlement of backfill and structures supported on the backfill. Active soil pressure may be used for retaining walls where the top of walls is free to deflect and resulting movement

of the backfill is acceptable. The at-rest and active soil pressures given below are for level backfill ground surface and do not include hydrostatic pressure that might be caused by water trapped behind the walls.

Soil Pressure	Drained Backfill	Undrained Backfill
At-rest ⁽¹⁾	60 pcf	95 pcf
Active ⁽²⁾	40 pcf	85 pcf
Seismic surcharge ⁽³⁾	22 pcf	

Notes:

1. Walls that can tolerate very little or no movement, or walls where movement and settlement of the backfill associated with active soil condition is not desirable, should be designed using at-rest soil pressure.
2. To develop active soil pressures, wall movements of about 0.005H to 0.01H may be necessary for cohesive soils, with up to 0.005H for cohesionless soils.
3. Consider seismic surcharge as an inverted equivalent fluid pressure (inverted triangle) and apply the resultant force at 0.6H above the base of the wall (H is the total height of the wall). For seismic loading condition, may consider seismic surcharge with active soil pressure.

Pressures due to external loads should be added to the soil pressures recommended above in the design of the walls. For uniform vertical load at the ground surface, the additional lateral pressure on the walls should be calculated as a uniform pressure equal to the magnitude of the vertical load multiplied by a factor. For level backfill slope, the factor is 0.33 for active soil condition and 0.5 for at-rest soil condition. For other slope inclinations and other types of surcharge loads, such as vehicle loads, point loads, strip loads, consult our office for specific recommendations.

For line loads parallel to the retaining walls (such as foundation loads from nearby buildings), see table below which was developed based on a 1000-plf line load. Interpolate linearly for line loads smaller or larger than 1,000 plf.

Horizontal Pressure From a 1,000-Pound-per-lineal-foot Line Load (Psf)						
Depth Below Nearby Line Loads (feet)	Horizontal Distance Between Line Loads and Earth Retaining System (feet)					
	1	2	3	5	7	10
1	320	205	120	50	25	15
2	105	160	135	80	45	25
3	40	90	110	80	55	35
4	20	55	75	80	60	40
5	10	30	50	65	60	40
6	6	20	35	50	55	40
7	4	15	25	40	45	40
8	4	10	20	35	40	40
9	4	7	15	25	35	35
10	4	5	10	20	30	35

Foundations for retaining walls may consist of footings or drilled piers designed using the recommendations in Section 6.2, "Foundations," of this report.

Wall backfill should consist of granular soil or approved on-site soils of low expansion potential. Over-compaction of wall backfill should be avoided because increased compaction effort can result in lateral pressures significantly higher than those recommended above. Backfill within 3 feet of the walls should be compacted with hand-operated equipment.

To achieve a drained backfill condition, a subsurface drain should be installed behind each wall extending from the wall bottom to about 1 foot below finished grade. The drain should consist of a 12-inch minimum wide blanket of drainage material consisting of either Class 2 Permeable material (Caltrans Standard Specifications, Section 68) or clean, 1/2 to 3/4-inch maximum size crushed rock or gravel. If crushed rock or gravel is used, it should be encapsulated in a geotextile filter fabric, such as Mirafi 140N or equivalent. Filter fabric is optional if Class 2 Permeable material is used. The top 1 foot below finish grade should be backfilled with compacted clayey soil to reduce infiltration of surface water.

A 4-inch minimum diameter, perforated, schedule 40 PVC (or equivalent) pipe should be installed (with perforations facing down) along the base of each wall on a 2-inch thick bed of drain rock, regardless whether drain rock or pre-fabricated drainage panel is used. The pipes should be sloped to drain by gravity to a proper collection system and be discharged at a proper outlet as designed by the project Civil Engineer.

6.5 VEHICLE PAVEMENTS

Vehicle pavements for this project will include interior streets and parking areas. These pavement areas will primarily serve automobiles and light pickup trucks, with occasional heavy vehicles, such as delivery and garbage trucks.

An R-value of 26 was measured on a bulk sample of soil collected from the site. An R-value of 25 was used to calculate the pavement sections tabulated below.

TRAFFIC INDEX	HOT MIX ASPHALT (inches)	CLASS 2 AGGREGATE BASE (inches)	TOTAL (inches)
5.0	3	6.5	9.5
5.5	3	8	11
6.0	3.5	8.5	12
6.5	3.5	10	13.5

Pavement sections should be constructed on soil subgrades that have been prepared as outlined in the "Earthwork" section of this report. The upper 8 inches of soil subgrade in pavement areas should be compacted to a minimum of 95 percent relative compaction. The full section of aggregate base should be compacted to a minimum of 95 percent relative compaction. Evaluation of relative compaction should be based on ASTM D1557, latest edition. The Class 2 Aggregate Base material should conform to Section 26 of the Caltrans Standard Specifications.

6.6 SURFACE AND SUBSURFACE DRAINAGE

Engineering design of grading and drainage at the site is the responsibility of the project Civil Engineer. We suggest the following for consideration by the project Civil Engineer, as appropriate.

Sufficient surface drainage should be provided to direct water away from buildings, foundations, concrete slabs-on-grade and pavements, and towards suitable collection and discharge facilities. Ponding of surface water should be avoided by establishing positive drainage away from all improvements.

Over-watering could result in soil saturation and subsequent distress to site improvements. Trees should be planted away from structures, foundations, concrete slabs, utilities, pavements, etc. because tree roots could cause distress to those improvements. A qualified engineer and/or landscape architect should be consulted.

7. PLAN REVIEW, EARTHWORK AND FOUNDATION OBSERVATION

Post-report geotechnical services by Pacific Geotechnical Engineering (PGE), typically consisting of pre-construction design consultations and reviews, construction observation and testing services, are necessary for PGE to confirm the recommendations contained in this report. This report is based on limited sampling and investigation, and by those constraints may not have discovered local anomalies or other varying conditions that may exist on the project site. Therefore, this report is only preliminary until PGE can confirm that actual conditions in the ground conform to those anticipated in the report. Accordingly, as an integral part of this report, PGE recommends post-report geotechnical services to assist the project team during design and construction of the project. PGE requires that it perform these services if it is to remain as the project geotechnical engineer-of-record.

During design, PGE can provide consultation and supplemental recommendations to assist the project team in design and value engineering, especially if the project design has been modified after completion of our report. It is impossible for us to anticipate every design scenario and use of construction materials during preparation of our report. Therefore, retaining PGE to provide post-report consultation will help address design changes, answer questions and evaluate alternatives proposed by the project designers and contractors.

Prior to issuing project plans and specifications for construction bidding purposes, PGE should review the grading, drainage and foundation plans and the project specifications to determine if the intent of our recommendations has been incorporated in these documents. We have found that such a review process will help reduce the likelihood of misinterpretation of our recommendations which may cause construction delay and additional cost.

Construction phase services can include, among other things, the observation and testing during site clearing, stripping, excavation, mass grading, subgrade preparation, fill placement and compaction, backfill compaction, foundation construction and pavement construction activities.

Pacific Geotechnical Engineering would be pleased to provide cost proposals for follow-up geotechnical services. Post-report geotechnical services may include additional field and laboratory services.

8. LIMITATIONS

In preparing the findings and professional opinions presented in this report, we have endeavored to follow generally accepted principles and practices of the engineering geologic and geotechnical engineering professions in the area and at the time our services were performed. No warranty, express or implied, is provided.

The conclusions and recommendations contained in this report are based, in part, on information that has been provided to us. In the event that the general development concept or general location and type of structures are modified, our conclusions and recommendations shall not be considered valid unless we are retained to review such changes and to make any necessary additions or changes to our recommendations. To remain as the project geotechnical engineer-of-record, PGE must be retained to provide geotechnical services as discussed under the Post-report Geotechnical Services section of this report.

Subsurface exploration is necessarily confined to selected locations and conditions may, and often do, vary between these locations. Should conditions different from those described in this report be encountered during project development, PGE should be consulted to review the conditions and determine whether our recommendations are still valid. Additional exploration, testing, and analysis may be required for such evaluation.

Should persons concerned with this project observe geotechnical features or conditions at the site or surrounding areas which are different from those described in this report, those observations should be reported immediately to Pacific Geotechnical Engineering for evaluation.

It is important that the information in this report be made known to the design professionals involved with the project, that our recommendations be incorporated into project drawings and documents, and that the recommendations be carried out during construction by the contractor and subcontractors. It is not the responsibility of Pacific Geotechnical Engineering to notify the design professionals and the project contractors and subcontractors.

The findings, conclusions and recommendations presented in this report are applicable only to the specific project development on this specific site. These data should not be used for other projects, sites or purposes unless they are reviewed by PGE or a qualified geotechnical professional.

Report prepared by,

Pacific Geotechnical Engineering

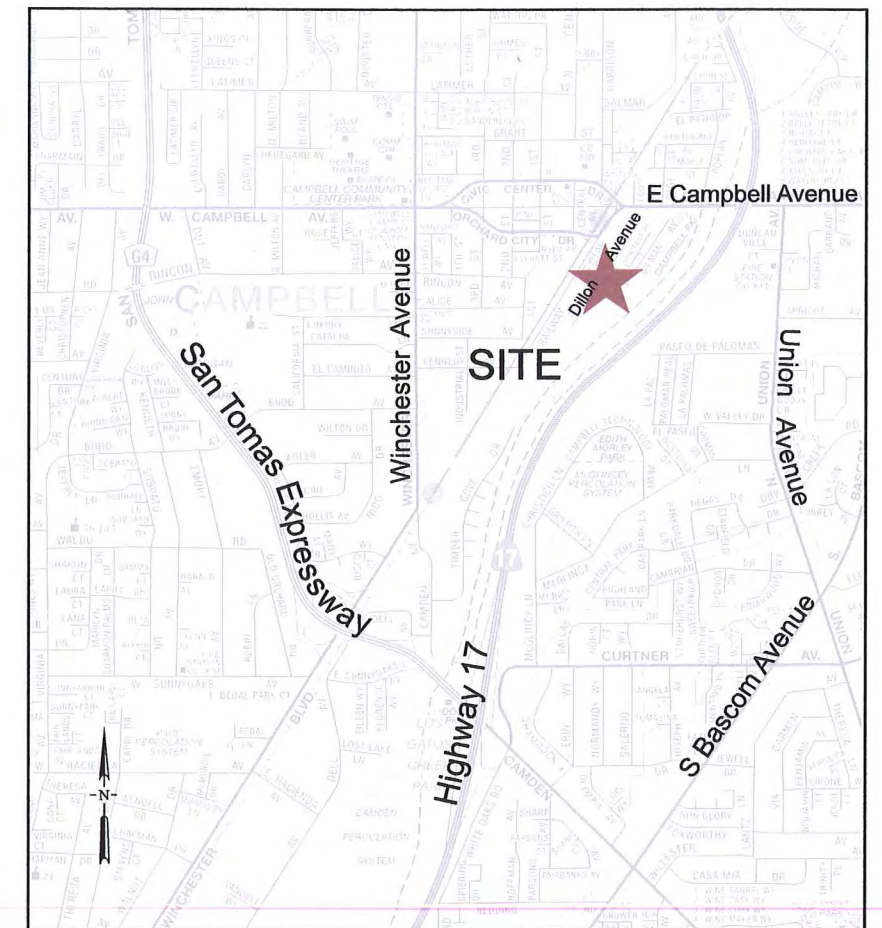
DRAFT FOR CLIENT REVIEW ONLY

Chalerm (Beeson) Liang
GE 2031

Distribution: Santa Clara Development, Mr. Richard Yee (6)



BASE: Modified from a file titled "Pre appl site plan 030514.pdf", received electronically.



VICINITY MAP - no scale

EXPLANATION

- DH-12  Exploratory drill hole
- B-2  Bulk sample



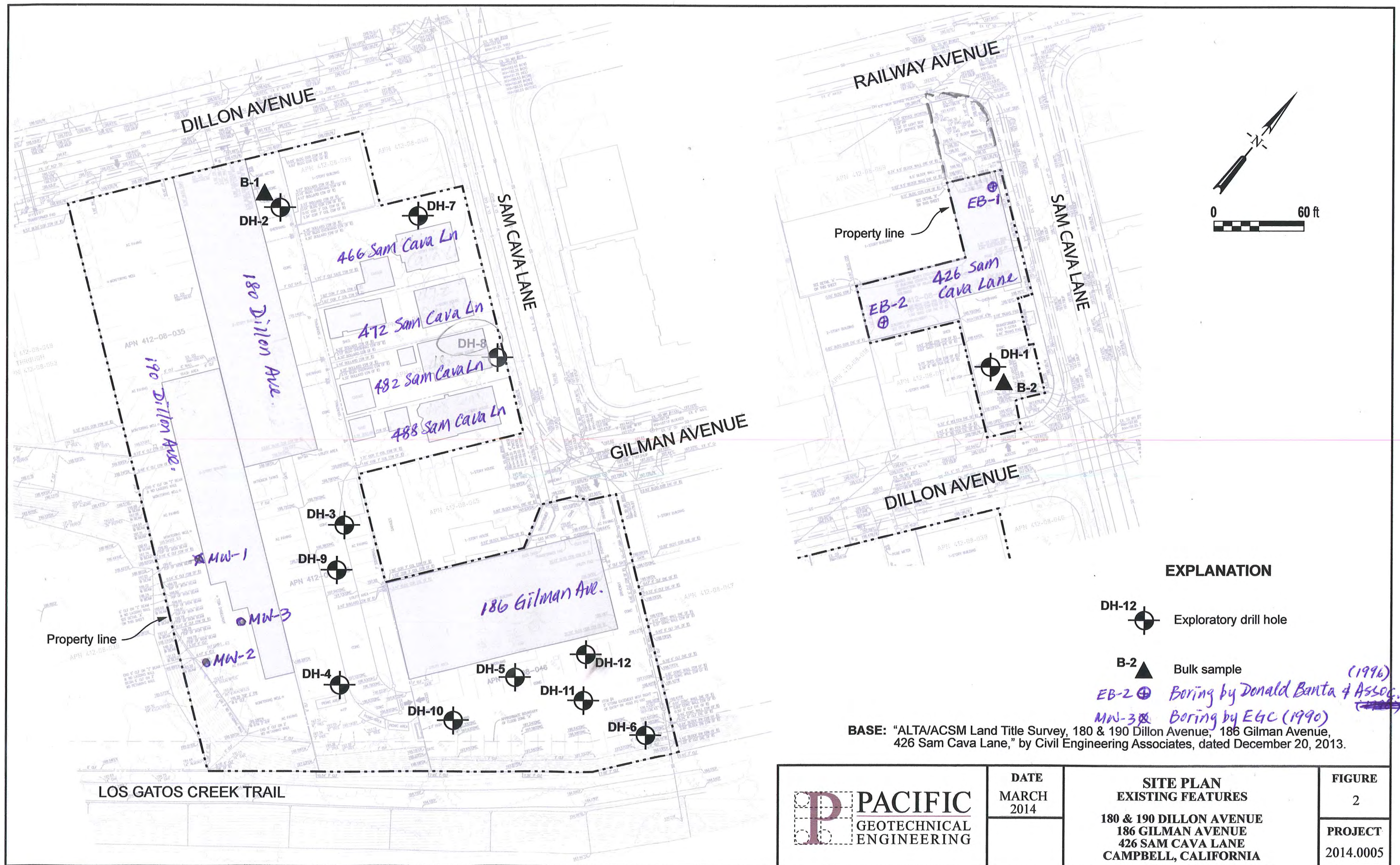
DATE
MARCH
2014

SITE PLAN
PROPOSED IMPROVEMENTS

180 & 190 DILLON AVENUE
186 GILMAN AVENUE
426 SAM CAVA LANE
CAMPBELL, CALIFORNIA

FIGURE
1

PROJECT
2014.0005



EXPLANATION

DH-12  Exploratory drill hole

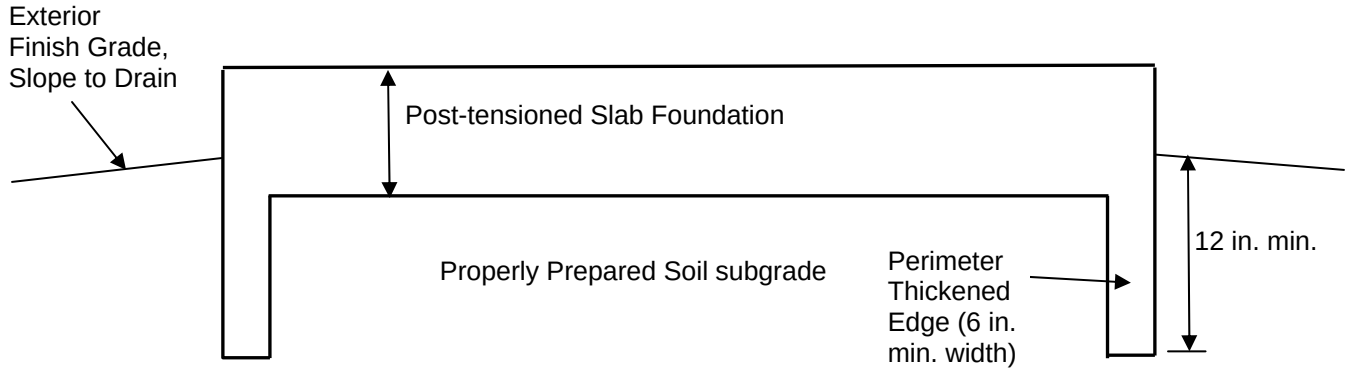
B-2  Bulk sample

EB-2  Boring by Donald Banta & Assoc. (1996)

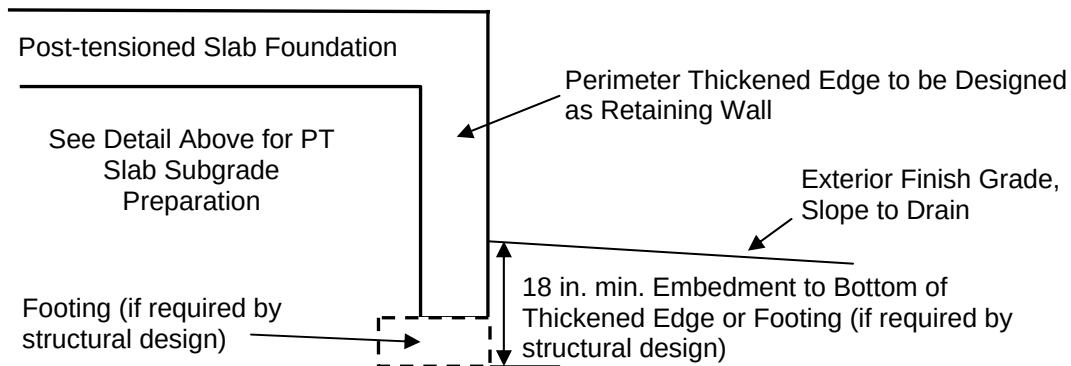
MW-3  Boring by EGC (1990)

BASE: "ALTA/ACSM Land Title Survey, 180 & 190 Dillon Avenue, 186 Gilman Avenue, 426 Sam Cava Lane," by Civil Engineering Associates, dated December 20, 2013.

	DATE MARCH 2014	SITE PLAN EXISTING FEATURES 180 & 190 DILLON AVENUE 186 GILMAN AVENUE 426 SAM CAVA LANE CAMPBELL, CALIFORNIA	FIGURE 2
			PROJECT 2014.0005



SUBGRADE AND THICKENED EDGE FOR POST-TENSIONED SLAB FOUNDATIONS



FOUNDATION EMBEDMENT FOR POST-TENSIONED SLAB WITH DIFFERENTIAL GRADE

NOTE:

1. Refer to project geotechnical report for details recommendations.

SCHEMATIC ONLY – NOT TO SCALE



PACIFIC
GEOTECHNICAL
ENGINEERING

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Fax (408) 779-6879

**POST-TENSIONED SLAB
DESIGN RECOMMENDATIONS
DILLON AVENUE, SAM CAVA
LANE & GILMAN AVENUE
CAMPBELL, CALIFORNIA**

FIGURE

3

**PROJECT
2014.0005**

Drafted By:

Date: May 2014

Checked By:

Revision:

APPENDIX A

KEYS TO SOIL CLASSIFICATION

AND

DRILL HOLE LOGS

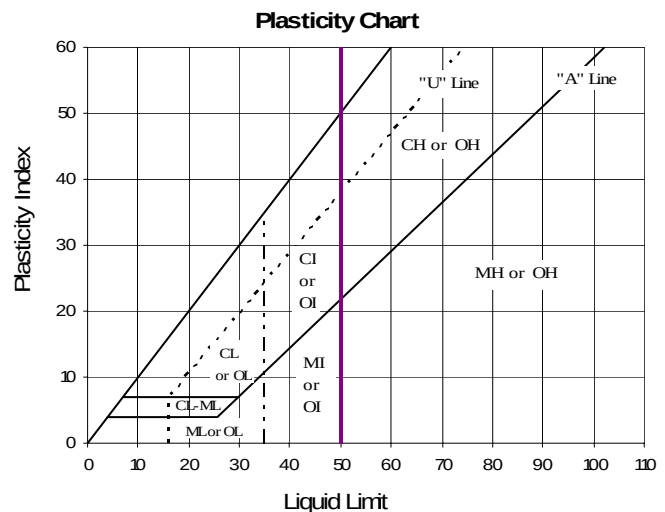
KEY TO SOIL CLASSIFICATION - FINE GRAINED SOILS
(50% OR MORE IS SMALLER THAN NO. 200 SIEVE SIZE)
(modified from ASTM D2487 to include fine grained soils with intermediate plasticity)

MAJOR DIVISIONS			GROUP SYMBOLS	GROUP NAMES
SILTS AND CLAYS (Liquid Limit less than 35) Low Plasticity	Inorganic	PI < 4 or plots below "A" line	ML	Silt, Silt with Sand or Gravel, Sandy or Gravelly Silt, Sandy or Gravelly Silt with Sand or Gravel
	Inorganic	PI > 7 or plots on or above "A" line	CL	Lean Clay, Lean Clay with Sand or Gravel, Sandy or Gravelly Lean Clay, Sandy or Gravelly Lean Clay with Sand or Gravel
	Inorganic	PI between 4 and 7	CL-ML	Silty Clay, Silty Clay with Sand or Gravel, Sandy or Gravelly Silty Clay, Sandy or Gravelly Silty Clay with Sand or Gravel
	Organic	See footnote 3	OL	Organic Silt (below "A" Line) or Organic Clay (on or above "A" Line) ^(1,2)
SILTS AND CLAYS (35 ≤ Liquid Limit < 50) Intermediate Plasticity	Inorganic	PI < 4 or plots below "A" line	MI	Silt, Silt with Sand or Gravel, Sandy or Gravelly Silt, Sandy or Gravelly Silt with Sand or Gravel
	Inorganic	PI > 7 or plots on or above "A" line	CI	Clay, Clay with Sand or Gravel, Sandy or Gravelly Clay, Sandy or Gravelly Clay with Sand or Gravel
	Organic	See footnote 3	OI	Organic Silt (below "A" Line) or Organic Clay (on or above "A" Line) ^(1,2)
SILTS AND CLAYS (Liquid Limit 50 or greater) High Plasticity	Inorganic	PI plots below "A" line	MH	Elastic Silt, Elastic Silt with Sand or Gravel, Sandy or Gravelly Elastic Silt, Sandy or Gravelly Elastic Silt with Sand or Gravel
	Inorganic	PI plots on or above "A" line	CH	Fat Clay, Fat Clay with Sand or Gravel, Sandy or Gravelly Fat Clay, Sandy or Gravelly Fat Clay with Sand or Gravel
	Organic	See note 3 below	OH	Organic Silt (below "A" Line) or Organic Clay (on or above "A" Line) ^(1,2)

1. If soil contains 15% to 29% plus No. 200 material, include "with sand" or "with gravel" to group name, whichever is predominant.
2. If soil contains ≥30% plus No. 200 material, include "sandy" or "gravelly" to group name, whichever is predominant. If soil contains ≥15% of sand or gravel sized material, add "with sand" or "with gravel" to group name.
3. Ratio of liquid limit of oven dried sample to liquid limit of not dried sample is less than 0.75.

CONSISTENCY	UNCONFINED SHEAR STRENGTH (KSF)	STANDARD PENETRATION (BLOWS/FOOT)
VERY SOFT	< 0.25	< 2
SOFT	0.25 – 0.5	2 – 4
FIRM	0.5 – 1.0	5 – 8
STIFF	1.0 – 2.0	9 – 15
VERY STIFF	2.0 – 4.0	16 – 30
HARD	> 4.0	> 30

MOISTURE	CRITERIA
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp, but no visible water
Wet	Visible free water, usually soil is below the water table



KEY TO SOIL CLASSIFICATION – COARSE GRAINED SOILS
(MORE THAN 50% IS LARGER THAN NO. 200 SIEVE SIZE)
(modified from ASTM D2487 to include fines with intermediate plasticity)

MAJOR DIVISIONS			GROUP SYMBOLS	GROUP NAMES ¹
GRAVELS (more than 50% of coarse fraction is larger than No. 4 sieve size)	Gravels with less than 5% fines	$Cu \geq 4$ and $1 \leq Cc \leq 3$	GW	Well Graded Gravel, Well Graded Gravel with Sand
		$Cu < 4$ and/or $1 > Cc > 3$	GP	Poorly Graded Gravel, Poorly Graded Gravel with Sand
	Gravels with 5% to 12% fines	ML, MI or MH fines	GW-GM	Well Graded Gravel with Silt, Well Graded Gravel with Silt and Sand
			GP-GM	Poorly Graded Gravel with Silt, Poorly Graded Gravel with Silt and Sand
		CL, CI or CH fines	GW-GC	Well Graded Gravel with Clay, Well Graded Gravel with Clay and Sand
			GP-GC	Poorly Graded Gravel with Clay, Poorly Graded Gravel with Clay and Sand
	Gravels with more than 12% fines	ML, MI or MH fines	GM	Silty Gravel, Silty Gravel with Sand
		CL, CI or CH fines	GC	Clayey Gravel, Clayey Gravel with Sand
		CL-ML fines	GC-GM	Silty Clayey Gravel; Silty, Clayey Gravel with Sand
	SANDS (50% or more of coarse fraction is smaller than No. 4 sieve size)	Sands with less than 5% fines	$Cu \geq 6$ and $1 \leq Cc \leq 3$	SW
$Cu < 6$ and/or $1 > Cc > 3$			SP	Poorly Graded Sand, Poorly Graded Sand with Gravel
Sands with 5% to 12% fines		ML, MI or MH fines	SW-SM	Well Graded Sand with Silt, Well Graded Sand with Silt and Gravel
			SP-SM	Poorly Graded Sand with Silt, Poorly Graded Sand with Silt and Gravel
		CL, CI or CH fines	SW-SC	Well Graded Sand with Clay, Well Graded Sand with Clay and Gravel
			SP-SC	Poorly Graded Sand with Clay, Poorly Graded Sand with Clay and Gravel
Sands with more than 12% fines		ML, MI or MH fines	SM	Silty Sand, Silty Sand with Gravel
		CL, CI or CH fines	SC	Clayey Sand, Clayey Sand with Gravel
		CL-ML fines	SC-SM	Silty, Clayey Sand; Silty, Clayey Sand with Gravel

US STANDARD SIEVES

3 Inch ¾ Inch No. 4 No. 10 No. 40 No. 200

	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES & BOULDERS	GRAVELS		SANDS		SILTS AND CLAYS	

RELATIVE DENSITY (SANDS AND GRAVELS)	STANDARD PENETRATION (BLOWS/FOOT)
Very Loose	0 - 4
Loose	5 – 10
Medium Dense	11 – 30
Dense	31 - 50
Very Dense	50+

1. Add "with sand" to group name if material contains 15% or greater of sand-sized particle. Add "with gravel" to group name if material contains 15% or greater of gravel-sized particle.

MOISTURE	CRITERIA
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp, but no visible water
Wet	Visible free water, usually soil is below the water table

DATE: 1/9/2014		LOG OF EXPLORATORY DRILL HOLE								DH- 1				
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue						PROJECT NUMBER: 2014.0005								
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch						LOGGED BY: CSS								
HOLE DIAMETER: 8" hollow stem auger						HOLE ELEVATION: ----								
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---										
DRAFT DESCRIPTION OF EARTH MATERIALS				SOIL TYPE	DEPTH (ft)	SAMPLE BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
PAVEMENT (±6 in. concrete)														
ALLUVIUM: CLAY WITH SAND: Brown (10YR 4/3), moist, very stiff; with mostly fine to medium sand stiff				Cl	1	S								
					2	D	33	4.5+	77	37	13	17	105	
					3	S								
					4	D	24	4.5+			10		114	
					5	S								
					6	D	12							
CLAYEY SAND WITH GRAVEL: Brown (10YR 4/3), moist, medium dense; fine to coarse, subrounded to subangular sand and gravel				SC	7									
					8									
					9	S								
					10	D	14				6		111	
					11									
					12									
WELL GRADED GRAVEL WITH SAND AND CLAY: Dark brown (10YR 5/3), moist, dense; fine to coarse, subangular to subrounded gravel and sand				GW-GC	13									
					14	S								
					15	I	35		7		4			
					16									
					17									
					18									
					19	S								
					20	I	34							
BOTTOM OF HOLE = 20 Feet No groundwater encountered														
PACIFIC GEOTECHNICAL ENGINEERING											PAGE: 1 of 1			

DATE: 1/9/2014		LOG OF EXPLORATORY DRILL HOLE							DH- 2				
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue							PROJECT NUMBER: 2014.0005						
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch							LOGGED BY: CSS						
HOLE DIAMETER: 8" hollow stem auger							HOLE ELEVATION: ----						
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---									
DRAFT DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
PAVEMENT (±5 in. concrete)		SC	1	S									
FILL: CLAYEY SAND WITH GRAVEL: Dark brown (10YR 3/2), moist, medium dense; mostly fine sand; with fine gravel			2	D	44				10		115		
			3	S									
			4	D	19								
			5	S									
			6	D	21		25		11				
with minor concrete		SC	7										
ALLUVIUM: CLAYEY SAND: Dark yellowish brown (10YR 3/4), moist, loose; fine to coarse sand			8										
			9	S	8								
			10	I									
			11										
			12										
WELL GRADED GRAVEL WITH SAND AND CLAY: Brown (10YR 4/3), moist, dense; fine to coarse, subangular to subrounded gravel and sand		GW-GC	13										
			14	S	41								
			15	I									
			16										
			17										
			18										
			19	S									
BOTTOM OF HOLE = 20 Feet No groundwater encountered			20	D	58								
PACIFIC GEOTECHNICAL ENGINEERING										PAGE: 1 of 1			

DATE: 1/9/2014		LOG OF EXPLORATORY DRILL HOLE							DH- 3				
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue							PROJECT NUMBER: 2014.0005						
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch							LOGGED BY: CSS						
HOLE DIAMETER: 8" hollow stem auger							HOLE ELEVATION: ----						
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---									
DRAFT DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
PAVEMENT (±3 in. AC, ±2 in. base)		SC	1	S									
FILL: CLAYEY SAND: Dark brown (10YR 3/2), moist, medium dense; fine sand		SC	2	D	29				14		92		
ALLUVIUM: CLAYEY SAND: Dark yellowish brown (10YR 3/4), moist, loose; fine sand medium dense fine to coarse sand; with fine gravel			3	S									
			4	I	4								
			5	S	5								
			6	I									
			7										
			8										
			9	S	16								
			10	D					6		116		
WELL GRADED GRAVEL WITH SAND AND CLAY: Brown (10YR 4/3), moist, dense; fine to coarse, subangular to subrounded gravel and sand		GW-GC	11										
dense to very dense BOTTOM OF HOLE = 20 Feet No groundwater encountered			12										
			13										
			14	S	32								
			15	I									
			16										
			17										
			18										
			19	S	53								
			20	I									
PACIFIC GEOTECHNICAL ENGINEERING										PAGE: 1 of 1			

DATE: 1/9/2014		LOG OF EXPLORATORY DRILL HOLE								DH- 4					
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue						PROJECT NUMBER: 2014.0005									
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch						LOGGED BY: CSS									
HOLE DIAMETER: 8" hollow stem auger						HOLE ELEVATION: ----									
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---											
DRAFT DESCRIPTION OF EARTH MATERIALS				SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
PAVEMENT (±2 in. AC, ±4 in. base)				SC	1	S									
FILL: CLAYEY SAND WITH GRAVEL: Variable color - dark brown (10YR 3/3), dark brown (7.5YR 3/3), very dark grayish brown (10YR 3/2), moist, medium dense; fine to coarse sand; with fine to coarse gravel and cobble size pieces of asphalt and concrete					2	S	43				11		122		
					3	S									
					4	S	20			10		108			
					5	S									
sample fell out of liners, no recovery					6	S	45								
					7										
					8										
with concrete chunks					9	S	62								
					10	D				9		116			
					11										
ALLUVIUM: WELL GRADED SAND WITH GRAVEL AND CLAY: Brown (10YR 4/3), moist, medium dense; fine to coarse sand; with fine to coarse gravel and cobbles				SW-SC	12										
					13										
					14	S	20								
					15	I									
					16										
					17										
					18										
medium dense to dense					19	S	45								
					20	D		8		4					
PACIFIC GEOTECHNICAL ENGINEERING												PAGE: 1 of 3			

DATE: 1/9/2014		LOG OF EXPLORATORY DRILL HOLE							DH- 4					
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue					PROJECT NUMBER: 2014.0005									
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch					LOGGED BY: CSS									
HOLE DIAMETER: 8" hollow stem auger					HOLE ELEVATION: ----									
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---										
DRAFT DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)	
WELL GRADED SAND WITH GRAVEL AND CLAY: continued very dense dense harder drilling		SW- SC	21											
			22											
			23											
			24	I	50/5"									
			25											
			26											
			27											
			28											
			29	S I I	34									
			30											
CLAYEY SAND to SILTY SAND: Brown (10YR 4/3), moist, medium dense; fine sand, grades coarser with depth; fines content decreases with depth		SC/ SM	32											
			33											
			34	S										
			35	D D	24									
			36											
			37											
			38											
			39	S I	50/6"	14		11						
			40											
			CLAYEY SAND WITH GRAVEL: Brown (10YR 4/3), moist, very dense; fine to coarse subangular sand; with fine gravel		SC									
PACIFIC GEOTECHNICAL ENGINEERING									PAGE: 2 of 3					

DATE: 1/9/2014		LOG OF EXPLORATORY DRILL HOLE								DH- 4			
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue						PROJECT NUMBER: 2014.0005							
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch						LOGGED BY: CSS							
HOLE DIAMETER: 8" hollow stem auger						HOLE ELEVATION: ----							
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---									
DRAFT DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
CLAYEY SAND WITH GRAVEL: continued		SC	41										
			42										
			43										
layer of sandy clay from 43½ to 44½ ft			44	S	37								
			45	I									
BOTTOM OF HOLE = 45 Feet No groundwater encountered			46										
			47										
			48										
			49										
			50										
			51										
			52										
			53										
			54										
			55										
			56										
			57										
			58										
			59										
			60										
PACIFIC GEOTECHNICAL ENGINEERING										PAGE: 3 of 3			

DATE: 1/9/2014		LOG OF EXPLORATORY DRILL HOLE								DH- 5					
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue						PROJECT NUMBER: 2014.0005									
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch						LOGGED BY: CSS									
HOLE DIAMETER: 8" hollow stem auger						HOLE ELEVATION: ----									
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---											
DRAFT DESCRIPTION OF EARTH MATERIALS				SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
PAVEMENT (±7 in. concrete)				CI	1	S									
FILL: CLAY WITH SAND: Very dark gray (10YR 3/1), moist, very stiff					2	D	32	4.5+			14		117		
ALLUVIUM: CLAY WITH SAND: Very dark gray (10YR 3/1), moist, firm; with fine sand				SC	3	S									
					4	I	6								
					5	S									
					6	I	7								
					7										
					8										
encountered wood @ 10 ft, appears to be natural, not fill related					9	S									
					10	D	7	1.5 4.5+			23		89		
					11										
WELL GRADED GRAVEL WITH SAND AND CLAY: Brown (10YR 4/3), moist, dense; fine to coarse, subangular to subrounded gravel and sand				GW- GC	12										
					13										
					14	S									
					15	I	33								
					16										
					17										
					18										
medium dense to dense					19	S									
BOTTOM OF HOLE = 20 Feet No groundwater encountered					20	I	31								
PACIFIC GEOTECHNICAL ENGINEERING												PAGE: 1 of 1			

DATE: 1/9/2014		LOG OF EXPLORATORY DRILL HOLE							DH- 6					
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue							PROJECT NUMBER: 2014.0005							
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch							LOGGED BY: CSS							
HOLE DIAMETER: 8" hollow stem auger							HOLE ELEVATION: ----							
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---										
DRAFT DESCRIPTION OF EARTH MATERIALS				SOIL TYPE	DEPTH (ft)	SAMPLE BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
PAVEMENT (±3 in. AC, ±2 in. base)				SC/ GC	1	S								
FILL: CLAYEY SAND WITH GRAVEL to CLAYEY GRAVEL WITH SAND: Very dark grayish brown (10YR 3/2), moist, medium dense; fine to coarse sand; with fine to coarse gravel and asphalt fragments					2	D	15			9		112		
					3	S								
					4	D	19		27	7				
					5	S								
					6	D	19			13		113		
ALLUVIUM: CLAYEY GRAVEL WITH SAND: Brown (10YR 4/3), dry to moist, medium dense; fine to coarse gravel; with fine to coarse, subangular to subrounded sand				7										
				8										
				9	S	14								
				10	I		15	7						
				11										
				12										
				13										
				14	S	15								
				15	I									
				16										
				17										
				18										
				19	S	13								
				20	I									
BOTTOM OF HOLE = 20 Feet No groundwater encountered														
PACIFIC GEOTECHNICAL ENGINEERING											PAGE: 1 of 1			

DATE: 1/29/2014		LOG OF EXPLORATORY DRILL HOLE								DH- 7			
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue						PROJECT NUMBER: 2014.0005							
DRILL RIG: Minuteman with 140# above ground hammer						LOGGED BY: CSS							
HOLE DIAMETER: 3.5" sampler only						HOLE ELEVATION: ----							
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---									
DRAFT DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
ALLUVIUM: LEAN CLAY: Dark brown (10YR 3/3), dry, very stiff to hard; with fine sand		CL	1	S									
			2	D	41	4.5+							
			3	S									
			4	X	40	4.5+							
			5	X	35	4.5+							
			6	S									
			7	X	43								
CLAYEY SAND: Dark brown (10YR 3/3), moist, medium dense to dense; fine to coarse, subangular to subrounded sand		SC	8	S	40								
			9	I									
			10	I	22								
			11										
BOTTOM OF HOLE = 10 Feet No groundwater encountered			12										
			13										
			14										
			15										
			16										
			17										
			18										
			19										
			20										
			PACIFIC GEOTECHNICAL ENGINEERING										PAGE: 1 of 1

DATE: 1/29/2014		LOG OF EXPLORATORY DRILL HOLE								DH- 8			
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue						PROJECT NUMBER: 2014.0005							
DRILL RIG: Minuteman with 140# above ground hammer						LOGGED BY: CSS							
HOLE DIAMETER: 3.5" sampler only						HOLE ELEVATION: ----							
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---									
DRAFT DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
ALLUVIUM: LEAN CLAY: Dark grayish brown (10YR 4/2), dry, very stiff to hard		CL	1	S									
			2	D	40	4.5+							
			3	S									
			4	D	48	4.5+							
			5	S	40								
			6	S	30								
			7	S									
CLAYEY SAND WITH GRAVEL: Dark grayish brown (10YR 4/2), moist, dense; fine to coarse subangular sand; with fine gravel		SC	8	S	38								
			9	S	41								
			10	I									
BOTTOM OF HOLE = 10 Feet No groundwater encountered			11										
			12										
			13										
			14										
			15										
			16										
			17										
			18										
			19										
			20										
PACIFIC GEOTECHNICAL ENGINEERING										PAGE: 1 of 1			

DATE: 1/29/2014		LOG OF EXPLORATORY DRILL HOLE							DH- 9					
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue							PROJECT NUMBER: 2014.0005							
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch							LOGGED BY: CSS							
HOLE DIAMETER: 8" hollow stem auger							HOLE ELEVATION: ----							
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---										
DRAFT DESCRIPTION OF EARTH MATERIALS				SOIL TYPE	DEPTH (ft)	SAMPLE BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
PAVEMENT (±6 in. concrete)														
FILL: CLAYEY GRAVEL WITH SAND: Very dark grayish brown (10YR 3/2), moist, medium dense; fine to coarse gravel; with fine to coarse sand; concrete chunks up to 4 in.				GC	1									
rough and choppy drilling					2	S D D	26							
					3									
					4									
				loose to medium dense					5	S I I	11			
	6													
	7													
ALLUVIUM (POSSIBLY FILL): CLAYEY SAND: Very dark grayish brown (10YR 3/2), moist, loose, fine sand				SC	8	S I I	4							
					9									
					10									
CLAYEY SAND WITH GRAVEL: Brown (10YR 4/3), moist, medium dense; fine to coarse, subangular to subrounded sand; with fine to coarse gravel				SC	11	S I I	23							
					12									
					13									
				BOTTOM OF HOLE = 15 Feet No groundwater encountered					14	S I I	31			
	15													
	16													
					17									
					18									
					19									
					20									
PACIFIC GEOTECHNICAL ENGINEERING											PAGE: 1 of 1			

DATE: 1/29/2014		LOG OF EXPLORATORY DRILL HOLE							DH- 10						
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue							PROJECT NUMBER: 2014.0005								
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch							LOGGED BY: CSS								
HOLE DIAMETER: 8" hollow stem auger							HOLE ELEVATION: ----								
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---											
DRAFT DESCRIPTION OF EARTH MATERIALS				SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)
PAVEMENT (±7 in. concrete)				SC	1										
FILL: CLAYEY SAND WITH GRAVEL: Dark grayish brown (10YR 4/2), moist, medium dense; fine to coarse sand; with fine to coarse gravel					2	S	16								
					3	I									
					4	S									
					5	I	24								
					6										
					7										
CLAYEY SAND: Very dark brown (10YR 2/2), moist, loose; fine to coarse angular to subrounded sand; with fine to coarse gravel and concrete fragments bits of charcoal, wood fragments, white powdery bits; difficult drilling below 11.5 ft bits of wood, metal coming up @ 14.5 ft				SC	8	S	9								
					9	I									
					10	S									
					11	I	6								
					12	S	37								
					13	I									
BOTTOM OF HOLE = 14.5 Feet No groundwater encountered					14	S	22								
					15										
					16										
					17										
					18										
					19										
					20										
PACIFIC GEOTECHNICAL ENGINEERING												PAGE: 1 of 1			

DATE: 1/29/2014		LOG OF EXPLORATORY DRILL HOLE							DH- 11									
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue							PROJECT NUMBER: 2014.0005											
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch							LOGGED BY: CSS											
HOLE DIAMETER: 8" hollow stem auger							HOLE ELEVATION: ----											
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---														
DRAFT DESCRIPTION OF EARTH MATERIALS				SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)			
PAVEMENT (±6 in. concrete, ±5 in. base)																		
FILL: CLAYEY SAND: Dark grayish brown (10YR 4/2), moist, medium dense; mostly fine sand, some medium to coarse sand bits of debris, white powdery bits, glass, wood, brick, concrete; loose medium dense				SC	1	S I I	15											
					2													
					3													
									4	S I I	6							
									5									
									6									
									7									
									8	S I I	26							
									9									
									10									
									11									
ALLUVIUM: CLAYEY SAND WITH GRAVEL: Brown (10YR 4/3), moist, dense; fine to coarse sand; with fine to coarse gravel				SC	12	S I I	34											
					13													
BOTTOM OF HOLE = 14.5 Feet No groundwater encountered					14													
					15													
					16													
					17													
					18													
					19													
PACIFIC GEOTECHNICAL ENGINEERING												PAGE: 1 of 1						

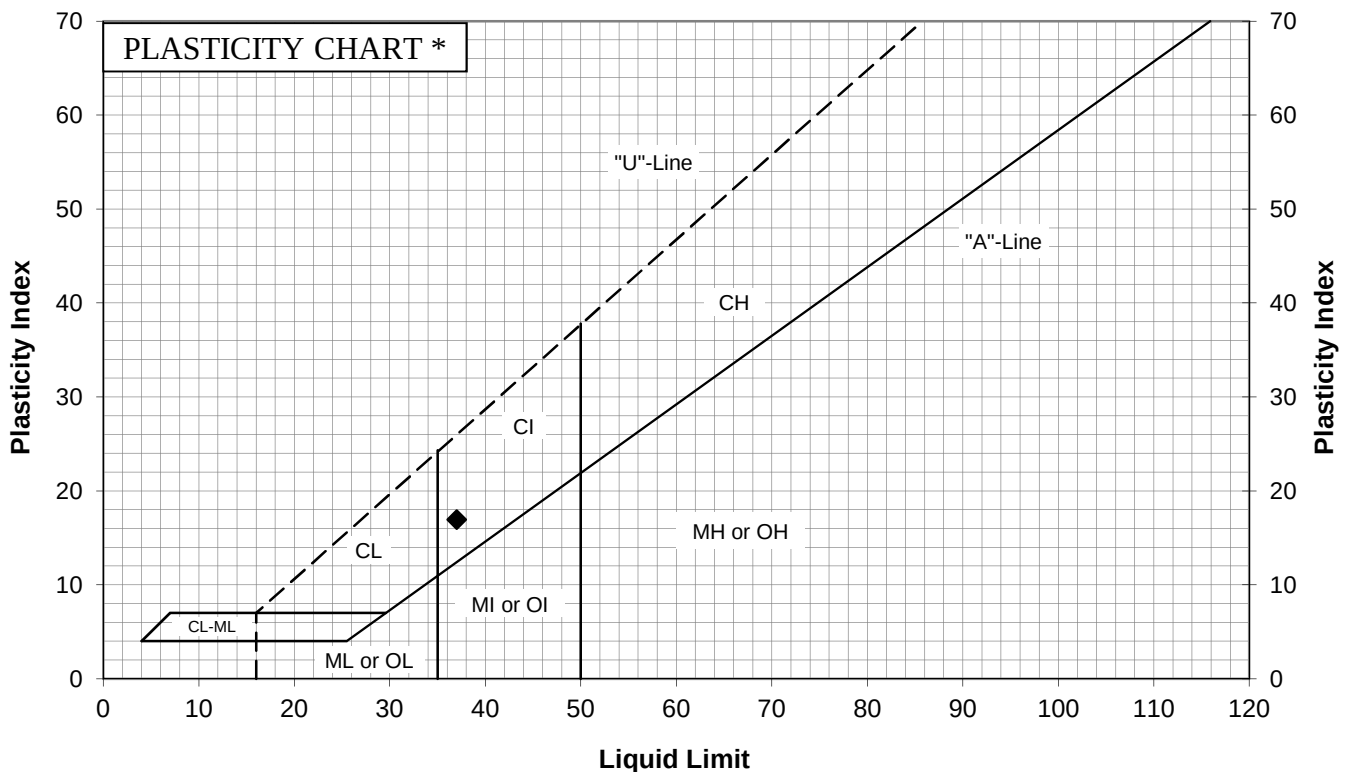
DATE: 1/29/2014		LOG OF EXPLORATORY DRILL HOLE							DH- 12								
PROJECT NAME: Dillion Avenue, Sam Cava Lane & Gilman Avenue							PROJECT NUMBER: 2014.0005										
DRILL RIG: Mobile B53, 140# downhole hammer w rods & wire winch							LOGGED BY: CSS										
HOLE DIAMETER: 8" hollow stem auger							HOLE ELEVATION: ----										
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample					GROUND WATER DEPTH: Initial: --- Final: ---												
DRAFT DESCRIPTION OF EARTH MATERIALS					SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)	
PAVEMENT (±7 in. concrete; ±5 in. base)																	
FILL: CLAYEY SAND: Brown (10YR 4/2), moist, medium dense; mostly fine sand, some medium to coarse sand; bits of wood, brick, concrete and other debris larger concrete fragments, kicking auger sideways, harder drilling wood and concrete fragments					SC	1	S I I	12									
					2												
					3												
							4	S I I	8								
							5										
							6										
							7	S I I	8								
							8										
							9										
							10	S I I	14								
							11										
							12										
		13	S I I	25													
		14															
ALLUVIUM: CLAYEY GRAVEL WITH SAND: Brown (10YR 4/3), moist, medium dense; fine to coarse gravel; with fine to coarse subrounded to subangular sand BOTTOM OF HOLE = 15 Feet No groundwater encountered					GC	15											
					16												
					17												
					18												
					19												
					20												
PACIFIC GEOTECHNICAL ENGINEERING												PAGE: 1 of 1					

APPENDIX B

LABORATORY TEST RESULTS

ATTERBERG LIMITS TEST RESULTS

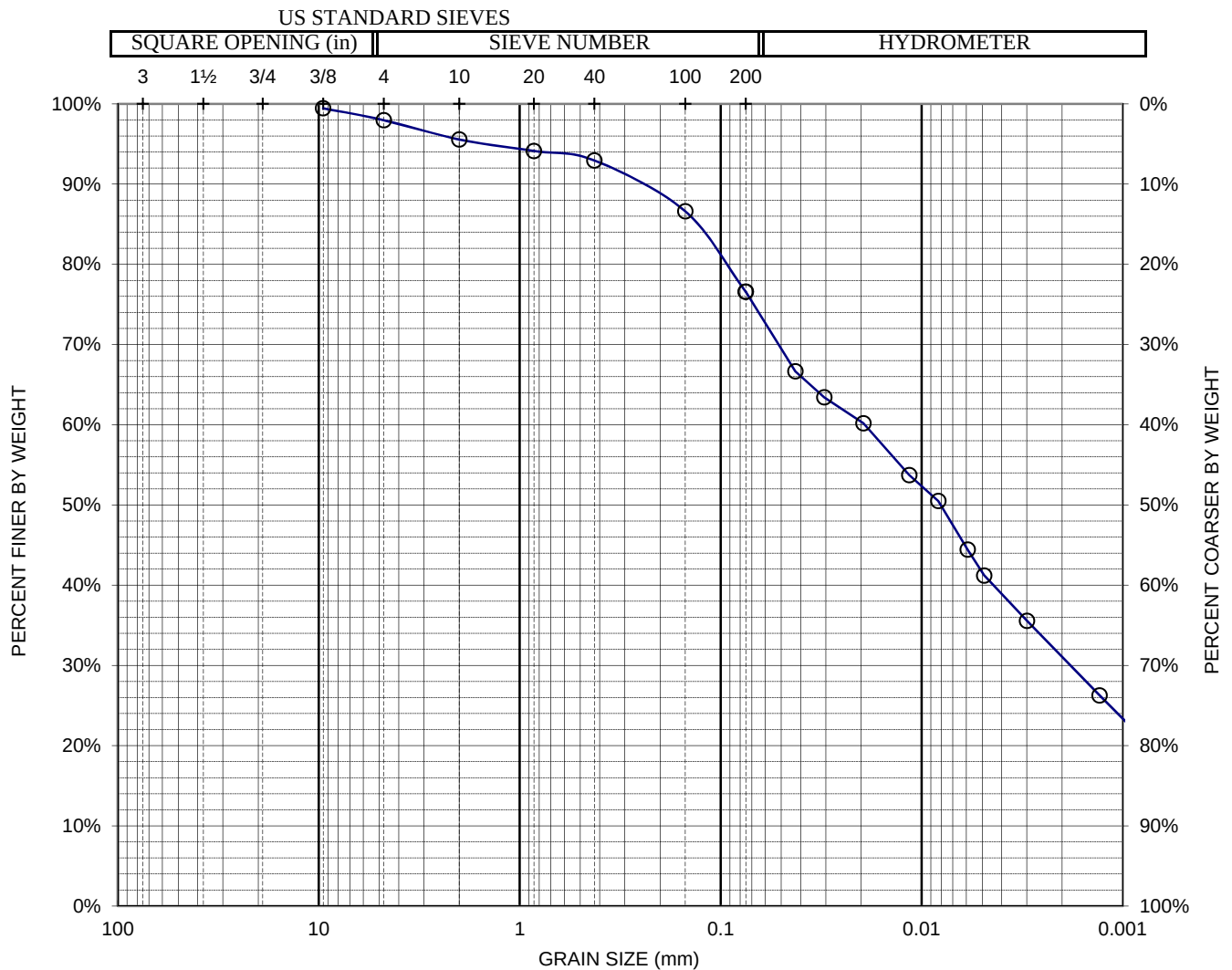
PROJECT NAME	Dillon Avenue, Sam Cava Lane & Gilman Avenue			PROJECT No.	2014.0005
DATE OF TEST	1/17/2014				
KEY SYMBOL	◆				
DRILL HOLE No.	1				
DEPTH (ft)	1.5				
NATURAL WATER CONTENT (%)	13				
% Retained No. 40 SIEVE (Est.)	8				
% PASSING No. 200 SIEVE	77				
LIQUID LIMIT	37				
PLASTIC LIMIT	20				
PLASTICITY INDEX	17				
CLASSIFICATION SYMBOL	CI				



* Based on the Unified Soil Classification System modified to incorporate the "intermediate" classifications CI, MI, and OI for soils with liquid limits between 35 and 50. In the unmodified Unified Soil Classification System, such soils would be classified as CL, ML and OL, respectively.

GRAIN SIZE TEST RESULTS

PROJECT NAME Dillon Avenue, Sam Cava Lane & Gilman Avenue				PROJECT No. 2014.0005	
DRILL HOLE No. 1	DEPTH (ft) 1.5	SAMPLE 0	DATE OF TEST	1/17/2014	
SOURCE/QUARRY: --					
DESCRIPTION OF SOIL: CLAY WITH SAND: brown (10YR 4/3), moist					



REMARKS:

GRAIN SIZE TEST RESULTS

PROJECT NAME Dillon Avenue, Sam Cava Lane & Gilman Avenue

PROJECT No. 2014.0005

DRILL HOLE No. 1

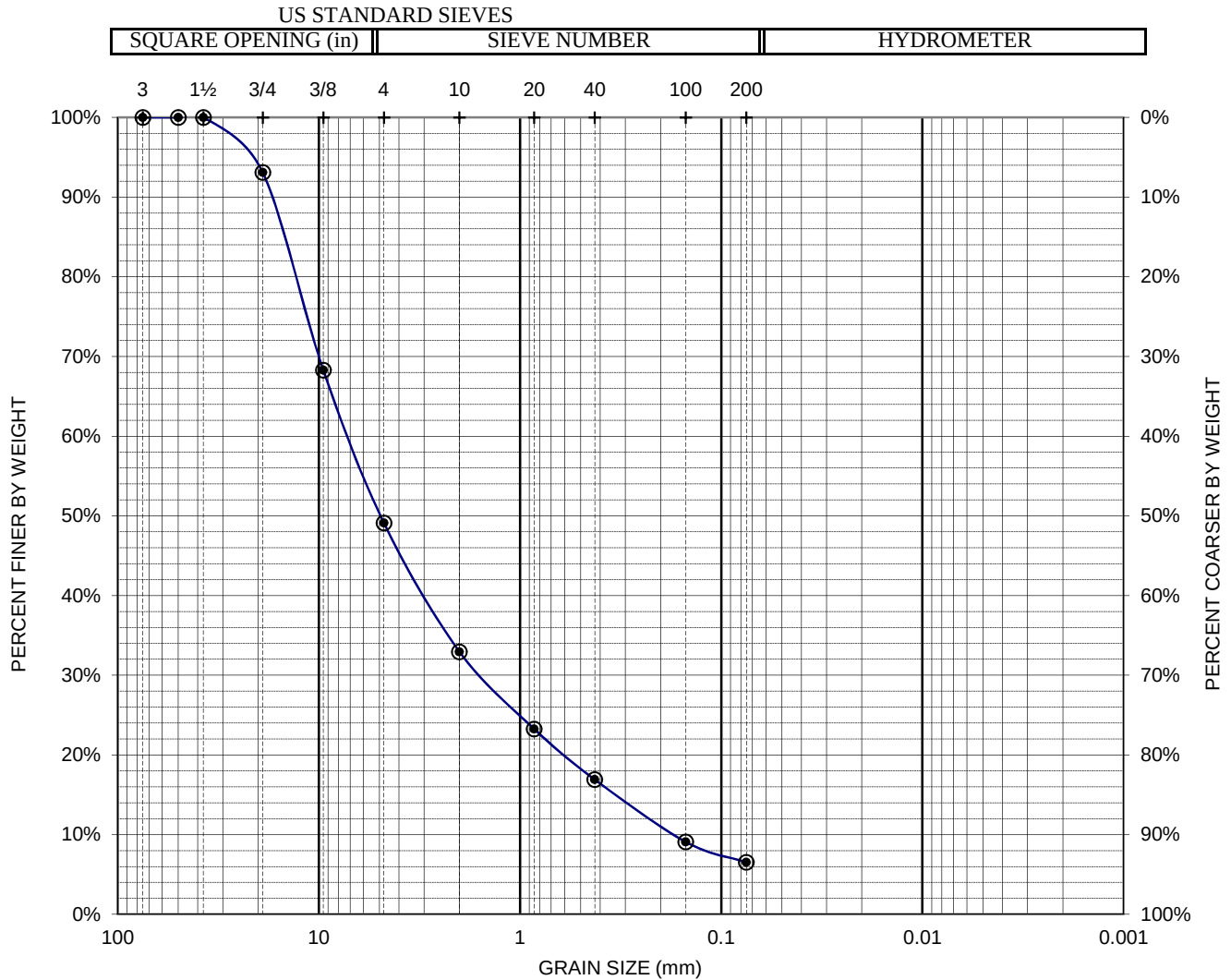
DEPTH (ft) 14-15

SAMPLE 0

DATE OF TEST 1/17/2014

SOURCE/QUARRY: On-site

DESCRIPTION OF SOIL: WELL GRADED GRAVEL WITH SAND AND CLAY: dark brown (10YR 5/3), moist



	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	50.9%		42.6%			6.5%

REMARKS:

PACIFIC GEOTECHNICAL ENGINEERING

RevOct20070

Figure B-3

GRAIN SIZE TEST RESULTS

PROJECT NAME Dillon Avenue, Sam Cava Lane & Gilman Avenue

PROJECT No. 2014.0005

DRILL HOLE No. 4

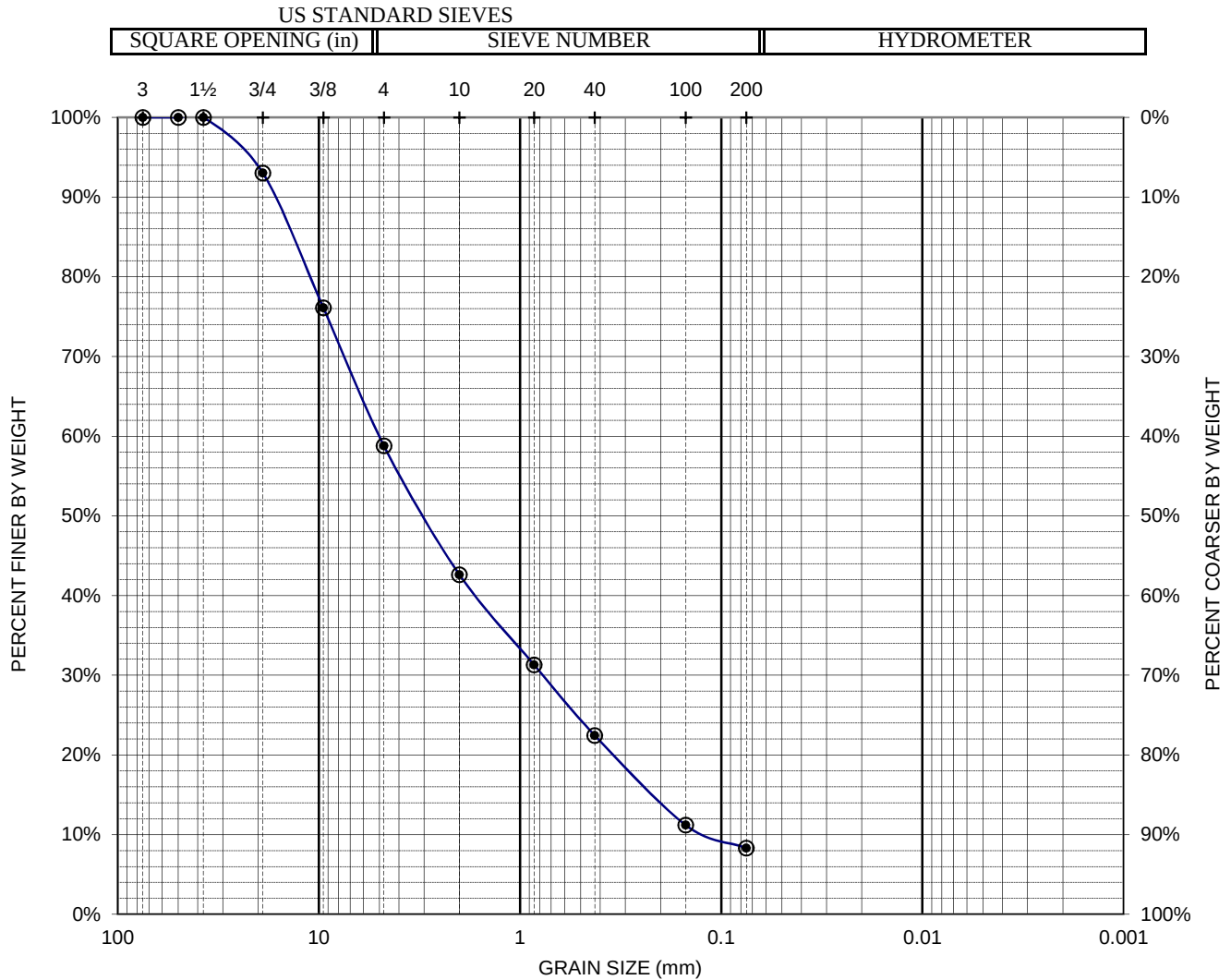
DEPTH (ft) 19-20

SAMPLE 0

DATE OF TEST 1/17/2014

SOURCE/QUARRY: On-site

DESCRIPTION OF SOIL: WELL GRADED SAND WITH GRAVEL AND CLAY: brown (10YR 4/3), moist



	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	41.2%		50.5%			8.3%

REMARKS:

PACIFIC GEOTECHNICAL ENGINEERING

Figure B-4

GRAIN SIZE TEST RESULTS

PROJECT NAME Dillon Avenue, Sam Cava Lane & Gilman Avenue

PROJECT No. 2014.0005

DRILL HOLE No. 6

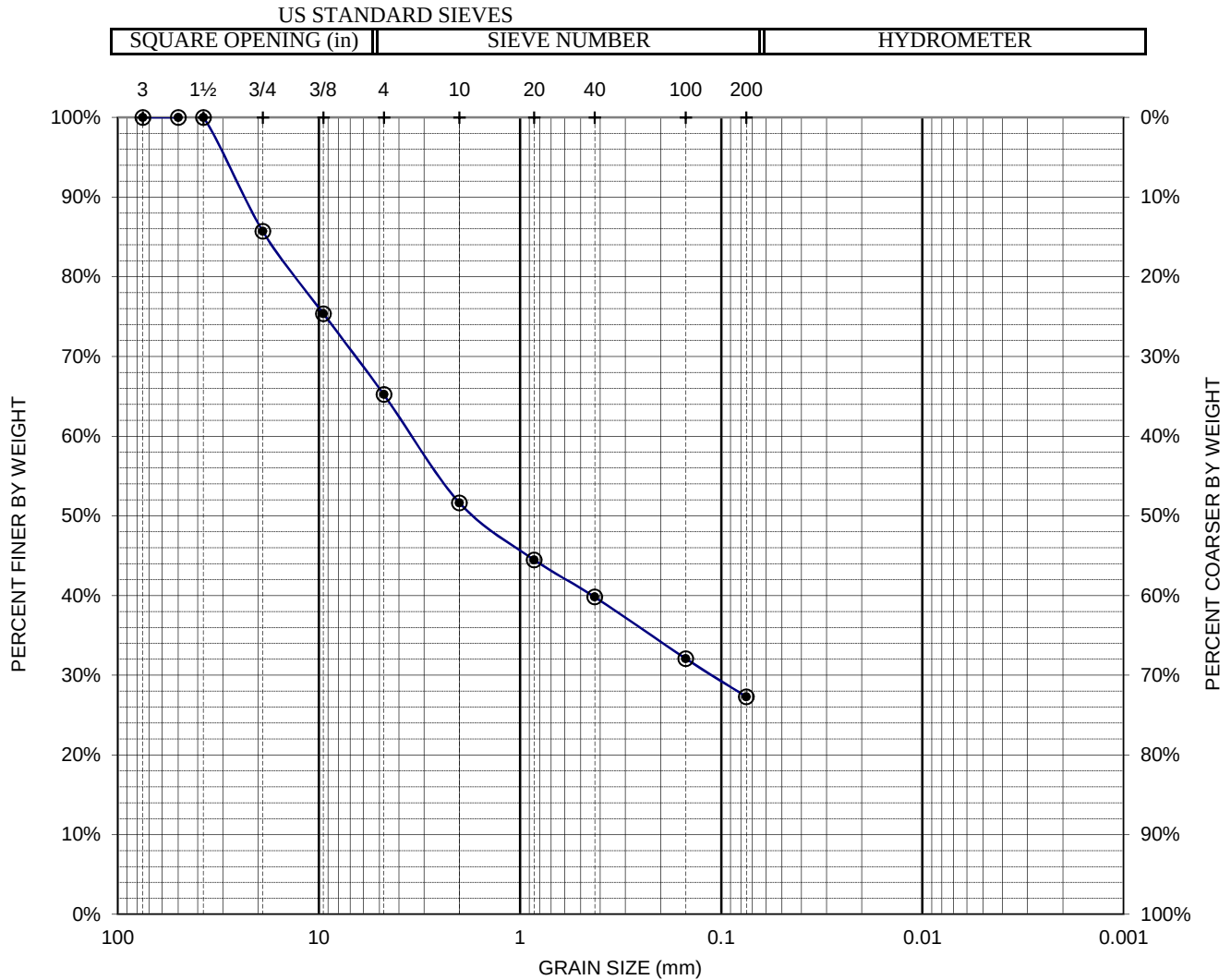
DEPTH (ft) 4

SAMPLE 0

DATE OF TEST 1/17/2014

SOURCE/QUARRY: On-site

DESCRIPTION OF SOIL: CLAYEY SAND WITH GRAVEL to CLAYEY GRAVEL WITH SAND: very dark grayish brown (10YR 3/2), moist; with asphalt fragments



	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	34.8%		37.9%			27.3%

REMARKS:

PACIFIC GEOTECHNICAL ENGINEERING

RevOct20070

Figure B-5

GRAIN SIZE TEST RESULTS

PROJECT NAME Dillon Avenue, Sam Cava Lane & Gilman Avenue

PROJECT No. 2014.0005

DRILL HOLE No. 6

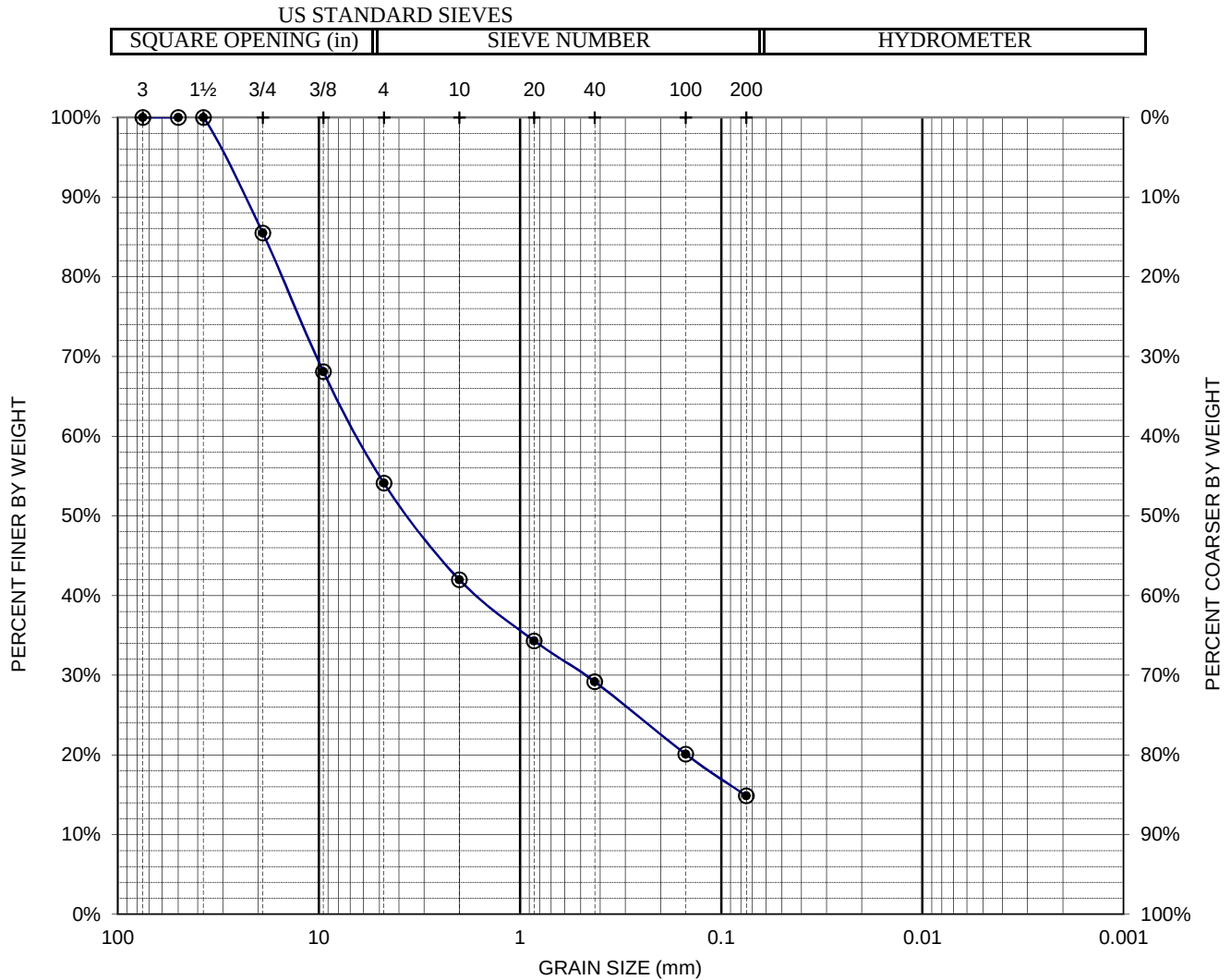
DEPTH (ft) 9-10

SAMPLE 0

DATE OF TEST 1/17/2014

SOURCE/QUARRY: On-site

DESCRIPTION OF SOIL: CLAYEY GRAVEL WITH SAND: brown (10YR 4/3), dry to moist



	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	45.9%		39.2%			14.8%

REMARKS:

PACIFIC GEOTECHNICAL ENGINEERING

RevOct20070

Figure B-6

PROJECT NAME	Dillon Avenue, Sam Cava Lane & Gilman Avenue			PROJECT No.	2014.0005
DRILL HOLE NO.	Bulk B-1	DEPTH (ft)	1-4	SAMPLE	DATE OF TEST 1/27/2014

SOURCE/QUARRY:

SOIL DESCRIPTION: Dark brown, Silty Clay w Gravel

Specimen Number	A	B	C	D	Remarks:
Exudation Pressure, psi	211	309	455		Initial Moisture= 7.30 %
Prepared Weight, grams					
Final Water Added, grams/cc					R-value by
Weight of Soil & Mold, grams					Stabilometer 26
Weight of Mold, grams					
Height After Compaction, in.	2.559	2.482	2.478		Expansion Pressure 106 psf
Moisture Content, %	13.6	12.7	11.8		
Dry Density, pcf	119.0	121.1	122.7		
Expansion Pressure, psf	17	113	195		
Stabilometer @ 1000	56	42	30		
Stabilometer @ 2000	130	102	81		
Turns Displacement	4.15	3.87	3.92		
R-value	12	27	39		

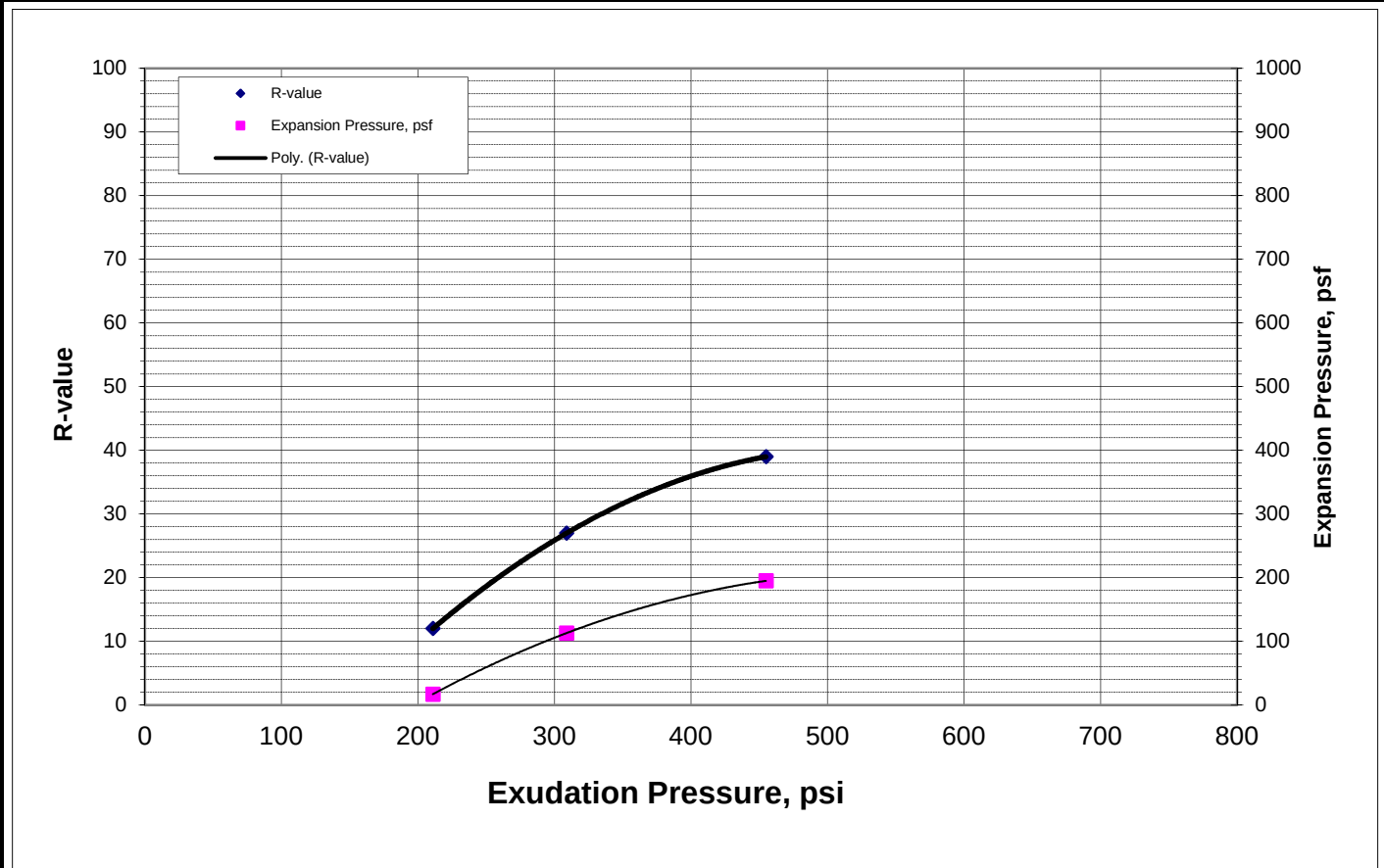


Figure B-7

27 January, 2014

Job No.1401157

Cust. No.10854

Mr. Vincent Castaneda
Pacific Geotechnical Engineering
16055-D Caputo Drive
Morgan Hill, CA 95037

Subject: Project No.: 2014.0005
Project Name: Dillon Property/Dillon Ave. Sites
Corrosivity Analysis – ASTM Test Methods

Dear Mr. Castaneda:

Pursuant to your request, CERCO Analytical has analyzed the soil samples submitted on January 22, 2014. Based on the analytical results, a brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurements, Sample No.001 is classified as "corrosive" and Samples No.002 & No.003 are classified as "moderately corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentrations ranged from none detected to 26 mg/kg and are determined to be insufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentrations ranged from 53 to 1,100 mg/kg and are determined to be sufficient to damage reinforced concrete structures and cement mortar-coated steel at these locations. Therefore, concrete that comes into contact with this soil should use sulfate resistant cement such as Type II, in accordance with the California Building Code requirements with a maximum water-to-cement ratio of 0.55.

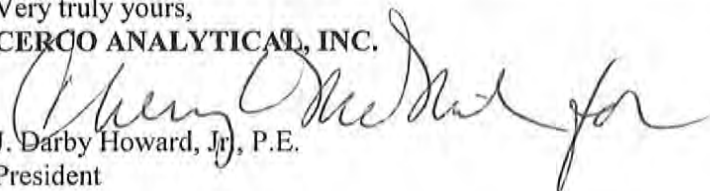
The pH of the soils ranged from 7.73 to 7.88, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potentials ranged from 410 to 440-mV, which is indicative of aerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc.* at (925) 927-6630.

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.


J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

Signed Chain of Custody

Date of Report: 27-Jan-2014

[illegible]

Method:	ASTM D1498	ASTM D4972	ASTM D1125M	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Detection Limit:	-	-	10	-	50	15	15
Date Analyzed:	24-Jan-2013	24-Jan-2013	-	22-Jan-2014	-	24-Jan-2014	24-Jan-2014

* Results Reported on "As Received" Basis
N.D. - None Detected

Cheryl McMillen
Laboratory Director

ATTACHMENT 7

PHASE I SITE ASSESSMENT AND PHASE II SOIL INVESTIGATION

(BIDDLE ROOFING PROPERTIES)



**Phase I Environmental
Site Assessment
and Phase II Soil Investigation**

230, 280, and 282 Dillon Avenue
APNs 412-08-030, -034, and -035
Campbell, CA

Prepared for:

**Robson Homes, LLC
San Jose, CA**

Prepared by:

**ENVIRON International Corporation
Emeryville, CA**

Date:

July 18, 2013

Project Number:

03-21676M

Signature and Environmental Professional Statement

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR §312.10.

Further, I have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Anne W. Gates, P.E.

ENVIRON International Corporation
2200 Powell Street, Suite 700
Emeryville, CA

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1 Summary of Conclusions

ENVIRON International Corporation (ENVIRON) was retained by Robson Homes, LLC (“Robson Homes”) to perform a Phase I Environmental Site Assessment (ESA) and Phase II Soil Investigation of the property located at 230, 280, and 282 Dillon Avenue (APNs 412-08-030, -034, and -035) in Campbell, California (herein referred to as the “site” or the “property”). ENVIRON’s assessment was conducted in connection with the purchase of the property. The Phase I ESA described in this report was performed in general conformance with the scope and limitations of the ASTM International’s *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* E-1527-05 (the “ASTM Standard”), as stated in Chapter 2.0 (Introduction). Any exceptions to, or deletions from, this practice are described in Section 7.3 of this report.

1.1 Recognized Environmental Conditions

ENVIRON identified the following “recognized environmental condition[s]” (REC[s]), as defined by ASTM (see Chapter 2.0), in connection with unrestricted residential land use of the property:

- **On-Site Waste Disposal.** Buried waste materials were discovered at the site during excavation of test pits to investigate geophysical anomalies. During subsequent trenching and environmental sampling investigations, discolored soil, concrete, ash, metal debris and other waste materials were discovered buried across the central portion of the site (see Figure 4). Soil samples collected from within the waste debris and adjacent areas had concentrations of lead, arsenic, total petroleum hydrocarbons (TPH) and PCBs above environmental regulatory screening levels for residential land use. In addition, lead concentrations exceeded California Hazardous Waste Levels and Federal Hazardous Waste Levels in several samples.

1.2 Significant Data Gaps

The ASTM Standard defines a data gap as “a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information.” A data gap is only significant if other information obtained during the ESA, or professional experience, raises reasonable concerns and affects the ability of the environmental professional to identify whether a given issue is a REC. The ASTM Standard requires that the ESA report identify and comment on significant data gaps.

ENVIRON did not identify any significant data gaps during the course of this assessment and based on the information collected to date, no further investigation of the property is needed at this time.

1.3 Other Findings

ENVIRON identified the following additional findings that are not considered RECs based on available information:

- **Clandestine Drug Lab.** The site, specifically the 280/282 Dillon Avenue parcel, was listed on the HAZNET database and the Clandestine Drug Labs (CDL) database. The CDL database listing indicates that the site is a location where an illegal drug lab was

operated or drug lab equipment and/or materials were stored. The database listing does not include the date of discovery of the materials, the source of the listing, or any other site-specific information. According to facility personnel, an employee of the roofing company during the 1990s was found to have been preparing small quantities of methamphetamine in a shed behind the pole barn on the 280/282 Dillon Avenue parcel, and was arrested and dismissed from the company. Several glass containers were removed from the site by police at the time of the arrest.

- **Small Fuel Spill 1997.** The HAZNET database listing indicates that contaminated soil was removed from the site for disposal after a site cleanup in 1997. The incident contact is listed as EH Canfield and Sons, which is a trucking company out of Eugene, Oregon. According to facility personnel, the cleanup was conducted after the fuel tank of a delivery truck hit the road curb while exiting the site after delivering wooden roofing materials. A fuel spill of less than 20 gallons of fuel resulted from the truck tank contacting the curb. Emergency services were immediately notified and the soil removal was conducted in order to address contaminated soil resulting from the fuel spill.
- **Historical Commercial Site Use as Storage Yard for Roofing Companies, Portable Outhouse Supplier, and Arborist.** The 280/282 Dillon Avenue parcel was used as a contractor's yard from approximately 1964 through 2007. Historical site features are shown on Figure 2. A portion of this parcel was also used as a yard for a portable outhouse supplier, which leased a section of the yard from the roofing company in the 1970s, 1980s, and early 1990s. In addition, the 230 Dillon Avenue parcel was leased to a hot roofing contractor in the 1980s and 1990s, and to an arborist from approximately 2011-2012 to the present. All of the occupants of the site appear to have used and/or stored relatively small quantities of chemicals, as well as hazardous materials including petroleum-based oils in buildings and/or vehicles on the site. However, there is no indication of past fuel, oil, or chemical storage in underground storage tanks (USTs), nor is there any indication of past storage of bulk quantities of fuel, oil, or chemicals.
- **Fuel USTs Historically and Currently Present at City of Campbell Service Center.** Environmental database searches and local agency file reviews indicate that USTs containing gasoline, diesel, and motor oil have been used at the adjacent City of Campbell Service Center. Five USTs are known to have been installed at the site in 1969-1970. Two of the USTs, after their removal in 1987, were the subject of a Leaking Underground Storage Tanks (LUST) case. The LUST case was closed in 1999 after soil sampling indicated no residual impacts to soil. The site is currently permitted to operate a double-chambered UST for gasoline and diesel storage, which is equipped with leak monitoring systems and inspected annually. However, no UST removal documentation was available regarding the other three USTs (one gasoline and two waste oil tanks) that were installed in 1969-1970. It is not known if any of those USTs are still in operation or if they have been abandoned or removed. There is no current LUST case at this property. The current superintendent of the City of Campbell Public Works Maintenance Division indicated that there are no other USTs currently in use at the facility.

- **Fuel UST Historically Present at 260 Dillon Avenue**

Environmental database searches and local agency file reviews indicate that a gasoline UST was present at the adjacent property at 260 Dillon Avenue beginning in 1981. The UST was permitted and reported on fire department records through 1997. A 2005 hazardous materials inventory and closure report indicated that all hazardous materials had been removed from the property. However, no UST removal documentation was available for review. There is no current LUST case at this property.

De minimis conditions, as defined in Chapter 2.0, along with other site conditions observed during the site visit, are discussed within relevant sections of this report and are summarized in Chapter 7.0.

2 Introduction

2.1 Purpose

ENVIRON was retained by Robson Homes, LLC to conduct a Phase I ESA of the property located at 230, 280, and 282 Dillon Avenue (APN No. 307-38-001, -003, -004, and -005) in Campbell, California. ENVIRON's assessment was conducted in connection with the purchase of the property. The purpose of the assessment was to identify RECs, which are defined in the ASTM Standard as:

“The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.”

2.2 Scope of the Phase I ESA

ENVIRON completed the following tasks, consistent with the ASTM Standard, during its Phase I ESA of the property:

- A visit to the site by Dan Clark of ENVIRON on March 8, 2013 to observe the features of the site and to identify the uses and conditions specified in the ASTM Standard. In addition, ENVIRON observed the adjoining properties from the site or adjacent public thoroughfares. Photographs taken during the site visits are presented in Appendix A.
- An interview on March 14, 2013 with the trustee of the David R. Bittle 1989 Living Trust (property owner), Mr. Mark H. Bittle. According to Mr. Bittle, the Bittle family has owned the site since approximately 1964. A follow-up interview was conducted on March 18, 2013 with a former site employee, Mr. Tom Reed, who worked at the site from the 1970s until the early 2000s. Mr. Bittle and Mr. Reed are referred to herein as “facility personnel”. The facility personnel interviewed by ENVIRON were identified as having good knowledge of the current and historical uses and physical characteristics of the site.
- An interview on July 18, 2013 with Mr. Alex Mordwinow, the superintendent of the City of Campbell Public Works Department, Maintenance Division, who provided information on the adjacent City of Campbell Service Center.
- A review of a search of environmental regulatory agency database records conducted by Environmental Data Resources, Inc. (EDR) on March 7, 2013 for the site and off-site properties in the vicinity of the site. A copy of the EDR radius report is included as Appendix B. The databases and the radius searched for each database were selected in accordance with the ASTM Standard and are identified in the EDR database report. The

dates of the most recent updates of the environmental databases are also listed in the database report.

- A review of the EDR Environmental Lien Search Reported dated March 8, 2013 to identify environmental liens or activity use limitations (AULs) imposed by judicial authorities with respect to the property.
- A review of standard historical sources (included as Appendix C) and local agency inquiries, as defined in the ASTM Standard. The following resources were reviewed:
 - Readily available historical sources, including (where available) historical topographic maps and aerial photographs, city directories, and Sanborn Maps, to develop a history of the previous uses of the site and surrounding area.
 - Historical and site-specific information obtained from the following local agencies: Santa Clara County Assessor's Office (Assessor), Campbell Building Department (Building Department), and the Santa Clara County Fire Department (Fire Department). ENVIRON also requested files from the Santa Clara County Environmental Health Department (SCCDEH) and conducted a search of historical LUST and solvent release files on the website of the Santa Clara Valley Water District (SCVWD). SCVWD's historical LUST and solvent release files did not contain information pertinent to the site. SCCDEH provided a link to current LUST and solvent release files, which did not contain information pertinent to the site, and indicated that they have no further information on file regarding the site.
 - Telephone interview with a representative of the Santa Clara County Fire Department (SCCFD) regarding historical records available for the site. ENVIRON was informed that records were found for the 282 Dillon Avenue address, and could be provided through a file review, which ENVIRON performed.
 - Telephone interview with a representative of the City of Campbell Building Department regarding historical records available for the site. ENVIRON was informed that records were available for the site, and the records would be made available to ENVIRON at the Building Department planning desk. ENVIRON visited the Building Department and obtained the records.
 - Telephone interview with representatives of the City of Campbell Police Department and the California Department of Justice regarding historical records available for the site. ENVIRON was informed that no records were available for the site at either agency.
- A review of physical setting sources, as defined in the ASTM Standard, including:
 - The current USGS 7.5-minute topographic map that shows the area on which the site is located.
 - Geologic, hydrogeologic, or hydrologic sources as provided in the EDR report.
- A review of a topographic survey map of the site, prepared by BKF Inc., dated May 21, 2007.
- A review of the *ALTA/ASCM Land Title Survey*, prepared by Civil Engineering Associates (CEA), dated April 17, 2013.

- A review of the *Geotechnical Investigation, Proposed Residential Development, 230 & 280 Dillon Avenue, Campbell, California*, prepared by Pacific Geotechnical Engineering, dated May 9, 2013.
- A review of preliminary development plans including *Existing Conditions Plan*, *Conceptual Site Plan*, and *Conceptual Grading and Utility Plan*, prepared by CEA, dated May 10, 2013.
- A review of the geophysical survey report, *Magnetic Investigation at 230, 280, and 282 Dillon Avenue, Campbell, California*, prepared by JR Associates, Inc., dated March 28, 2013.
- Multiple visits to the site during April 2013 for collection of environmental samples and oversight of trenching activities.
- ENVIRON provided Robson Homes with a User Questionnaire consistent with Appendix X3 of the ASTM Standard. Pertinent responses, if any, are discussed in the appropriate sections of this report.

This assessment was conducted in accordance with ASTM Standard E1527-05, as agreed upon by ENVIRON and Robson Homes in March 2013. Certain “non-scope considerations,” as defined in the ASTM Standard (i.e., asbestos-containing materials [ACM], radon, lead-based paint, mold) are not directly addressed in this Phase I ESA.

2.3 Significant Assumptions

In conducting this review, no significant assumptions were made, except for the following:

- Site-specific field measurements of groundwater gradient are not available. Groundwater flow directions at nearby sites (available in closure documentation for LUST cases posted to the RWQCB Geotracker website) indicated a range of groundwater flow directions in the area, ranging from south-southeast to north-northwest, with a depth to groundwater greater than 50 feet below ground surface (bgs). Based on these measurements, the local topographic gradient (generally to the northeast), and the presence of Los Gatos Creek (flowing to the northeast) adjacent to the southeast boundary of the site, ENVIRON has assumed that the groundwater flow direction beneath the site is approximately to the northeast. In evaluating potential on-site impacts from off-site sources, those off-site facilities not located adjacent to or within one-quarter mile upgradient of the subject site are not considered to represent a significant concern to the subject site. This interpretation is based on the assumption that a hazardous material released to the subsurface generally does not migrate laterally within the unsaturated soil for a significant distance, although a hazardous material can migrate in the groundwater in a generally downgradient direction.

2.4 Reliance and General Limitations

This environmental review has been prepared exclusively without limitation for use by Robson Homes, LLC and affiliated entities including Santa Clara Development Company, Sun Lakes Construction Company of California, and Vesta Real Estate Company Inc., and such other persons or entities whose reliance is explicitly authorized in writing by ENVIRON.

The report is considered current only for a period of 180 days from ENVIRON's most recent site visit which was conducted on April 24, 2013. The conclusions presented in this report represent ENVIRON's best professional judgment based upon the information available and conditions existing as of the date of the review. In performing its assignment, ENVIRON must rely upon publicly available information, information provided by the client and information provided by third parties. Accordingly, the conclusions in this report are valid only to the extent that the information provided to ENVIRON was accurate and complete. This review is not intended as legal advice, nor is it an exhaustive review of site conditions or facility compliance.

3 Site Description

3.1 Site Setting

The subject site consists of an irregularly-shaped parcel of land with the addresses 230, 280, and 282 Dillon Avenue in Campbell, Santa Clara County, California (the “site” or the “facility”). The site, which is approximately 1.9 acres in total area, is divided into two parcels that are separated by a steep embankment. The 280/282 Dillon Avenue parcel is approximately 1.75 acres in size and extends east from Dillon Avenue down a sloped driveway to a broad, partially paved, and generally flat area (with the exception of steeply upward sloping embankments along the northwest boundary and a portion of the northeast boundary). The 230 Dillon Avenue parcel is a flat, unpaved, approximately 0.15-acre area adjacent to the northwest of the 280/282 Dillon Avenue parcel, and extends southeast from Dillon Avenue to a fence at the top of the embankment separating the two parcels. The site is located approximately 0.5 mile southeast of downtown Campbell (Figure 1). According to the Santa Clara County Assessor’s Office, the assessor’s parcel numbers (APNs) for the site are 412-08-030, -0034, and -035.

The site was, until approximately 2007, developed with one small yard office and five sheds, with a total combined area of about 1,900 square feet. The yard office and two of the sheds were located along the southern boundary of the site. Two additional sheds were located in the central portion of the site, along the northwestern boundary of the 280/282 Dillon Avenue parcel, near the 230 Dillon Avenue parcel. Lastly, one small shed (which still remains at the site) is located at the northernmost corner of the site, on a small flat area at the top of the steep embankment on the northwestern boundary of the 280/282 Dillon Avenue parcel.

The majority of the site is accessed from Dillon Avenue at the western corner of the 280/282 Dillon Avenue parcel. The 230 Dillon Avenue parcel is also accessed from Dillon Avenue. At the northeastern boundary of the 280/282 Dillon Avenue parcel is a shoring wall that is approximately 13 feet in height, separating the site from the parking lot of an adjacent commercial property, which is at a higher elevation than the majority of the site. There are no on-site surface water bodies. A pedestrian walkway along Los Gatos Creek is adjacent to the southeast of the site, on the other side of a chain-link fence.

Table A provides an overview of physical setting and utility information for the site.

Table A: Physical Setting and Utility Information		
Conditions	Source	Description
Topography		
Elevation (above mean sea level)	ALTA Title Survey	Ranges from approximately 200 feet at the western end of the 280/282 Dillon Avenue parcel and the 230 Dillon Avenue parcel, to approximately 186 feet in the lower portion of the 280/282 Dillon Avenue parcel.

Table A: Physical Setting and Utility Information		
Conditions	Source	Description
Topographic Gradient	USGS topographic map; visual observations, site topographic survey map (BKF 2007)	Relatively flat on both portions of the site, with the exception of a steep slope along the northwest boundary and a portion of the northeast boundary of the 280/282 Dillon Avenue parcel. In addition, a portion of the northeast boundary of the lower parcel consists of an approximately 13-foot high shoring wall separating that portion of the site from the parking lot of a multi-tenant commercial building adjacent to the northeast. Regional topography slopes gently downward to the northeast toward San Francisco Bay.
Hydrology		
Surface Water Runoff	Visual observations	Primarily absorbs into the ground surface. Likely runs off of the northwestern portion of the 230 Dillon Avenue parcel into city storm drains along Dillon Avenue. Heavy rain events may cause limited amounts of runoff from the 280-282 Dillon Avenue parcel.
Nearest Surface Water Body	USGS topographic map; Visual observations	Los Gatos Creek is located approximately 100 feet southeast of the lower portion of the site. Los Gatos Creek joins with other creeks in the San Jose area and ultimately drains to San Francisco Bay, located approximately 9.5 miles north-northwest of the site.
Flood Plain	FEMA*; Facility personnel	Facility personnel reported no known occurrences of flooding at the site. The southeastern property boundary (adjacent to Los Gatos Creek) is within a 100-year flood zone.
Wetlands	NWI*	There are no federally-designated wetlands on-site. Los Gatos Creek, approximately 100 feet to the southeast of the site, contains federally-designated wetland areas.
Geology and Hydrogeology		
Presumed Direction of Shallow Groundwater Flow	LUST case closure documentation for sites within approximately 0.5 mile of the site, reviewed on RWQCB Geotracker online database	Site-specific field measurements of groundwater gradient are not available. Groundwater flow directions at nearby sites (available in closure documentation for LUST cases posted to the RWQCB Geotracker website) indicated a range of groundwater flow directions in the area, ranging from south-southeast to north-northwest. Based on these measurements, the local topographic gradient (generally to the northeast), and the presence of Los Gatos Creek (flowing to the northeast) adjacent to the southeast boundary of the site, ENVIRON has assumed that the groundwater flow direction beneath the site is approximately to the northeast.
Depth to Groundwater	LUST case closure documentation for sites within approximately 0.5 mile of the site, reviewed on RWQCB Geotracker online database	Site-specific measurements of groundwater depth are not available. Groundwater depth data reviewed in LUST case closure documentation for sites within approximately 0.5 mile of the site indicate that the depth to groundwater in the area typically ranges from approximately 70 to 100 feet below ground surface. Because the lower portion of the site is approximately 15 feet below the elevation of the surrounding area, the depth to groundwater beneath the lower portion of the site is estimated to range between approximately 55 to 85 feet below ground surface.
On-site Wells	Facility personnel; Visual observations	There are no on-site monitoring wells.

Table A: Physical Setting and Utility Information		
Conditions	Source	Description
Nearest Groundwater Supply Wells	EDR database report	10 state-registered wells are present within one mile of the site; none are registered as public water supply wells.
Geologic Conditions	2013 geotechnical report, facility personnel, historical aerial photographs, EDR database report,	Boring logs generated during the 2013 geotechnical investigation of the site indicate primarily sands and gravels with clay to a depth of 15 to 20 feet bgs. Facility personnel report the area along Los Gatos Creek was historically mined for gravel, and this was supported by historical aerial photographs. The EDR physical setting report indicates that surface soil types in the area consist of clay loam, silty clay loam, and sandy clay loam, with moderate infiltration rates. Underlying sediments are reported to be quaternary stratified sequences.
Site Utility Information		
Electricity Supplier	Facility personnel	Pacific Gas & Electric (PG&E)
Natural Gas Supplier	Facility personnel	No current or former use of natural gas reported.
Use of Fuel Oil for Building Heat	Facility personnel	No current or former use of fuel oil reported.
Water Supplier	Facility personnel	San Jose Water Company
Sanitary Sewer	Facility personnel	At the 280/282 Dillon Avenue parcel, no current or former connection to the sanitary sewer was reported. Site historically used an outhouse. At the 230 Dillon Avenue parcel, facility personnel report a residential house was formerly located on the parcel prior to the 1980s. This house was likely to have been connected to the City of Campbell sanitary sewer system.
Septic Systems	Facility personnel	There are no known current or former septic tanks or leach fields at the site.
Notes: FEMA = Federal Emergency Management Agency; NCCS = National Cooperative Soil Survey ; NWI = National Wetlands Inventory * - Source was provided in the EDR database report.		

3.2 Current and Historical Use of Property

The site consists of the 280/282 Dillon Avenue parcel and the 230 Dillon Avenue parcel. The 280/282 Dillon Avenue parcel is currently vacant and unused. One small wooden storage shed remains in place on the northernmost portion of the 280/282 Dillon Avenue parcel, and is not currently used. The 230 Dillon Avenue parcel is currently leased to West Valley Arborists, which uses the parcel to store tools, equipment, vehicles, and firewood. There are no structures on the 230 Dillon Avenue parcel.

According to facility personnel, the 280/282 Dillon Avenue parcel was purchased in 1964 by Mr. David R. Bittle, who used the site as a yard for his roofing company. Between approximately 1970 and 1990, the eastern portion of the yard was leased to a construction sanitation company, which used the site to store rental outhouses constructed out of plywood. Between the 1960s until approximately 2007, a portion of the 280/282 Dillon Avenue parcel was leased to a roofing supply company for the storage of roofing materials. During this time, there were five small buildings on the parcel including a yard office; a pole barn used for storing wooden and tile shingles and other roofing materials; a metal shed used for storing furniture and personal items; another metal shed used for storing paints, oils, and caulking; and a small wooden storage shed, the former use for which is not known. The small wooden storage shed remains in place in a flat area at the top of the embankment on the northwest side of the parcel, and contains miscellaneous garbage. The other structures were removed in approximately 2007, in preparation for the sale of the property. The wooden foundation of the former yard office remains in place.

According to facility personnel, the Bittle family acquired the 230 Dillon Avenue parcel in the 1960s or 1970s from landowner Jack Leach. The 230 Dillon Avenue parcel contained a residential house at the time. The residential house was torn down and a portion of that parcel was leased to a hot-roofing company for storage of roofing tar blocks, tar heating trailers, and vehicles. By the late 1990s the parcel was no longer leased to the hot-roofing company, but continued to be used for the storage of several old vehicles until approximately 2007. The 230 Dillon Avenue parcel has been leased to West Valley Arborists for vehicle and equipment storage for approximately one year.

According to historical aerial photographs, prior to the 1940s the site appears to have been unused and was part of the natural stream bank along Los Gatos Creek. During the 1940s until prior to 1958, the site appears to have been used as a gravel pit, and did not contain any structures. The gravel mining activity apparently resulted in most of the 280/282 Dillon Avenue parcel being approximately 15 feet lower in elevation than surrounding areas to the west and north. By 1958, aerial photos show a row of small structures on the site, which are not identifiable.

3.3 Current Uses of Adjoining Properties

The site is located in a mixed commercial and residential land use area.

The 280/282 Dillon Avenue parcel is bordered by the City of Campbell Service Center to the south, at which City-owned vehicles and equipment are maintained and stored. The parcel is bordered to the northwest by a residential house at 272 Dillon Avenue and several commercial

properties. Continuing to the northeast along Dillon Avenue, the commercial properties consist of a roofing company at 260 Dillon Avenue, a multi-tenant commercial building at 240 and 250 Dillon Avenue, the 230 Dillon Avenue portion of the site (currently leased to West Valley Arborists for vehicle and equipment storage), and a multi-tenant commercial building at 200 Dillon Avenue that houses an engineering office and the offices of West Valley Arborists. Along the northeast boundary of the site is another multi-tenant commercial building at 190 Dillon Avenue, which houses a machine shop, a pool service company, a landscaping company, two construction firms, a pest control business, a screen and awning installer, and a recording studio. To the west of the site is a multi-tenant automotive repair facility containing at least two auto repair and/or auto body shops. The southeastern property boundary is bordered by a pedestrian walkway and Los Gatos Creek.

Based on discussions with facility personnel, ENVIRON's visual observations from the property boundary and public rights-of-way, and a limited review of publicly available information, a general determination of the current use of adjacent properties was developed, as described Table B.

Table B: Current Use of Properties Adjacent to the Site		
Direction	Property/Land Use	ENVIRON's Observations
North	Residences and commercial buildings	Limited manufacturing activities (appearing mainly as woodworking at the time of the site visit) are conducted at the roofing company located at 260 Dillon Avenue. No apparent exterior manufacturing or chemical storage operations were observed at other properties in this area during ENVIRON's reconnaissance.
East	Pedestrian walkway and Los Gatos Creek. Highway 17 is located on the opposite side of the creek.	No apparent exterior manufacturing or chemical storage operations were observed during ENVIRON's reconnaissance.
South	City of Campbell Service Center	Limited material storage related to utilities, including some electrical equipment (primarily conduit and insulating equipment – no transformers were observed), was observed in the area of the service center that is adjacent to the southern portion of the site. Further to the southwest in the service center are garages that appear to be used for vehicle maintenance. In addition, a fueling area containing fuel pumps and a natural gas aboveground storage tank (AST) is located near the center of this property. No exterior manufacturing or other chemical storage was observed.
West	A multi-tenant automotive repair facility including Mike's Auto Body and B&J Automotive	No apparent exterior manufacturing or chemical storage operations were observed during ENVIRON's reconnaissance. The property contains several garages and buildings apparently used to house auto repair operations.
Notes: Observations were made by ENVIRON during the site visit. ENVIRON walked or drove by the borders of these properties that are shared with the subject site. ENVIRON did not enter the neighboring properties and was therefore unable to observe the rear of the properties.		

4 Review of Public Records and Other Information Sources

4.1 Environmental Regulatory Database Review

ENVIRON contracted with EDR in March 2013 to prepare a summary of listings in federal and state agency databases for the site and facilities within applicable radii of the property, as specified by the ASTM standard.¹ A copy of the EDR report is presented in Appendix B.

4.1.1 Database Review for Site

ENVIRON reviewed the results of the state and federal environmental database searches performed by EDR (see Appendix B) and also reviewed information available in the California GeoTracker database. The site, specifically the 280/282 Dillon Avenue parcel, was listed on the HAZNET database and the Clandestine Drug Labs (CDL) database.

The HAZNET database listing indicates that contaminated soil was removed from the site for disposal after a site cleanup in 1997. The incident contact is listed as EH Canfield and Sons, which is a trucking company out of Eugene, Oregon. According to facility personnel, the cleanup was conducted after the fuel tank of a delivery truck hit the road curb while exiting the site after delivering wooden roofing materials. A fuel spill of less than 20 gallons of fuel resulted from the truck tank contacting the curb. Emergency services were immediately notified and the soil removal was conducted in order to address contaminated soil resulting from the fuel spill. This incident is further discussed in Section 4.2.1.

The CDL database listing indicates that the site is a location where an illegal drug lab was operated or drug lab equipment and/or materials were stored. The database listing does not include the date of discovery of the materials, the source of the listing, or any other site-specific information. According to facility personnel, an employee of the roofing company during the 1990s was found to have been preparing small quantities of methamphetamine in a shed behind the pole barn on the 280/282 Dillon Avenue parcel, and was arrested and dismissed from the company. Several glass containers were removed from the site by police at the time of the arrest. ENVIRON contacted the City of Campbell Police Department, and the police department administrative assistant reported that the department does not have any records concerning the site going back to 2001, before which records are not available. The police department recommended that ENVIRON contact the Santa Clara County Specialized Enforcement Team (SCCSET), a division of the Santa Clara County Sheriff's Department. ENVIRON left a voicemail message for SCCSET and the call was returned by a representative of California Department of Justice. No records were found pertaining to the site. Further discussion is provided in Section 4.2.1.

4.1.2 Database Review for Surrounding Properties

There are several listings in the EDR report for off-site facilities located within applicable ASTM search radii. Several of these listings (e.g., hazardous waste generators, registered

¹ EDR uses the term "radii" to refer to the ASTM terminology "approximate minimum search distance" in the environmental database report.

underground storage tanks [USTs]), by themselves, are not necessarily indicative of an environmental concern, and these listings are therefore not discussed herein.

A few sites appear on databases indicative of potential contamination concerns (e.g., Leaking Underground Storage Tank [LUST]; Department of Toxic Substances Control's [DTSC's] Site Mitigation and Brownfields Reuse Program's [SMBRP] EnviroStor database; Spills, Leaks, Investigations & Cleanups [SLIC]; Voluntary Cleanup Program [VCP]). Of these latter facilities, only the following sites were identified that are located adjacent to, very nearby, or upgradient from the subject site and within 0.25 miles. These facilities were selected based on the assumption that a hazardous material released to the subsurface generally does not migrate laterally within the unsaturated soil for a significant distance, although a hazardous material can migrate in groundwater typically in a generally downgradient direction.

- City of Campbell Service Center.** The City of Campbell Service Center, also known as the Corporate Yard, located at 290 South Dillon Avenue in Campbell, California and adjacent to the southwest of the subject site, is listed on the LUST, Historical LUST, UST, Historical UST, CA FID UST, CUPA Listings, Historical Cortese, and SWEEPS UST databases. The LUST listings refer to a closed underground fuel leak case. Other UST database listings refer to current fuel USTs currently or historically in use at the site. The Historical UST database indicates that five USTs were installed at the site in 1969 and 1970, including a 10,000-gallon gasoline UST, a 1,000-gallon gasoline UST, a 1,000-gallon diesel UST, a 250-gallon waste oil UST, and a 200-gallon waste product UST (type of product unspecified). A case closure letter dated January 7, 1999 was reviewed on the RWQCB Geotracker online database. In April 1987, a 10,000-gallon gasoline UST and a 1,000-gallon diesel UST were removed from the site and soil samples were collected after over-excavation of tank pits. Soil analyses indicated that a maximum of 1,200 parts per million (ppm) total petroleum hydrocarbons (TPH) as gasoline, and 100 ppm TPH as diesel, remained beneath the tank pits, with other analytes below detection limits. In December 1998, soil borings were conducted at the site to investigate soil quality beneath the former USTs and to evaluate the potential for groundwater impacts. Soil samples collected from up to 70 feet below ground surface (bgs) did not indicate impacts above detection limits and groundwater was not encountered. The depth to groundwater is estimated to range between 55 to 85 feet bgs (or greater) in the vicinity of the site. Residual contamination was considered to have been attenuated naturally and the case was granted closure by SCVWD in January 1999.

The service center is also a permitted UST facility, at which USTs are currently in use. The 1999 LUST case closure includes a map indicating that a 10,000-gallon double-containment UST was in use in 1999. No further details regarding other USTs at the service center were available. Documents reviewed at the Santa Clara County Fire Department indicated that the site is currently permitted to operate a double-containment two-chamber UST with an 8,000-gallon gasoline capacity and a 2,000-gallon diesel fuel capacity, and that leak monitoring and regular inspections are conducted. However, no fire department records were available that would indicate the presence and/or status of any other USTs at the property. From the available records it is not clear whether any of the USTs installed in 1969-1970 (aside from the two USTs removed in 1987) are still in use, or

if they were previously removed without resulting in a LUST case. The current superintendent of the City of Campbell Public Works Maintenance Division indicated that there are no other USTs currently in use at the facility. There is no active LUST case at the service center property and based on available information, the service center property is not considered to be of concern for the site.

- Draeger Construction Inc./Stinson Construction Inc.** The Draeger Construction/Stinson Construction property is located at 260 Dillon Avenue in Campbell, California. The property is adjacent to the northwest of the 280/282 Dillon Avenue parcel and is located approximately 150 feet to the southwest of the 230 Dillon Avenue parcel. The property is listed on the CA FID UST, SWEEPS UST, and Historical UST databases for an 8,000-gallon gasoline UST historically associated with the property. No LUST case or any case closure documentation was available on the RWQCB Geotracker online database. Based on documents reviewed at the Santa Clara County Fire Department, the UST was installed in 1981. A leak monitoring system was installed in 1986. The property is not a currently permitted UST facility. Based on prior hazardous materials management plan (HMMP) documents, the property appears to have been last permitted to operate a gasoline UST in 1997. A 2005 hazardous materials closure document indicated that all hazardous materials had been removed from the site when the current tenant (Weathershield Roofing Systems) took possession of the property. The gasoline UST was not mentioned in the closure document. No record of UST removal or confirmation sampling was available for review. There is no active LUST case at this property and based on available information, the Draeger/Stinson property is not considered to be of concern for the site.
- Fire-Matic Systems, Inc.** The Fire-Matic Systems Inc. property, located at 190 Dillon Avenue in Campbell, California, adjacent to the northwest of the subject site, is listed on the LUST, Historical LUST, and Historical Cortese databases. IN 1989, a 1,000-gallon gasoline UST and a 500-gallon paint thinner UST were removed from the portion of the property that is adjacent to the shoring wall along the northeastern boundary of the subject site. Following over-excavation of tank pits, soil samples were collected under the oversight of the Campbell fire department. Minor impacts by xylene (up to 56 ppm) were detected in two of the soil samples, with other BTEX compounds and TPH found to be non-detect. Three soil borings were also advanced in the area to depths up to 45 feet and groundwater was not encountered. Soil samples from the soil borings were non-detect for TPH and BTEX. The facility was granted a case closure letter on November 6, 1990. The Fire-Matic Systems, Inc. property is not considered to be of concern for the site.

4.2 Historical Use Information on the Site and Surrounding Area

To evaluate the historical uses of the property, ENVIRON reviewed historical aerial photographs, fire insurance maps, topographic maps, and an abstract of city directory information, where readily available. ENVIRON also interviewed the representative of the current owner of the site, Mr. Mark Bittle, on March 14, 2013 and Mr. Tom Reed, a former employee at the site, on March 18, 2013. In addition, ENVIRON reviewed information from local government agencies including the assessor's office, environmental health department, fire department and building department.

Based on ENVIRON's review of the historical information sources described above, the earliest known structures on the 280/282 Dillon Avenue parcel were the site office and five sheds, installed in the late 1960s or early 1970s and removed in approximately 2007. The earliest known structure on the 230 Dillon Avenue parcel was a residential house, likely constructed in the 1920s or earlier and removed in the 1960s.

4.2.1 Interviews with Current Site Personnel

ENVIRON interviewed facility personnel on March 14 and 18, 2013. ENVIRON also interviewed the superintendent of the adjacent City of Campbell Service Center on July 18, 2013.

- **Mr. Mark Bittle (Property Owner Representative)**

Mr. Bittle is the son of the late Mr. David Bittle and is the trustee of the David R. Bittle 1989 Living Trust. Mr. Bittle's family has owned the site since 1964, and Mr. Bittle himself has had sporadic involvement since the 1970s. Mr. Bittle reported no known on-site waste disposal, groundwater wells, current or former USTs, septic systems or leach fields, stained surfaces, PCB-containing hydraulic or electrical equipment, environmental violations or liens, or other known environmental concerns associated with the site. Mr. Bittle remembered having seen several old vehicles that were stored on the site. Mr. Bittle also reported that a spill of fuel from a delivery truck occurred at the site in the 1990s and referred ENVIRON to Mr. Tom Reed, a former employee at the site, for more information. Mr. Bittle again referred ENVIRON to Mr. Reed in regard to an underground drum that, according to Fire Department records, was used as part of the operations of a company that leased the site for portable restroom operations. These issues are further discussed below.

- **Mr. Tom Reed (Former Site Employee)**

Mr. Reed was an employee at the site from the early 1980s until the site closed in the mid-2000s. He was not aware of any underground fuel tanks, on-site waste disposal, electrical equipment containing PCBs, underground equipment containing hydraulic oil, septic tanks or leach fields, fires, or any other potential sources of environmental contamination. He mentioned that early in his time at the site, several old cars were stored on the site, and he remembered that the site owner had occasionally performed limited maintenance and repairs of personal cars and roofing company trucks on the site. He mentioned that small amounts of motor oil, hydraulic oil for forklifts, shingle oil for roofing, and cans of spray paint were kept on site in sheds, generally in small quantities. He also said that solid blocks of roofing tar were kept on the 230 Dillon Avenue parcel when it was leased by a hot roofing contractor in the 1980s and 1990s, and the roofing tar was melted in heated trailers for transport to job sites.

When asked about a fuel spill from a delivery truck in the 1990s, Mr. Reed reported that in 1997, a delivery truck was exiting the site after a delivery when its gas tank contacted a concrete curb, resulting in a spill of approximately 10-20 gallons of fuel. The fire department was contacted immediately and contaminated soil (approximately four 55-gallon drums in volume) was removed by a cleanup contractor hired by the trucking company.

When asked about a former underground drum at the site that was associated with a portable outhouse supplier that leased part of the site, Mr. Reed replied that the underground drum was installed in a concrete pad where outhouse service trucks would fill their tanks with water from an on-site water tank. The drum was used to catch overflow water in order to prevent problems with mud and standing water on the site.

Mr. Reed was also asked if he had any knowledge concerning the site being listed on the CDL database as the former site of an illegal drug lab. Mr. Reed replied that an employee of the site in the 1990s had been found to have occasionally used a shed behind the pole barn for preparing small amounts of methamphetamine over a period of several months, and was subsequently arrested and dismissed from the company. Police removed several small glass containers from the area. Mr. Reed reported that in his experience the site had been kept clean, and in general, chemicals were not used or stored on the site (with the exception of limited quantities of oil and paint as described above).

- **Mr. Alex Mordwinow (Superintendent, City of Campbell Public Works, Maintenance Division).**

Mr. Mordwinow has been involved with the City of Campbell Service Center (adjacent to the site) since December 2012. When asked about the current and former USTs at the City of Campbell Service Center, Mr. Mordwinow replied that the current double-chambered UST is currently permitted and has integrated leak detection systems, and he understood that the prior USTs at the fueling station were appropriately closed and removed under Santa Clara County oversight in 1987, and the LUST case received closure in 1999. When asked about any history of other USTs, contamination, releases, or other environmental issues at the City of Campbell Service Center, Mr. Mordwinow replied that to his knowledge, aside from the LUST case, there have not been any instances of contamination, releases, or other environmental issues at the property. After checking with employees who have worked at the site for an extended time period, Mr. Mordwinow indicated that there are no other USTs in use at the facility. Mr. Mordwinow mentioned that there is an underground septic pump near the northeastern property boundary which is used to pump sanitary wastewater to the sanitary sewer.

4.2.2 Review of Historical Reference Sources

To evaluate the historical uses of the property, ENVIRON reviewed historical aerial photographs, topographic maps, and city directory abstracts. The results of ENVIRON's historical review are presented below.

4.2.2.1 Aerial Photographs

ENVIRON reviewed historical aerial photographs that were obtained for the property and vicinity from EDR, dated 1939, 1948, 1956, 1965, 1976, 1982, 1993, 1999, 2005, and 2006.

- 1939** Site is located on the banks of Los Gatos Creek, which appears as a narrow channel within a broad, undeveloped ravine area. An area of residences is situated along the northwest boundary of the 280/282 Dillon Avenue parcel. It appears that the 230 Dillon Avenue parcel

may contain a residence. Orchards are present to the southwest and to the east, on the other side of Los Gatos Creek.

- 1948** – The banks of Los Gatos Creek (including portions of the site) appear to be part of a large earthmoving project, with areas of earth removal and other areas of filling activities, and it appears the Los Gatos Creek channel is being narrowed in the vicinity of the site.
- 1956** The immediate vicinity of the site is essentially unchanged since the 1948 photo. A row of small structures is present on the site.
- 1968** – Highway 17 has been constructed on the other side of the Los Gatos Creek. There no longer appears to be a residence on the 230 Dillon Avenue parcel, and several of the other residences along Dillon Avenue appear to have been removed. The 280/282 Dillon Avenue parcel appears to be used at this time as a contractor yard. The adjacent property to the south appears to have several small buildings and an asphalt-paved area. Medium-sized commercial buildings are present to the southeast of the site.
- 1974** At the adjacent property to the south, the current building present at the City of Campbell Service Center appears to have been constructed. Photo details are not readily distinguishable due to poor photo quality.
- 1982** The area appears generally similar to the 1974 photo. Photo details are not readily distinguishable due to poor photo quality.
- 1993** The site and vicinity appear substantially similar to the present-day aerial photo. The site appears to be used as a contractor yard.
- 1999** Similar to 1993 photo.
- 2005** The site appears as in the present-day aerial photo, however small structures and materials are still present on the site and the site appears to still be used as a contractor yard.
- 2006** Similar to 2005 photo.
- 2009** The site appears to be unchanged in comparison to the present day. No structures or materials appear on the 280/282 Dillon Avenue parcel. The 230 Dillon Avenue parcel appears to contain several vehicles.
- 2010** Similar to 2009 photo.

4.2.2.2 Topographic Maps

- 1899 (coarse scale map)** – Site is shown on the outskirts of the town of Campbell, in an undeveloped area.
- 1953** Site is shown on the banks of Los Gatos Creek. The 280/282 Dillon Avenue parcel is shown in an undeveloped area. The 230 Dillon Avenue parcel is shown in a developed area along Dillon Avenue.
- 1961** Similar to 1953 map with additional development and roads shown in the vicinity. Highway 17 has been constructed on the other side of Los Gatos Creek. The shading that indicates a developed area has been expanded to include the 280/282 Dillon Avenue parcel.
- 1968** Similar to 1961 map with additional development and roads shown in the vicinity.
- 1973** Same as 1968 map with increased regional urban development.
- 1980** Same as 1973 map with increased regional urban development.

4.2.2.3 City Directory Abstracts

EDR searched select national repositories of business directories from select years between 1922 and 2012. According to listings in the EDR report from Cole Information Services, Haines Company, Pacific Bell, and R.L. Polk & Co. directories, 282 Dillon Avenue is listed as Bittle Roofing Company from 1970 to 2007. In 1980 and 1985, John [sic] Reed is also listed as a site occupant. The 230 Dillon Avenue parcel is listed only in 1963, apparently as a residence, with occupants identified as Leonard M. Newby and Myrtle U. Utley. ENVIRON reviewed numerous listings for addresses that appear to be adjacent or nearby on Dillon Avenue, Railway Avenue, and Sam Cava Lane, and determined that most were residential listings or commercial business not likely to have been of concern for the subject site. However, listings for 300 Railway Avenue include automotive repair shops, a wholesale auto dealer, a sheet metal finishing and machine shop, dating back to 1963. 300 Railway Avenue is approximately 350 feet to the southwest of the site and is the current location of Mike's Auto Body and B&J Automotive. EDR listings for this property (including a closed LUST case) have been evaluated and the property is not considered to be of concern for the subject site.

4.2.2.4 Sanborn Maps

ENVIRON requested a search of Sanborn maps for the property and vicinity from EDR. The search report indicated that Sanborn maps were available that included partial coverage for the property and vicinity for 1920, 1928, 1935, and 1950. The maps generally show only the northeastern corner of the 280/282 Dillon Avenue parcel, and most of the 230 Dillon Avenue parcel. The 280/282 Dillon Avenue parcel is not shown to have contained any structures during these time periods. The 230 Dillon Avenue parcel appears to have contained a residence and several small outbuildings during these time periods. Other properties in the area are shown as having contained residential buildings, outbuildings, and chicken coops during these time periods.

4.3 Review of Local and State Agency Information

ENVIRON visited or otherwise contacted local governmental agencies and regulatory bodies for information relating to the site. An overview of the findings of this review is presented in Table C.

4.4 Environmental Lien Record Search

A review of EDR Environmental Lien Search Report dated March 8, 2013 to identify environmental liens or activity use limitations (AULs) imposed by judicial authorities with respect to the property. No environmental liens or AULs were found.

4.5 Previous Environmental Assessments

No previous environmental assessments are known to have been conducted at the site.

4.6 User-Provided Information

ENVIRON provided the client with a User Questionnaire (consistent with Appendix X3 of the ASTM Standard) that requested information relating to environmental liens, AULs, specialized knowledge of the property, property value diminution, chain-of-title, or any other commonly

known or obvious indications of site contamination, that was not otherwise provided to ENVIRON.

Table C: Local Agency Information for the Property	
Agency Contacted / Document Reviewed	Information Obtained
Santa Clara County Tax Assessor	Documents reviewed online using the Santa Clara County Tax Assessor's website included assessment roll information and a tax map. The map indicates that the APNs for the site are 412-08-030, -034, and -035.
Campbell Building Department	ENVIRON reviewed available public records maintained in an online database by the city of Campbell Building Department. Online building department records included a list of case activity for the site, including several complaints regarding junk or debris on the property in the mid to late 2000s. The only other record found by the Building Department search was a permit from 1965 for the 230 Dillon Avenue parcel, on which it is written that the fire department will burn one building. Based on similar documents reviewed at the Santa Clara County Fire Department, it appears that several buildings on this street were purposefully burned in the 1960s in order to remove the structures and also for fire department training purposes.
Santa Clara County Fire Department	ENVIRON reviewed available public records maintained in the computer system of the Santa Clara County Fire Department. Records pertaining to the site and nearby properties were available dating back to the 1960s. A complaint from the Campbell Planning Department to the Fire Department indicated that junk cars and miscellaneous debris were present on the property and requested the items be removed. Hazardous materials records were available dating back to 1982 and typically mentioned spray paint, shingle oil, propane, welding supplies, motor oil, and hydraulic fluid being stored on the site in small amounts. Lastly, a 1990 letter to Acme Sanitation (the company that formerly leased a portion of the site for portable restroom supply operations) from the Fire Department requested closure activities for the site prior to the company leaving the site, including removal of an underground drum from their chemical storage area, soil borings in and around the chemical storage area, and a soil boring in their waste oil storage area. According to facility personnel, the underground drum was a grated sump designed to contain overflow from water tanker trucks filling up at a water tank prior to servicing portable restrooms. The sump was installed to prevent problems with mud and standing water on the site. No further information was available regarding the requested soil borings in the chemical storage and waste oil storage areas, and no further closure documentation was available. ENVIRON also reviewed historical documentation related to USTs at 290 Dillon Avenue (City of Campbell Service Center) and 260 Dillon Avenue (former Stinson Construction Inc. property), both of which are adjacent to the site. Records were found pertaining to historical permitting of USTs at these properties; however closure documentation for UST removals was not available for either property.
Santa Clara County Department of Environmental Health	ENVIRON requested records from SCCDEH for information regarding soil or groundwater investigations, USTs, LUSTs, hazardous materials inspections, or

Table C: Local Agency Information for the Property	
Agency Contacted / Document Reviewed	Information Obtained
(SCCDEH)	violations/permits for the property. ENVIRON was referred to SCCDEH's online database of LUST, solvent release, and cleanup cases. No records were found related to the addresses of the site.
Santa Clara Valley Water District	ENVIRON requested records from the Santa Clara Valley Water District and was referred to the SCVWD online database of LUST files prior to 2004 when local agency oversight was transferred to the Department of Environmental Health. No records were found related to the addresses of the site.
City of Campbell Police Department	ENVIRON requested records from the City of Campbell Police Department in regards to the site's listing on the CDL database. No records were found related to the addresses of the site. .
California Department of Justice	ENVIRON requested records from the California Department of Justice in regards to the site's listing on the CDL database. No records were found related to the addresses of the site.

5 Site Reconnaissance

5.1 Methodology and Limiting Conditions

Dan Clark of ENVIRON conducted a site reconnaissance visit on March 8, 2013. During the site visit, observations of the site were made to evaluate if any RECs, as defined in Chapter 2, are present.

5.2 General Site Setting and Observations

ENVIRON made observations during the site visit concerning all of the interior and exterior issues specified in Sections 9.4.2 through 9.4.4 of the ASTM E1527-05 Standard. The presence or absence of each issue of environmental interest or concern is noted in Table D. Only those areas of environmental interest or concern that were observed at the property are discussed further in the text below.

Table D: Summary of Site Reconnaissance Observations		
Issue	ASTM Section	Observation
Interior and Exterior Issues		
Current use(s) of the property	9.4.2.1	See Section 3.2
Past use(s) of the property	9.4.2.2	See Section 3.2 and 4.2
Hazardous substances and petroleum products used, treated, stored, disposed of, or generated on the property in connection with identified present or past uses	9.4.2.3	Present and Historically Present (see Section 5.2.1)
Storage tanks: Underground storage tanks (fill ports, vent pipes, manholes) Aboveground storage tanks (ASTs)	9.4.2.4	Absent
Odors (strong, pungent or noxious)	9.4.2.5	Absent
Pools of liquid, standing surface water or sumps	9.4.2.6	Absent
Drums of hazardous substances or petroleum products (for example, five-gallon, 55-gallon or totes)	9.4.2.7	Present (see Section 5.2.1)
Hazardous substance and petroleum product containers (not necessarily in connection with identified uses)	9.4.2.8	Absent
Unidentified substance containers suspected of containing hazardous substances or petroleum products	9.4.2.9	Absent
Polychlorinated biphenyls (PCBs) Electrical equipment on-site (e.g., transformers, capacitors) Electrical equipment known or likely to contain PCBs Hydraulic equipment on-site (e.g., elevators, truck dock lifts) Hydraulic equipment known or likely to contain PCBs	9.4.2.10	Hydraulic Equipment Historically Present (forklifts) but unlikely to have contained PCBs (see Section 5.2.2).

Table D: Summary of Site Reconnaissance Observations		
Issue	ASTM Section	Observation
Interior Issues		
Heating/cooling systems	9.4.3.1	Absent
Stains or corrosion on interior floors, walls or ceilings (except for staining from water)	9.4.3.2	Absent
Floor drains and interior sumps	9.4.3.3	Absent
Exterior Issues		
Pits, ponds or lagoons on property or adjacent sites	9.4.4.1	Absent
Stained soil or pavement	9.4.4.2	Present (see Section 5.2.3)
Stressed vegetation (from other than insufficient water)	9.4.4.3	Absent
On-site solid waste disposal; areas apparently filled or graded by non-natural causes; or mounds or depressions suggesting solid waste disposal	9.4.4.4	Not observed during Phase I Site Reconnaissance, but identified during Phase II activities (see Section 7)
Wastewater or other liquid (including storm water) or any discharge into a drain, ditch, underground injection system or stream on or adjacent to the property	9.4.4.5	Absent
Wells (including dry wells, irrigation wells, injection wells, abandoned wells, or other wells)	9.4.4.6	Absent
Septic systems or cesspools	9.4.4.7	Absent
Non-Scope Considerations		
Asbestos Containing Materials	N/A	Absent
Lead-Based Paint	N/A	Absent
Notes: Observations noted in this table and discussed further below are based on information obtained during the site visit and from a review of the sources summarized in Chapter 4. See the ASTM Standard for a detailed description of the issues included in each referenced ASTM section. Per the ASTM Standard, fluorescent light ballasts likely to contain PCBs do not need to be noted.		

5.2.1 Hazardous Substances and Petroleum Products

At the 230 Dillon Avenue parcel, several one-gallon and five-gallon containers of used motor oil were observed, which had apparently been generated by the arborist company which currently leases that portion of the site. No secondary containment was in use. Staining or other evidence of a release was not observed in the area.

At the 280/282 Dillon Avenue parcel, no hazardous substances or petroleum products were observed during the site reconnaissance. According to Fire Department records and facility

personnel, small quantities of spray paint, motor oil, shingle oil, and hydraulic oil for forklifts has been stored and used on the site during its use as a roofing company yard. In addition, the former lessee who operated a portable outhouse supply and service company likely stored chemicals on site for use in portable outhouses. However no records were available to determine the type or quantity of such chemicals.

5.2.2 Polychlorinated Biphenyls (PCBs)

According to facility personnel, forklifts were historically used at the site for roofing company operations and likely for the operations of the portable outhouse company that leased a portion of the site. Hydraulic oil fluid was stored and used on the site for forklift operations. The type of hydraulic fluids typically used for forklift operations is not considered likely to have contained PCBs. Facility personnel reported that no transformers or other electrical equipment likely to have contained PCBs have historically been present on the site.

5.2.3 Stained Soil or Pavement

ENVIRON observed evidence of staining on the gravel-covered parking area at the 230 Dillon Avenue parcel, which appeared to be consistent with minor drips from vehicles parked at the site by the arborist company that leases the site for vehicle and equipment storage. The staining is considered to represent a de minimis release of petroleum products on the site.

6 Soil Sampling and Analysis

ENVIRON conducted shallow soil sampling at the site on March 19, 2013. Figure 3 shows the locations of the soil samples collected in March 2013. Tables 1 and 2 present the results of soil sample analyses.

6.1 Pre-Field Activities

ENVIRON prepared a site-specific health and safety plan (HASP) and notified Underground Service Alert (USA) of the sampling activities at least two working days prior to the start of intrusive sampling, as required by law. ENVIRON contracted with a private utility locating company to clear proposed boring locations of underground utilities. ENVIRON also contracted with a drilling subcontractor to perform direct-push technology (DPT) drilling activities, and with analytical laboratories to perform soil sample analyses.

6.2 Collection of Soil Samples for Chemical Analysis

Soil samples were collected for chemical analyses at locations SB-4 through SB-13 from a depth of 0.5 to 1.0 foot below ground surface (bgs) (see Figure 3). At each location, a soil boring was advanced to a depth of two to three feet bgs and soil was screened for volatile organic compounds (VOCs) using a calibrated photoionization detector (PID) at one-foot intervals. Observations were recorded at each borehole to document soil lithology and any indications of staining or other visual evidence of impacts.

Soil borings SB-4 through SB-6 were sited on the 230 Dillon Avenue parcel, with SB-4 located where one-gallon and five-gallon containers of waste oil were being stored. Samples collected from SB-5 and SB-6 were placed on laboratory hold pending the results of the SB-4 sample. Borings SB-7 through SB-13 were placed on the 280/282 Dillon Avenue parcel. SB-7 was located in an area previously used for the storage of roofing materials on the ground surface. SB-8 was sited in an area where a metal storage shed was previously used for the storage of roofing equipment as well as motor oil, shingle oil, and spray paint. SB-9 was located in the eastern portion of the site, where facility personnel had indicated a portable outhouse supply and service company had conducted most of their operations. SB-10 was located at the water truck fill pad used by the portable outhouse company, which also appears to have been the location of that company's chemical storage and/or waste oil storage area. SB-11 and SB-12 were located adjacent to the concrete foundation of the pole barn, where roofing materials and equipment were stored and where an employee in the 1990s had prepared small quantities of methamphetamine (see Section 4.2.1). Lastly, SB-13 was sited next to the former site office.

Soil samples were collected using DPT and hand auger (SB-4 only) methods. The samples were sealed in sections of drilling liner or laboratory-provided glass jars, labeled, placed in doubled zip-closure bags, and stored on ice in an insulated cooler. Split samples were also collected in the same manner and also stored on ice in an insulated cooler, per the request of the property owner. Samples were transported to McCampbell Analytical Inc. with chain-of-custody documentation for chemical analysis on a five-day turnaround. Split samples were placed on laboratory hold. All soil samples were analyzed for California Assessment Manual 17 Metals (CAM17) by Environmental Protection Agency (EPA) Method 6010/6020/7470, organochlorine pesticides by EPA Method 8081A, and PCBs by EPA Method 8082. The

sample collected from SB-4 (in the area where waste oil was stored on the 230 Dillon Avenue parcel) was also requested to be analyzed for total petroleum hydrocarbons (TPH) as gasoline, diesel, and motor oil (TPH-G, TPH-D, and TPH-MO) by EPA Method 8015. In addition, the samples from SB-8 and SB-10 through 13 were later also analyzed for TPH-D and TPH-MO in order to evaluate potential TPH impacts in areas of the site historically associated with the storage or use of petroleum hydrocarbons (e.g., diesel fuel, motor oil, or hydraulic oil).

6.3 Collection of Samples for Naturally Occurring Asbestos Analysis

Samples of base rock material (beneath asphalt in paved areas) and surface soil (in unpaved areas) were collected for naturally-occurring asbestos (NOA) analysis at locations SB-1 through SB-12 (see Figure 3). The samples were collected in labeled zip-closure bags and were transported to Forensic Analytical Laboratories under chain-of-custody documentation for NOA analysis by California Air Resources Board (CARB) Method 435. The samples were requested to be combined into four three-point composite samples prior to analysis. Samples SB-1 through SB-3 were composited in order to represent base rock beneath the asphalt driveway leading into the 280/282 Dillon Avenue parcel. Samples SB-4 through SB-6 were composited in order to represent surface soil and gravel on the 230 Dillon Avenue parcel. Samples SB-7 through SB-9 were composited in order to represent surface soil in unpaved areas of the 280/282 Dillon Avenue parcel. Lastly, samples SB-10 through SB-12 were composited in order to represent base rock beneath the asphalt-paved area in the center of the 280/282 Dillon Avenue parcel.

6.4 Soil Analytical Results – Chemical Analyses

Analytical results of soil samples collected from the locations described above indicated elevated concentrations of lead above the Environmental Screening Level (ESL) and California Human Health Screening Level (CHHSL) for residential land use of 80 mg/kg at SB-10 and SB-13. Because the lead concentrations exceeded ten times the soluble threshold leaching characteristic (STLC) hazardous waste criteria, the samples from these locations were re-extracted using the California Waste Extraction Test (WET) and re-analyzed for lead. The results indicated that the STLC concentrations were below the criteria for non-RCRA hazardous waste.

Analytical results of soil samples also indicated elevated concentrations of TPH-D and/or TPH-MO above residential ESLs at locations SB-12 and SB-13. In addition, the organochlorine pesticide, dieldrin, was detected at concentrations above the residential CHHSL at locations SB-8 and SB-13. Lastly, PCBs were detected at concentrations above the residential CHHSL at location SB-13. To confirm the detection of PCBs in this sample, a split sample collected for the property owner was also analyzed, and it also showed PCBs at a concentration above the CHHSL.

In order to delineate the PCB impacts noted at SB-13, additional shallow soil sampling was conducted in the area. A deeper sample from 2 feet bgs was collected at SB-13, and surface samples were collected at five additional locations, SB-14 through SB-18. These samples were analyzed for PCBs, TPH-D and TPH-MO. The results indicated that the elevated concentrations of PCBs are limited to shallow soil within approximately 10 feet of SB-13, and do not appear to extend to deeper soils. Trace concentrations of PCBs (below the laboratory

reporting limit and thus estimated) were detected at locations SB-13 (at 2 feet bgs) and SB-18 (at the surface). The results of TPH analyses of the step-out samples indicated TPH-D and/or TPH-MO above ESLs at SB-14, SB-15, and SB-18. Chemical analytical results are shown on Tables 1 and 2 and laboratory analytical reports are provided in Appendix E.

6.5 Soil Analytical Results – NOA Analyses

Four three-point composite soil samples were collected and submitted for NOA analysis, as described in Section 6.3. The results of the analysis indicated that only a trace percentage (less than 0.25%) of chrysotile-type asbestos was detected in each of the composite samples. Based on the NOA testing results, there are no restrictions on the handling, reuse and/or disposal of the base rock and surface soil material from the site with respect to asbestos content. NOA analytical results are shown on Table 3 and the laboratory analytical report is provided in Appendix E.

7 Test Pits and Exploratory Trenching

Test pits and exploratory trenching were performed at the 280/282 Dillon Avenue parcel in April 2013. Prior to beginning these activities, ENVIRON revised the site-specific HASP to include the new tasks. The locations of test pits and trenches, observations of subsurface soil, and the analytical results of soil samples collected during these activities, are discussed below. Photographs documenting these activities are included in the photographic log presented in Appendix A. Test pit locations are shown on Figure 3, and trench locations are shown on Figure 4.

7.1 Test Pits

A geophysical survey of the 280/282 Dillon Avenue site was performed by JR Associates Inc. in March 2013. The results of the survey indicated 11 metallic anomalies in several locations at the site, which were numbered 1 through 11 on a magnetic contour map provided by JR Associates (Appendix D). On April 3, 2013, Robson Homes' contractor, Phase 3 Communications, used a backhoe to excavate test pits in the locations of the metallic anomalies. ENVIRON observed test pit excavation activities and collected soil samples for laboratory analysis. JR Associates was also on site to scan test pits for additional metallic objects after excavation was performed. Excavated soils were placed on plastic sheeting next to each test pit. After soil samples were collected, test pits were backfilled with the previously excavated soils. Backfilled trenches were compacted by wheel-rolling the backhoe.

7.1.1 Test Pit Locations

The test pits at the metallic anomaly locations were designated as A1 through A3, A5 through A11, and Center, which was advanced between anomaly clusters A1/A4 and A2/A3. The test pit that was used to explore Anomaly 4 was identified as A1, because Anomaly 1 was adjacent to Anomaly 4 and the test pit extended through both anomalies. Test pit locations are shown on Figure 3.

7.1.2 Observations of Test Pits

Metallic objects and debris were encountered in the test pits, with the most concentrated area of metallic debris in test pits A1, A2, A3, and Center, where the debris appeared to consist of rusted can lids, metal pipe, nails, other metal objects, discolored soil (generally dark brown to rust-colored), and glass bottles or fragments in a layer ranging in thickness from approximately six inches to 1.5 feet, and with its maximum depth ranging from six inches below the surface to approximately two to three feet in depth. Similar debris (without can lids) and discolored soil was encountered in test pits A6, A7, and A10, with waste materials and discolored soil at A10 extending to a depth of at least four feet. Test pits A5, A8, A9, and A11 contained objects more closely resembling construction debris such as sheet metal (A5), metal conduit (A8), and concrete fragments with rebar (A9 and A11).

7.1.3 Soil Sampling in Test Pits

Soil samples were collected in order to characterize waste materials and soils that were encountered in the test pits. Soil samples were collected in laboratory-provided glass sample jars. Samples from depths of less than three feet bgs were collected directly into a sample jar,

while samples from depths greater than three feet were collected from the backhoe bucket into a sample jar. In general, one soil sample was collected per pit in order to characterize subsurface soil whether waste materials were or were not present. Waste materials were present in the samples collected from test pits A1, A2, A6, A7, A10, and Center. At test pit A3, instead of a sample characterizing the waste (which had been sampled in nearby pits), a sample of the underlying native soil was collected to assess whether impacts from waste materials in overburden material had affected deeper soil. At test pit A10, where waste materials appeared to extend to a depth of at least four feet, three samples were collected in order to represent the upper portion of the waste, the lower portion of the waste, and native soils beneath the bottom of the waste material. At locations where no waste materials were present, or where waste materials consisted only of construction debris such as concrete and rebar, a sample of soil was collected from the approximate depth at which the construction debris was encountered.

7.1.4 Analysis of Test Pit Soil Samples

The test pit soil samples were analyzed for TPH-D, TPH-MO, OCPs, PCBs, and CAM17 metals by the analytical methods identified in Section 6.2. Analytical results for organics (TPH, OCPs, and PCBs) indicated that soil in most locations was slightly impacted by TPH-D and TPH-MO, with only one location (A10) with results above the ESLs for TPH-D and TPH-MO. OCPs were detected in soil at a number of the test pit locations, but at concentrations that were below the CHHSLs and ESLs for the various compounds. PCBs were not detected in any of the samples collected from the test pit locations.

Analytical results for metals indicated that samples collected from waste material generally exhibited elevated concentrations of arsenic and lead, and in some cases, also cadmium and zinc. The results of soil samples collected from native soil and soil where construction debris was found generally indicated that soil in these areas was not impacted with elevated metals, or was only slightly impacted by metals, with the exception of the sample A9-5, which indicated elevated lead in soil where concrete debris was found.

7.1.5 Leachability Testing and Comparison to Hazardous Waste Criteria

Additional data evaluation and leachability testing was performed on soil samples with elevated concentrations of lead to assess the potential for site soils to exceed the criteria for non-RCRA (California) or RCRA (Federal) hazardous waste.

Samples collected from locations A6 and Center exhibited lead concentrations above the Total Threshold Limit Concentration (TTLC) criteria for non-RCRA hazardous waste, thus soil in these areas exceeds the criteria for non-RCRA hazardous waste.

The lead concentrations in samples collected from A1, A7, and A10 exceeded ten times the numerical value of the soluble threshold limit concentration (STLC) hazardous waste criteria, so the samples from these locations were re-extracted using the California Waste Extraction Test (WET) and re-analyzed for lead. The results indicated that soil at these locations also exceeds the criteria for non-RCRA hazardous waste.

To evaluate the potential for soil to exceed RCRA (federal) hazardous waste criteria, samples from locations A1, A6, A7, A10, and Center were re-extracted using the Toxicity Characteristic Leaching Procedure (TCLP) method and re-analyzed for lead. The TCLP results for lead in the test pit samples did not exceed the criteria for RCRA hazardous waste.

7.2 Exploratory Trenching

Based on the results of the test pits and at the request of Robson Homes, ENVIRON coordinated exploratory trenching and additional soil sampling at the site. The purpose of the exploratory trenching was to define the horizontal and vertical limits of the buried waste at the site.

Trenching and soil sampling activities were conducted over a period of five days between April 18 and April 24, 2013. Trenching was performed by Robson Homes' contractor, Phase 3 Communications, using a backhoe and a skid-steer loader. ENVIRON field personnel were on site during each day of trenching to record trench observations and conduct soil sampling activities. Excavated soils were placed on plastic sheeting with plywood sheets placed on top of the sheeting, in the area adjacent to each trench. Approximately 50 feet of trench was excavated at a time. Prior to excavating the next 50-foot section, the open portion of the trench was backfilled after soil sampling was completed. Backfilled trenches were compacted by wheel-rolling with the backhoe and/or the skid-steer loader. Large pieces of concrete and construction debris (e.g., rebar) that were removed from the trenches were stockpiled on the ground surface rather than being returned to the trenches.

The backhoe and skid-steer shovels were decontaminated before moving from waste-impacted areas into non-impacted areas. Decontamination activities were performed over a bermed, plastic-lined decontamination pad using a steam cleaner, with decontamination liquids captured and containerized in sealed, labeled five-gallon buckets.

7.2.1 Exploratory Trench Locations

Five parallel trenches (T1 through T5) were excavated, spanning the entire site in the northeast-southwest dimension. Trench T1 was situated along the northwestern edge of the site, followed by T2, T3, T4, and T5 situated in parallel lines approximately 25 feet apart. Trenches were advanced to a minimum of approximately 2.5 feet bgs. In areas where waste materials were observed extending beneath that depth, the trench was excavated to the maximum depth of the waste (with a maximum depth cutoff at seven feet due to equipment limitations) and a soil sample collected from native soil beneath the waste material. Trench locations are shown on Figure 4.

7.2.2 Observations of Exploratory Trenches

Waste materials were observed primarily in trenches T1 through T4, with only small amounts of waste materials observed in T5. Concrete fragments (slab and concrete pipe) and other construction debris (rebar, wire, etc.) were observed along T4 at node L, and along T5 at nodes G, K, and P. Observations of soil recorded at each trench sampling node are presented on Table 4.

Trench excavations progressed from the northeastern part of the site to the southwestern part of the site. In the northeastern part of the site, beginning around node L in T2 and T3, the waste material appeared to consist of a thin layer (six inches or less) of dark soil, metal fragments, and glass fragments, beginning a few inches beneath the ground surface. Moving to the southwest, the waste material gradually became thicker and deeper, with the thickest portions (a layer between 1 and 3 feet thick, beginning at a depth of one to two feet bgs) observed along T1 between node B and E, along T2 between nodes G and E and around node B, along T3 between nodes L and J, along T4 between nodes J and H, and along T5 at node K.

Significant deposits of rusted can lids and other metal objects were observed in T2 around nodes G and F, nearby test pits A1 through A3 and Center, where similar materials were observed, as discussed in Section 7.1.2. Waste materials observed in the southwest portion of T1 appeared to continue beneath the paved driveway and beyond the end of the trench. Along T3 between nodes O and P, pieces of white material were observed to a depth greater than seven feet bgs.

The approximate extent of waste materials observed in test pits and trenches is shown by a dashed line on Figure 4.

7.2.3 Soil Sampling in Exploratory Trenches

Soil samples of soil containing waste materials, as well as native soil beneath observed waste materials, were collected into laboratory-provided glass sample jars as described in Section 7.1.3. Samples were collected from each trench at 25 foot intervals. At several locations, additional samples were collected between the established grid nodes if significant changes were observed (e.g., if a waste layer appeared to end, or if waste materials appeared to be significantly different than in adjacent areas). Soil samples were identified by the trench number (T1, T2, T3, etc.), the node letter (A, B, C, etc.), and the depth in feet below ground surface. Samples collected between grid nodes were identified using the two adjacent grid node letters (e.g., location T1-GH was between T1-G and T1-H). Sampling locations are illustrated on Figure 4.

7.2.4 Analysis of Exploratory Trench Soil Samples

The analytical results of exploratory trench soil samples are presented in Table 4. Based on the analytical results of samples collected during the initial soil borings as well as during the test pit investigation, soil samples collected from exploratory trenches were analyzed for arsenic and lead. Samples were analyzed for these metals using EPA Method 6020. Arsenic has residential ESL and CHHSL values that are generally well below the typical natural background concentration for soils in the San Francisco Bay Area; as a result, arsenic concentrations were compared to a value of 11 mg/kg, which for the purposes of this investigation is considered to represent typical natural background concentrations for arsenic. Lead concentrations were compared to its residential ESL and CHHSL value of 80 mg/kg.

Both arsenic and lead were detected in nearly all soil samples, with soil samples collected from waste material layers generally exhibiting elevated concentrations of arsenic and lead above background concentrations and residential screening criteria, respectively. Some soil samples collected from native soil or non-waste-bearing fill material (T1-O, T1-P, T2-A, T2-C, T2-H, T3-

E, T3-J, T3-K, T3-P, T4-E, T4-I, T5-M, and T5-N), also exhibited elevated concentrations of arsenic and/or lead above background concentrations and residential screening criteria, respectively. Elevated metals in soils not containing waste materials may have resulted from leaching of waste materials in nearby areas. Maximum lead and arsenic concentrations by location are presented on Figures 5 and 6, respectively, including a dashed line representing the extent of observed waste materials.

Soil samples collected from T2-K were analyzed for TPH-D and TPH-MO, after field personnel reported a petroleum-like odor and discolored soil at this location. A shallow soil sample was collected from a waste-containing layer at 0.5 feet bgs, and results indicated that TPH-D and TPH-MO were present at concentrations above residential ESLs. A deeper sample was collected from native material at 2.5 feet bgs; the TPH-D and TPH-MO results from the deeper sample were below residential ESLs.

Soil samples collected from T1-B were analyzed for PCBs by EPA Method 8082 because of debris that appeared to contain electrical components. In addition, samples collected from T3-E, T2-A, T2-AB, and T2-B were analyzed for PCBs in order to further delineate PCB impacts detected at soil boring location SB-13, as discussed in Section 6.4. PCBs were detected at trace concentrations below residential ESLs at T2-A-2.5 and T3-E-0.5. Other trench samples analyzed for PCBs indicated no PCB detections.

7.2.5 Leachability Testing and Comparison to Hazardous Waste Criteria

As described in Section 7.1.4, the results of exploratory trench samples were evaluated in comparison to non-RCRA and RCRA hazardous waste criteria. With the exception of a shallow soil sample collected from T3-E, all soil samples with total lead concentrations above hazardous waste criteria were collected from waste-bearing soil layers.

Samples collected from locations T1-B, T1-E, T2-I, T2-K, T2-L, T3-E, and T3-I exhibited lead concentrations above the TTLC criteria for non-RCRA hazardous waste. The shallow sample collected from T4-I was extracted using the STLC procedure and re-analyzed for arsenic and lead due to total concentrations above ten times the numerical value of the applicable STLC hazardous waste criteria. The results indicated an STLC value for arsenic that exceeded non-RCRA hazardous waste criteria. If soil in these areas were to be excavated for offsite disposal, the soil would need to be disposed of as non-RCRA California hazardous waste at an appropriately permitted landfill or waste disposal facility.

To evaluate the potential for lead-impacted soil to exceed RCRA hazardous waste criteria, samples from locations T2-C, T2-I, T2-K, T2-L, and T3-I were re-extracted using the TCLP method and re-analyzed for lead. Samples from T2-I and T2-K exceeded the criteria for RCRA hazardous waste. If soil in these areas were to be excavated for offsite disposal, the soil would need to be disposed of as RCRA hazardous waste at an appropriately permitted landfill or waste disposal facility.

8 Findings, Opinion, and Conclusions

ENVIRON has performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E1527-05, as well as a limited shallow soil investigation, at the property located at 230, 280, and 282 Dillon Avenue in Campbell, California. Any exceptions to, or deletions from, this practice are described in Section 7.3.

8.1 Findings and Opinion

8.1.1 Recognized Environmental Conditions

ENVIRON identified the following “recognized environmental condition[s]” (REC[s]), as defined by ASTM (see Chapter 2.0), in connection with unrestricted residential land use of the property:

- **On-Site Waste Disposal.** Buried waste materials were discovered at the site during excavation of test pits to investigate geophysical anomalies. During subsequent trenching and environmental sampling investigations, discolored soil, concrete, ash, metal debris and other waste materials were discovered buried across the central portion of the site (see Figure 4). Soil samples collected from within the waste debris and adjacent areas had concentrations of lead, arsenic, total petroleum hydrocarbons (TPH) and PCBs above environmental regulatory screening levels for residential land use. In addition, lead concentrations exceeded California Hazardous Waste Levels and Federal Hazardous Waste Levels in several samples.

8.1.2 Significant Data Gap Issues

The ASTM Standard defines a data gap as “a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information.” A data gap is only significant if other information obtained during the ESA, or professional experience, raises reasonable concerns and affects the ability of the environmental professional to identify whether a given issue is a REC. The ASTM Standard requires that the ESA report identify and comment on significant data gaps.

ENVIRON identified no significant data gaps during the course of this assessment.

8.1.3 Other Findings

ENVIRON identified the following additional findings that are not considered RECs based on available information:

- **Clandestine Drug Lab.** The site, specifically the 280/282 Dillon Avenue parcel, was listed on the HAZNET database and the Clandestine Drug Labs (CDL) database. The CDL database listing indicates that the site is a location where an illegal drug lab was operated or drug lab equipment and/or materials were stored. The database listing does not include the date of discovery of the materials, the source of the listing, or any other site-specific information. According to facility personnel, an employee of the roofing company during the 1990s was found to have been preparing small quantities of methamphetamine in a shed behind the pole barn on the 280/282 Dillon Avenue parcel, and was arrested and dismissed from the company. Several glass containers were removed from the site by police at the time of the arrest.

- **Small Fuel Spill 1997.** The HAZNET database listing indicates that contaminated soil was removed from the site for disposal after a site cleanup in 1997. The incident contact is listed as EH Canfield and Sons, which is a trucking company out of Eugene, Oregon. According to facility personnel, the cleanup was conducted after the fuel tank of a delivery truck hit the road curb while exiting the site after delivering wooden roofing materials. A fuel spill of less than 20 gallons of fuel resulted from the truck tank contacting the curb. Emergency services were immediately notified and the soil removal was conducted in order to address contaminated soil resulting from the fuel spill.
- **Historical Commercial Site Use as Storage Yard for Roofing Companies, Portable Outhouse Supplier, and Arborist.** The 280/282 Dillon Avenue parcel was used as a contractor's yard from approximately 1964 through 2007. A portion of this parcel was also used as a yard for a portable outhouse supplier, which leased a section of the yard from the roofing company in the 1970s, 1980s, and early 1990s. In addition, the 230 Dillon Avenue parcel was leased to a hot roofing contractor in the 1980s and 1990s, and to an arborist from approximately 2011-2012 to the present. All of the occupants of the site appear to have used and/or stored relatively small quantities of chemicals, as well as hazardous materials including petroleum-based oils in buildings and/or vehicles on the site. However, there is no indication of past fuel, oil, or chemical storage in underground storage tanks, nor is there any indication of past storage of bulk quantities of fuel, oil, or chemicals.
- **Fuel USTs Historically and Currently Present at City of Campbell Service Center.** Environmental database searches and local agency file reviews indicate that USTs containing gasoline, diesel, and motor oil have been used at the adjacent City of Campbell Service Center. Five USTs are known to have been installed at the site in 1969-1970. Two of the USTs, after their removal in 1987, were the subject of a LUST case. The LUST case was closed in 1999 after soil sampling indicated no detectable residual impacts to soil. The site is currently permitted to operate a double-chambered UST for gasoline and diesel storage, which is equipped with leak monitoring systems and inspected annually. However, no UST removal documentation was available regarding the other three USTs (one gasoline and two waste oil tanks) that were installed in 1969-1970. It is not known if any of those USTs are still in operation or if they have been abandoned or removed. There is no current LUST case at this property. The current superintendent of the City of Campbell Public Works Maintenance Division indicated that there are no other USTs currently in use at the facility.
- **Fuel UST Historically Present at 260 Dillon Avenue**
Environmental database searches and local agency file reviews indicate that a gasoline UST was present at the adjacent property at 260 Dillon Avenue beginning in 1981. The UST was permitted and reported on fire department records through 1997. A 2005 hazardous materials inventory and closure report indicated that all hazardous materials had been removed from the property. However, no UST removal documentation was available for review. There is no current LUST case at this property.

8.1.4 De Minimis Conditions

De minimis conditions are those that do not represent a material risk of harm to public health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies. ENVIRON identified the following *de minimis* conditions related to the site:

- Minor staining on the gravel surface of the 230 Dillon Avenue parcel was observed during the site reconnaissance. The staining appeared to be consistent with minor drips of automotive fluids from vehicles parked in the area.

8.2 Conclusions

ENVIRON has performed this updated Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E 1527, of the facility located at 230, 280, and 282 Dillon Avenue in Campbell, California. Any exceptions to, or deletions from, this practice are described in Section 8.3 of this report. This assessment has revealed evidence of one recognized environmental condition as described in Section 8.1.1.

8.3 Analysis of Data Gaps

Site reconnaissance deviations, deletions, limitations, and exceptions, to the ASTM Standard for the assessment are discussed below.

- Due to extended age of the site, it was not possible to interview representatives dating back to 230 Dillon Avenue's first developed use prior to 1920, at which time a residence was present on the parcel. In addition, it was not possible to interview representatives dating back to 280/282 Dillon Avenue's first developed use between 1939 and 1948, at which time it appears that earthwork related to Los Gatos Creek was being conducted on the parcel. However, ENVIRON conducted interviews with Mr. Mark Bittle and Mr. Tom Reed, both of whom have experience with the site dating back to the 1970s. Other historical resources, environmental database reports, local agency file reviews and a subsurface environmental investigation are considered to be sufficient to gain an adequate understanding of the site history.

None of the exceptions, deletions, deviations, or site reconnaissance limitations noted above are considered to represent significant data gaps.

9 References

9.1 Documents

- BKF Engineers/Surveyors/Planners. 2007. *Topographic Survey, 230 & 280 Dillon Ave., Campbell, Santa Clara County, California*. May 21.
- Civil Engineering Associates (CEA). 2013. *ALTA/ACSM Land Title Survey, 280 Dillon Avenue*. April 17.
- EDR. 2013. *Aerial Photo Decade Package: Inquiry Number 3537772.5*. March 11.
- EDR. 2013. *City Directory, Abstract, Inquiry Number 3537772.6*. March 7.
- EDR. 2013. *Environmental Lien Search, Inquiry Number 3537772.8*. March 8.
- EDR. 2013. *Historical Topographic Map Report, Inquiry Number 3537772.4*. March 7.
- EDR. 2013. *Radius Map, Inquiry Number: 3537772.2r*. March 7.
- EDR. 2013. *Sanborn® Map Report, Inquiry Number 3537772.3*. March 7.
- JCP-LGS Disclosure Reports. 2013. *Residential Property Disclosure Reports, 280 Dillon Avenue, Campbell, Santa Clara County, California*. February 19.
- JR Associates, Inc. 2013. *Magnetic Investigation at 230, 280, and 282 Dillon Avenue, Campbell, California*. March 28.
- Pacific Geotechnical Engineering. 2013. *Geotechnical Investigation, Proposed Residential Development, 230 & 280 Dillon Avenue, Campbell, California*. May 9.

9.2 Interviews

- Mark Bittle. Representative of Site Owner. 2013. Personal interview. March 14.
- Tom Reed. Former Site Employee. 2013. Personal Interview. March 18.
- Alex Mordwinow. Superintendent, City of Campbell Public Works, Maintenance Division. 2013. Personal interview. July 18.

Tables

TABLE 1: METALS IN SOIL - SOIL BORINGS AND TEST PITS
Shallow Soil Investigation
230, 280, and 282 Dillon Avenue, Campbell, California

Sample ID	Depth (feet bgs)	CAM17 Metals EPA Method 6020A/7470																		
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Lead - STLC (mg/L)	Lead - TCLP (mg/L)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SOIL BORING SAMPLES																				
SB-4-0.5	0.5-1.0	0.68	6.8	190	0.74	0.34	60	14	33	26	--	--	0.13	1.6	74	0.7	ND < 0.5	ND < 0.5	55	110
SB-7-0.5	0.5-1.0	ND < 0.5	4	100	ND < 0.5	ND < 0.25	65	15	40	5.3	--	--	ND < 0.05	0.52	73	ND < 0.5	ND < 0.5	ND < 0.5	89	74
SB-8-0.5	0.5-1.0	ND < 0.5	6.9	180	0.62	0.29	52	12	43	31	--	--	0.11	0.83	64	ND < 0.5	ND < 0.5	ND < 0.5	51	95
SB-9-0.5	0.5-1.0	ND < 0.5	4.7	100	ND < 0.5	ND < 0.25	38	8.1	24	7.8	--	--	ND < 0.05	0.89	45	ND < 0.5	ND < 0.5	ND < 0.5	51	56
SB-10-0.5	0.5-1.0	2.8	3.9	1,100	ND < 0.5	0.73	160	13	34	100	3	ND < 0.2	0.15	0.61	180	ND < 0.5	ND < 0.5	ND < 0.5	33	120
SB-11-0.5	0.5-1.0	ND < 0.5	5	86	ND < 0.5	ND < 0.25	170	19	35	27	--	--	0.053	0.67	280	ND < 0.5	ND < 0.5	ND < 0.5	41	82
SB-12-0.5	0.5-1.0	0.62	5.3	140	ND < 0.5	0.33	59	12	34	19	--	--	0.074	0.88	78	ND < 0.5	ND < 0.5	ND < 0.5	53	72
SB-13-0.5	0.5-1.0	0.93	4.5	120	ND < 0.5	0.81	140	15	47	96	3.7	--	0.067	0.7	120	ND < 0.5	ND < 0.5	ND < 0.5	63	160
SB-13-2	2.0-2.5	ND < 0.5	5.8	80	ND < 0.5	ND < 0.25	230	27	25	11	--	--	ND < 0.05	ND < 0.5	520	ND < 0.5	ND < 0.5	ND < 0.5	57	68
SB-14-0.0	0.0-0.5	1.7	6	210	ND < 0.5	2.6	260	19	53	190	--	--	0.15	1.3	290	ND < 0.5	ND < 0.5	ND < 0.5	46	670
SB-15-0.0	0.0-0.5	0.81	2.6	110	ND < 0.5	0.31	200	17	32	38	--	--	0.073	0.8	230	ND < 0.5	ND < 0.5	ND < 0.5	52	100
SB-16-0.0	0.0-0.5	0.91	4.8	120	ND < 0.5	0.62	160	22	38	69	--	--	0.075	0.78	310	ND < 0.5	ND < 0.5	ND < 0.5	31	220
SB-17-0.0	0.0-0.5	0.86	5	79	ND < 0.5	2.1	360	47	58	160	--	--	ND < 0.05	2.1	620	ND < 0.5	ND < 0.5	ND < 0.5	35	2,300
SB-18-0.0	0.0-0.5	3	4.3	190	ND < 0.5	1	210	31	340	450	--	--	0.46	2.6	220	ND < 0.5	ND < 0.5	ND < 0.5	53	450
TEST PIT SAMPLES																				
A1-2 (discolored soil in can lids)	2	ND < 0.5	17	130	ND < 5.0	ND < 2.5	38	13	78	230	13	0.31	ND < 0.5	ND < 0.5	46	ND < 5.0	ND < 5.0	ND < 5.0	42	480
A2-2 (discolored soil in can lids)	2	0.9	7	100	ND < 0.5	ND < 0.25	42	10	31	49	--	--	ND < 0.05	1.3	62	ND < 0.5	ND < 0.5	ND < 0.5	42	90
A3-3 (native soil)	3	0.62	6.9	85	ND < 0.5	ND < 0.25	54	8.4	30	52	--	--	ND < 0.05	0.71	74	ND < 0.5	ND < 0.5	ND < 0.5	48	110
A5-5 (loose fine sand below sheet metal)	5	ND < 0.5	5.2	93	ND < 0.5	ND < 0.25	50	8.9	29	5.8	--	--	ND < 0.05	0.53	55	ND < 0.5	ND < 0.5	ND < 0.5	49	59
A6-3 (discolored soil in waste)	3	4.0	14	180	ND < 0.5	6.7	49	12	83	1100	--	0.54	0.38	1.3	63	ND < 0.5	ND < 0.5	ND < 0.5	32	2,900
A7-5 (discolored soil in waste)	1	1.1	5.1	150	ND < 0.5	1.1	46	9.5	55	140	9.9	ND < 0.2	0.07	0.94	55	ND < 0.5	ND < 0.5	ND < 0.5	46	390
A8-1 (native soil)	2	ND < 0.5	6.5	110	ND < 0.5	0.48	190	25	31	68	--	--	0.066	0.54	310	ND < 0.5	ND < 0.5	ND < 0.5	39	140
A9-5 (native soil near concrete debris)	5	1.1	10	350	0.59	0.59	64	13	78	150	--	--	0.46	0.82	77	0.98	ND < 0.5	ND < 0.5	52	270
A10-2 (discolored soil in waste)	4	5.4	5.5	220	ND < 0.5	5.1	66	9.4	99	260	25	0.27	0.12	1.0	63	1.1	ND < 0.5	ND < 0.5	45	490
A10-4 (discolored soil in waste)	2.5	25	7	550	ND < 0.5	18	57	8.8	290	500	39	1.2	2.0	1.4	60	2.5	0.82	ND < 0.5	32	23,000
A10-5 (native soil)	5	1.9	15	280	ND < 0.5	1.5	53	9.4	34	58	--	--	0.28	1.2	53	0.54	ND < 0.5	ND < 0.5	43	360
A11-4 (native soil near concrete debris)	4	0.98	6.4	120	0.54	0.27	58	12	30	14	--	--	0.19	0.82	83	ND < 0.5	ND < 0.5	ND < 0.5	48	75
Center-2.5	2.5	14	42	320	ND < 5.0	ND < 2.5	39	19	160	1,300	--	0.45	ND < 0.5	ND < 5.0	43	ND < 5.0	ND < 5.0	ND < 5.0	32	1,500
Residential CHHSL		30	0.07	5,200	150	1.7	100,000	660	3,000	80	N/A	N/A	18	380	1,600	380	380	5	530	23,000
Residential ESL		20	0.39	750	4	12	750	0.33	230	80	N/A	N/A	6.7	40	150	10	20	0.78	200	600
STLC (mg/L)		15	5	100	0.75	1	5	80	25	5	5	5	0.2	350	20	1	5	7	24	250
TTLC (mg/kg)		500	500	10000	75	100	2500	8000	2500	1000	N/A	N/A	20	3,500	2000	100	500	700	2400	5,000

Notes:

- Boreholes SB-1 through SB-3, SB-5, and SB-6 were collected only for analysis of naturally occurring asbestos (NOA), see Table 3.
- Gray highlighted cells indicate sample collected from an area of observed buried waste materials
- Green highlighted cells indicate result is above California hazardous waste criteria
- Yellow highlighted cells indicate result exceeds regulatory screening criteria

All samples analyzed by McCampbell Analytical, Incorporated.
Detected compounds are shown in **bold**.
All data are reported in milligrams per kilogram (mg/kg) unless otherwise noted.
-- = not analyzed
bgs = below ground surface
CAM17 = California Assessment Manual 17 metals
CHHSL = California Human Health Screening Level. *Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties.*
California EPA, January 2005. Table 1: CHHSLs for Soil and Comparison to Other Potential Environmental Concerns.
EPA = Environmental Protection Agency
ESL = Environmental Screening Level. RWQCB Screening for Environmental Concerns, February 2013 Update. Table A - Environmental Screening Levels (ESLs), Shallow Soils (<3m), Groundwater is Current or Potential Source of Drinking Water.

ID = identification
ND = not detected at or above laboratory reporting limit shown
STLC = Soluble Threshold Limit Concentration (Title 22 California Hazardous Waste Criteria)
TTLC = Total Threshold Limit Concentration (Title 22 California Hazardous Waste Criteria)

TABLE 2: TOTAL PETROLEUM HYDROCARBONS, ORGANOCHLORINE PESTICIDES, AND PCBs IN SOIL - SOIL BORINGS AND TEST PITS
Shallow Soil Investigation
230-280, and 282 Dillon Avenue, Campbell, California

Sample ID	Depth (feet bgs)	TPH EPA Method 8015			OCPs and PCBs EPA Method 8081A/8082A						
		TPH-G	TPH-D	TPH-MO	p,p-DDD	p,p-DDE	p,p-DDT	Dieldrin	a-Chlordane	g-Chlordane	Total PCBs
SOIL BORING SAMPLES											
SB-4-0.5	0.5-1.0	ND < 1.0	42	360	0.00056 J	0.0020 J	0.0029	ND < 0.00066	ND < 0.02	ND < 0.02	ND < 0.008
SB-7-0.5	0.5-1.0	--	--	--	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.05
SB-8-0.5	0.5-1.0	--	ND < 20	430	0.023	0.074	0.056	0.0038 J	ND < 0.01	ND < 0.01	ND < 0.04
SB-9-0.5	0.5-1.0	--	--	--	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.05
SB-10-0.5	0.5-1.0	--	18	150	0.0016 J	ND < 0.01	ND < 0.01	ND < 0.0033	0.014	0.016	ND < 0.04
SB-11-0.5	0.5-1.0	--	30	420	ND < 0.1	ND < 0.1	ND < 0.1	ND < 0.0033	ND < 0.1	ND < 0.1	ND < 0.4
SB-12-0.5	0.5-1.0	--	80	1,000	0.0072 J	ND < 0.05	ND < 0.05	ND < 0.016	ND < 0.05	ND < 0.05	ND < 0.2
SB-13-0.5	0.5-1.0	--	280	930	0.0053 J	ND < 0.02	0.3	0.020 J	ND < 0.02	ND < 0.02	2.5
SB-13-0.5-SPLIT (dup)	0.5-1.0	--	--	--	--	--	--	--	--	--	4.5
SB-13-2.0	2.0-2.5	--	2.4	6.4	--	--	--	--	--	--	0.011 J
SB-14-0.0	0.0-0.5	--	79	790	--	--	--	--	--	--	ND < 0.011
SB-15-0.0	0.0-0.5	--	85	210	--	--	--	--	--	--	ND < 0.0044
SB-16-0.0	0.0-0.5	--	51	270	--	--	--	--	--	--	ND < 0.0044
SB-17-0.0	0.0-0.5	--	16	210	--	--	--	--	--	--	ND < 0.0044
SB-18-0.0	0.0-0.5	--	190	2,600	--	--	--	--	--	--	0.10 J
TEST PIT SAMPLES											
A1-2 (discolored soil in can lids)	2.0	--	8.7	38	ND < 0.002	ND < 0.002	0.0085	ND < 0.002	ND < 0.002	ND < 0.002	ND < 0.10
A2-2 (discolored soil in can lids)	2.0	--	7.7	40	ND < 0.002	ND < 0.002	0.0032	ND < 0.002	ND < 0.002	ND < 0.002	ND < 0.10
A3-3 (native soil)	3.0	--	2.8	24	ND < 0.002	ND < 0.002	0.002	ND < 0.002	ND < 0.002	ND < 0.002	ND < 0.10
A5-5 (loose fine sand below sheet metal)	5.0	--	3.9	8.1	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.05
A6-3 (discolored soil in waste)	3.0	--	5.3	48	ND < 0.002	ND < 0.002	0.0035	ND < 0.002	ND < 0.002	ND < 0.002	ND < 0.10
A7-5 (discolored soil in waste)	5.0	--	12	120	0.0031	0.0089	0.041	ND < 0.002	0.0032	0.0033	ND < 0.10
A8-1 (native soil)	1.0	--	28	210	0.024	0.054	0.094	ND < 0.010	0.013	0.015	ND < 0.50
A9-5 (native soil near concrete debris)	5.0	--	13	89	0.0075	0.092	0.11	ND < 0.005	0.028	0.03	ND < 0.25
A10-2 (discolored soil in waste)	2.0	--	67	1,000	ND < 0.050	ND < 0.050	0.075	ND < 0.050	ND < 0.050	ND < 0.050	ND < 2.5
A10-4 (discolored soil in waste)	4.0	--	110	1,500	ND < 0.050	0.051	0.28	ND < 0.050	ND < 0.050	ND < 0.050	ND < 2.5
A10-5 (native soil)	5.0	--	25	840	ND < 0.050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 0.0050	ND < 2.5
A11-4 (native soil near concrete debris)	4.0	--	7	110	0.011	0.16	0.1	ND < 0.01	ND < 0.01	ND < 0.01	ND < 0.50
Center-2.5	2.5	--	ND < 1	13	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.001	ND < 0.05
Residential CHHSL		NA	NA	NA	1.6	1.6	1.6	0.035	0.43	0.43	0.089
Residential ESL		83	83	500	1.7	1.7	1.7	0.0023	0.44	0.44	0.22

Notes:

Boreholes SB-1 through SB-3, SB-5, and SB-6 were collected only for analysis of naturally occurring asbestos (NOA), see Table 3.

Only compounds detected above the laboratory reporting limit are included in the table.

Detected compounds are shown in **bold**.

All data are reported in milligrams per kilogram (mg/kg).

-- = not analyzed

bgs = below ground surface

CHHSL = California Human Health Screening Level. *Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties.*

California EPA, January 2005. Table 1: CHHSLs for Soil and Comparison to Other Potential Environmental Concerns.

DDE = dichlorodiphenylethylene

DDT = dichlorodiphenyltrichloroethane

Dup = duplicate split sample

EPA = Environmental Protection Agency

ESL = Environmental Screening Level. RWQCB Screening for Environmental Concerns, February 2013 Update. Table A - Environmental Screening Levels (ESLs), Shallow Soils (<3m), Groundwater is Current or Potential Source of Drinking Water

ID = identification

J = analyte detected below quantitation limits, result is estimated

mg/kg = milligrams per kilogram

ND = not detected at or above laboratory reporting limit shown

OCP = organochlorine pesticide

PCB = polychlorinated biphenyl

TPH = Total Petroleum Hydrocarbons

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel

TPH-MO = Total Petroleum Hydrocarbons as Motor Oil

Gray highlighted cells indicate sample collected from an area of observed buried waste materials.

Yellow highlighted cells indicate result exceeds regulatory screening criteria

TABLE 3: NATURALLY OCCURRING ASBESTOS IN BASE ROCK AND SURFACE SOIL
Shallow Soil Investigation
230, 280, and 282 Dillon Avenue, Campbell, California

Location ID	Composite Sample ID	NOA CARB 435		
		Visual Estimation	% Asbestos in Matrix	Asbestos Type(s) Detected
SB-1	SB-1-2-3	Trace	< 0.25	Chrysotile
SB-2				
SB-3				
SB-4	SB-4-5-6	Trace	< 0.25	Chrysotile
SB-5				
SB-6				
SB-7	SB-7-8-9	Trace	< 0.25	Chrysotile
SB-8				
SB-9				
SB-10	SB-10-11-12	Trace	< 0.25	Chrysotile
SB-11				
SB-12				

Notes:

Samples were composited and analyzed by Forensic Analytical Laboratories.

Results with detected naturally occurring asbestos are shown in **bold**.

CARB 435 = California Air Resources Board Method 435; June 6, 1991.

ID = identification

N/A = Not Applicable

NOA = Naturally Occurring Asbestos

% = percent

TABLE 4: RESULTS OF EXPLORATORY TRENCH SOIL SAMPLES
Shallow Soil Investigation
230, 280, and 282 Dillon Avenue, Campbell, California

Sample ID	Depth (feet bgs)	Arsenic, total	Arsenic, STLC	Lead, total	Lead TCLP	Lead STLC	TPH- Diesel	TPH- Motor Oil	PCBs, total	Trench Log Notes
Trench 1										
T1-B-0.5	0.5	34	--	1,100	--	--	--	--	ND<0.05	Waste layer is at 0.5-1.5'.
T1-B-3.0	3	5.3	--	6.9	--	--	--	--	ND<0.05	
T1-C-1.5	1.5	14	--	380	--	--	--	--	--	Faint waste layer at node C. Continuous waste layer present 1.5-2' between nodes C and D. White material observed between nodes B and C.
T1-C-3.0	3	7.4	--	15	--	--	--	--	--	
T1-D-0.5	0.5	9.6	--	59	--	--	--	--	--	Concrete pipe fragments, glass 0-1'. Intermittent rusty waste layer between nodes D and E.
T1-D-2.5	2.5	5.5	--	11	--	--	--	--	--	
T1-E-1.5	1.5	51	--	1,100	--	--	--	--	--	Concrete obstruction at 2' and deeper. Approximately 5' wide. Waste between nodes D and E. Starts as a rusty layer 0-1', deepening towards T2. After concrete block, melted bottles, metal fragments, depth from 1' to 2' deep. Native below.
T1-E-3.0	3	5.2	--	7.3	--	--	--	--	--	
T1-F-0.5	0.5	3.3	--	4.3	--	--	--	--	--	No waste observed.
T1-F-2.5	2.5	6.3	--	5.8	--	--	--	--	--	
T1-G-2.5	2.5	4.9	--	5.8	--	--	--	--	--	No waste observed.
T1-GH-0.5	0.5	6.2	--	45	--	--	--	--	--	4" black soil layer under asphalt.
T1-GH-2.5	2.5	6.2	--	6.3	--	--	--	--	--	
T1-H-0.5	0.5	5.6	--	35	--	--	--	--	--	No waste observed.
T1-H-2.5	2.5	5.5	--	5.3	--	--	--	--	--	
T1-I-0.5	0.5	6.1	--	210	--	--	--	--	--	Discontinuous tar-like layer approximately 0.5-1' depth. Only about 1-2" thick. 0.5' sample characterization.
T1-I-2.5	2.5	6.2	--	7.4	--	--	--	--	--	
T1-J-0.5	0.5	6.7	--	13	--	--	--	--	--	Between nodes I and J, gravel deposit observed ~3' deep, 4-5' long along trench, starts at 1' depth. No waste observed at node J.
T1-J-2.5	2.5	4.6	--	11	--	--	--	--	--	
T1-K-0.5	0.5	4.8	--	22	--	--	--	--	--	No waste observed.
T1-K-2.5	2.5	6.1	--	6.9	--	--	--	--	--	
T1-L-0.5	0.5	5	--	32	--	--	--	--	--	No waste observed.
T1-L-2.5	2.5	4.1	--	4.7	--	--	--	--	--	
T1-M-0.5	0.5	5.3	--	64	--	--	--	--	--	No waste observed.
T1-M-2.5	2.5	4.7	--	5.2	--	--	--	--	--	
T1-N-0.5	0.5	4.5	--	7	--	--	--	--	--	No waste observed.
T1-N-2.5	2.5	4.3	--	2.6	--	--	--	--	--	
T1-O-0.5	0.5	5.5	--	7.1	--	--	--	--	--	No waste observed.
T1-O-2.5	2.5	5.9	--	260	--	--	--	--	--	
T1-P-0.5	0.5	8.7	--	100	--	--	--	--	--	No waste observed.
T1-P-2.5	2.5	4.2		5	--	--	--	--	--	

TABLE 4: RESULTS OF EXPLORATORY TRENCH SOIL SAMPLES
Shallow Soil Investigation
230, 280, and 282 Dillon Avenue, Campbell, California

Sample ID	Depth (feet bgs)	Arsenic, total	Arsenic, STLC	Lead, total	Lead TCLP	Lead STLC	TPH- Diesel	TPH- Motor Oil	PCBs, total	Trench Log Notes
Trench 2										
T2-A-0.5	0.5	6.2	--	150	--	--	--	--	ND<0.05	No waste observed.
T2-A-2.5	2.5	7.3	--	610	0.28	--	--	--	0.21	
T2-AB-5.0	5	4.9	--	7.3	--	--	--	--	ND<0.05	~2-2.5' think layer of debris, glass, metal (~2-4.5' deep), sample taken approximately 1' below deepest deposit of debris in native soil.
SB-16	0-0.5	4.8	--	69	--	--	--	--	--	
T2-B-0.5	0.5	18	--	340	--	--	--	--	ND<0.05	Thin, dark and rusty layer ~0.5-1.5'
T2-B-2.5	2.5	4	--	5.4	--	--	--	--	ND<0.05	
SB-15	0-0.5	2.6	--	38	--	--	--	--	--	
T2-C-0.5	0.5	15	--	780	ND<0.2	--	--	--	--	No waste observed.
T2-C-2.5	2.5	5	--	8.1	--	--	--	--	--	
T2-D-0.5	0.5	3.7	--	50	--	--	--	--	--	No waste observed.
T2-D-2.5	2.5	4.8	--	6.7	--	--	--	--	--	
T2-E-0.5	0.5	2.7	--	87	--	--	--	--	--	Waste still at ~2-3', glass, metal, pipe sections, bottles. At E, waste layer getting thinner and shallower (Grayish + brick color layer at 0.5)
T2-E-2.5	2.5	4.5	--	45	--	--	--	--	--	
T2-F-0.5	0.5	8.3	--	150	--	--	--	--	--	Clean sand at 4'. Rusty layer 2'-3'.
T2-F-4.0	4	NA	--	8.1	--	--	--	--	--	
A2-2	2	7	--	49	--	--	--	--	--	Discolored soil in can lids.
A3-3	3	6.9	--	52	--	--	--	--	--	Native soil.
T2-FG-4.5	4.5	5.9	--	12	--	--	--	--	--	Native, approximately 1' below deepest deposit of can lids/debris
T2-G-0.5	0.5	10	--	540					--	In between nodes F and G begin ~2-2.5' thick layer of can lids/debris, black, rusty soil (impacted area start at ~1' depth).
T2-G-2.5	2.5	5.2	--	9.6					--	
T2-H-0.5	0.5	6.8	--	390	--	--	--	--	--	No waste observed.
T2-H-2.5	2.5	5.1	--	7.4	--	--	--	--	--	
T2-I-0.5	0.5	10	--	2500	8.1	--	--	--	--	~5-6" layer of dark material with glass and metal debris between 0.5-1.0. Below still appears clear.
T2-I-2.5	2.5	4.8	--	6.5	--	--	--	--	--	
T2-J-0.5	0.5	4.5	--	12	--	--	--	--	--	Thin dark and rusty layer ~5-6" beneath asphalt.
T2-J-2.5	2.5	4	--	5.6	--	--	--	--	--	
T2-K-0.5	0.5	5.5	--	1100	12	--	170	1700	--	Approximately 6" NE of node K, waste appears as ~5-6" layer a few inches beneath asphalt. Dark and rusty with glass, metal, tar. PID: ND
T2-K-2.5	2.5	6	--	7.4	--	--	3.1	5.8	--	
T2-L-0.5	0.5	12	--	1000	1.9	--	--	--	--	Thin dark layer with glass, metal pieces, metal shavings, approximately 3" thick beneath asphalt. Begins right at node. Appears discontinuous.
T2-L-2.5	2.5	4.2	--	4.9	--	--	--	--	--	
T2-M-0.5	0.5	5.7	--	10	--	--	--	--	--	No waste observed.
T2-M-2.5	2.5	5.6	--	7.3	--	--	--	--	--	
T2-N-0.5	0.5	5.4	--	13	--	--	--	--	--	No waste observed.
T2-N-2.5	2.5	3.2	--	5.5	--	--	--	--	--	
T2-O-0.5	0.5	8	--	12	--	--	--	--	--	No waste observed.
T2-O-2.5	2.5	5.1	--	5.9	--	--	--	--	--	
T2-P-0.5	0.5	7.5	--	78	--	--	--	--	--	No waste observed.
T2-P-2.5	2.5	4.1		6.7	--	--	--	--	--	

TABLE 4: RESULTS OF EXPLORATORY TRENCH SOIL SAMPLES
Shallow Soil Investigation
230, 280, and 282 Dillon Avenue, Campbell, California

Sample ID	Depth (feet bgs)	Arsenic, total	Arsenic, STLC	Lead, total	Lead TCLP	Lead STLC	TPH- Diesel	TPH- Motor Oil	PCBs, total	Trench Log Notes
Trench 3										
SB-13-0.5	0.5	4.5	--	96	--	--	--	--	--	
SB-13-2	2	5.8	--	11	--	--	--	--	--	
T3-E-0.5	0.5	5.8	--	1,100	--	--	--	--	0.17	
T3-E-2.5	2.5	5.2	--	6	--	--	--	--	--	No waste observed.
T3-F-0.5	0.5	6.5	--	170	--	--	--	--	--	
T3-F-2.5	2.5	3.2	--	5	--	--	--	--	--	Thin dark rusty layer 0.5-1.5'. No debris observed.
T3-G-0.5	0.5	5	--	180	--	--	--	--	--	
T3-G-2.5	2.5	11	--	51	--	--	--	--	--	Thin dark rusty layer 0.5-1.5'. No debris observed.
A1-2	2	17	--	230	--	--	--	--	--	Discolored soil in can lids.
Center-2.5	2.5	42	--	1,300	--	--	--	--	--	Discolored soil layer with corroded metal fragments
T3-H-0.5	0.5	11	--	210	--	--	--	--	--	
T3-H-2.5	2.5	7.9	--	59	--	--	--	--	--	Thin dark layer 0.5-1.5', debris, metal, can lids.
T3-I-0.5	0.5	24	--	310	--	--	--	--	--	
T3-I-2.5	2.5	12	--	2,100	0.8	--	--	--	--	Thin layer of debris 0.5-1.5' with metals, glass, wires
T3-J-0.5	0.5	6.2	--	97	--	--	--	--	--	
T3-J-2.5	2.5	5.7	--	86	--	--	--	--	--	No waste observed.
T3-KJ-5.0	5	6.3	--	170	--	--	--	--	--	~2-4' layer of metals, glass, plastics, wire. Ends ~2/3 of the way from K to J.
T3-K-0.5	0.5	5	--	100	--	--	--	--	--	
T3-K-2.5	2.5	7.4	--	19	--	--	--	--	--	No waste observed.
T3-L-0.5	0.5	10	--	42	--	--	--	--	--	
T3-L-5.0	2.5	5.8	--	120	--	--	--	--	--	~2' thick layer of metals, glass, debris at ~3' deep.
T3-M-0.5	0.5	5.5	--	13	--	--	--	--	--	
T3-M-2.5	2.5	6.5	--	5.6	--	--	--	--	--	No waste observed.
T3-N-0.5	0.5	5.8	--	21	--	--	--	--	--	
T3-N-2.5	2.5	5	--	6.8	--	--	--	--	--	No waste observed.
T3-O-0.5	0.5	5.1	--	7.9	--	--	--	--	--	
T3-O-2.5	2.5	4.4	--	5.3	--	--	--	--	--	No waste observed.
T3-OP-7.0	7	6.1	--	81	--	--	--	--	--	Interspersed layers of white rock, dissolves in hand when pressure applied. Trenched to 7' and white still present.
T3-P-0.5	0.5	9.7	--	93	--	--	--	--	--	
T3-P-2.5	2.5	22	--	66	--	--	--	--	--	No waste observed.

TABLE 4: RESULTS OF EXPLORATORY TRENCH SOIL SAMPLES
Shallow Soil Investigation
230, 280, and 282 Dillon Avenue, Campbell, California

Sample ID	Depth (feet bgs)	Arsenic, total	Arsenic, STLC	Lead, total	Lead TCLP	Lead STLC	TPH- Diesel	TPH- Motor Oil	PCBs, total	Trench Log Notes
Trench 4										
T4-E-0.5	0.5	4.4	--	210	--	--	--	--	--	No waste observed.
T4-E-2.5	2.5	7.4	--	88	--	--	--	--	--	
T4-F-0.5	0.5	5.5	--	49	--	--	--	--	--	Thin dark rusty layer 0.5-1.0'.
T4-F-2.5	2.5	6.5	--	200	--	--	--	--	--	
T4-G-0.5	0.5	4.8	--	73	--	--	--	--	--	Thin layer of white and rusty colored soil 0.5-1.0'.
T4-G-2.5	2.5	4.8	--	8.4	--	--	--	--	--	
T4-H-0.5	0.5	7.4	--	27	--	--	--	--	--	Thin layer of brick pieces 0.5-2'.
T4-H-2.5	2.5	6.8	--	91	--	--	--	--	--	
T4-I-0.5	0.5	4.3	--	550	--	--	--	--	--	No waste observed.
T4-I-2.5	2.5	100	5.6	120	--	3.6	--	--	--	
T4-J-0.5	0.5	3.9	--	37	--	--	--	--	--	Start thin dark, rusty layer at 0.5-1.5' with debris, metals, brick.
T4-J-2.5	2.5	5.6	--	51	--	--	--	--	--	
T4-K-0.5	0.5	6.5	--	25	--	--	--	--	--	No waste observed.
T4-K-2.5	2.5	4.3	--	11	--	--	--	--	--	
T4-L-0.5	0.5	69	--	28	--	--	--	--	--	No waste observed.
T4-L-2.5	2.5	7.8	--	20	--	--	--	--	--	
T4-N-0.5	0.5	9.3	--	36	--	--	--	--	--	No waste observed.
T4-N-2.5	2.5	7.7	--	41	--	--	--	--	--	
T4-O-0.5	0.5	6.8	--	40	--	--	--	--	--	No waste observed.
T4-O-2.5	2.5	5.3	--	14	--	--	--	--	--	
T4-P-0.5	0.5	7.3	--	18	--	--	--	--	--	No waste observed.
T4-P-2.5	2.5	9.2	--	30	--	--	--	--	--	
Trench 5										
T5-F-0.5	0.5	4.9	--	76	--	--	--	--	--	No waste observed.
T5-F-2.5	2.5	6.5	--	73	--	--	--	--	--	
T5-G-0.5	0.5	4.2	--	16	--	--	--	--	--	Found pieces of pipe, does not appear continuous, seems similar to chunks of concrete found near node P. No other debris observed.
T5-G-2.5	2.5	8.2	--	25	--	--	--	--	--	
T5-H-0.5	0.5	6.6	--	41	--	--	--	--	--	No waste observed.
T5-H-2.5	2.5	6.2	--	59	--	--	--	--	--	
T5-I-0.5	0.5	4.7	--	93	--	--	--	--	--	Thin layer of bricks, insulations, wires, debris 1.5-2'.
T5-I-2.5	2.5	6	--	53	--	--	--	--	--	
T5-J-0.5	0.5	6.3	--	9.4	--	--	--	--	--	No waste observed.
T5-J-2.5	2.5	7.3	--	59	--	--	--	--	--	
T5-K-0.5	0.5	18	--	21	--	--	--	--	--	Layer of debris, glass, brick, wires, concrete 1.5-4'.
T5-K-4.5	4.5	5.8	--	93	--	--	--	--	--	
T5-L-0.5	0.5	7.5	--	24	--	--	--	--	--	No waste observed.
T5-L-2.5	2.5	5.5	--	25	--	--	--	--	--	
T5-M-0.5	0.5	5.5	--	80	--	--	--	--	--	No waste observed.
T5-M-2.5	2.5	7.3	--	32	--	--	--	--	--	
T5-N-0.5	0.5	8.7	--	51	--	--	--	--	--	No waste observed.
T5-N-2.5	2.5	10	--	100	--	--	--	--	--	
T5-O-0.5	0.5	6.8	--	22	--	--	--	--	--	Thin layer white rock 0.5-1.5'.
T5-O-2.5	2.5	6.4	--	39	--	--	--	--	--	
T5-P-0.5	0.5	15	--	83	--	--	--	--	--	Several large pieces of concrete below surface.
T5-P-2.5	2.5	12	--	120	--	--	--	--	--	

TABLE 4: RESULTS OF EXPLORATORY TRENCH SOIL SAMPLES
Shallow Soil Investigation
230, 280, and 282 Dillon Avenue, Campbell, California

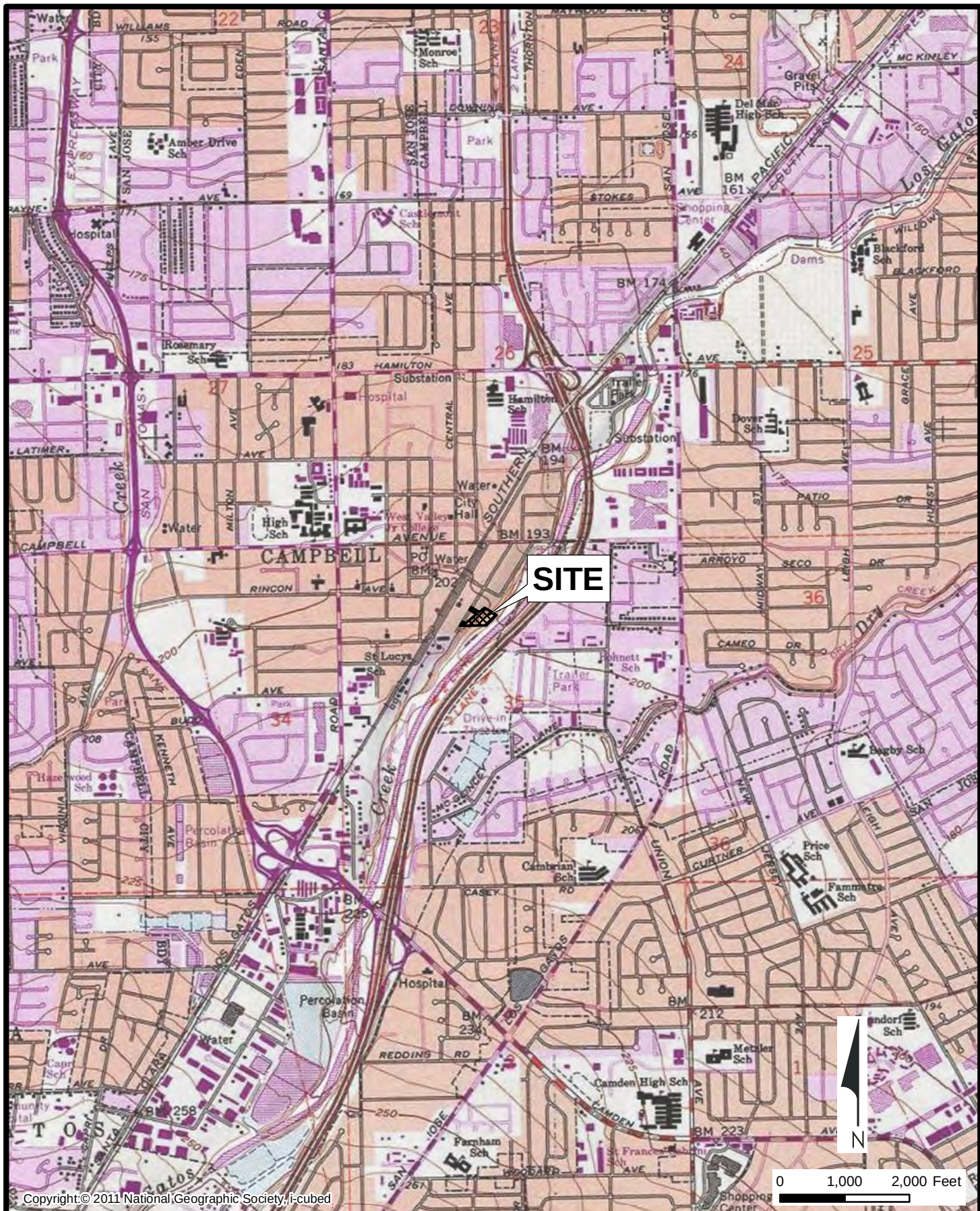
Sample ID	Depth (feet bgs)	Arsenic, total	Arsenic, STLC	Lead, total	Lead TCLP	Lead STLC	TPH- Diesel	TPH- Motor Oil	PCBs, total	Trench Log Notes
Residential CHHSL		0.07	--	80	N/A	N/A	NA	NA	0.089	
Residential ESL		0.39	--	80	N/A	N/A	83	500	0.22	
STLC (mg/L)		5	--	5	5	5	--	--	--	
TTLC (mg/kg)		500	--	1000	N/A	N/A	--	--	--	

Notes:
Results of selected samples from soil borings (e.g., SB-13) and test pits (e.g., A2-2) are included when these locations were at or nearby trench nodes (trench node samples not collected)

	Gray highlighted cells indicate sample collected from an area of observed buried waste materials and/or discolored soil
	Beige highlighted cells indicate waste materials, discolored soil, or construction debris observed at or near this location
	Green highlighted cells indicate result is above California hazardous waste criteria
	Orange highlighted cells indicate result is above Federal hazardous waste criteria
	Yellow highlighted cells indicate result exceeds regulatory screening criteria

All samples analyzed by McCampbell Analytical, Incorporated.
Detected compounds are shown in **bold**.
All data are reported in milligrams per kilogram (mg/kg) unless otherwise noted.
-- = not analyzed
bgs = below ground surface
CAM17 = California Assessment Manual 17 metals
CHHSL = California Human Health Screening Level. *Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties.*
California EPA, January 2005. Table 1: CHHSLs for Soil and Comparison to Other Potential Environmental Concerns.
EPA = Environmental Protection Agency
ESL = Environmental Screening Level. RWQCB Screening for Environmental Concerns, February 2013 Update. Table A - Environmental Screening
Levels (ESLs), Shallow Soils (<3m), Groundwater is Current or Potential Source of Drinking Water.
ID = identification
ND = not detected at or above laboratory reporting limit shown
STLC = Soluble Threshold Limit Concentration (Title 22 California Hazardous Waste Criteria)
TTLC = Total Threshold Limit Concentration (Title 22 California Hazardous Waste Criteria)

Figures



Site Location Map
230, 280, and 282 Dillon Avenue
Campbell, California

Figure

1

Drafter: RS

Date: 6/18/2013

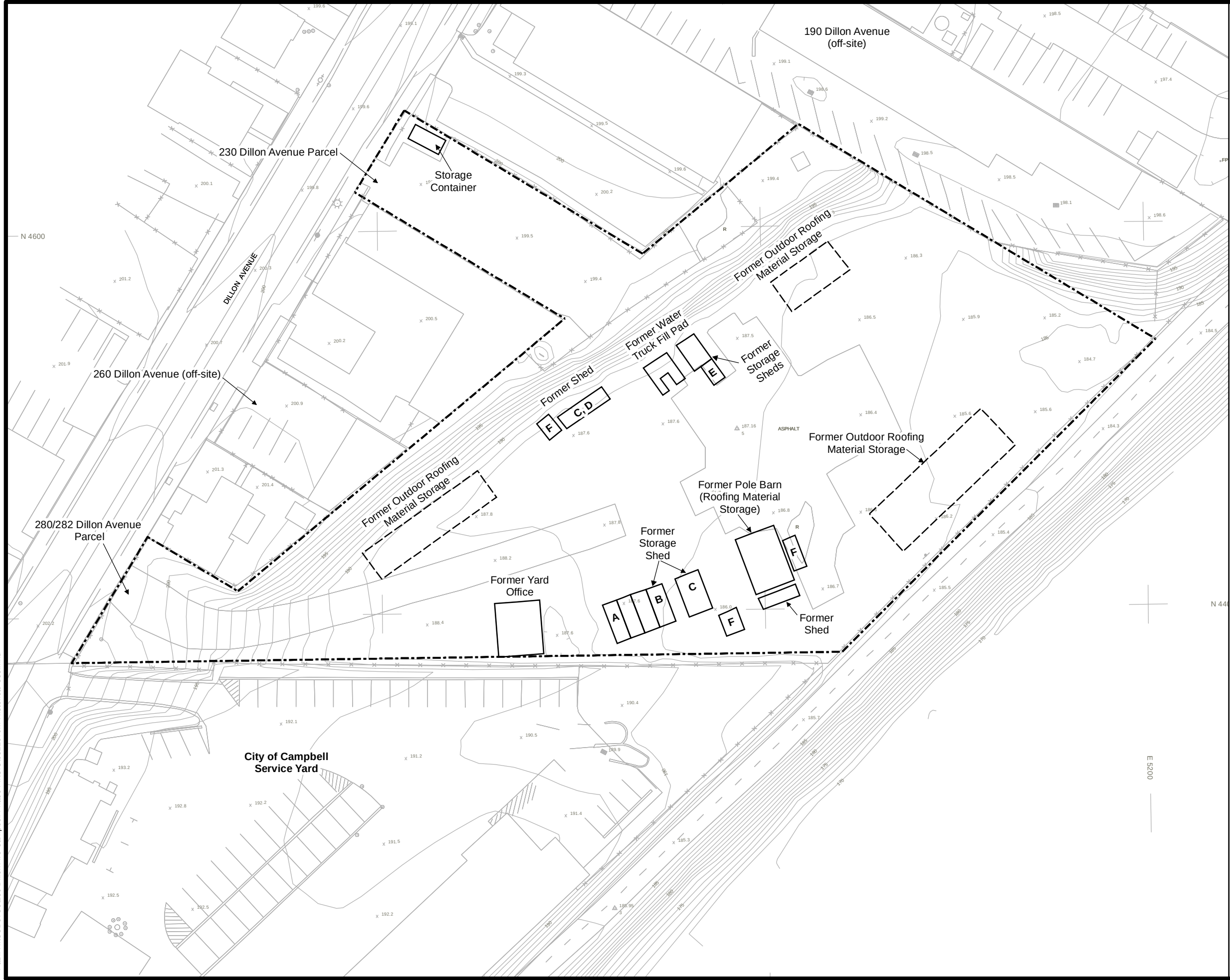
Contract Number:

03-21676M

Approved:

Revised:

Path: H:\SCDev\Co280 Dillon Ave Campbell Phase I\GIS\0321676m-Historical Use.mxd



Historical Usage Areas:

- A. Paint Storage
- B. Shingle Oil Storage
- C. Motor Oil Storage
- D. Hydraulic Oil Storage
- E. Welding Area
- F. Propane Tanks

Notes:

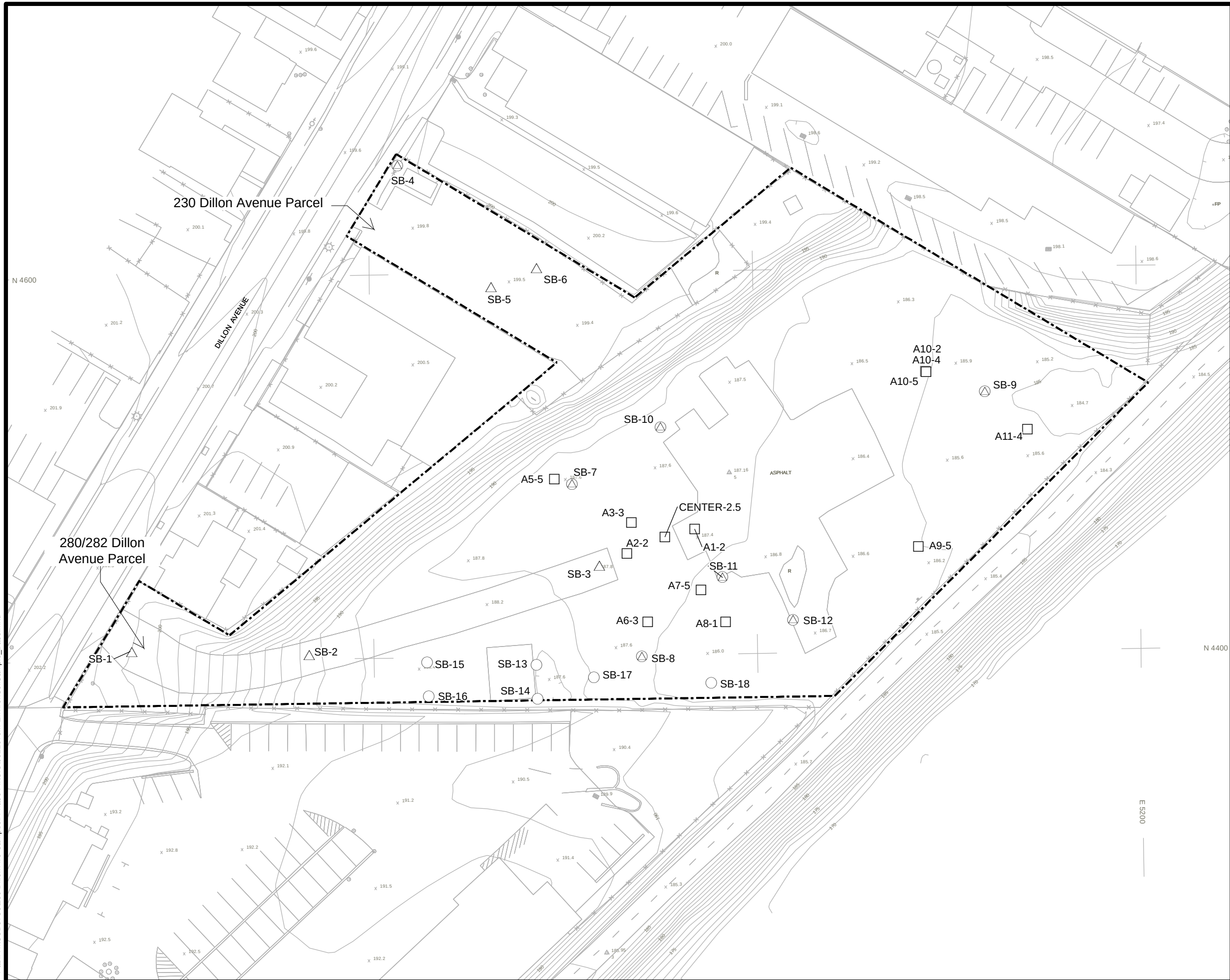
1. All former site buildings have been removed, except a platform at the former yard office.
2. Locations are approximate. Based on a 1994 map of former roofing contractor yard, reviewed at Santa Clara County Fire Department.



Historical Site Features
230, 280, and 282 Dillon Avenue
Campbell, California

Date: 7/17/2013	Contract Number: 03-21676M	Figure 2
Drafter: RS	Approved: Revised:	

Path: H:\SCDev\Co280 Dillon Ave Campbell Phase I\GIS\0321676m-Environ\SoilSample_Base.mxd



Legend

- △ Baserock Sampling Location
- ⊕ Baserock and Soil Sampling Location
- Soil Sampling Location
- Test Pit Sampling Location



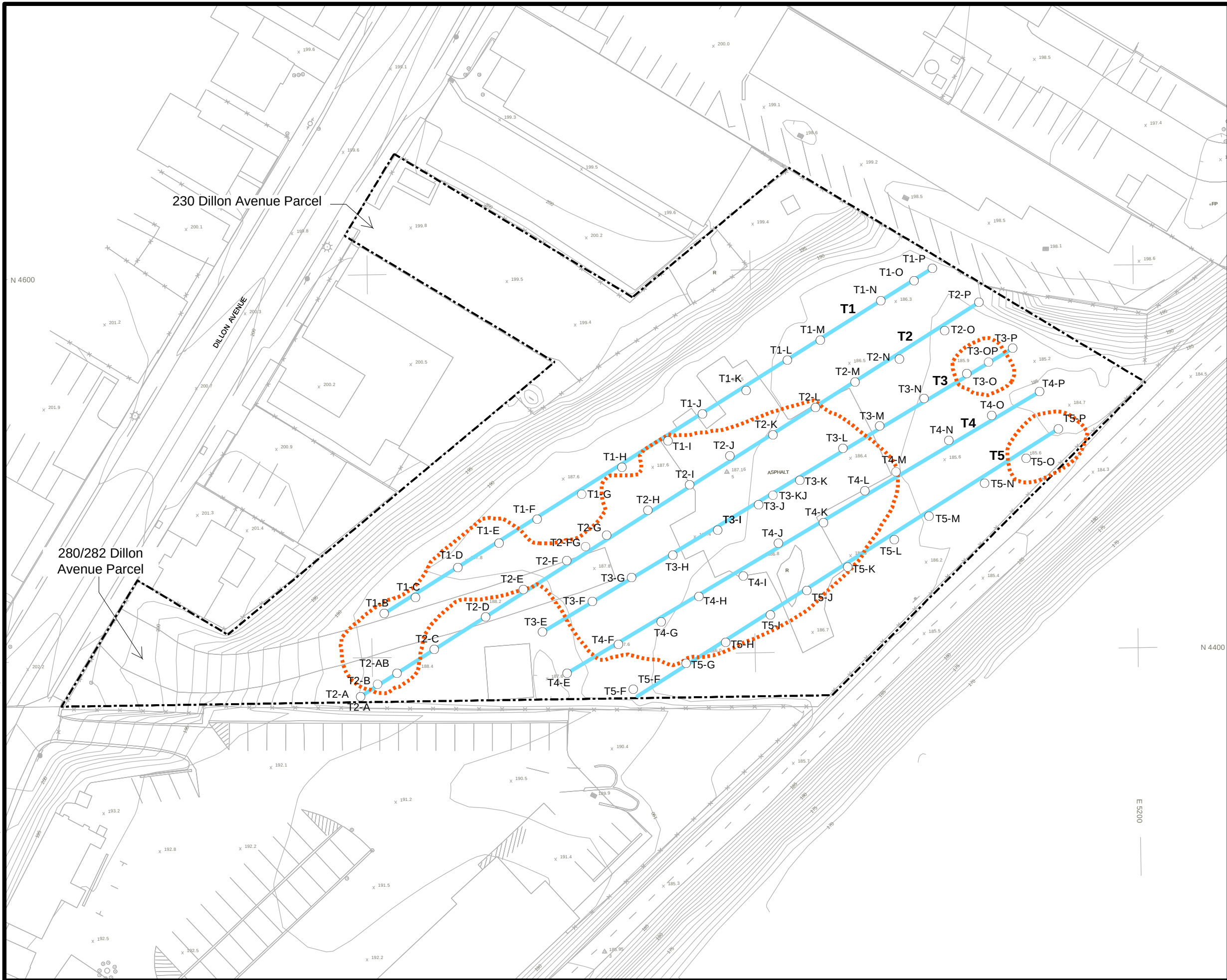
Soil Boring and Test Pit Sampling Locations
230, 280, and 282 Dillon Avenue
Campbell, California

Date: 05/03/13	Contract Number: 03-21676M	
Drafter: RS	Approved:	Revised:

Figure

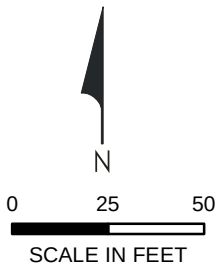
3

Path: H:\SCDevCo\280 Dillon Ave Campbell Phase I\GIS\0321676m-Trench Map.mxd



Legend

- Soil Sampling Locations
- Waste Areas
- Trenches



Trenching Soil Sampling Locations and Distribution of Observed Waste Materials
230, 280, and 282 Dillon Avenue
Campbell, California

Date: 05/03/13	Contract Number: 03-21676M	
Drafter: RS	Approved:	Revised:

Figure

4

ATTACHMENT 8

PHASE I ENVIRONMENTAL SITE ASSESSMENT AND SUBSURFACE SOIL INVESTIGATION

(190 DILLON AVE.)



**Phase I Environmental
Site Assessment
and Subsurface Soil Investigation**

190 Dillon Avenue
APN 412-08-037
Campbell, CA

Prepared for:

**Robson Homes, LLC
San Jose, CA**

Prepared by:

**ENVIRON International Corporation
Emeryville, CA**

Date:

June 2014

Project Number:

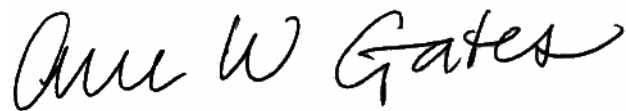
03-21676P



Signature and Environmental Professional Statement

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR §312.10.

Further, I have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

A handwritten signature in black ink that reads "Anne W. Gates". The signature is written in a cursive, flowing style.

Anne W. Gates, P.E.

ENVIRON International Corporation
2200 Powell Street, Suite 700
Emeryville, CA

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	C.5: Environmental Lien Search
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1 Summary of Conclusions

ENVIRON International Corporation (ENVIRON) was retained by Robson Homes, LLC (“Robson Homes”) to perform a Phase I and limited Phase II Environmental Site Assessment (ESA) of the property located at 190 Dillon Avenue (APN 412-08-037) in Campbell, California (herein referred to as the “site” or the “property”). ENVIRON’s assessment was conducted in connection with the purchase of the property. The ESA described in this report was performed in general conformance with the scope and limitations of the ASTM International’s *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* E-1527-05 (the “ASTM Standard”), as stated in Chapter 2.0 (Introduction). Any exceptions to, or deletions from, this practice are described in Section 8.3 of this report.

1.1 Recognized Environmental Conditions

ENVIRON did not identify any “recognized environmental condition[s]” (REC[s]), as defined by ASTM (see Chapter 2.0), in connection with residential use of the property.

1.2 Significant Data Gaps

The ASTM Standard defines a data gap as “a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information.” A data gap is only significant if other information obtained during the ESA, or professional experience, raises reasonable concerns and affects the ability of the environmental professional to identify whether a given issue is a REC. The ASTM Standard requires that the ESA report identify and comment on significant data gaps.

ENVIRON did not identify any significant data gaps during the course of this assessment and based on the information collected to date, no further investigation of the property is needed at this time.

1.3 Other Findings

ENVIRON identified the following additional findings that are not considered RECs based on available information:

- **Underground Storage Tank Removals at the Site.** The GeoTracker database and EDR database report indicate that the site is listed on the Leaking Underground Storage Tank (LUST), Historical LUST, and Historical Cortese databases. In 1989, a 1,000-gallon gasoline underground storage tank (UST) and a 500-gallon paint thinner UST were removed from the portion of the site that is adjacent to the shoring wall along the southwestern boundary of the site. Following over-excavation of tank pits, soil samples were collected under the oversight of the City of Campbell Fire Department. Low concentrations of xylene (up to 56 ppm) were detected in two of the soil samples, while benzene, toluene, ethylbenzene, and total petroleum hydrocarbons (TPH) were not detected. Three soil borings were also advanced in the area to depths up to 45 feet and groundwater was not encountered. Benzene, toluene, ethylbenzene, and xylenes (BTEX) and TPH were not detected in the soil samples analyzed from the soil borings. The site was granted a case closure letter on November 30, 1990 by the California Regional Water Quality Control Board (RWQCB) - San Francisco Bay Region.

- **Motor Oil Spill at the Site.** The property owner, through Robson Homes, provided documentation related to the dumping of approximately 2 quarts of motor oil into a former storm drain sump at the site by an employee of Chimney Jack Construction in August 1991. Chimney Jack Construction occupied Unit H at 190 Dillon Avenue at the time of the dumping. Correspondence indicates that the approximately 2 quarts of oil were removed from the sump and stored in a 55-gallon drum before being disposed of by a licensed hazardous material disposal company, as ordered by the Fire Department. Gen-Tech Environmental (Gen-Tech) was hired by the property owner to assess the impacts of the dumping. In a report dated January 21, 1992, Gen-Tech opined that the site poses no further threat to soil or groundwater based on the prompt cleanup of the spill. No further documentation from the property owner, Gen-Tech, or the Fire Department was obtained by ENVIRON and the matter is considered resolved.
- **Elevated Arsenic, p,p-DDE and PCBs Concentrations in Shallow Soil Samples.** The results of shallow soil sampling at the site reported elevated arsenic and p,p-DDE concentrations in soil boring SB-17, located near the southeastern-most storm water catch basin in the asphalt parking lot. An elevated concentration of PCBs was also found in soil boring SB-4. Results of additional sampling performed at nearby locations reported arsenic concentrations within typical background levels, p,p-DDE at concentrations below regulatory screening levels and PCBs not detected. Therefore, the elevated arsenic and 4,4-DDE concentration at SB-17 and elevated PCBs concentration at SB-4 are considered localized anomalies.

De minimis conditions, as defined in Chapter 2.0, along with other site conditions observed during the site visit, are discussed within relevant sections of this report and are summarized in Chapter 8.0.

2 Introduction

2.1 Purpose

ENVIRON was retained by Robson Homes, LLC to conduct a Phase I ESA and subsurface soil investigation of the property located at 190 Dillon Avenue (APN 412-08-037) in Campbell, California. ENVIRON's assessment was conducted in connection with the purchase of the property. The purpose of the assessment was to identify RECs, which are defined in the ASTM Standard as:

“The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.”

2.2 Scope of the Phase I ESA

ENVIRON completed the following tasks, consistent with the ASTM Standard, during its Phase I ESA of the property:

- A visit to the site by Dan Clark of ENVIRON on August 1, 2013 and Elise Post of ENVIRON on August 7, 2013 to observe the features of the site and to identify the uses and conditions specified in the ASTM Standard. Jason Kane of ENVIRON conducted a follow-up site visit on June 12, 2014 to observe any changes to the features, uses, and/or conditions of the site since ENVIRON's previous site visits in August 2013. In addition, ENVIRON observed the adjoining properties from the site or adjacent public thoroughfares. Photographs taken during the site visits are presented in Appendix A.
- Interviews during the site visits with the representatives of the following businesses (unit location and year of initial occupancy at the site, if known, indicated in parentheses): RB Tool Precision Machining, (Unit A, 2004); Ken's Solar and Pool Service (Unit B, 2003); Lynch Co. Services (Unit C, 2012); TP Construction (Unit D, initial occupancy date unavailable); D&J Pest Control (Unit E, 1988); Reed's Recording (Unit I, initial occupancy date unavailable). The aforementioned businesses are referred to herein as “current site tenants”. The current site tenants interviewed by ENVIRON were identified as having good knowledge of the uses and physical characteristics of the site.
- A telephone interview on August 22, 2013 with the property owner, Terrance Wolf.
- A review of a search of environmental regulatory agency database records conducted by Environmental Data Resources, Inc. (EDR) on May 20, 2014 for the site and off-site properties in the vicinity of the site. The search was conducted as part of a similar ESA conducted for Robson Homes at adjacent and nearby properties (466, 472, 482, and 488

Sam Cava Lane). A copy of the EDR radius report is included as Appendix B. The databases and the radius searched for each database were selected in accordance with the ASTM Standard and are identified in the EDR database report. The dates of the most recent updates of the environmental databases are also listed in the database report.

- A review of the EDR Environmental Lien Search Reported dated August 12, 2013 to identify environmental liens or activity use limitations (AULs) imposed by judicial authorities with respect to the property.
- A review of standard historical sources (included as Appendix C) and local agency inquiries, as defined in the ASTM Standard. The following resources were reviewed:
 - Readily available historical sources, including (where available) historical topographic maps and aerial photographs, city directories, and Sanborn Maps, to develop a history of the previous uses of the site and surrounding area.
 - Historical and site-specific information obtained from the following local agencies: Santa Clara County Assessor's Office (Assessor), Santa Clara County Fire Department (SCCFD), and the City of Campbell Building Division (Building Division). ENVIRON also requested files from the Santa Clara County Environmental Health Department (SCCDEH) and the Santa Clara Valley Water District (SCVWD).
 - Telephone interview with a representative of the SCCFD regarding historical records available for the site. ENVIRON was informed that records were found for the property, and could be provided through a file review, which ENVIRON performed.
 - Telephone interview with a representative of the Campbell Building Division regarding historical records available for the site. ENVIRON was informed that records were available for the site, and the records would be made available to ENVIRON at the Building Division planning desk. ENVIRON visited the Building Division and obtained the records.
- A review of physical setting sources, as defined in the ASTM Standard, including:
 - The current USGS 7.5-minute topographic map that shows the area on which the site is located.
 - Geologic, hydrogeologic, or hydrologic sources as provided in the EDR report.
- A review of documents provided to ENVIRON by the current property owner, including previous environmental investigations and reports, waste manifests/off-site waste disposal information, and correspondence with regulatory agencies.
- A review of the *Building Survey Report for Suspect Asbestos-Containing Material and Lead in Paint*, prepared by Sierra Environmental and dated January 2, 2014. The asbestos and lead survey was conducted at the site properties in conjunction with similar investigations at adjacent properties on Sam Cava Lane, Dillon Avenue, and Gilman Avenue in Campbell, California.
- A review of the *Preliminary Title Report for 466, 472, 482, and 488 Sam Cava Lane, Campbell, California*, prepared by First American Title Company and dated May 5, 2014.

- A review of the *Draft Geotechnical Investigation, Proposed Residential Development, Dillon Avenue, Sam Cava Lane, and Gilman Avenue, Campbell, California*, prepared by Pacific Geotechnical Engineering and dated May 16, 2014.
- A review of the geophysical survey report, *Magnetic Investigation at 190 Dillon Avenue, Campbell, California*, prepared by JR Associates, Inc., dated August 12, 2013.
- Information gathered as part of previous Phase I ESAs and Phase II soil investigations also prepared for Robson Homes at parcels adjacent to or in the vicinity of the site. Reports include the following:
 - *Phase I Environmental Site Assessment and Phase II Soil Investigation, 230, 280, and 282 Dillon Avenue, Campbell, California*, prepared by ENVIRON, dated July 18, 2013.
 - *Phase I Environmental Site Assessment and Subsurface Soil Investigation, Haig Precision Manufacturing Corporation, Campbell, California*, prepared by ENVIRON, dated March, 2014; and
 - *Phase I Environmental Site Assessment and Subsurface Soil Investigation, 466, 472, 482, 488 Sam Cava Lane, Campbell, California*, prepared by ENVIRON, dated May 23, 2014.
- Multiple visits to the site during August and September 2013 for collection of environmental samples.
- ENVIRON provided Robson Homes with a User Questionnaire consistent with Appendix X3 of the ASTM Standard. Pertinent responses, if any, are discussed in the appropriate sections of this report.

This assessment was conducted in accordance with ASTM Standard E1527-05, as agreed upon by ENVIRON and Robson Homes in August 2013. Certain “non-scope considerations,” as defined in the ASTM Standard (i.e., asbestos-containing materials [ACM], radon, lead-based paint, mold) are not directly addressed in this Phase I ESA.

2.3 Significant Assumptions

In conducting this review, no significant assumptions were made, except for the following:

- Site-specific field measurements of the groundwater gradient are not available. Groundwater flow directions at nearby sites (available in closure documentation for leaking underground storage tank [LUST] cases posted to the Regional Water Quality Control Board [RWQCB] Geotracker website) indicated a range of groundwater flow directions in the area, ranging from south-southeast to north-northwest, with a depth to groundwater greater than 50 feet below ground surface (bgs). Due to the variation of groundwater flow directions reported in said closure documentation for LUST cases posted to the Geotracker website, ENVIRON has assumed that the groundwater flow direction beneath the site is approximately to the northeast based on the local topographic gradient (generally to the northeast), and the presence of Los Gatos Creek (flowing to the northeast) southeast of the site. In evaluating potential on-site impacts from off-site sources, those off-site facilities not located adjacent to or within one-quarter mile upgradient of the subject site are not

considered to represent a significant concern to the subject site. This interpretation is based on the assumption that a hazardous material released to the subsurface generally does not migrate laterally within the unsaturated soil for a significant distance, although a hazardous material can migrate in the groundwater in a generally downgradient direction.

2.4 Reliance and General Limitations

This environmental review has been prepared exclusively without limitation for use by Robson Homes, LLC and affiliated entities including Santa Clara Development Company, Sun Lakes Construction Company of California, and Vesta Real Estate Company Inc., and such other persons or entities whose reliance is explicitly authorized in writing by ENVIRON.

The report is considered current only for a period of 180 days from ENVIRON's most recent site visit which was conducted on June 12, 2014. The conclusions presented in this report represent ENVIRON's best professional judgment based upon the information available and conditions existing as of the date of the review. In performing its assignment, ENVIRON must rely upon publicly available information, information provided by the client and information provided by third parties. Accordingly, the conclusions in this report are valid only to the extent that the information provided to ENVIRON was accurate and complete. This review is not intended as legal advice, nor is it an exhaustive review of site conditions or facility compliance.

3 Site Description

3.1 Site Setting

The subject site consists of a trapezoidal-shaped parcel of land located at 190 Dillon Avenue in Campbell, Santa Clara County, California (the “site” or the “facility”). The site, which is approximately 0.66 acre in total area, is located approximately 0.5 mile southeast of downtown Campbell (Figure 1).

According to the Santa Clara County Assessor’s Office, the assessor’s parcel number (APN) for the site is 412-08-037. The site is developed with an approximately 7500-square-foot multi-tenant commercial building. The remainder of the site consists of an asphalt parking lot with two small planters along the northwestern boundary of the site on either side of the street entrance.

The site is accessed from Dillon Avenue along the northwestern boundary of the site. At the southern boundary of the site is a shoring wall that is approximately 13 feet in height separating the parking lot from 280/282 Dillon Avenue, an undeveloped property which is at a lower elevation than the site. A chain-link fence runs along the top of the shoring wall between the two properties and along the southeastern boundary of the site. There are no on-site surface water bodies. A pedestrian walkway along Los Gatos Creek is adjacent to the southeast portion of the site, on the other side of the chain-link fence.

Table A provides an overview of physical setting and utility information for the site.

Table A: Physical Setting and Utility Information		
Conditions	Source	Description
Topography		
Elevation (above mean sea level)	ALTA Title Survey	Approximately 200 feet across the site.
Topographic Gradient	USGS topographic map; visual observations	Relatively flat across the site, with the exception of an approximately 13-foot high shoring wall separating the southeastern portion of the site from an undeveloped property to the south that is lower in elevation than the site. Regional topography slopes gently downward to the northeast toward San Francisco Bay.
Hydrology		
Surface Water Runoff	Visual observations; property owner	Likely runs off of the northwestern portion site into city storm drains along Dillon Avenue. Storm water drainage wells located throughout the parking lot infiltrate storm water into the subsurface.
Nearest Surface Water Body	USGS topographic map; visual observations	Los Gatos Creek is located approximately 100 feet southeast of site. Los Gatos Creek joins with other creeks in the San Jose area and ultimately drains to San Francisco Bay, located approximately 9.5 miles north-northwest of the site.
Flood Plain	FEMA*; current site tenants; property owner	Current tenants and property owner reported no known occurrences of flooding at the site. The southeastern property boundary (adjacent to Los Gatos Creek) is within a 100-year flood zone.

Table A: Physical Setting and Utility Information		
Conditions	Source	Description
Wetlands	NWI*	There are no federally-designated wetlands on-site. Los Gatos Creek, approximately 100 feet to the southeast of the site, contains federally-designated wetland areas.
Geology and Hydrogeology		
Presumed Direction of Shallow Groundwater Flow	LUST case closure documentation for sites within approximately 0.5 mile of the site, reviewed on RWQCB Geotracker online database	Site-specific field measurements of groundwater gradient are not available. Groundwater flow directions at nearby sites (available in closure documentation for LUST cases posted to the RWQCB Geotracker website) indicated a range of groundwater flow directions in the area, ranging from south-southeast to north-northwest. Due to the variation of these measurements, ENVIRON has assumed that the groundwater flow direction beneath the site is approximately to the northeast due to the local topographic gradient (generally to the northeast), and the presence of Los Gatos Creek (flowing to the northeast) in the vicinity of the site.
Depth to Groundwater	1990 environmental investigation and report; LUST case closure documentation for sites within approximately 0.5 mile of the site, reviewed on RWQCB Geotracker online database	Boring logs generated during a 2014 geotechnical investigation at adjacent and nearby properties owned by Haig (180 Dillon Avenue, 186 Gilman Avenue, and 426 Sam Cava Lane) indicate groundwater was not encountered at the depth of boring terminations at approximately 45 feet bgs. Boring logs generated during the 1990 environmental investigation at the site indicate that groundwater was not encountered at the depth of boring terminations at approximately 45 feet below ground surface. Groundwater depth data reviewed in LUST case closure documentation for sites within approximately 0.5 mile of the site indicate that the depth to groundwater in the area typically ranges from approximately 70 to 100 feet below ground surface.
On-site Wells	Current site tenants; property owner; visual observations	There are no on-site monitoring wells.
Nearest Groundwater Supply Wells	EDR database report	10 state-registered wells are present within one mile of the site; none are registered as public water supply wells.
Geologic Conditions	1990 environmental investigation and report, EDR database report	Boring logs generated during a 2014 geotechnical investigation at adjacent and nearby properties owned by Haig (180 Dillon Avenue, 186 Gilman Avenue, and 426 Sam Cava Lane) indicate heterogeneous layers of clays, sands, and gravels to a depth of approximately 40 to 45 feet below ground surface. The EDR physical setting report indicates that surface soil types in the area consist of clay loam, silty clay loam, and sandy clay loam, with moderate infiltration rates. Underlying sediments are reported to be quaternary stratified sequences.
Site Utility Information		
Electricity Supplier	Current site tenants	Pacific Gas & Electric (PG&E)
Natural Gas Supplier	Current site tenants	Pacific Gas & Electric (PG&E)

Table A: Physical Setting and Utility Information		
Conditions	Source	Description
Use of Fuel Oil for Building Heat	Property owner; current site tenants	No current or former use of fuel oil reported.
Water Supplier	Current site tenants	San Jose Water Company
Sanitary Sewer	Current site tenants	West Valley Sanitation District
Septic Systems	Property owner; current site tenants	There are no known current or former septic tanks or leach fields at the site.
Notes: FEMA = Federal Emergency Management Agency; NCCS = National Cooperative Soil Survey ; NWI = National Wetlands Inventory * - Source was provided in the EDR database report.		

3.2 Current and Historical Use of Property

The site consists of a multi-tenant commercial building and parking area which was built in the late 1960s or early 1970's. The tenant units are arranged in the building alphabetically from the northwest to the southeast (Units A through I, see Figure 2). The current tenants, a brief description of their operations, and a description of the historical use of the units is included below:

- Unit A is occupied by RB Tool Precision Machining, which has conducted prototype manufacturing machine shop operations since 2004. Chemical use associated with primary and ancillary operations consists of a water-soluble cutting oil/coolant mixture used in milling/machining centers, lubricating oil, hydraulic oil, household-type detergents, and retail-sized quantities of acetone, isopropyl alcohol, and WD-40 lubricating oil. Wastes, consisting of used oil and oil mixtures, are stored in containers 5-gallons in volume or smaller and collected by the City of Campbell for recycling as needed on a monthly basis. Prior to RB Tool Precision Machining, the unit was occupied by a machine shop that conducted similar operations (Dynamic Engineering Concepts) and by an electrician's shop in approximately 1992.
- Unit B is occupied by Ken's Solar and Pool Service, which has conducted operations at the site since approximately 2003. The unit is primarily used for office operations and storage of pool cleaning chemicals and equipment. Numerous crates containing small containers (less than five gallons) of cleaning chemicals (e.g., hypochlorite) were observed. No wastes are generated the site because all chemicals are applied at customer locations. Santa Clara County Fire Department (Fire Department) records indicate that a plumbing company operated in the unit in 1992.
- Unit C is occupied by Lynch Co. Services, which has conducted carpet cleaning and general handyman services at the site since 2012. Small quantities (less than five gallons) of carpet cleaning chemicals are stored at the site. The majority of the unit is used for storage of rugs and equipment. Prior to Lynch Co. Services, Pro Lawn of Campbell (a landscaping company), Barry's Custom Woodworks and T&J Door operated

at the site. Fire Department records from 1992 indicate that no chemical storage was associated with the operations of Barry's Custom Woodworks and T&J Door at that time.

- Unit D is occupied by TP Construction (formerly TI Pro Construction), which conducts general contractor service operations. The unit is used for office operations and storage of equipment (e.g., air compressor) and a boat. General maintenance chemicals and materials (e.g., motor oil) are stored in small quantities (less than five gallons) and no wastes are generated. Fire Department records indicate that a taxidermist operated in the unit in 1992.
- Unit E is occupied by D&J Pest Control, which has operated a pest control operation since approximately 1988. The primary use of the unit is for office operations and for storage of pest control chemicals, which are located in a metal enclosure along the northern wall of the ground floor. Chemicals are generally stored in containers up to five-gallons in size and in various physical states (e.g., liquid, solid, grains). According to records available from the Fire Department, no wastes are generated from the operations because chemicals are fully applied at customer locations. In addition to pest control chemicals, minor quantities of petroleum products (e.g., motor oil, gasoline) are stored in the unit in support of the owner's personal boat which is also stored in the unit.
- Unit F-G is currently vacant and formerly was occupied by DLB Construction, which used the unit for tool storage and as an office. A tow truck garage operated at the unit in 1992. Fire Department records indicate that prior to 1989 the unit was occupied by Etched Media, which conducted etched metallic label manufacturing. The operations consisted of wet dip electroplating and related operations. A Hazardous Materials Management Plans (HMMP) on file with the Fire Department indicated that chlorinated solvents were historically used at the site, including trichloroethylene (TCE), tetrachloroethylene (PCE), and trichloroethane (TCA). In addition, the 1985 HMMP indicates that several types of pesticides (i.e., chlorpyrifos formulated with xylene, rodenticides, lindane, malathion, chlorinated organophosphate pesticides including pyrethrin formulated with PCE) were stored at the site. A map contained in an HMMP for Etched Media indicated that a sink but no floor drains were present in the unit. In addition, the map indicated the presence of an etching machine, plate processor, and corrosive and flammable drum storage area. When Etched Media vacated in 1989, the closure was overseen by the Campbell Fire Department, although the documentation related to the closure was limited. Prior to Etched Media's occupancy, the unit may have been occupied by a painting company. Former USTs associated with the painting company (1,000-gallon gasoline UST and 500-gallon paint thinner UST) were located outside this unit. See Sections 4.2.1 and 5.2.1 for additional information regarding the USTs.
- Unit H is currently occupied by Air-Sun Screen & Awning. The occupant of the unit was not available for an interview regarding their operations, but the operations appeared to consist of general construction services. ENVIRON observed storage of equipment (e.g., power tools, metal parts) and some chemical storage (e.g., paints, motor oil) in small containers. The mezzanine level of the unit appeared to be used for storage of

general furniture and equipment. Etched Media (discussed above) expanded into Unit H in 1985 and vacated the unit in 1989. An auto detailer shop occupied the unit in 1992.

- Unit I is occupied by Reed's Recording as a recording studio with no associated chemical use or storage. Prior to Reed's Recordings, the unit was occupied by Johnson Painting (approximately 1991-1995) and Paintall Systems.

3.2.1 Ownership history

The first historical aerial photographs taken of the site in 1939 appear to show a small residential structure and other smaller structures on the site. The first historical aerial photograph showing the current building at the site was taken in 1974. The site parcel was purchased by Terrance Wolf, the current property owner in approximately 1982.

3.3 Current Uses of Adjoining Properties

The site is located in a mixed commercial and residential land use area.

The site is bordered by Dillon Avenue to the northwest. Along the northeast boundary, the site is bordered by Haig Precision Manufacturing Corporation at 186 Dillon Avenue. The southeastern property boundary is bordered by a pedestrian walkway and Los Gatos Creek. The southwestern property boundary is bordered by an undeveloped parcel at 280/282 Dillon and, continuing west along the property boundary, a multi-tenant commercial building at 200 Dillon Avenue that houses an engineering office and the offices of West Valley Arborists.

Based on discussions with facility personnel, ENVIRON's visual observations from the property boundary and public rights-of-way, and a limited review of publicly available information, a general determination of the current use of adjacent properties was developed, as described Table B.

Table B: Current Use of Properties Adjacent to the Site		
Direction	Property/Land Use	ENVIRON's Observations
Northeast	Haig Precision Manufacturing Corporation and residential housing	Haig is a machining and sheetmetal fabrication shop and uses hydraulic and lubricating oils on a regular basis.
Southeast	Pedestrian walkway and Los Gatos Creek. Highway 17 is located on the opposite side of the creek.	No apparent exterior manufacturing or chemical storage operations were observed during ENVIRON's reconnaissance.

Table B: Current Use of Properties Adjacent to the Site		
Direction	Property/Land Use	ENVIRON's Observations
Southwest	Undeveloped land parcel, multi-tenant commercial, City of Campbell Service Center	Based on a previous ESA of 280/282 Dillon Avenue conducted by ENVIRON for Robson Homes, limited material storage related to utilities, including some electrical equipment (primarily conduit and insulating equipment – no transformers were observed), was observed in the area of the service center that is adjacent to the southern portion of 280/282 Dillon Avenue. Further to the southwest in the service center are garages that appear to be used for vehicle maintenance. In addition, a fueling area containing fuel pumps and a natural gas aboveground storage tank (AST) is located near the center of this property. Limited manufacturing activities (appearing mainly as woodworking at the time of the site visit) are conducted at the roofing company located at 260 Dillon Avenue. No other exterior manufacturing or chemical storage was observed during ENVIRON's reconnaissance.
Northwest	Public street and residential housing	No apparent exterior manufacturing or chemical storage operations were observed during ENVIRON's reconnaissance.
Notes: Observations were made by ENVIRON during the site visit. ENVIRON walked or drove by the borders of these properties that are shared with the subject site. ENVIRON did not enter the neighboring properties and was therefore unable to observe the rear of the properties.		

4 Review of Public Records and Other Information Sources

4.1 Environmental Regulatory Database Review

As part of an ESA conducted by ENVIRON for Robson Homes in May 2014, ENVIRON contracted with EDR to prepare a summary of listings in federal and state agency databases within applicable radii of the 466, 472, 482, and 488 Sam Cava Lane parcels as specified by the ASTM standard.¹ Based on the nearby location of those parcels to the site, the EDR report for the 466, 472, 482, and 488 Sam Cava Lane parcels was used for the site. A copy of the EDR report is presented in Appendix B.

4.1.1 Database Review for Site

ENVIRON reviewed the results of the state and federal environmental database searches performed by EDR (see Appendix B) and also reviewed information available in the California GeoTracker database.

The GeoTracker database and EDR database report indicate that the site is listed on the LUST, Historical LUST, and Historical Cortese databases. In 1989, a 1,000-gallon gasoline UST and a 500-gallon paint thinner UST were removed from the portion of the site that is adjacent to the shoring wall along the southwestern boundary site. Following over-excavation of tank pits, soil samples were collected under the oversight of the City of Campbell Fire Department. Low concentrations of xylene (up to 56 ppm) were detected in two of the soil samples, while benzene, toluene, ethylbenzene, and total petroleum hydrocarbons (TPH) were not detected. Three soil borings were also advanced in the area to depths up to 45 feet and groundwater was not encountered. BTEX and TPH were not detected in the soil samples analyzed from the soil borings. The site was granted a case closure letter on November 30, 1990 by the California Regional Water Quality Control Board (RWQCB) - San Francisco Bay Region.

4.1.2 Database Review for Surrounding Properties

There are several listings in the EDR report for off-site facilities located within applicable ASTM search radii. Several of these listings (e.g., hazardous waste generators, registered underground storage tanks [USTs]), by themselves, are not necessarily indicative of an environmental concern, and these listings are therefore not discussed herein.

A few sites appear on databases indicative of potential contamination concerns (e.g., Leaking Underground Storage Tank [LUST]; Department of Toxic Substances Control's [DTSC's] Site Mitigation and Brownfields Reuse Program's [SMBRP] EnviroStor database; Spills, Leaks, Investigations & Cleanups [SLIC]; Voluntary Cleanup Program [VCP]). Of these latter facilities, only the following sites were identified that are located adjacent to, very nearby, or upgradient from the subject site and within 0.25 miles. These facilities were selected based on the assumption that a hazardous material released to the subsurface generally does not migrate

¹ EDR uses the term "radii" to refer to the ASTM terminology "approximate minimum search distance" in the environmental database report.

laterally within the unsaturated soil for a significant distance, although a hazardous material can migrate in groundwater typically in a generally downgradient direction.

- **City of Campbell Service Center.** The City of Campbell Service Center, also known as the Corporate Yard, located at 290 South Dillon Avenue in Campbell, California and approximately 500 feet to the southwest of the site, is listed on the LUST, Historical LUST, UST, Historical UST, CA FID UST, CUPA Listings, Historical Cortese, and SWEEPS UST databases. The LUST listings refer to a closed underground fuel leak case. Other UST database listings refer to current fuel USTs currently or historically in use at the site. The Historical UST database indicates that five USTs were installed at the site in 1969 and 1970, including a 10,000-gallon gasoline UST, a 1,000-gallon gasoline UST, a 1,000-gallon diesel UST, a 250-gallon waste oil UST, and a 200-gallon waste product UST (type of product unspecified). A case closure letter dated January 7, 1999 was reviewed on the RWQCB Geotracker online database. In April 1987, a 10,000-gallon gasoline UST and a 1,000-gallon diesel UST were removed from the site and soil samples were collected after over-excavation of tank pits. Soil analyses indicated that a maximum of 1,200 parts per million (ppm) TPH as gasoline, and 100 ppm TPH as diesel remained beneath the tank pits, with other analytes below detection limits. In December 1998, soil borings were conducted at the site to investigate soil quality beneath the former USTs and to evaluate the potential for groundwater impacts. Soil samples collected from up to 70 feet below ground surface (bgs) did not indicate impacts above detection limits and groundwater was not encountered. The depth to groundwater is estimated to range between 55 to 85 feet bgs (or greater) in the vicinity of the site. Residual contamination was considered to have been attenuated naturally and the case was granted closure by SCVWD in January 1999.

The service center is also a permitted UST facility, at which USTs are currently in use. The 1999 LUST case closure includes a map indicating that a 10,000-gallon double-containment UST was in use in 1999. No further details regarding other USTs at the service center were available. Documents reviewed at the Santa Clara County Fire Department indicated that the site is currently permitted to operate a double-containment two-chamber UST with an 8,000-gallon gasoline capacity and a 2,000-gallon diesel fuel capacity, and that leak monitoring and regular inspections are conducted. However, no fire department records were available that would indicate the presence and/or status of any other USTs at the property. From the available records it is not clear whether any of the USTs installed in 1969-1970 (aside from the two USTs removed in 1987) are still in use, or if they were previously removed without resulting in a LUST case. The current superintendent of the City of Campbell Public Works Maintenance Division indicated that there are no other USTs currently in use at the facility. There is no active LUST case at the service center property and based on available information, the service center property is not considered to be of concern for the site.

- **Draeger Construction Inc./Stinson Construction Inc.** The Draeger Construction/Stinson Construction property is located at 260 Dillon Avenue in Campbell, California. The property is approximately 300 feet to the southwest of the site. The property is listed on the CA FID UST, SWEEPS UST, and Historical UST databases for an 8,000-gallon gasoline UST historically associated with the property. No LUST case or any

case closure documentation was available on the RWQCB Geotracker online database. Based on documents reviewed at the Santa Clara County Fire Department, the UST was installed in 1981. A leak monitoring system was installed in 1986. The property is not a currently permitted UST facility. Based on prior hazardous materials management plan (HMMP) documents, the property appears to have been last permitted to operate a gasoline UST in 1997. A 2005 hazardous materials closure document indicated that all hazardous materials had been removed from the site when the current tenant (Weathershield Roofing Systems) took possession of the property. The gasoline UST was not mentioned in the closure document. No record of UST removal or confirmation sampling was available for review. There is no active LUST case at this property and no documentation available that indicates a release occurred from the UST. Therefore, the Draeger/Stinson property is not considered to be of concern for the site.

- **280/282 Dillon Avenue.** 280/282 Dillon Avenue is an undeveloped parcel adjacent to the southeast of the site. The HAZNET database listing indicates that contaminated soil was removed from the site for disposal after a site cleanup in 1997. The incident contact is listed as EH Canfield and Sons, which is a trucking company out of Eugene, Oregon. According to facility personnel, the cleanup was conducted after the fuel tank of a delivery truck hit the road curb while exiting the site after delivering wooden roofing materials. A fuel spill of less than 20 gallons of fuel resulted from the truck tank contacting the curb. Emergency services were immediately notified and the soil removal was conducted in order to address contaminated soil resulting from the fuel spill.

ENVIRON conducted a Phase I ESA and soil investigation at the 280/282 Dillon Avenue property in 2013 on behalf of Robson Homes. In addition to the information reported above, ENVIRON also reported historical on-site waste disposal at the property to be a REC after discovering buried waste materials during excavation of test pits to investigate geophysical anomalies. During subsequent trenching and environmental sampling investigations, discolored soil, concrete, ash, metal debris and other waste materials were discovered buried across the central portion of the 280/282 Dillon Avenue property. Soil samples collected from within the waste debris and adjacent areas had concentrations of lead, arsenic, TPH and PCBs above environmental regulatory screening levels for residential land use. In addition, lead concentrations exceeded California Hazardous Waste Levels and Federal Hazardous Waste Levels in several samples. Cleanup of the property is currently overseen by SCCDEH. A work plan for remedial soil excavation has been approved and work is scheduled to be completed this summer. No other RECs were identified at the property by ENVIRON. The extent of the buried waste has been generally characterized. Therefore, ENVIRON does not consider the 280/282 Dillon Avenue property to be of concern to the site at this time.

- **Railway Distributing, Inc.** The property is located at 261 Railway Avenue Campbell, California. The property is located approximately 750 feet southwest of the site. The property is listed on the CA FID UST, SWEEPS UST, and Historic UST databases for a 1000-gallon waste tank used for number 6 fuel oil. Leak detection is performed visually. No LUST case or any documentation was available on the RWQCB Geotracker online

database that indicates a release occurred from the UST. Therefore, the Railway Distributing property is not considered to be of concern for the site.

4.2 Historical Use Information on the Site and Surrounding Area

To evaluate the historical uses of the property, ENVIRON reviewed historical aerial photographs, fire insurance maps, topographic maps, and an abstract of city directory information, where readily available. ENVIRON also interviewed current site tenants on August 1 and 7, 2013 and interviewed the current property owner of the site, Mr. Terrance Wolf, on August 22, 2013. Jason Kane of ENVIRON conducted a follow-up site visit on June 12, 2014 to observe any changes to the features, uses, and/or conditions of the site since ENVIRON's previous site visits in August 2013. In addition, ENVIRON reviewed information from local government agencies including the assessor's office and fire department.

Based on ENVIRON's review of the historical information sources described above, the earliest known structure on the site appears to have been a residential structure installed prior to 1939. A portion of the current mixed-commercial building at the site (Units A through G, see Figure 2) was installed in the late 1960s or early 1970s. The building was expanded to its current size in the late 1970s or early 1980s.

4.2.1 Interviews with Current Site Tenants and Property Owner

ENVIRON interviewed available current site tenants on August 1 and 7, 2013 and June 12, 2014. The information garnered from the interviews was incorporated into Section 3.2. ENVIRON also conducted a telephone interview with the current property owner, Mr. Terrance Wolf, on August 22, 2013:

- **Mr. Terrance Wolf** and has owned the site since approximately 1982. Mr. Wolf reported two current USTs were removed from the site and the case received closure from the RWQCB. Mr. Wolf also reported a small oil spill in front of Unit H which was cleaned up and required no additional action by the regulating agency. Documentation provided by Mr. Wolf through Robson Homes includes correspondence, environmental reports, and case closure notifications related to the UST removals and minor oil spill. Mr. Wolf reported no known on-site waste disposal, groundwater wells, septic systems or leach fields, polychlorinated biphenyl (PCB)-containing hydraulic or electrical equipment, environmental liens, or other known environmental concerns associated with the site. Since he purchased the property in 1982, Mr. Wolf reported that a few pest control and machine shop businesses (including those currently at the site) and a taxidermist business have operated at the site. Mr. Wolf reported that there have not been any automotive repair shops to operate at the site since he purchased the property in 1982. Mr. Wolf also reported that the three storm water catch basins in the parking lot at the site are storm water catch basins that infiltrate storm water into the subsurface and are not connected to the municipal storm water system. These issues are further discussed below.

4.2.2 Review of Historical Reference Sources

To evaluate the historical uses of the property, ENVIRON reviewed historical aerial photographs, topographic maps, and city directory abstracts. The results of ENVIRON's historical review are presented below.

4.2.2.1 Aerial Photographs

ENVIRON reviewed historical aerial photographs that were obtained for the property and vicinity from EDR, dated 1939, 1948, 1956, 1968, 1974, 1982, 1993, 1999, 2005, 2006, 2009, and 2010.

- 1939** Site appears to be a residential property with a main house on the northwest portion of the site. Smaller structures appear to be to the southeast of the house and the remaining portion of the site appears undeveloped with scattered trees. Other residences appear to surround the site to the north, northeast, and southwest. A moderately sized vacant parcel is to the west of the site. To the southeast of the site are the banks of Los Gatos Creek, which appears as a narrow channel within a broad, undeveloped ravine area. Orchards are present on the other side of Los Gatos Creek.
- 1948** Site appears the same except for possibly some additional smaller structures to the southeast of the main house. Additional structures have been added to the surrounding properties, and the vacant lot to the west has been developed with what appear to be residences. The banks of Los Gatos Creek appear to be part of a large earthmoving project, with areas of earth removal and other areas of filling activities, and it appears the Los Gatos Creek channel is being narrowed in the vicinity of the site.
- 1956** The majority of the structures at the site appear to have been removed since the 1948 photo, including the main house. The parcel to the northeast appears to show similar activity. The other immediate vicinity of the site is essentially unchanged since the 1948 photo.
- 1968** Site appears to be razed and graded. The current structure to the northeast at 186 Dillon Avenue has been constructed. The 280/282 Dillon Avenue parcel appears to have several small structures and materials present. Several residences along Dillon Avenue appear to have been removed. Highway 17 has been constructed on the other side of Los Gatos Creek. Also on the other side of Los Gatos Creek, medium-sized commercial buildings have been constructed in place of orchards.
- 1974** A portion of what appears to be the current multi-tenant commercial building (Units A through G; see Figure 2) has been constructed at the site. In the vicinity of the site to the south, the current building present at the City of Campbell Service Center appears to have been constructed. Photo details are not readily distinguishable due to poor photo quality.
- 1982** The multi-tenant commercial building at the site appears to have expanded to its current size. The remaining vicinity of the site appears generally similar to the 1974 photo. Photo details are not readily distinguishable due to poor photo quality.
- 1993** The multi-tenant commercial building located at 200 Dillon Avenue, adjacent to the southwest of the site, has been constructed. The site and vicinity appear substantially similar to the present-day aerial photo.
- 1999** The site and vicinity appear substantially similar to the present-day aerial photo.
- 2005** Similar to 1999 photo.

- 2006** Similar to 2005 photo.
- 2009** Similar to 2006 photo.
- 2010** Similar to 2009 photo.

4.2.2.2 Topographic Maps

- 1899 (coarse scale map)** – Site is shown on the outskirts of the town of Campbell, in an undeveloped area.
- 1953** Site is shown on the banks of Los Gatos Creek in a developed area along Dillon Avenue.
- 1961** Similar to 1953 map with additional development and roads shown in the vicinity. Highway 17 has been constructed on the other side of Los Gatos Creek.
- 1968** Similar to 1961 map with additional development and roads shown in the vicinity. The shading that indicates a developed area has been expanded to include the Site.
- 1973** Same as 1968 map with increased regional urban development.
- 1980** Same as 1973 map with increased regional urban development.

4.2.2.3 City Directory Abstracts

EDR searched select national repositories of business directories from select years between 1922 and 2012. According to listings in the EDR report from Cole Information Services, Pacific Bell, and R.L. Polk & Co. directories, numerous commercial businesses are listed as occupants of the site between 1974 and 2012. The majority of the businesses listed correspond with those discussed in Section 3.2. The businesses not discussed in Section 3.2, include multiple graphic design companies, a fire extinguisher service and sales company, and an appliance repair company, are not considered to be of concern with respect to the site. Pete [sic] King is listed as the only site occupant in 1963. ENVIRON reviewed numerous listings for addresses that appear to be adjacent or nearby on Dillon Avenue, Railway Avenue, and Sam Cava Lane, and determined that most were residential listings or commercial business not likely to have been of concern for the subject site. However, listings for 300 Railway Avenue include automotive repair shops, a wholesale auto dealer, a sheet metal finishing and machine shop, dating back to 1963. 300 Railway Avenue is approximately 500 feet to the southwest of the site and is the current location of Mike's Auto Body and B&J Automotive. EDR listings for this property (including a closed LUST case) have been evaluated and the property is not considered to be of concern for the subject site.

4.2.2.4 Sanborn Maps

ENVIRON requested a search of Sanborn maps for the property and vicinity from EDR. The search report indicated that Sanborn maps were available that included partial coverage for the property and vicinity for 1920, 1928, 1935, and 1950. The 1920 map does not show the site. The 1928 and 1935 maps show that the current 190 Dillon Avenue parcel was combined with the current 186 Dillon Avenue parcel. A structure is shown to have been located along Dillon Avenue with multiple oblong-shaped structures to the southeast labeled "Poultry". The 1950 map shows a structure along Dillon Avenue with a similarly shaped structure to the southeast with the description "House Trailer Park" listed on the area of the current site. Other properties in the area are shown as having contained residential buildings, outbuildings, and chicken coops during these time periods.

4.3 Review of Local and State Agency Information

ENVIRON visited or otherwise contacted local governmental agencies and regulatory bodies for information relating to the site. An overview of the findings of this review is presented in Table C.

4.4 Environmental Lien Record Search

A review of EDR Environmental Lien Search Report dated August 12, 2013 to identify environmental liens or activity use limitations (AULs) imposed by judicial authorities with respect to the property. No environmental liens or AULs were found.

4.5 Previous Environmental Assessments

No previous environmental assessments are known to have been conducted at the site.

4.6 User-Provided Information

ENVIRON provided the client with a User Questionnaire (consistent with Appendix X3 of the ASTM Standard) that requested information relating to environmental liens, AULs, specialized knowledge of the property, property value diminution, chain-of-title, or any other commonly known or obvious indications of site contamination, that was not otherwise provided to ENVIRON.

4.7 Historical Information Provided by Property Owner

In addition to documentation related to the environmental investigation and case closure related to the removal of two LUSTs at the site, the property owner, through Robson Homes, provided documentation related to the dumping of approximately 2 quarts of motor oil into a former storm drain sump at the site by an employee of Chimney Jack Construction in August 1991. Chimney Jack Construction occupied Unit H at 190 Dillon Avenue at the time of the dumping. Correspondence indicates that the approximately 2 quarts of oil was removed from the sump and stored in a 55-gallon drum before being disposed of by a licensed hazardous material disposal company, as ordered by the Fire Department. Gen-Tech Environmental (Gen-Tech) was hired by the property owner to assess the impacts of the dumping. In a report dated January 21, 1992, Gen-Tech opined that the site poses no further threat to soil or groundwater based on the prompt cleanup of the spill and the fact that no stains of oil were observed at the discharge of the 4-inch diameter pipe leading away from the sump. No further documentation from the property owner, Gen-Tech, or the Fire Department was obtained by ENVIRON and the matter is considered resolved. Based on available documentation, the former storm drain sump was located at or in the vicinity of the existing storm water catch basin on the eastern portion of the site (see Figure 2) and discharged storm water off the southern boundary of the site through a 4-inch diameter pipe. During site visits, ENVIRON was unable to identify the 4-inch diameter discharge pipe referenced by Gen-Tech in their inspection report, suggesting the discharge pipe and former storm drain sump have since been removed.

Table C: Local Agency Information for the Property	
Agency Contacted / Document Reviewed	Information Obtained
Santa Clara County Tax Assessor	Documents reviewed online using the Santa Clara County Tax Assessor's website included assessment roll information and a tax map. The map indicates that the APNs for the site are 412-08-037.
Campbell Building Division	ENVIRON reviewed available public records maintained in an online database by the City of Campbell Building Division. Online building department records included a list of case activity for the site such as a change in electricity service, replacement of an existing retaining wall, and construction related to the commercial spaces at the site. ENVIRON also reviewed records obtained from the Building Division planning desk. Records included various electrical, plumbing, building, and heating and comfort permits and applications from the 1960s through the 1990s. Based on the review of nearby properties and documents reviewed at the Santa Clara County Fire Department, it appears that several buildings on Dillon Avenue were purposefully burned in the 1960s in order to remove the structures and also for fire department training purposes.
Santa Clara County Fire Department	ENVIRON reviewed available public records maintained in the computer system of the Santa Clara County Fire Department. Records pertaining to the site and nearby properties were available dating back to the 1960s. Hazardous material inventory statements in 1991 and 1992 from Campbell Fire Department indicated that small amounts of various pesticides and a chlorinated solvent (trichlorofluoromethane) were housed in the commercial space occupied by D&J Pest Control (Unit E). Hazardous materials management plans for Etched Media, a business occupying Units F, G, and H until 1989, that contain material safety data sheets and storage descriptions for materials stored and/or used at the business including paint, trichloroethane, trichloroethene, tetrachloroethene, lacquer thinner, alkaline cleaner, and acid. Extensive documentation was also available related to two USTs formerly located at the site. The documents, including inspection notices, environmental reports, and the notice of closure, were already acquired by ENVIRON through the RWQCB Geotracker website and through the property owner. ENVIRON also reviewed historical documentation related to USTs at 290 Dillon Avenue (City of Campbell Service Center) and 260 Dillon Avenue (former Stinson Construction Inc. property), both of which are in close vicinity to the site. Records were found pertaining to historical permitting of USTs at these properties; however closure documentation for UST removals was not available for either property.
Santa Clara County Department of Environmental Health (SCCDEH)	ENVIRON requested records from SCCDEH for information regarding soil or groundwater investigations, USTs, LUSTs, hazardous materials inspections, or violations/permits for the property. ENVIRON was referred to SCCDEH's online database of LUST, solvent release, and cleanup cases. The database contained a report and closure documentation related to the two USTs removed from the site in 1989. The records were the same as those found on the RWQCB Geotracker website.
Santa Clara Valley Water District Santa Clara Valley Water District	ENVIRON requested records from the Santa Clara Valley Water District and was referred to the SCVWD online database of LUST files prior to 2004 when local agency oversight was transferred to the Department of Environmental Health. No records were found related to the address of the site.

Table C: Local Agency Information for the Property	
Agency Contacted / Document Reviewed	Information Obtained
(cont.)	

5 Site Reconnaissance

5.1 Methodology and Limiting Conditions

Dan Clark and Elise Post of ENVIRON conducted site reconnaissance visits on August 1 and August 7, 2013, respectively. Jason Kane of ENVIRON conducted a follow-up site visit on June 12, 2014 to observe any changes to the features, uses, and/or conditions of the site since ENVIRON's previous site visits in August 2013. During the site visits, observations of the site were made to evaluate if any RECs, as defined in Chapter 2, are present.

5.2 General Site Setting and Observations

ENVIRON made observations during the site visit concerning all of the interior and exterior issues specified in Sections 9.4.2 through 9.4.4 of the ASTM E1527-05 Standard. The presence or absence of each issue of environmental interest or concern is noted in Table D. Only those areas of environmental interest or concern that were observed at the property are discussed further in the text below.

Table D: Summary of Site Reconnaissance Observations		
Issue	ASTM Section	Observation
Interior and Exterior Issues		
Current use(s) of the property	9.4.2.1	See Section 3.2
Past use(s) of the property	9.4.2.2	See Section 3.2 and 4.2
Hazardous substances and petroleum products used, treated, stored, disposed of, or generated on the property in connection with identified present or past uses	9.4.2.3	Present and Historically Present (see Section 5.2.1)
Storage tanks: Underground storage tanks (fill ports, vent pipes, manholes) Aboveground storage tanks (ASTs)	9.4.2.4	(see Section 5.2.2) Historically Present Absent
Odors (strong, pungent or noxious)	9.4.2.5	Absent
Pools of liquid, standing surface water or sumps	9.4.2.6	Absent
Drums of hazardous substances or petroleum products (for example, five-gallon, 55-gallon or totes)	9.4.2.7	Present (see Section 5.2.1)
Hazardous substance and petroleum product containers (not necessarily in connection with identified uses)	9.4.2.8	Absent
Unidentified substance containers suspected of containing hazardous substances or petroleum products	9.4.2.9	Absent

Table D: Summary of Site Reconnaissance Observations		
Issue	ASTM Section	Observation
Polychlorinated biphenyls (PCBs) Electrical equipment on-site (e.g., transformers, capacitors) Electrical equipment known or likely to contain PCBs Hydraulic equipment on-site (e.g., elevators, truck dock lifts) Hydraulic equipment known or likely to contain PCBs	9.4.2.10	(see Section 5.2.3) Present Potentially Present Present Absent
Interior Issues		
Heating/cooling systems	9.4.3.1	Present (see Section 5.2.4)
Stains or corrosion on interior floors, walls or ceilings (except for staining from water)	9.4.3.2	Present (see Section 5.2.5)
Floor drains and interior sumps	9.4.3.3	Absent
Exterior Issues		
Pits, ponds or lagoons on property or adjacent sites	9.4.4.1	Absent
Stained soil or pavement	9.4.4.2	Present (see Section 5.2.6)
Stressed vegetation (from other than insufficient water)	9.4.4.3	Absent
On-site solid waste disposal; areas apparently filled or graded by non-natural causes; or mounds or depressions suggesting solid waste disposal	9.4.4.4	Historically Present (see Section 5.2.7) t
Wastewater or other liquid (including storm water) or any discharge into a drain, ditch, underground injection system or stream on or adjacent to the property	9.4.4.5	Present (see Section 5.2.8)
Wells (including dry wells, irrigation wells, injection wells, abandoned wells, or other wells)	9.4.4.6	Absent
Septic systems or cesspools	9.4.4.7	Absent
Non-Scope Considerations		
Asbestos Containing Materials	N/A	Absent
Lead-Based Paint	N/A	Absent
Notes: Observations noted in this table and discussed further below are based on information obtained during the site visit and from a review of the sources summarized in Chapter 4. See the ASTM Standard for a detailed description of the issues included in each referenced ASTM section. Per the ASTM Standard, fluorescent light ballasts likely to contain PCBs do not need to be noted.		

5.2.1 Hazardous Substances and Petroleum Products

Several small containers, ranging from less than one-gallon to five-gallons, of lubricating oil, hydraulic oil, motor oil, used oil and oil mixtures, were observed at the site. Staining or other evidence of a release was not observed in the areas where petroleum products or hazardous chemicals were stored. Table E summarizes the hazardous substances and petroleum products observed at the site.

Table E: Summary of Hazardous Substances and Petroleum Products	
Location	Hazardous Substances and Petroleum Products
Unit A – RB Tool Precision Machining	Small containers (less than five gallons) of water-soluble cutting oil/coolant mixture used in milling/machining centers, lubricating oil, and hydraulic oil. Retail-sized quantities of acetone, isopropyl alcohol, and WD-40 lubricating oil.
Unit D – TP Construction	Small quantities (less than five gallons) of motor oil.
Unit E – D&J Pest Control	Pest control chemicals stored in small containers (five gallons or less) and in various physical states (e.g., liquid, solid, grains). Small quantities (less than five gallons) of motor oil.
Unit H – Air-Sun Screen & Awning	Small containers (less than five gallons) of paints and motor oil.
Notes: Observations noted in this table were made during site visits and interviews with current site tenants on August 1 and 7, 2013.	

As discussed in Section 3.2, historical records indicate that chlorinated solvents, including TCE, TCA, and PCE, were used in Units F, G, and H as part of wet dip electroplating and related operations conducted by former site tenant Etched Media. Several pesticides including chlorpyrifos, formulated with xylene, rodenticides, lindane, malathion, and chlorinated organophosphate pesticides including pyrethrine formulated with PCE were also listed in historical records.

5.2.2 Underground Storage Tanks

As described in Section 4.1.1, two former USTs operated by a painting company were located adjacent to the Unit H at the site. According to the property owner and based on the review of available documents, the install date(s) of the USTs is unknown. One tank was used to store gasoline with a 1000 gallon capacity and the other tank was used to store paint thinner with a 500 gallon capacity. The USTs were excavated under the observation of GeoEnvironmental Technology in [1989]. At the time of closure, the condition of the tanks is unknown but soils underneath the tanks were found to be contaminated with petroleum hydrocarbons and paint thinner. The site is listed on the LUST, Historical LUST, and Historical Cortese databases. Soils underneath the tanks were sampled and excavated in October 1989 and three soil borings were drilled in May 1990 with samples collected at five-foot intervals. Case closure was granted by the California Regional Water Quality Control Board (RWQCB) in November 1990.

5.2.3 Polychlorinated Biphenyls (PCBs)

Two pole-mounted transformers were present on the property that are likely owned by the utility company. ENVIRON saw no indication of leaks or releases from electrical equipment observed during the site visit. Because the units may have been installed before the 1979 federal ban on the manufacture of PCBs it is possible that the transformer oils contain PCBs. It is also possible that hydraulic oils for a hydraulic lift located inside Unit A contain PCBs. However, facility personnel indicated that the hydraulic lift was installed within the past 3 years; thus it is not likely that these oils contain PCBs. In addition, the hydraulic fluid reservoir is aboveground and self-contained. The current site tenant in Unit A stated that no hydraulic lift was present when they moved into Unit A in 2004.

5.2.4 Heating/Cooling Systems

Small air conditioning and comfort heating units are present in individual tenant spaces. Information regarding the type of refrigerants used in air conditioners and the energy source for heaters was not readily available. The tenant in Unit I indicated that condensate from the air conditioner in that unit drains to the exterior via small outlet in the loading dock door.

5.2.5 Stains or Corrosion on Interior Floors, Walls, or Ceilings

ENVIRON observed minor floor staining in several of the tenant units, including Units A and E. No floor drains were present in the vicinity of the observed staining, which did not appear to be indicative of widespread releases or losses. Concrete floors in the vicinity of the staining appeared to be in good condition, with no evidence of cracking.

5.2.6 Stained Soil or Pavement

ENVIRON observed minor evidence of staining in the parking area, which appeared to be consistent with minor drips from vehicles parked at the site. Pavement in the vicinity of the observed staining appeared to be in good condition, with no evidence of cracking.

5.2.7 Historical On-site Waste Disposal

A white sheetrock-like fill layer was encountered in multiple soil borings. The sheetrock-like fill layer is further discussed in Sections 6.2 and 6.4.

5.2.8 Wastewater

Sanitary wastewater, which includes wastewater from kitchen and bathroom areas, is discharged to the municipal sewer system. Process wastewater, if any, consists of washwater from vehicle and/or equipment washing.

Storm water at the site infiltrates into small landscaped areas or, in paved areas of the site, drains to storm water catch basins, which are not connected to the municipal storm sewer system, and instead, "infiltrate" storm water to the subsurface.

5.2.9 Wells

Facility personnel were not aware any other monitoring wells on the property, nor were any monitoring wells observed at the time of the site visits.

6 Soil Sampling and Analysis

ENVIRON conducted shallow soil sampling at the site on August 7, 2013, August 28, 2013, and September 20, 2013. Figure 3 shows the locations of the soil samples collected in August and September 2013. Tables 1 through 3 present the results of soil sample analyses.

6.1 Pre-Field Activities

ENVIRON prepared a site-specific health and safety plan (HASP) and notified Underground Service Alert (USA) of the sampling activities at least two working days prior to the start of intrusive sampling, as required by law. ENVIRON contracted with Subdynamic Locating Services, Inc., a private utility locating company located in San Jose, California, to clear proposed boring locations of underground utilities. ENVIRON also contracted with Penecore Drilling of Woodland, California (Penecore) to perform direct-push technology (DPT) drilling activities and construct semi-permanent soil gas wells, and with analytical laboratories to perform soil and soil gas sample analyses.

6.2 Collection of Soil Samples for Chemical Analysis

Soil samples were collected for chemical analyses at locations SB-2 through SB-9 from depths ranging between approximately 1.0 to 5.0 feet below ground surface (bgs) (see Figure 3). At each location, a soil boring was advanced to a depth of approximately 5 feet bgs and soil was screened for volatile organic compounds (VOCs) using a calibrated photoionization detector (PID) at one-foot intervals. All soil screened by the PID for VOCs during sampling read 0.0 parts per million by volume (ppmv) as hexane. Observations were recorded at each borehole to document soil lithology and any indications of staining or other visual evidence of impacts.

Soil borings SB-2 and SB-3 were located in the parking lot on the northwest portion of the site, in the vicinity of the multi-tenant commercial property to the southwest of the site and Haig Precision Manufacturing Corporation to northeast of the site, respectively. With the exception of SB-7, soil borings SB-3 through SB-9 were located along the exterior of the building footprint. SB-7 was located inside vacant Unit F-G in the vicinity of former wet dip electroplating machines that used chlorinated solvents, as previously described in Section 3.2. SB-8 was located in the approximate area where the two USTs were removed in 1989, as discussed in Section 4.1.1.

Soil samples were collected using DPT and hand auger (SB-3 and SB-7) methods. The samples were collected in laboratory-provided glass jars, labeled, placed in doubled zip-closure bags, and stored on ice in an insulated cooler. Samples were transported to McCampbell Analytical Inc. with chain-of-custody documentation for chemical analysis on a five-day turnaround. All soil samples were analyzed for California Assessment Manual 17 Metals (CAM17) by United States Environmental Protection Agency (USEPA) Method 6020, organochlorine pesticides (OCPs) by USEPA Method 8081A, and PCBs by USEPA Method 8082. Samples collected from SB-6 through SB-8 were collected at depths ranging between approximately 3.0 to 5.0 feet bgs where a sheetrock-like fill layer was encountered. In addition to the analysis listed above, samples SB-6 through SB-8 were also analyzed for pH by USEPA Method 9045D.

6.3 Collection of Samples for Naturally Occurring Asbestos Analysis

Samples of base rock material (beneath asphalt in paved areas and underneath the building slab) were collected for naturally-occurring asbestos (NOA) analysis at locations SB-1 through SB-9 (see Figure 3). The samples were collected in labeled zip-closure bags and were transported to Forensic Analytical Laboratories under chain-of-custody documentation for NOA analysis by California Air Resources Board (CARB) Method 435. The samples were requested to be combined into three (3) three-point composite samples prior to analysis. Samples SB-1 through SB-3 were composited (SB-123-NOA) to represent base rock beneath the asphalt parking lot in the northwest portion of the site. Samples SB-4 through SB-6 were composited (SB-456-NOA) to represent base rock beneath the asphalt in the central portion of the site. Samples SB-7 through SB-9 were composited (SB-789-NOA) in order to represent base rock beneath the asphalt and building slab in the southeastern portion of the site.

6.4 Soil Analytical Results – Chemical Analyses

Sample analytical results for metals indicated that, except for arsenic and nickel, concentrations in site soils are below the residential land use USEPA Regional Screening Levels (RSLs) and RWQCB Environmental Screening Levels (ESLs). The arsenic concentrations, however, are within the typical range of natural background concentrations of arsenic except for one sample at SB-17, which is discussed further in Section 6.6. In addition, analytical results of the soil sample collected from SB-3 reported the concentration of nickel to be 200 mg/kg, above the residential land use ESL of 150 mg/kg but below the residential RSL of 1,500 mg/kg. The reported pH values for soil samples collected from SB-6 through SB-8, where a sheetrock-like fill layer was encountered between approximately 3.0 to 5.0 feet bgs, ranged between 7.56 and 7.72. Analytical results for metals and pH are summarized in Table 2. The laboratory analytical report is provided in Appendix E.

Sample analytical results for organics, including pesticides and PCBs, indicated that isolated areas of the site contain very low concentrations of pesticides, but none of the concentrations exceeded RSLs or ESLs except at SB-4 and SB-7. Analytical results of the soil sample collected at SB-4 reported the concentration of PCBs to be 7.3 mg/kg, above the residential land use RSL and ESL of 0.24 and 0.22 mg/kg, respectively. In order to delineate the elevated PCB concentration reported at SB-4, five additional shallow soil samples were collected in the vicinity of SB-4, as described below in Section 6.6. Analytical results of the soil sample collected at SB-7 reported the concentration of the OCP, dieldrin, to be 0.018 mg/kg, above the residential land use ESL of 0.0023 mg/kg but below the residential RSL of 0.033 mg/kg. Analytical results for OCPs and PCBs are summarized in Table 1. The laboratory analytical report is provided in Appendix E.

6.5 Soil Analytical Results – NOA Analyses

Three (3) three-point composite soil samples were collected and submitted for NOA analysis, as described in Section 6.3. The results of the analysis indicated that only a trace percentage (between less than 0.25% and 0.50%) of chrysotile-type asbestos was detected in each of the composite samples. Based on the NOA testing results, there are no restrictions on the handling, reuse, and/or disposal of the base rock and surface soil material from the site with

respect to asbestos content. NOA analytical results are shown on Table 3 and the laboratory analytical report is provided in Appendix E.

6.6 Additional Soil Sampling for Chemical Analyses

On August 28, 2013, additional soil samples were collected at the site in order to: (1) delineate the PCB impact reported at SB-4; and (2) characterize soil at or in the vicinity of the three storm water “infiltration” catch basins.

Upon receiving the analytical results of the August 28 sampling event, additional soil samples were collected on September 20, 2013 to delineate pesticide and arsenic concentrations reported at SB-17.

6.6.1 Soil Sampling in Vicinity of SB-4

As described in Section 6.4, analytical results of the soil sample collected at SB-4 reported the concentration of PCBs to be 7.3 mg/kg, above the residential land use RSL and ESL of 0.24 and 0.22 mg/kg, respectively. To delineate the PCB impact reported at SB-4, five additional shallow soil samples were collected by ENVIRON personnel in the vicinity of SB-4 using a hand auger. Four of the five samples (SB-10 through SB-13) were collected at a depth of approximately 2 feet bgs, approximately 5 feet away from SB-4 in each cardinal direction. The fifth step-out sample (SB-14) was collected at a depth of approximately 6 feet bgs, approximately 1 foot to the east of SB-4. The locations of the step-out borings are shown in Figure 3. The samples were collected in laboratory-provided glass jars, labeled, placed in doubled zip-closure bags, and stored on ice in an insulated cooler. Samples were transported to McCampbell Analytical Inc. with chain-of-custody documentation for chemical analysis on a 24-hour turnaround. The samples collected were analyzed for OCPs by EPA Method 8081A and PCBs by EPA Method 8082. Reported concentrations of PCBs in all five step-out samples were not detected above the laboratory reporting limit of 0.05 mg/kg. Analytical results for OCPs and PCBs are summarized in Table 1. The laboratory analytical report is provided in Appendix E.

6.6.2 Soil Sampling in Vicinity of Storm Water Catch Basins

As described in Section 4.2.1, the site property owner informed ENVIRON during a phone interview on August 22, 2013 that the three storm water catch basins in the parking lot at the site are storm water catch basins that infiltrate storm water into the subsurface and are not connected to the municipal storm water system. The bottom of the catch basins are filled with gravel. Because the gravel prohibited collection of a soil sample from the bottom of the catch basin, ENVIRON collected three samples (SB-15 through SB-17) at a depth of approximately 3 feet bgs using a hand auger. The samples were located approximately 3 feet off-center from each of the three storm water catch basins in order to avoid the footprint of the storm water catch basin. The location of the storm water catch basins and corresponding samples are shown in Figure 3. The samples were collected in laboratory-provided glass jars, labeled, placed in doubled zip-closure bags, and stored on ice in an insulated cooler. Samples were transported to McCampbell Analytical Inc. with chain-of-custody documentation for chemical analysis on a 24-hour turnaround. The samples were analyzed for CAM17 metals by EPA Method 6020, OCPs by EPA Method 8081A, PCBs by EPA Method 8082, and total petroleum

hydrocarbons (TPH) by EPA Methods 8021B/8015B. Analytical results of the soil sample collected at SB-17 reported the concentration of the OCP, p,p- dichlorodiphenylethylene (p,p- DDE), to be 1.9 mg/kg, slightly above the residential land use RSL and ESL of 1.6 and 1.7 mg/kg, respectively. In addition, analytical results of the soil sample collected at SB-17 also reported the concentration of the arsenic to be 24 mg/kg, above the residential land use RSL and ESL of 0.067 and 0.39 mg/kg, respectively and also above typical background levels. To delineate the impacts of p,p-DDE and arsenic reported at SB-17, five additional soil samples were collected by ENVIRON personnel in the vicinity of SB-17, as described in Section 6.6.3. Analytical results for OCPs and PCBs are summarized in Table 1 and analytical results for metals and TPH are summarized in Table 2. The laboratory analytical report is provided in Appendix E.

6.6.3 Additional Soil Sampling in Vicinity of SB-17

On September 20, 2013, five additional soil samples were collected in order to delineate the impacts of p,p-DDE and arsenic at SB-17, as discussed in Section 6.6.2. ENVIRON contracted with Penecore to perform DPT drilling activities and collect soil samples for chemical analysis. Soil samples were collected at locations SB-18 through SB-22 (see Figure 3). Three of the five samples (SB-18 through SB-20) were collected at a depth of approximately 1 foot bgs, approximately 5 feet away to the northeast, southeast, and southwest, respectively, from SB-17. The sample from SB-21 was collected at a depth of approximately 5 feet bgs, approximately 1.5 feet to the southeast of SB-17. The sample from SB-22 was collected from the first native soil encountered (approximately 20 feet bgs) in the catch basin located approximately 3 feet from SB-17. The samples were collected in laboratory-provided glass jars, labeled, placed in doubled zip-closure bags, and stored on ice in an insulated cooler. Samples were transported to McCampbell Analytical Inc. with chain-of-custody documentation for chemical analysis on a 24-hour turnaround. The samples collected were analyzed for CAM17 metals by EPA Method 6020, OCPs by EPA Method 8081A, and PCBs by EPA Method 8082. Reported concentrations of p,p-DDE in all five soil samples were below the residential land use RSL and ESL of 1.6 and 1.7 mg/kg, respectively. Although the reported concentrations of arsenic in all five soil samples were above the residential land use RSL and ESL of 0.67 and 0.39 mg/kg, respectively, the reported arsenic concentrations were generally consistent typical background levels. Analytical results for OCPs are summarized in Table 1 and analytical results for metals are summarized in Table 2. The laboratory analytical report is provided in Appendix E.

7 Soil Gas Sampling and Analysis

ENVIRON constructed semi-permanent soil gas wells at the site as part of shallow soil sampling August 7, 2013. Figure 3 shows the locations of the soil gas samples collected the following day, August 8, 2013. Table 4 presents the results of soil gas sample analyses.

7.1 Soil Gas Probe Construction

As described in Section 6.2, Penecore advanced eight soil borings (SB-2 through SB-9) on August 7, 2013 to a depth of approximately 5 feet bgs. Following soil sampling activities, soil gas probes were installed at each location at a depth of approximately 4.5 feet bgs in accordance with the RWQCB and DTSC Advisory on Active Soil Gas Investigations, dated April 2012. The locations of the soil gas probes (SV-2 through SV-9) are shown in Figure 3.

7.2 Soil Gas Sampling

Soil gas sampling was conducted by ENVIRON personnel on August 8, 2013. Individually cleaned and certified 1-liter stainless steel Summa canister and flow controller assemblies were used to sample each soil gas well. A plastic syringe was used to purge three volumes of air from the soil gas probe and tubing assembly. Purging proceeded at a rate between 100 and 200 cubic centimeters per minute (cc/min). A plastic container was placed over the top of each probe and a paper towel sprayed with 1,1-difluoroethane (1,1-DFA) was placed inside the container in order to provide an atmosphere of leak check compound around the top of each probe to check for ambient air intrusion during sampling. After completion of purging, the valve on the Summa canister was opened, allowing sample air to fill the canister at a rate no greater than 200 cc/min. The canister valve was closed when approximately -2 to -3 inches of mercury in vacuum remained inside the canister. Each canister was labeled and shipped to Calscience Environmental Laboratories via overnight Fedex under chain-of-custody documentation for chemical analysis on a 5-day turnaround time. Soil gas samples were analyzed for VOCs by EPA Method TO-15 (including 1,1-DFA).

7.3 Soil Gas Sampling Analytical Results

The results of analysis indicate that all concentrations detected at or above laboratory reporting limits were below established RWQCB residential land use ESLs for each respective analyte. Acetone was detected at or above laboratory reporting limits in all eight soil gas samples, ranging from 8.9 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in SV-4 to 86 $\mu\text{g}/\text{m}^3$ in SV-8. 1,1-trichloroethane (1,1-TCA) was also detected at or above laboratory reporting limits in all eight soil gas samples, ranging from 5.1 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in SV-4 to 160 $\mu\text{g}/\text{m}^3$ in SV-3. The analytical results of soil gas sampling are summarized in Table 4. The laboratory analytical report is provided in Appendix E.

8 Findings, Opinion, and Conclusions

ENVIRON has performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E1527-05, as well as a limited shallow soil and soil gas investigation, at the property located at 190 Dillon Avenue in Campbell, California. Any exceptions to, or deletions from, this practice are described in Section 8.3.

8.1 Findings and Opinion

8.1.1 Recognized Environmental Conditions

ENVIRON did not identify any “recognized environmental condition[s]” (REC[s]), as defined by ASTM (see Chapter 2.0), in connection with residential use of the property.

8.1.2 Significant Data Gap Issues

The ASTM Standard defines a data gap as “a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information.” A data gap is only significant if other information obtained during the ESA, or professional experience, raises reasonable concerns and affects the ability of the environmental professional to identify whether a given issue is a REC. The ASTM Standard requires that the ESA report identify and comment on significant data gaps.

ENVIRON did not identify any significant data gaps during the course of this assessment.

8.1.3 Other Findings

ENVIRON identified the following additional findings that are not considered RECs based on available information:

- **Underground Storage Tank Removals at the Site.** The GeoTracker database and EDR database report indicate that the site is listed on the Leaking Underground Storage Tank (LUST), Historical LUST, and Historical Cortese databases. In 1989, a 1,000-gallon gasoline underground storage tank (UST) and a 500-gallon paint thinner UST were removed from the portion of the site that is adjacent to the shoring wall along the southwestern boundary of the site. Following over-excavation of tank pits, soil samples were collected under the oversight of the City of Campbell Fire Department. Low concentrations of xylene (up to 56 ppm) were detected in two of the soil samples, while benzene, toluene, ethylbenzene, and total petroleum hydrocarbons (TPH) were not detected. Three soil borings were also advanced in the area to depths up to 45 feet and groundwater was not encountered. Benzene, toluene, ethylbenzene, and xylenes (BTEX) and TPH were not detected in the soil samples analyzed from the soil borings. The site was granted a case closure letter on November 30, 1990 by the California Regional Water Quality Control Board (RWQCB) - San Francisco Bay Region.
- **Motor Oil Spill at the Site.** The property owner, through Robson Homes, provided documentation related to the dumping of approximately 2 quarts of motor oil into a former storm drain sump at the site by an employee of Chimney Jack Construction in August 1991. Chimney Jack Construction occupied Unit H at 190 Dillon Avenue at the time of the dumping. Correspondence indicates that the approximately 2 quarts of oil

was removed from the sump and stored in a 55-gallon drum before being disposed of by a licensed hazardous material disposal company, as ordered by the Fire Department. Gen-Tech Environmental (Gen-Tech) was hired by the property owner to assess the impacts of the dumping. In a report dated January 21, 1992, Gen-Tech opined that the site poses no further threat to soil or groundwater based on the prompt cleanup of the spill. No further documentation from the property owner, Gen-Tech, or the Fire Department was obtained by ENVIRON and the matter is considered resolved.

- **Elevated Arsenic, p,p-DDE and PCBs Concentrations in Shallow Soil Samples.** The results of shallow soil sampling at the site reported elevated arsenic and p,p-DDE concentrations in soil boring SB-17, located near the southeastern-most storm water catch basin in the asphalt parking lot. An elevated concentration of PCBs was also found in soil boring SB-4. Results of additional sampling performed at nearby locations reported arsenic concentrations within typical background levels, p,p-DDE at concentrations below regulatory screening levels and PCBs not detected. Therefore, the elevated arsenic and 4,4-DDE concentration at SB-17 and elevated PCBs concentration at SB-4 are considered localized anomalies.

8.1.4 De Minimis Conditions

De minimis conditions are those that do not represent a material risk of harm to public health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies. ENVIRON identified the following *de minimis* conditions related to the site:

- In paved areas at the site, storm water drains to three storm water catch basin that are not connected to the municipal storm sewer system and infiltrate storm water into the subsurface.

8.2 Conclusions

ENVIRON has performed this updated Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E 1527, of the facility located at 190 Dillon Avenue in Campbell, California. Any exceptions to, or deletions from, this practice are described in Section 8.3 of this report. This assessment has revealed evidence of no recognized environmental conditions at the site.

8.3 Analysis of Data Gaps

No exceptions, deletions, deviations, or site reconnaissance limitations to the ASTM Standard for the assessment were encountered.

9 References

9.1 Documents

- Civil Engineering Associates. 2014. *ALTA Land Title Survey, 186 and 190 Dillon Avenue, 186 Gilman Avenue, 426, 466, 472, 482, and 488 Sam Cava Lane, Campbell, California*. April 29.
- EDR. 2013. *Aerial Photo Decade Package: Inquiry Number 3537772.5*. March 11.
- EDR. 2013. *City Directory, Abstract, Inquiry Number 3537772.6*. March 7.
- EDR. 2013. *Environmental Lien Search, Inquiry Number 3690606.1*. August 12.
- EDR. 2013. *Historical Topographic Map Report, Inquiry Number 3537772.4*. March 7.
- EDR. 2014. *Radius Map, Inquiry Number: 03949136.2r*. May 20.
- EDR. 2013. *Sanborn® Map Report, Inquiry Number 3537772.3*. March 7.
- JR Associates, Inc. 2013. *Magnetic Investigation at 190 Dillon Avenue, Campbell, California*. August 12.
- Pacific Geotechnical Engineering. 2014. *Draft Geotechnical Investigation, Proposed Residential Development, Dillon Avenue, Sam Cava Lane, and Gilman Avenue, Campbell, California*. May 16.
- Sierra Environmental. 2014. *Building Survey Report for Suspect Asbestos-Containing Material and Lead in Paint, 426, 466, 472, 482, and 488 Sam Cava Lane, 186 and 190 Dillon Avenue, 186 Gilman Avenue, Campbell, California*. January 2.

9.2 Interviews

- Current site tenants. 2013. Personal interviews. August 1 and 7.
- Current site tenants. 2014. Personal interviews. June 12.
- Terrance Wolf. Site owner. 2013. Personal telephone interview. August 22.

Tables

TABLE 1: PESTICIDES, PCBs, and TPHs DETECTED IN SOIL
Results of Soil Sampling
190 Dillon Avenue, Campbell, California

Sample ID	Depth (feet bgs)	Detected OCPs and PCBs in Soil EPA Method 8081A/8082							Total Petroleum Hydrocarbons in Soil EPA Methods 8021B/8015B		
		a-Chlordane	g-Chlordane	p,p-DDD	p,p-DDE	p,p-DDT	Dieldrin	PCBs, total	TPH-G	TPH-D	TPH-MO
SB-2	1.0-5.0	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.05	NA	NA	NA
SB-3	1.0-5.0	0.023	0.022	0.039	0.059	0.29	ND<0.020	ND<1.0	NA	NA	NA
SB-4	1.0-5.0	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	7.3	NA	NA	NA
SB-5	1.0-5.0	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.05	NA	NA	NA
SB-6	3.0-5.0	ND<0.010	ND<0.010	ND<0.010	0.024	0.06	ND<0.010	ND<0.50	NA	NA	NA
SB-7	3.0-5.0	ND<0.010	ND<0.010	ND<0.010	0.018	0.06	0.018	ND<0.50	NA	NA	NA
SB-8	3.0-5.0	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.50	NA	NA	NA
SB-9	1.0-5.0	ND<0.050	ND<0.050	ND<0.050	0.091	0.16	ND<0.050	ND<2.5	NA	NA	NA
SB-10	2.0	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.05	NA	NA	NA
SB-11	2.0	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.05	NA	NA	NA
SB-12	2.0	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.05	NA	NA	NA
SB-13	2.0	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.05	NA	NA	NA
SB-14	6.0	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.05	NA	NA	NA
SB-15	3.0	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.001	ND<0.05	ND<1.0	1.0	ND<5.0
SB-16	3.0	ND<0.001	ND<0.001	0.0015	0.24	0.082	ND<0.001	ND<0.05	ND<1.0	1.9	8.7
SB-17	3.0	ND<0.001	ND<0.001	0.016	1.9	0.6	ND<0.001	ND<0.05	ND<1.0	2.3	6.3
SB-18	1.0	ND<0.0050	ND<0.0050	ND<0.0050	0.048	0.040	ND<0.0050	ND<0.25	NA	NA	NA
SB-19	1.0	0.0025	0.0012	0.0035	0.1	0.068	0.0068	ND<0.50	NA	NA	NA
SB-20	1.0	ND<0.0050	ND<0.0050	0.0073	0.52	0.19	ND<0.0050	ND<0.25	NA	NA	NA
SB-21	5.0	ND<0.0010	ND<0.0010	0.014	0.6	0.33	ND<0.0010	ND<0.050	NA	NA	NA
SB-22	20.0	ND<0.0050	ND<0.0050	0.0053	0.009	0.014	ND<0.0050	ND<0.25	NA	NA	NA
Residential ESL		0.44	0.44	2.4	1.7	1.7	0.0023	0.22	100	100	100
Residential RSL		1.8	1.8	2.2	1.6	1.9	0.033	0.24	--	--	--

Notes:

Only compounds detected above the laboratory reporting limit is included in the table.

Detected compounds are shown in **bold**.

All data are reported in milligrams per kilogram (mg/kg).

Orange highlighted cells indicate result is greater than regulatory screening level.

bgs = below ground surface

DDD = dichlorodiphenyldichloroethane

DDE = dichlorodiphenylethylene

DDT = dichlorodiphenyltrichloroethane

EPA = Environmental Protection Agency

ESL = Environmental Screening Level. RWQCB Screening for Environmental Concerns, December 2013 Update. Summary Table A - Environmental Screening Levels (ESLs),

Shallow Soils (<3m bgs), Groundwater is Current or Potential Source of Drinking Water.

ID = identification

mg/kg = milligrams per kilogram

NA = not analyzed

ND = not detected at or above laboratory reporting limit shown

OCP = organochlorine pesticide

PCB = polychlorinated biphenyl

RSL = Regional Screening Level. USEPA Screening Levels for Chemical Contaminants, May 2014 update. Regional Screening Level (RSL) Summary Table (TR=1E-6, HQ=1, Resident Soil).

TPH-G = total petroleum hydrocarbons - gasoline range (C6-C12)

TPH-D = total petroleum hydrocarbons - diesel range (C10-C23)

TPH-MO = total petroleum hydrocarbons - motor oil range (C18-C36)

TABLE 2: METALS DETECTED IN SOIL
Results of Soil Sampling
190 Dillon Avenue, Campbell, California

Sample ID	Depth (feet bgs)	CAM17 Metals in Soil EPA Method 6020																	Soil pH EPA Method 9045D
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	pH
SB-2	1.0-5.0	ND<0.5	6.1	180	0.62	0.27	69	15	31	9.3	ND<0.050	1.2	96	0.56	ND<0.5	ND<0.5	51	73	NA
SB-3	1.0-5.0	0.74	5.9	130	ND<0.5	0.42	190	16	29	43	0.088	1.0	200	ND<0.5	ND<0.5	ND<0.5	48	100	NA
SB-4	1.0-5.0	0.79	8.2	220	0.95	0.30	76	18	42	13	ND<0.050	2.1	97	0.79	ND<0.5	ND<0.5	69	95	NA
SB-5	1.0-5.0	0.56	7.0	200	0.76	ND<0.25	66	14	35	9.4	ND<0.050	1.3	82	0.52	ND<0.5	ND<0.5	58	81	NA
SB-6	3.0-5.0	0.68	5.0	170	ND<0.5	0.25	44	9.5	27	30	0.25	0.96	50	ND<0.5	ND<0.5	ND<0.5	45	80	7.72
SB-7	3.0-5.0	2.1	4.3	150	ND<0.5	0.78	16	3.7	48	77	0.39	1.0	18	ND<0.5	ND<0.5	ND<0.5	14	170	7.56
SB-8	3.0-5.0	1.1	2.7	110	ND<0.5	0.58	23	5.0	38	69	0.22	0.75	26	ND<0.5	ND<0.5	ND<0.5	25	120	7.70
SB-9	1.0-5.0	1.5	8.0	190	0.71	0.37	66	15	53	38	0.092	1.6	84	0.53	ND<0.5	ND<0.5	63	110	NA
SB-15	3.0	0.69	7.5	200	0.85	0.29	71	16	39	11	ND<0.050	1.6	95	0.54	ND<0.5	ND<0.5	63	84	NA
SB-16	3.0	0.55	7.1	170	0.64	ND<0.25	55	12	45	15	0.068	0.84	66	ND<0.5	ND<0.5	ND<0.5	58	78	NA
SB-17	3.0	0.82	24	190	0.86	ND<0.25	67	16	49	66	0.092	0.82	82	0.52	ND<0.5	ND<0.5	60	83	NA
SB-18	1.0	0.54	6.4	190	0.54	0.32	180	18	35	29	0.28	0.97	170	ND<0.5	ND<0.5	ND<0.5	43	92	NA
SB-19	1.0	0.6	6.9	160	0.65	0.25	86	14	35	14	0.097	1.0	80	ND<0.5	ND<0.5	ND<0.5	45	78	NA
SB-20	1.0	0.62	11	150	0.61	ND<0.25	73	16	36	33	0.17	1.0	110	ND<0.5	ND<0.5	ND<0.5	51	81	NA
SB-21	5.0	0.57	11	150	0.55	ND<0.25	58	13	92	35	0.079	1.1	79	0.53	ND<0.5	ND<0.5	53	87	NA
SB-22	20.0	0.78	5.0	93	ND<0.5	0.27	53	9.9	31	18	0.31	0.94	57	ND<0.5	ND<0.5	ND<0.5	45	130	NA
Residential ESL		20	0.39	750	4.0	12	1,000	23	230	80	6.7	40	150	10	20	0.78	200	600	--
Residential RSL		31	0.67	15,000	160	70	120,000 ¹	23	3,100	400	9.4	390	1,500	390	390	0.78	390	23,000	--

Notes:

All samples analyzed by McCampbell Analytical, Incorporated.

Detected compounds are shown in **bold**.

All data for metals concentrations are reported in milligrams per kilogram (mg/kg) unless otherwise noted.

Orange highlighted cells indicate result is greater than regulatory screening level.

bgs = below ground surface

CAM17 = California Assessment Manual 17 metals

EPA = Environmental Protection Agency

ESL = Environmental Screening Level. RWQCB Screening for Environmental Concerns, December 2013 Update. Summary Table A - Environmental Screening Levels (ESLs),

Shallow Soils (<3m bgs), Groundwater is Current or Potential Source of Drinking Water.

ID = identification

NA = not analyzed

ND = not detected at or above laboratory reporting limit shown

RSL = Regional Screening Level. USEPA Screening Levels for Chemical Contaminants, May 2014 update. Regional Screening Level (RSL) Summary Table (TR=1E-6, HQ=1, Resident Soil).

¹ RSL for Chromium (III), Insoluble Salts

TABLE 3: NATURALLY-OCCURRING ASBESTOS IN BASE ROCK**Limited Environmental Investigation****190 Dillon Avenue, Campbell, California**

Location ID	Composite Sample ID	NOA CARB 435		
		Visual Estimation	% Asbestos in Matrix	Asbestos Type(s) Detected
SB-1	SB-123-NOA	Trace	0.25	Chrysolite
SB-2				
SB-3				
SB-4	SB-456-NOA	Trace	0.50	Chrysolite
SB-5				
SB-6				
SB-7	SB-789-NOA	Trace	<0.25	Chrysolite
SB-8				
SB-9				

Notes:

Samples were composited in the field and analyzed by Forensic Analytical Laboratories, Inc.

Results with detected naturally occurring asbestos are shown in **bold**.

CARB 435 = California Air Resources Board Method 435; June 6, 1991.

ID = identification

N/A = Not Applicable

NOA = Naturally Occurring Asbestos

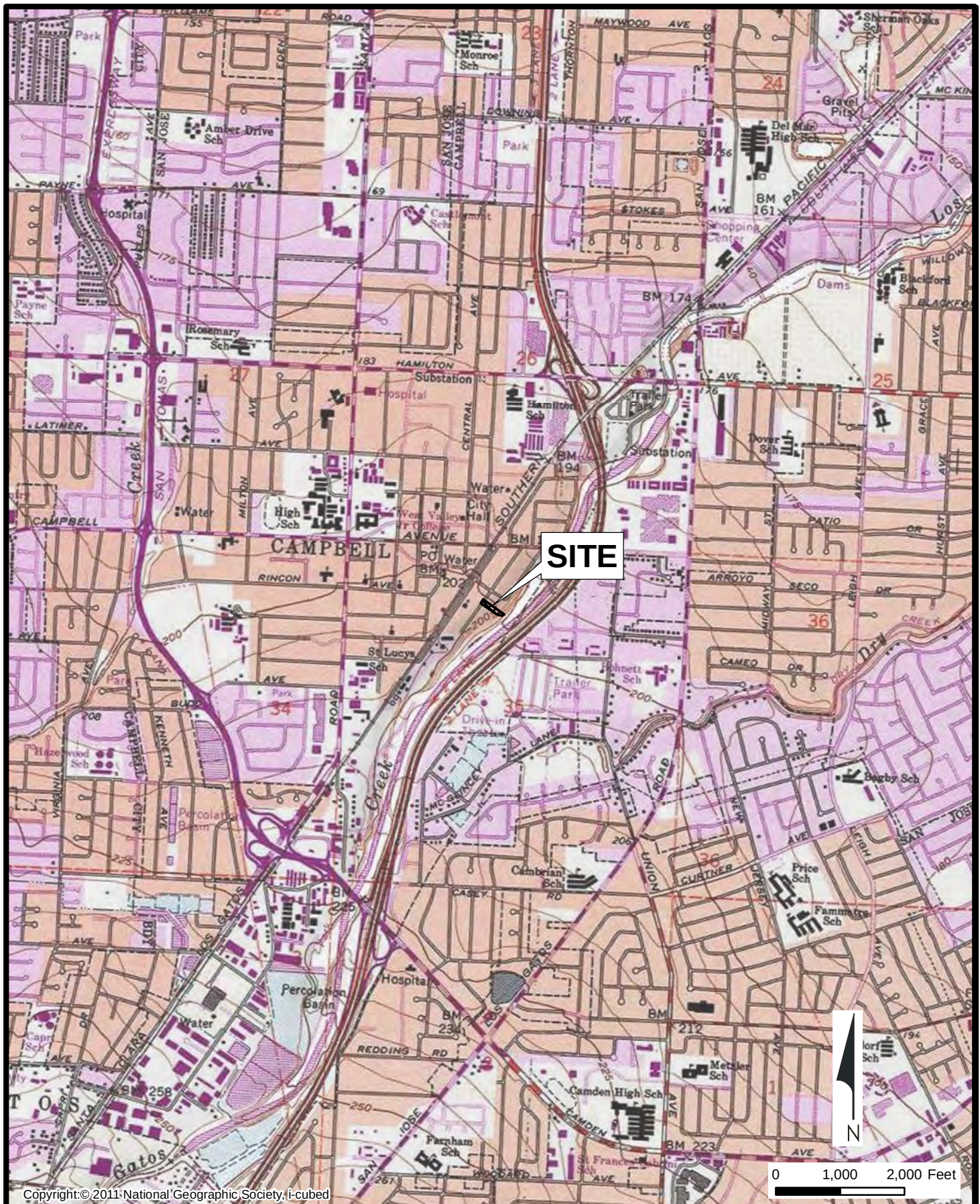
% = percent

TABLE 4: VOLATILE ORGANIC COMPOUNDS DETECTED IN SOIL GAS
Results of Soil Gas Sampling
190 Dillon Avenue, Campbell, California

Sample ID	Depth (feet bgs)	VOCs Detected in Soil Gas EPA Method TO-15																
		Acetone	Benzene	2-Butanone	Carbon Tetrachloride	CFC-113	Chloromethane	DCDFM	Ethylbenzene	4-Ethyltoluene	PCE	Toluene	o-Xylene	m/p-Xylene	1,1,1-TCA	1,3,5-TMB	1,2,4-TMB	1,1-DFA (Leak Check)
SV-2	4.5	23	ND<3.8	ND<10	ND<7.5	ND<27	ND<2.4	ND<5.9	ND<5.1	ND<5.8	ND<8.0	ND<4.5	ND<5.1	ND<21	20	ND<5.8	ND<17	ND<13
SV-3	4.5	20	8.5	ND<10	ND<7.2	56	ND<2.4	ND<5.6	5.9	ND<5.6	ND<7.7	24	7.5	26	160	ND<5.6	ND<17	ND<12
SV-4	4.5	8.9	ND<1.6	ND<4.4	ND<3.1	ND<11	1.4	2.8	ND<2.2	ND<2.5	ND<3.4	ND<1.9	ND<2.2	ND<8.7	5.1	ND<2.5	ND<7.4	9.8
SV-5	4.5	38	4.6	ND<4.4	5.2	84	ND<1.0	3.3	ND<2.2	ND<2.5	ND<3.4	ND<1.9	ND<2.2	ND<8.7	37	ND<2.5	ND<7.4	33
SV-6	4.5	49	3.8	8.5	ND<3.3	30	1.3	3.5	ND<2.3	ND<2.6	ND<3.6	ND<2.0	ND<2.3	ND<9.2	17	ND<2.6	ND<7.8	ND<5.7
SV-7	4.5	37	ND<1.6	ND<4.4	ND<3.1	16	1.7	ND<2.5	ND<2.2	ND<2.5	5.8	ND<1.9	ND<2.2	ND<8.7	61	ND<2.5	ND<7.4	ND<5.4
SV-8	4.5	86	1.7	11	ND<3.1	22	1.2	3.8	ND<2.2	ND<2.5	5.1	ND<1.9	ND<2.2	ND<8.7	8.1	ND<2.5	ND<7.4	ND<5.4
SV-9	4.5	54	9.0	15	ND<3.1	ND<11	1.2	3.0	2.4	3.0	13	2.7	2.5	ND<8.7	12	2.8	7.7	ND<5.4
Residential ESL		16,000,000	42	2,600,000	29	--	47,000	--	490	--	210	160,000	52,000	52,000	2,600,000	--	--	N/A

Notes:
Only compounds detected above the laboratory reporting limit is included in the table.
Detected compounds are shown in **bold**.
All data are reported in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).
Orange highlighted cells indicate result is greater than regulatory screening level.
-- = no established value
bgs = below ground surface
CFC-113 = chlorofluorocarbon-113 (1,1,2-Trichloro-1,2,2-Trifluoroethane)
DCDFM = dichlorodifluoromethane
EPA = Environmental Protection Agency
ESL = Environmental Screening Level. RWQCB Screening for Environmental Concerns, December 2013 Update.
Summary Table E - Environmental Screening Levels (ESLs), Indoor Air and Soil Gas (Vapor Intrusion Concerns)
ID = identification
ND = not detected at or above laboratory reporting limit shown
PCE = tetrachloroethene
VOC = volatile organic compounds
o-Xylene = ortho-xylene
m/p-Xylene = meta-/para-xylene
1,1,1-TCA = 1,1,1-trichloroethane
1,3,5-TMB = 1,3,5-trimethylbenzene
1,2,4-TMB = 1,2,4-trimethylbenzene
1,1-DFA = 1,1-difluoroethane

Figures



Site Location Map
190 Dillon Avenue
Campbell, California

Figure

1

Drafter: RS

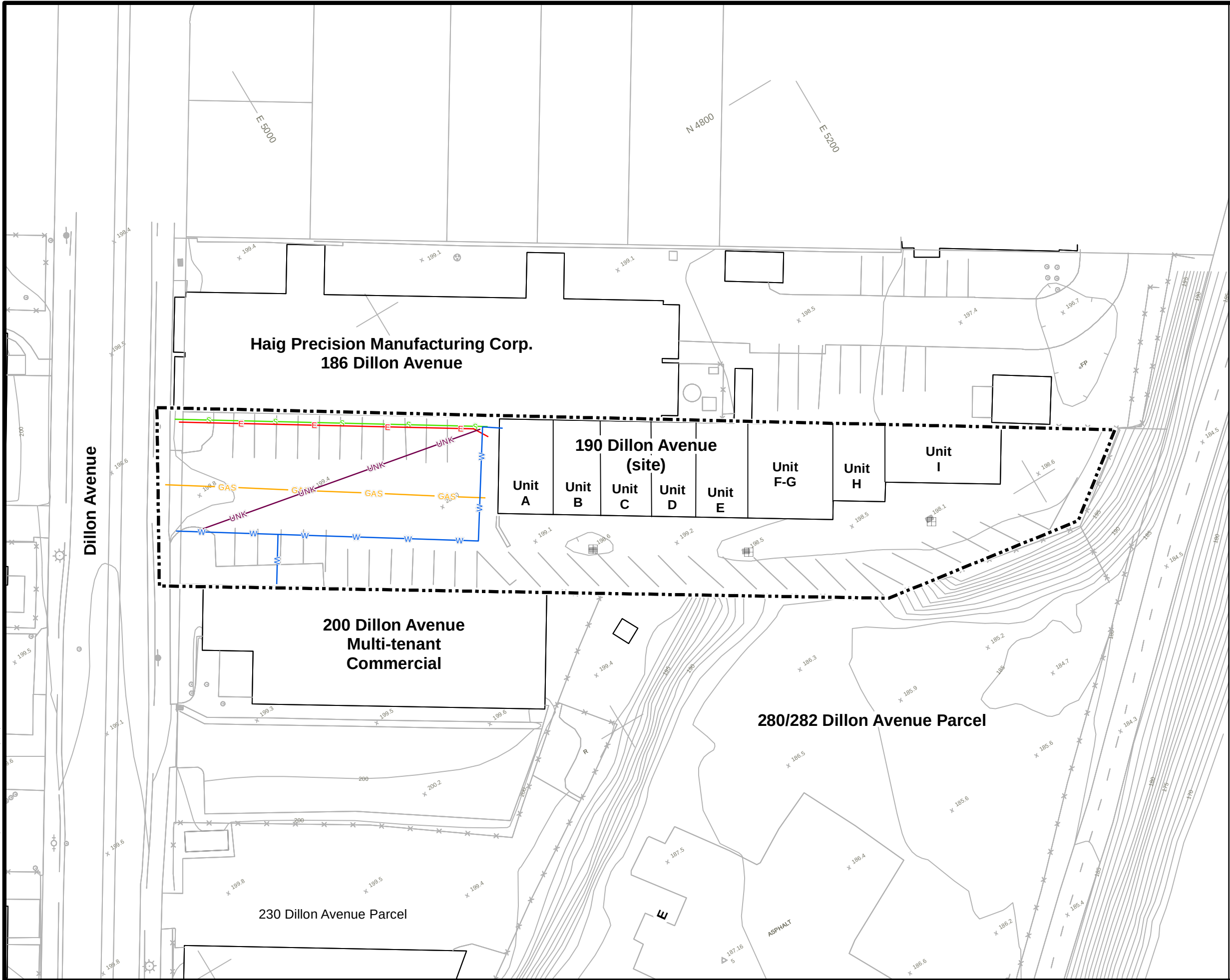
Date: 8/19/2013

Contract Number: 03-21676P

Approved:

Revised:

Path: H:\SCDev\Col190 Dillon Ave Campbell\GIS\0321676P-UtilityMap.mxd



Legend:

- Electrical
- Gas
- Sewer
- Water
- Unknown
- Boundary

Catch Basin

Unit A RB Tool Precision Machining

Unit B Ken's Solar and Pool Service

Unit C Lynch Co. Services

Unit D TP Construction

Unit E D & J Pest Control

Unit F-G Vacant (Former Etched Media)

Unit H Air-Sun Screen & Awning

Unit I Reed's Recording

Utility Map
190 Dillon Avenue
Campbell, California

Date:
9/4/2013

Contract Number:
03-21676P

Drafter:
RS

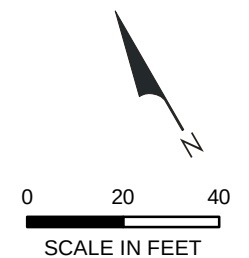
Approved:

Revised:

Figure

2

 Sample Location
 Boundary



Sample location Map
190 Dillon Avenue
Campbell, California

Date: 10/3/2013	Contract Number: 03-21676P	
Drafter: RS	Approved:	Revised:

ATTACHMENT 10

"WILL SERVE" LETTERS



June 27, 2014

Richard Yee
Robson Homes, LLC
2185 The Alameda, Suite 150
San Jose, CA 95126

RE: 280 Dillon Ave, Campbell – Will Serve Letter

Dear Mr. Yee:

This letter will serve as the West Valley Sanitation District's (District) "WILL SERVE" for the proposed 100 residential unit development along Sam Cava Lane and Dillon Ave. in the City Campbell.

District staff has reviewed the Formal Planning Submittal for 280 Dillon Avenue from the City of Campbell (PLN2013-337-338-339). The proposed development consists of 100 residential units. Sanitary sewer service is available from either the 6-inch sewer along Dillon Ave or the 6-inch sewer along Sam Cava Lane and Gillman Ave as shown in the attached map.

Pursuant to District Ordinance Code Section 10.130, the owner is required to pay all applicable fees prior to the recordation of the Final Map. The District will issue a clearance letter for the recording of the Final Map after the fees are paid.

Please contact me at (408)385-3030 if you have any further questions or concerns.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Alan Kam', is written over a light-colored background.

Alan Kam
Senior Civil Engineer

Attachment: WVSD System Map



**San Jose
Water
Company**

110 W. Taylor Street
San Jose, CA 95110-2131

**San Jose Water Company
Water Services Administration**

1265 S. Bascom Ave., San Jose, CA 95128
Facsimile: 408-279-7889
Writer's Direct Dial: 408-279-7874

June 18, 2014

RECEIVED

AUG 06 2014

CITY OF CAMPBELL
PLANNING DEPT.

City of Campbell
Department of Public Works
70 North First Street
Campbell, CA 95008

REFERENCE: Proposed Residential Project
180, 190, 230, 280 & 282 Dillon Avenue and
466, 472, 482 & 488 Sam Cava Lane
APN 412-08-030, 034, 035, 037, 041, 042, 043, 044 & 046

Gentlemen:

Please be informed that the above-referenced property is within the jurisdiction of San Jose Water Company. We will serve further development of the site in accordance with our rules and regulations in effect and on file with the California Public Utilities Commission.

If you have any questions, or require further information, please contact this office at the number indicated above.

Sincerely,

SAN JOSE WATER COMPANY

JAMES R. BARITEAU
Senior Water Services Representative

JRB:bct
280 Dillon Avenue (Updated Will Serve).doc

This letter e-mailed and mailed to: Richard Yee w/Robson Homes, LLC.

Date: May 14, 2014



Mr. Richard Yee
Robson Homes

RE: Dillon Ave, Campbell

This letter has been created to satisfy your request of a Will Serve Letter to the referenced subdivision.

Pacific Gas & Electric will be designing and providing the requested utilities per the standard application process and under the correct Tariff rules set forth by the California Public Utilities Commission.

Application, contract, right-of-way, and moneys are due prior to construction. Be certain to keep in close contact with your PG&E Representative. This will insure that any changes or delays in your plans will not affect PG&E's ability to design and construct your service facilities in a manner that best meets your needs.

Please call if there are any questions.

Sincerely,
Serina Oliver
Senior New Business Representative
408-725-2146

ATTACHMENT 11

LETTER OF MAP AMENDMENT (LOMA)



Federal Emergency Management Agency

Washington, D.C. 20472

August 07, 2014

MR. KIRK WHEELER
SCHAAF & WHEELER
1171 HOMESTEAD ROAD #255
SANTA CLARA, CA 95050

CASE NO.: 14-09-3443A
COMMUNITY: CITY OF CAMPBELL, SANTA CLARA
COUNTY, CALIFORNIA
COMMUNITY NO.: 060338

DEAR MR. WHEELER:

This is in reference to a request that the Federal Emergency Management Agency (FEMA) determine if the property described in the enclosed document is located within an identified Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), on the effective National Flood Insurance Program (NFIP) map. Using the information submitted and the effective NFIP map, our determination is shown on the attached Letter of Map Amendment (LOMA) Determination Document. This determination document provides additional information regarding the effective NFIP map, the legal description of the property and our determination.

Additional documents are enclosed which provide information regarding the subject property and LOMAs. Please see the List of Enclosures below to determine which documents are enclosed. Other attachments specific to this request may be included as referenced in the Determination/Comment document. If you have any questions about this letter or any of the enclosures, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.

Sincerely,

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration

LIST OF ENCLOSURES:

LOMA DETERMINATION DOCUMENT (REMOVAL)

cc: State/Commonwealth NFIP Coordinator
Community Map Repository
Region



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION
COMMUNITY	CITY OF CAMPBELL, SANTA CLARA COUNTY, CALIFORNIA	Lots 18, Block 3, Ruckers Addition, as shown on the Plat recorded in Map Book F, Page 39; Parcel 3, as shown on the Record of Survey recorded in Map Book 367, Page 56; and Parcel A, as shown on the Parcel Map recorded in Map Book 338, Page 55; all in the Office of the Recorder, Santa Clara County, California
	COMMUNITY NO.: 060338	
AFFECTED MAP PANEL	NUMBER: 06085C0237H	
	DATE: 5/18/2009	
FLOODING SOURCE: LOS GATOS CREEK		APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 37.284, -121.942 SOURCE OF LAT & LONG: GOOGLE EARTH PRO DATUM: NAD 83

DETERMINATION

LOT	BLOCK/SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
18	3	Ruckers Addition	180 & 190 Dillon Avenue	Property	X (unshaded)	--	--	187.3 feet

Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

DETERMINATION TABLE (CONTINUED)

ZONE A

STUDY UNDERWAY

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document amends the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

DETERMINATION TABLE (CONTINUED)

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
Parcel 3	--	--	280 Dillon Avenue	Property	X (unshaded)	--	--	187.3 feet
Parcel A	--	--	186 Gillman Avenue	Property	X (unshaded)	--	--	191.9 feet

ZONE A (This Additional Consideration applies to the preceding 3 Properties.)

The National Flood Insurance Program map affecting this property depicts a Special Flood Hazard Area that was determined using the best flood hazard data available to FEMA, but without performing a detailed engineering analysis. The flood elevation used to make this determination is based on approximate methods and has not been formalized through the standard process for establishing base flood elevations published in the Flood Insurance Study. This flood elevation is subject to change.

STUDY UNDERWAY (This Additional Consideration applies to all properties in the LOMA DETERMINATION DOCUMENT (REMOVAL))

This determination is based on the flood data presently available. However, the Federal Emergency Management Agency is currently revising the National Flood Insurance Program (NFIP) map for the community. New flood data could be generated that may affect this property. When the new NFIP map is issued it will supersede this determination. The Federal requirement for the purchase of flood insurance will then be based on the newly revised NFIP map.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 847 South Pickett Street, Alexandria, VA 22304-4605.

Luis Rodriguez, P.E., Chief
Engineering Management Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency

Washington, D.C. 20472

ADDITIONAL INFORMATION REGARDING LETTERS OF MAP AMENDMENT

When making determinations on requests for Letters of Map Amendment (LOMAs), the Department of Homeland Security's Federal Emergency Management Agency (FEMA) bases its determination on the flood hazard information available at the time of the determination. Requesters should be aware that flood conditions may change or new information may be generated that would supersede FEMA's determination. In such cases, the community will be informed by letter.

Requesters also should be aware that removal of a property (parcel of land or structure) from the Special Flood Hazard Area (SFHA) means FEMA has determined the property is not subject to inundation by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This does not mean the property is not subject to other flood hazards. The property could be inundated by a flood with a magnitude greater than the base flood or by localized flooding not shown on the effective National Flood Insurance Program (NFIP) map.

The effect of a LOMA is it removes the Federal requirement for the lender to require flood insurance coverage for the property described. The LOMA *is not* a waiver of the condition that the property owner maintain flood insurance coverage for the property. *Only* the lender can waive the flood insurance purchase requirement because the lender imposed the requirement. *The property owner must request and receive a written waiver from the lender before canceling the policy.* The lender may determine, on its own as a business decision, that it wishes to continue the flood insurance requirement to protect its financial risk on the loan.

The LOMA provides FEMA's comment on the mandatory flood insurance requirements of the NFIP as they apply to a particular property. A LOMA is not a building permit, nor should it be construed as such. Any development, new construction, or substantial improvement of a property impacted by a LOMA must comply with all applicable State and local criteria and other Federal criteria.

If a lender releases a property owner from the flood insurance requirement, and the property owner decides to cancel the policy and seek a refund, the NFIP will refund the premium paid for the current policy year, provided that no claim is pending or has been paid on the policy during the current policy year. The property owner must provide a written waiver of the insurance requirement from the lender to the property insurance agent or company servicing his or her policy. The agent or company will then process the refund request.

Even though structures are not located in an SFHA, as mentioned above, they could be flooded by a flooding event with a greater magnitude than the base flood. In fact, more than 25 percent of all claims paid by the NFIP are for policies for structures located outside the SFHA in Zones B, C, X (shaded), or X (unshaded). More than one-fourth of all policies purchased under the NFIP protect structures located in these zones. The risk to structures located outside SFHAs is just not as great as the risk to structures located in SFHAs. Finally, approximately 90 percent of all federally declared disasters are caused by flooding, and homeowners insurance does not provide financial protection from this flooding. Therefore, FEMA encourages the widest possible coverage under the NFIP.

The NFIP offers two types of flood insurance policies to property owners: the low-cost Preferred Risk Policy (PRP) and the Standard Flood Insurance Policy (SFIP). The PRP is available for 1- to 4-family residential structures located outside the SFHA with little or no loss history. The PRP is available for townhouse/rowhouse-type structures, but is not available for other types of condominium units. The SFIP is available for all other structures. Additional information on the PRP and how a property owner can qualify for this type of policy may be obtained by calling the Flood Insurance Information Hotline, toll free, at 1-800-427-4661. Before making a final decision about flood insurance coverage, FEMA strongly encourages property owners to discuss their individual flood risk situations and insurance needs with an insurance agent or company.

FEMA has established "Grandfather" rules to benefit flood insurance policyholders who have maintained continuous coverage. Property owners may wish to note also that, if they live outside but on the fringe of the SFHA shown on an effective NFIP map and the map is revised to expand the SFHA to include their structure(s), their flood insurance policy rates will not increase as long as the coverage for the affected structure(s) has been continuous. Property owners would continue to receive the lower insurance policy rates.

LOMAs are based on minimum criteria established by the NFIP. State, county, and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction in the SFHA. If a State, county, or community has adopted more restrictive and comprehensive floodplain management criteria, these criteria take precedence over the minimum Federal criteria.

In accordance with regulations adopted by the community when it made application to join the NFIP, letters issued to amend an NFIP map must be attached to the community's official record copy of the map. That map is available for public inspection at the community's official map repository. Therefore, FEMA sends copies of all such letters to the affected community's official map repository.

When a restudy is undertaken, or when a sufficient number of revisions or amendments occur on particular map panels, FEMA initiates the printing and distribution process for the affected panels. FEMA notifies community officials in writing when affected map panels are being physically revised and distributed. In such cases, FEMA attempts to reflect the results of the LOMA on the new map panel. If the results of particular LOMAs cannot be reflected on the new map panel because of scale limitations, FEMA notifies the community in writing and revalidates the LOMAs in that letter. LOMAs revalidated in this way usually will become effective 1 day after the effective date of the revised map.

ATTACHMENT 12

DRAFT ENVIRONMENTAL NOISE FEASIBILITY STUDY

Dillon Residences
Campbell, California

Draft Environmental Noise Feasibility Study

16 May 2014

Prepared for:

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CSA Project Number: 13-0165

PROJECT DESCRIPTION

This report provides an environmental noise feasibility study for the proposed residential development at 230 and 280 Dillon Avenue in Campbell, California. The purpose of the study is to determine the noise environment at the site, compare the measured data with the applicable City and State standards, and propose preliminary mitigation measures as necessary. This report summarizes the results of our study.

The project site is located in the City of Campbell, situated between Dillon Avenue and the Highway 17 corridor. The project site is bounded by commercial uses to the north, a public works facility for the City to the south, and a pedestrian trail to the east. The major noise sources affecting the project site are vehicular traffic along Highway 17 and Dillon Avenue. Noise from the public works facility is also a contributor.

In summary, interior noise levels would be reduced to meet City and State standards by incorporating sound-rated assemblies at exterior building facades. Appendix A and Figure A1 contain more information about the fundamental concepts of environmental noise.

PROJECT CRITERIA

State of California – California Building Code (CBC)

The 2013 California Building Code (CBC) does not currently include an exterior noise intrusion criterion. However, the CBC has historically required that the indoor noise level in residential units of new multi-family dwellings not exceed DNL¹ 45 dB where the exterior noise level is greater than DNL 60 dB. This criterion is our recommended goal.

City of Campbell, California – Noise Element of 2001 General Plan

The City of Campbell's interior noise standard is consistent with the historic State requirement for multi-family housing of CNEL³ 45 dB. According to the noise guidelines in the general plan:

“New residential development shall conform to a traffic-related noise exposure of 60 dBA CNEL for outdoor noise in noise-sensitive outdoor activity areas and 45 dBA CNEL for indoor noise.”

Noise-sensitive outdoor activity areas are typically considered rear yards, common-use courtyards, etc. For this project, we have applied this requirement to the common open space along the south side of the site.

¹ Day-Night Average Sound Level (DNL) – A descriptor established by the U.S. Environmental Protection Agency to describe the average day-night level with a penalty applied to noise occurring during the nighttime hours (10 pm to 7 am) to account for the increased sensitivity of people during sleeping hours.

³ Community Noise Equivalent Level (CNEL) – A descriptor for the 24-hour A-weighted average noise level. The CNEL concept accounts for the increased acoustical sensitivity of people to noise during the evening and nighttime hours. Sound levels during the hours from 7 pm to 10 pm are penalized 5 dB; sound levels during the hours from 10 pm to 7 am are penalized 10 dB. A 10-dB increase in sound level is perceived by people to be a doubling of loudness. This is approximately equal to the DNL.

NOISE ENVIRONMENT

To quantify the existing noise environment at the project site, we conducted noise measurements at the site between 22 March and 28 March 2013. We returned to the site to conduct additional noise measurements between 8 April and 12 April 2014. We placed noise monitors at five long-term continuous locations (L1 to L3), as well as two 15-minute spot locations (S1 and S2). A summary of the acoustical measurement locations is listed below in Table 2, and Figure 1.

Table 1: On-Site Measured Data		
Monitor	Location	Measured CNEL
L1	Approximately 20-feet southeast of Dillon Avenue and approximately 375-feet southwest of Sam Cava Lane, 12-feet above grade	64 dB
L2	Approximately 230-feet southeast of Dillon Avenue and approximately 430-feet north of Highway 17, 12-feet above grade	70 dB
L3	Approximately 355-feet north of Highway 17 and approximately 335-feet southeast of Dillon Avenue, 12-feet above grade	71 dB
L4	Approximately 20-feet south of Sam Cava Lane and approximately 180-feet east of Dillon Avenue, 12-feet above grade	64 dB
L5	Approximately 220-feet southeast of Sam Cava Lane and approximately 325-feet north of Highway 17, 12-feet above grade	71 dB
S1	Approximately 200-feet southeast of Dillon Avenue and approximately 500-feet north of Highway 17, 5-feet above grade	63 dB*
S2	Approximately 330-feet southeast of Dillon Avenue and approximately 410-feet north of Highway 17, 5-feet above grade	65 dB*
* Calculated using a 15-minute offset from Monitor L3		

A traffic study has not been provided for this project. For our calculations, we have added 1 decibel to the expected CNEL to account for future traffic increases⁴.

ASSESSMENT OF NOISE LEVELS

Exterior Noise Levels

We calculated noise levels of CNEL 61 to 72 across the site. We understand that the only common open space for the site will be centrally located, near lots 23 to 30. At this open space, the noise level will be approximately 66 dB. In order to reduce the noise levels at the common open space down to the City's recommended CNEL 60 dB, a 7-foot sound wall would need to be installed between lots 71 and 72 as shown in Figure 2. This assumes the elevation of the bottom of the sound wall is the same as the elevation of the common open space. The fence must be continuous from grade to top, have no cracks or gaps, and have a minimum surface density of three pounds per square foot (e.g., one-inch thick plywood, CMU, etc.).

⁴ Caltrans assumes a traffic volume increase of three-percent per year, which corresponds to a 1 dB increase over ten years. In the absence of City data, we have used this same formula for the local roads.

Interior Noise Levels

To allow the project to meet the City's interior noise requirement of CNEL 45 dB in habitable rooms, sound-rated assemblies will be required at all building facades on the project site. The STC⁵ ratings for the project site vary between STC 28 and 35, depending on the exposure to the nearby noise sources.

Figure 2 shows the STC ratings necessary to meet the project criteria. The STC ratings are based on the typical floor plans that you have provided and typical glazing configurations from a similar project. For the purpose of this analysis, we are assuming bedrooms are approximately 12 feet by 12 feet with carpet and living rooms are 12 feet by 15 feet with hard-surfaced flooring. We have assumed a ceiling height of 9 feet and that approximately 30% of the exterior facade is glazing (including both windows and doors).

STC ratings for selected assemblies should be based on laboratory testing performed in accordance with ASTM E-90 and comprise the entire window or door assembly, including the frame. For reference purposes, a typical construction-grade 1-inch insulated, dual-pane window achieves an STC rating of approximately 28 to 30. A qualified acoustical engineer must review the design as it is developed to refine the specific STC ratings once the building design and site layout has been refined.

Because windows must be closed to achieve the interior noise criterion, an alternate means of providing outside air (e.g., HVAC, Z-ducts) to habitable spaces should be considered for all building facades exposed to an exterior DNL of 60 dB or greater. This applies to all residences on the project site.

*

*

*

This concludes our draft environmental noise feasibility study for the Dillon residences. Should you have any questions, please give us a call.

⁵ Sound Transmission Class (STC) – A single-figure rating standardized by ASTM and used to rate the sound insulation properties of building partitions. The STC rating is derived from laboratory measurements of a particular building element and as such is representative of the maximum sound insulation. Increasing STC ratings correspond to improved noise isolation.

APPENDIX A

FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

- The intensity or level of the sound
- The frequency spectrum of the sound
- The time-varying character of the sound

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or hertz (Hz). Most of the sounds, which we hear in the environment, do not consist of a single frequency, but of a broad band of frequencies, differing in level. The name of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands, which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Surprisingly, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively de-emphasizes the importance of frequency components below 1000 Hz and above 5000 Hz. This frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and at extreme high frequencies relative to the mid-range.

The weighting system described above is called "A"-weighting, and the level so measured is called the "A-weighted sound level" or "A-weighted noise level." The unit of A-weighted sound level is sometimes abbreviated "dBA." In practice, the sound level is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting characteristic. All U.S. and international standard sound level meters include such a filter. Typical sound levels found in the environment and in industry are shown in Figure A-1.

Although a single sound level value may adequately describe environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise is a conglomeration of distant noise sources, which results in a relatively steady background noise having no identifiable source. These distant sources may include traffic, wind in trees, industrial activities, etc. and are relatively constant from moment to moment. As natural forces change or as human activity follows its daily cycle, the sound level may vary slowly from hour to hour. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities such as single vehicle pass-bys, aircraft flyovers, etc. which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, statistical noise descriptors were developed. "L10" is the A-weighted sound level equaled or exceeded during 10 percent of a stated time

period. The L10 is considered a good measure of the maximum sound levels caused by discrete noise events. "L50" is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period; it represents the median sound level. The "L90" is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period and is used to describe the background noise.

As it is often cumbersome to quantify the noise environment with a set of statistical descriptors, a single number called the average sound level or "Leq" is now widely used. The term "Leq" originated from the concept of a so-called equivalent sound level which contains the same acoustical energy as a varying sound level during the same time period. In simple but accurate technical language, the Leq is the average A-weighted sound level in a stated time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the different response of people to daytime and nighttime noise. During the nighttime, exterior background noise levels are generally lower than in the daytime; however, most household noise also decreases at night, thus exterior noise intrusions again become noticeable. Further, most people trying to sleep at night are more sensitive to noise. To account for human sensitivity to nighttime noise levels, a special descriptor was developed. The descriptor is called the Ldn (Day/Night Average Sound Level), which represents the 24-hour average sound level with a penalty for noise occurring at night. The Ldn computation divides the 24-hour day into two periods: daytime (7:00 am to 10:00 pm); and nighttime (10:00 pm to 7:00 am). The nighttime sound levels are assigned a 10 dB penalty prior to averaging with daytime hourly sound levels.

For highway noise environments, the average noise level during the peak hour traffic volume is approximately equal to the Ldn.

The effects of noise on people can be listed in three general categories:

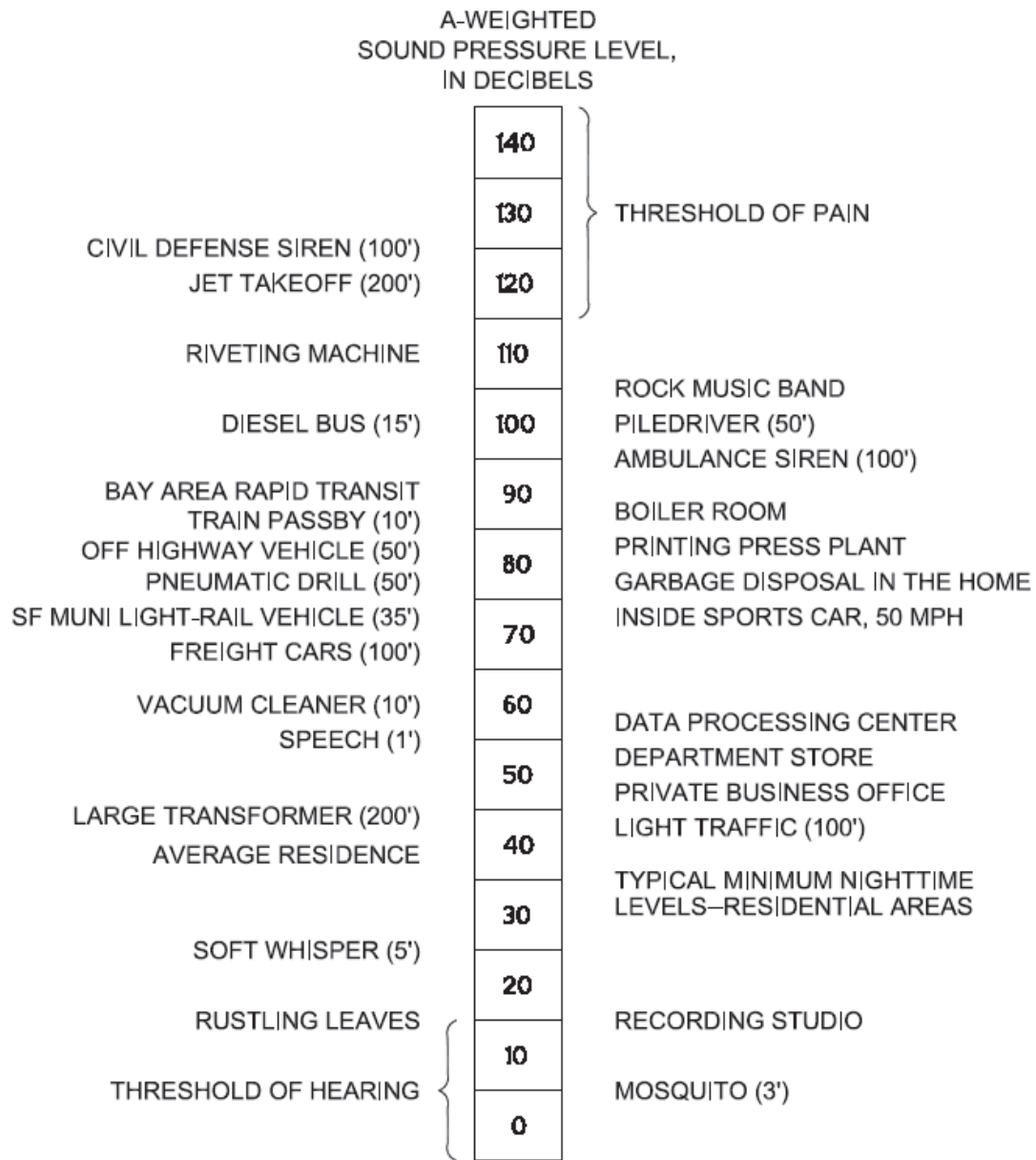
- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as startle, hearing loss

The sound levels associated with environmental noise usually produce effects only in the first two categories. Unfortunately, there has never been a completely predictable measure for the subjective effects of noise nor of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over time.

Thus, an important factor in assessing a person's subjective reaction is to compare the new noise environment to the existing noise environment. In general, the more a new noise exceeds the existing, the less acceptable the new noise will be judged.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

Except in carefully controlled laboratory experiments, a change of only 1 dB in sound level cannot be perceived. Outside of the laboratory, a 3 dB change is considered a just-noticeable difference. A change in level of at least 5 dB is required before any noticeable change in community response would be expected. A 10 dB change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse community response.



(100') = DISTANCE IN FEET
BETWEEN SOURCE
AND LISTENER

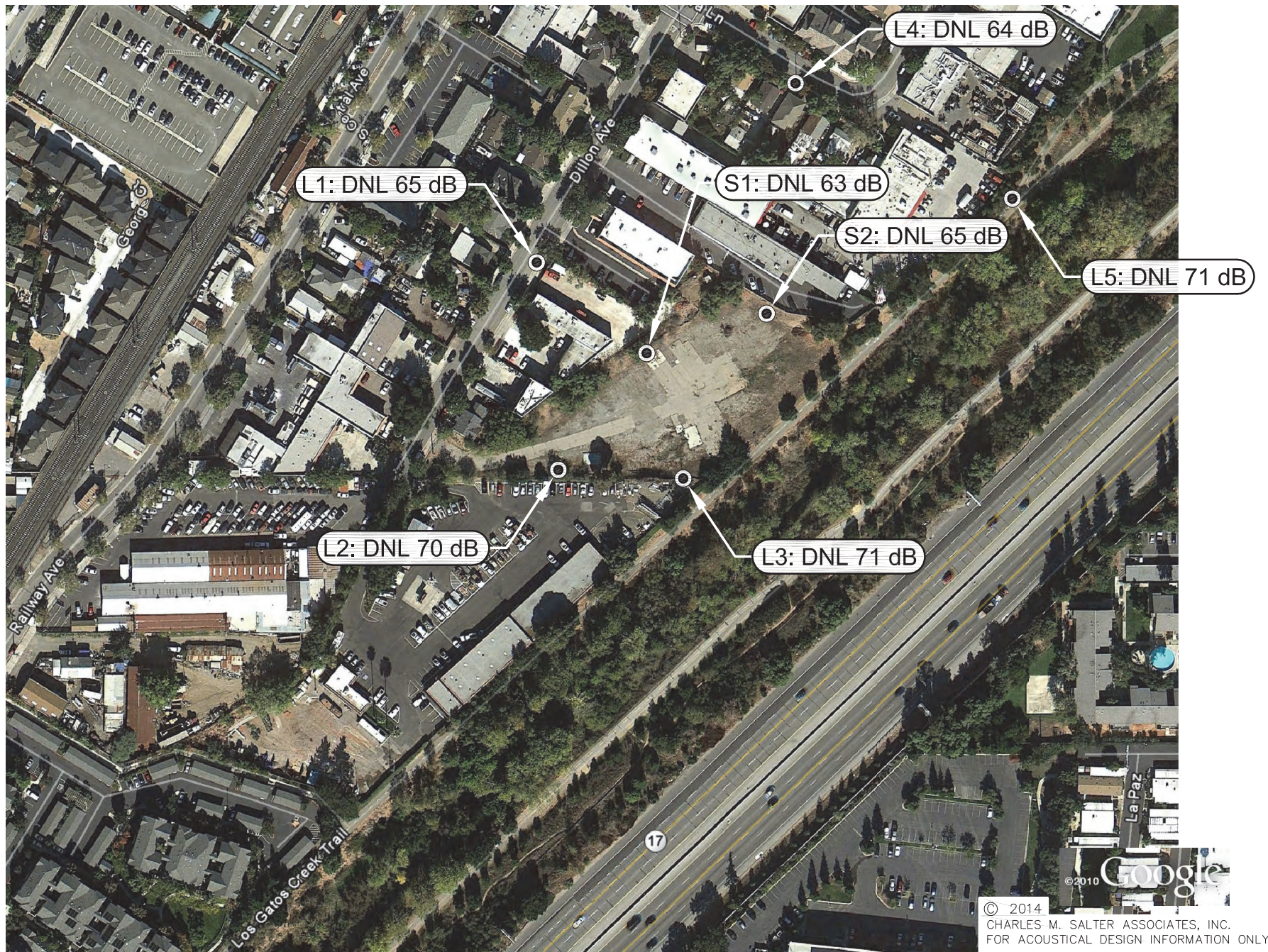
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TYPICAL SOUND LEVELS
MEASURED IN THE
ENVIRONMENT AND INDUSTRY

FIGURE A1

1107

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11.25.03



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DILLON AVENUE — CAMPBELL, CA
MEASUREMENT LOCATIONS AND MEASURED DNL

FIGURE 1

CSA #
13-0165

RPA/VS
05.16.14



FIGURE 2

RPA/VS
05.16.14

ATTACHMENT 13

TRAFFIC IMPACT ANALYSIS



June 17, 2014

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Campbell, CA, 95008

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Traffic Impact Study for the Dillon Avenue Residential Project

Dear Mr. Jue;

Whitlock & Weinberger Transportation, Inc. (W-Trans) has completed the traffic impact study for the proposed 100 residential units to be located at the southeast corner of the Dillon Avenue/Sam Cava Lane intersection in Campbell. The traffic study was completed in accordance with the criteria established by the City of Campbell and the Santa Clara Valley Transportation Authority (VTA), which administers the Santa Clara County Congestion Management Program (CMP).

Study Area and Period

The study area focused on five key intersections as listed below:

1. Campbell Avenue/Railway Avenue
2. Campbell Avenue/Gilman Avenue
3. Campbell Avenue/Union Avenue
4. Orchard City Drive/Railway Avenue
5. Dillon Avenue/Sam Cava Lane

Vehicle operating conditions during the a.m. and p.m. peak hours were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute. The operating conditions were evaluated for the following scenarios:

- Existing Conditions
- Existing Plus Project Conditions

Capacity Analysis

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersection of Dillon Avenue/Sam Cava Lane has stop signs on all approaches and was analyzed using the "All-Way Stop-Controlled" Intersection methodology from the *Highway Capacity*

Manual, Transportation Research Board, 2000 (HCM). This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole, and is then related to a Level of Service as shown in Table I.

Table I
All-Way Stop-Controlled Intersection Level of Service Criteria

LOS A	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.
LOS B	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.
LOS C	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach, and wait for vehicle to clear from one or more approaches prior to entering the intersection.
LOS D	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.
LOS E	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.
LOS F	Delay of more than 50 seconds. Drivers enter long queues on all approaches.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2000

All the remaining study intersections are controlled by traffic signals and were analyzed using the signalized methodology published in the HCM as well as the *Traffic Level of Service Analysis Guidelines*, Santa Clara County Transportation Authority, Congestion Management Program, 2003. These sources contain methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle. The signalized methodology is based on factors including traffic volumes, green time for each movement, phasing, whether or not the signals are coordinated, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. It should be noted that the average stopped delay for the signalized intersections was calculated using TRAFFIX analysis software and correlated to a level of service designation as shown Table 2.

Table 2
Signalized Intersection Level of Service Criteria

Level of Service	Average Control Delay (in seconds per vehicle)	Description
A	Delay $\leq$ 10.0	Free Flow; minimal to no delay
B+	10.0 < Delay $\leq$ 12.0	Stable flow, but speeds are beginning to be restricted by traffic conditions; slight delays.
B	12.0 < Delay $\leq$ 18.0	
B-	18.0 < Delay $\leq$ 20.0	
C+	20.0 < Delay $\leq$ 23.0	Stable flow, but most drivers cannot select their own speeds and feel somewhat restricted; acceptable delays.
C	23.0 < Delay $\leq$ 32.0	
C-	32.0 < Delay $\leq$ 35.0	
D+	35.0 < Delay $\leq$ 39.0	Approaching unstable flow, and drivers have difficulty maneuvering; tolerable delays
D	39.0 < Delay $\leq$ 51.0	
D-	51.0 < Delay $\leq$ 55.0	
E+	55.0 < Delay $\leq$ 60.0	Unstable flow with stop and go; delays
E	60.0 < Delay $\leq$ 75.0	
E-	75.0 < Delay $\leq$ 80.0	
F	Delay > 80.0	Total breakdown; congested conditions with excessive delays.

Reference: *Traffic Level of Service Guidelines*, Santa Clara County Congestion Management Program, 2003

Traffic Operation Standards

The City of Campbell has established a minimum acceptable operating level of LOS D for local intersections (non-CMP).

The City of Campbell has established criteria to determine the level of significance of traffic impacts based on standards set by the Santa Clara County *Congestion Management Program* (CMP) in the *Transportation Impact Analysis Guidelines*, adopted in March 2009. For local intersections not on the CMP network, a traffic impact is considered significant if:

- The addition of project-generated traffic causes operation of an intersection to deteriorate from an acceptable level of service (LOS D or better) to LOS E or LOS F, or
- For intersections where LOS E operation has been established as acceptable, the project condition causes operation to deteriorate from LOS E to LOS F.

Traffic Infusion on Residential Environment (TIRE) Index

Residential areas are especially sensitive to traffic because relatively small increases in traffic can impact the livability of the neighborhood. In the project vicinity, Dillon Avenue and Gillman Avenue have a mix of residential and commercial uses on both sides of the street. The effect of adding project-related traffic on Dillon Avenue and Gillman Avenue was evaluated based on the Traffic Infusion on Residential

Environment (TIRE) index. The TIRE index is a tool that measures the residents' perception of the effect of increased Average Daily Traffic (ADT) on residential streets. TIRE index values range from 0.0 to 5.0 depending on daily traffic volume. An index of 0.0 represents the least infusion of traffic and 5.0 the greatest, and, thereby the poorest residential environment. A TIRE index of 3.0 typically represents the threshold at which the character of a residential street changes. Residential streets with a TIRE index above this mid-range point of 3.0 typically exhibit higher traffic volumes, while streets with a TIRE index below 3.0 are usually more suitable for residential activities. According to this methodology, an impact occurs on the residential street when the difference in index between no project and project conditions is 0.10 or more. An abbreviated list of the TIRE indices is presented in Table 3, while the entire TIRE index table is enclosed.

Table 3
TIRE Index Table

Existing Volume Range (Daily Vehicles)	TIRE Index	Minimum Daily Volume Increase to Produce 0.10 change in the TIRE Index
711-890	2.9	170
891-1,100	3.0	220
1,101-1,400	3.1	290
1,401-1,800	3.2	380
1,801-2,200	3.3	500
2,201-2,800	3.4	650

Source: Goodrich Traffic Group

Existing Conditions

Collision History

The collision histories for the study intersections were reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on collision data available from the California Highway Patrol as published in their *Statewide Integrated Traffic Records System (SWITRS)* reports between October 1, 2007 and September 30, 2012. The calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2010 Collision Data on California State Highways*, Caltrans.

Out of the five study intersections, collisions were reported at three study intersections, which experienced collision rates lower than the statewide averages for similar facilities. No fatalities were reported during the five-year period studied, although the injury rate at the three study intersections where collisions were reported was higher than the statewide average for similar facilities. The calculated collision rates are presented in Table 4 and the details are enclosed.

Table 4
Collision Rates at the Study Intersections

Study Intersection	Number of Collisions (2007-2012)	Calculated Collision Rate (c/mve)	Statewide Average Collision Rate (c/mve)
1. Campbell Ave/Railway Ave	0	0.00	0.27
2. Campbell Ave/Gilman Ave	1	0.02	0.21
3. Campbell Ave/Union Ave	2	0.04	0.27
4. Orchard City Dr/Railway Ave	1	0.04	0.21
5. Dillon Ave/Sam Cava Ln	0	0.00	0.21

Note: c/mve = collisions per million vehicles entering

Intersection Operation

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Traffic volume data at the study intersections was collected on a typical weekday in May 2014 while local schools were in session.

Under Existing Conditions, all of the study intersections operate at an acceptable LOS C or better during the a.m. and p.m. peak hours. The intersection level of service calculations are summarized in Table 5 and copies are enclosed.

Table 5
Existing Peak Hour Intersection Levels of Service

Study Intersection	Existing Conditions			
	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Campbell Ave/Railway Ave	14.9	B	20.5	C+
2. Campbell Ave/Gilman Ave	11.8	B+	13.3	B
3. Campbell Ave/Union Ave	27.1	C	29.9	C
4. Orchard City Dr/Railway Ave	14.9	B	11.4	B+
5. Dillon Ave/Sam Cava Ln	8.0	A	7.8	A

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

Project Description

The proposed project includes 81 townhome units and 19 apartment units to be located at the southeast corner of the Dillon Avenue/Sam Cava Lane intersection in Campbell. However, since it is anticipated that the development may eventually include additional properties within the project scope, the City requested that the traffic analysis assume 110 units to allow for a complete and thorough

analysis. As part of the proposed project, the existing commercial uses located at 180/190 Dillon Avenue and 186 Gillman Avenue, and four single-family residential units located on 466/472/482/488 Sam Cava Lane would be demolished. Vehicular access to the project site is proposed via two driveways: one on Sam Cava Lane and the other on Dillon Avenue. The most recent site plan dated May 23, 2014, is enclosed.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 9th Edition, 2012 for a “Residential Condominium/Townhouse” (ITE Land Use #230) use. Although 19 of the 100 residential units are apartment units, the analysis was based on trip rates for townhomes. The difference in the expected trip generation between apartments and townhomes is minimal and would not affect the results or conclusions (one or two trips per peak hour for 19 units). Also, the traffic analysis is conservative in that it is based on 110 potential units instead of the proposed 100 units. Because the site is currently occupied by light industrial/warehouse and residential uses, trips generated by the existing uses were estimated by using the ITE standard average rates for “General Light Industrial” (LU #110), “Manufacturing” (LU #140), and “Single Family Detached Housing” (LU #210) uses.

Trip Reduction

The *Transportation Impact Analysis Guidelines* adopted by the Santa Clara County Transportation Authority’s CMP include guidance on trip reductions which are designed to further the Santa Clara County’s CMP goal of encouraging development that reduces system wide traffic congestion and improves air quality in the region. There are three particular strategies that can be used to encourage these types of developments and to accomplish these goals: mixed-use development (which increases internal trips), a strong transportation demand management (TDM) program (which provides incentives and services to encourage alternatives to the automobile), and development near transit stations or major bus lines.

The proposed project site is located within a 2,000-foot walk of the Campbell Light-Rail Station. Developments located near a transit facility encourage transit use and such trips do not affect the adjacent street network. The *Transportation Impact Analysis Guidelines* allow for a maximum trip reduction of 9 percent for housing and a maximum reduction of 3 percent for employment near a light-rail station.

Total Project Trip Generation

After applying the LRT housing reduction and deducting the trips made to and from the existing uses at the site, which would cease with the construction of the project, the proposed project is anticipated to generate an average of 406 additional daily trips, including 17 additional trips during the a.m. peak hour and 24 additional trips during the p.m. peak hour. The trip generation summary is presented in Table 6.

Table 6
Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Proposed Use											
Residential Condominium/ Townhomes	110 du	5.81	639	0.44	48	8	40	0.52	57	38	19
LRT Housing Reduction		-9%	-58	-9%	-4	-1	-3	-9%	-5	-3	-2
Net Project Trips			581		44	7	37		52	35	17
Existing Use to be Removed											
General Light Industrial	7.2 ksf	6.97	50	0.92	7	6	1	0.97	7	1	6
Manufacturing	24.562 ksf	3.82	94	0.73	18	14	4	0.73	18	6	12
Single Family Detached Housing	4 du	9.52	38	0.75	3	1	2	1.00	4	3	1
LRT Employment Trip Reduction ¹		-3%	-4	-3%	-1	-1	0	-3%	-1	0	-1
LRT Housing Trip Reduction		-9%	-3	-9%	0	0	0	-9%	0	0	0
Existing Trips to be Removed			175		27	20	7		28	10	18
Net-New Project Trips			406		17	-13	30		24	25	-1

Note: du = dwelling unit; ksf = 1,000 square feet

¹ = Employment trip reduction applied to General Light Industrial and Manufacturing land uses

Trip Distribution/Assignment

The pattern used to allocate new project trips to the street network was based on census data for employment and was provided by the City staff. The trip distribution summary is provided in Table 7.

Table 7
Trip Distribution Summary

Route	Percent (%)
SR 17 north of Hamilton Ave	44%
SR 17 south of Camden Ave	7%
Campbell Ave west of Winchester Blvd	16%
Campbell Ave east of Union Ave	33%
TOTAL	100%

Project trips were assigned to the study intersections based on the proposed project driveways on Sam Cava Lane and Dillon Avenue, and roadway geometry.

Existing plus Project Conditions Intersection LOS

Upon the addition of project-related traffic to the existing volumes, the study intersections are expected to operate acceptably during both peak hours. The intersection level of service calculations are summarized in Table 8 with Existing Conditions values shown for comparison. Copies of the level of service calculations are enclosed.

Table 8
Existing and Existing plus Project Peak Hour Intersection Levels of Service

Study Intersection	Existing Conditions				Existing plus Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Campbell Ave/Railway Ave	14.9	B	20.5	C+	15.1	B	20.5	C+
2. Campbell Ave/Gilman Ave	11.8	B+	13.3	B	12.9	B	13.6	B
3. Campbell Ave/Union Ave	27.1	C	29.9	C	27.7	C	29.9	C
4. Orchard City Dr/Railway Ave	14.9	B	11.4	B+	15.3	B	11.3	B+
5. Dillon Ave/Sam Cava Ln	8.0	A	7.8	A	8.0	A	7.8	A

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

Neighborhood Traffic Analysis

Based on a 24-hour machine count conducted in May 2014, Dillon Avenue south of Sam Cava Lane carries 848 vehicles daily, which translates to a TIRE index of 2.9. Gilman Avenue north of Sam Cava Lane carries 1,378 vehicles daily, which translates to a TIRE index of 3.1. The proposed project would add 92 and 269 additional daily trips on Dillon Avenue and Gilman Avenue study segments respectively. As shown in Table 9, the traffic added by the project on both study segments would be less than the minimum volume required to cause a 0.1 change in the TIRE Index and therefore, the increase in traffic would not be noticeable to residents. The proposed project would result in a less-than-significant residential street impact on the study segments. The TIRE Index summary is presented in Table 9.

Table 9
TIRE Index Summary

Study Segment	Existing Conditions		Volume Needed to Cause +0.1 Increase in TIRE Index	Project Trips	Significant Impact
	ADT	TIRE Index			
Dillon Ave (south of Sam Cava Ln)	848	2.9	170	92	No
Gilman Ave (north of Sam Cava Ln)	1,378	3.1	290	269	No

Notes: ADT = Average Daily Traffic

Access and Parking

Access to the project site would be provided from Sam Cava Lane and Dillon Avenue. The project has proposed a cul-de-sac at the southern terminus of Dillon Avenue, connecting the City of Campbell Public Works Service Center driveway and the driveway for 300 Railway Avenue. The proposed project driveways would connect to all building units and most of the parking areas and provide access to the internal circulation. Four of the guest parking spaces would be accessed via an existing driveway at the south corner of Sam Cava Lane/Gilman Avenue.

Sight Distance

At unsignalized intersections a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed.

Sight distances along Sam Cava Lane and Dillon Avenue for the proposed project driveways were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance for minor-street approaches that are either a private road or a driveway are based on stopping sight distance with the approach travel speeds as the basis for determining the recommended sight distance.

Sight distance at the proposed project driveways on Sam Cava Lane and Dillon Avenue were field measured. Although sight distance requirements are not technically applicable to urban driveways, the stopping sight distance criterion for private street intersections was applied for evaluation purposes.

Sam Cava Lane

The posted speed limit on Sam Cava Lane is 25 miles per hour (mph) which translates to a minimum stopping sight distance of 150 feet. Sam Cava Lane is relatively flat and straight to the west, resulting in adequate sight distance. However, it should be noted that on-street parking is permitted on the south side of Sam Cava Lane near the project site. In order to have a clear line of sight to the west for drivers exiting the proposed driveway, it is recommended that on-street parking be prohibited for 15 feet on the south side of Sam Cava Lane west of the proposed project driveway. Sam Cava Lane east of the project driveway makes a 90 degree bend and becomes Gilman Avenue, which runs north-south. On-street parking is permitted on the west side of Gilman Avenue just north of Sam Cava Lane, which restricts the line of sight to the east. It is therefore recommended that on-street parking be prohibited for 15 feet on the west side of Gilman Avenue just north of Sam Cava Lane to have clear sight lines to the east.

Dillon Avenue

The speed limit on Dillon Avenue is not posted; however, a design speed of 25 mph was assumed, requiring a minimum sight distance of 150 feet. All vehicles exiting from the project site would be expected to make a right turn onto Dillon Avenue, which is relatively flat and straight to the north, resulting in adequate sight distance to the north. However, on-street parking is permitted on the east side of Dillon Avenue near the project site. It is recommended that on-street parking be prohibited for 15 feet on the east side of Dillon Avenue just north of project driveway.

The project has proposed a cul-de-sac at the southern terminus of Dillon Avenue. The Cul-de-sac would provide access to City of Campbell Public Works Service Center and 300 Railway Avenue. It is anticipated that a driver exiting the project site would have a clear view of the cul-de-sac to the south. No potential vehicle conflicts between the vehicles exiting the project site and other driveways on the cul-de-sac are anticipated.

Guest Parking at Sam Cava Lane-Gilman Avenue

Four of the guest parking spaces are diagonal spaces accessed by an existing driveway along the curve of Sam Cava Lane-Gilman Avenue. The required minimum sight distance along Sam Cava Lane is 150 feet. Based on the posted speed limit of 25 mph on Gilman Avenue, the required minimum sight distance along Gilman Avenue is also 150 feet.

Vehicles leaving the parking spaces may be required to use part of the roadway to completely turn around and maneuver out of the parking space. Because the driveway is located along the outside of the curve at Sam Cava Lane-Gilman Avenue, the driveway is directly in the line of sight of drivers on both Sam Cava Lane and Gilman Avenue, and the available sight distance is greater than 500 feet, far greater than the required minimum stopping sight distance of 150 feet on Sam Cava Lane and on Gilman Avenue. Based on the available sight distance and the low traffic volumes on Sam Cava Lane-Gilman Avenue, the vehicular maneuver required to egress from the guest parking spaces is considered acceptable.

Site Circulation

Within the project site, vehicular access to individual apartment and condominium units would be via an internal network of 20-foot wide private streets. The 20-foot wide cross-section provided in the site plan would allow for two-way travel on the private streets. As proposed, the private streets would meander through the development and include curves such as those shown on the enclosed site plan at the south end of the site. Based on the enclosed site plan and the turning radii of the curves, emergency vehicle access throughout the development is expected to be acceptable. Because private streets within residential developments typically serve low-speed traffic and adequate emergency access is preserved, the curves along the private streets would constitute acceptable access to the project.

Parking

The City of Campbell parking requirements were reviewed to ensure that the project would provide adequate parking. The project site is located within one-quarter mile of the Downtown Campbell Light Rail Station and therefore designated as a transit-oriented development. For a residential use in a transit-oriented development with two or more bedroom units, the City of Campbell Municipal Code (§21.28.040) requires two covered spaces per unit and one-half space per unit designated as guest parking. Based on the above parking requirement, the proposed 100 residential units would require a total of 250 parking spaces, including 200 covered spaces and 50 guest spaces.

The project has proposed a total of 247 off-street parking spaces, including 200 covered spaces and 47 open spaces for guests. The proposed parking supply is three guest spaces fewer than the 250 parking spaces required by the City of Campbell. Although the project's proposed parking supply would not satisfy the City's requirements, the project would remove two existing driveways on Dillon Avenue and one existing driveway on Sam Cava Lane, which would increase the amount of available street parking near the development by three spaces.

The projected peak parking demand for the proposed project was estimated using ITE *Parking Generation*, 4th Edition, which is a nationally recognized industry standard reference for parking. For the “Residential Condominium/Townhouse” and “Low/Mid-Rise Apartment” land uses, the average peak parking demand is 1.38 vehicles per dwelling unit and 1.23 vehicles per dwelling unit respectively, which translates to 135 parking spaces for the proposed project. The proposed 247 parking spaces at the project site would be more than adequate to serve the project’s projected peak parking demand of 135 spaces based on application of the ITE peak parking rate.

Findings

- The proposed project would generate an average of 406 additional daily trips, including 17 trips during the a.m. peak hour and 24 trips during the p.m. peak hour.
- Currently all the study intersections operate acceptably during both peak hours, and they would be expected to continue to do so with the addition of project-generated traffic.
- All of the study intersections experienced collision rates lower than the statewide averages for similar facilities.
- The proposed project would result in a less-than-significant residential street impact on the Dillon Avenue and Gillman Avenue study segments.
- Internal vehicular circulation and emergency access within the project site would be acceptable.
- The parking supply proposed by the project would not satisfy the City of Campbell parking requirements but the project’s projected peak parking demand of 135 spaces would be accommodated by the proposed supply of 247 spaces.

Recommendations

- It is recommended that on-street parking be prohibited for 15 feet on the south side of Sam Cava Lane west of the proposed project driveway to have clear sight lines to the west.
- It is recommended that on-street parking be prohibited for 15 feet on the west side of Gilman Avenue just north of Sam Cava Lane to have clear sight lines to the west.
- It is recommended that on-street parking be prohibited for 15 feet on the east side of Dillon Avenue just north of the project driveway to have clear sight lines to the north.
- It is recommended that the City consider a parking variance based on the demand projected through use of standard rates.

Mr. Matthew Jue

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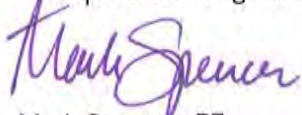
June 17, 2014

We appreciate the opportunity to provide these services. Please call us if you have any questions or comments.

Sincerely,



Sam Lam, PE
Transportation Engineer



Mark Spencer, PE
Principal

MS/stl/CMP012.L1-8

Enclosure: Proposed Site Plan
 TIRE Index
 Collision Rate Details
 Levels of Service Calculations

TIRE Index Table

Existing Volume Range (Vehicles per Day)	TIRE Index	Minimum Daily Volume Increase to Produce	
		a .1 Change in the TIRE Index	a .2 Change in the TIRE Index
29-35	1.5	+6	+15
36-44	1.6	+8	+20
45-56	1.7	+10	+25
57-70	1.8	+13	+32
71-89	1.9	+17	+41
90-110	2.0	+22	+52
111-140	2.1	+29	+65
141-180	2.2	+40	+80
181-220	2.3	+52	+100
221-280	2.4	+65	+125
281-350	2.5	+79	+160
351-450	2.6	+94	+205
451-560	2.7	+114	+260
561-710	2.8	+140	+330
711-890	2.9	+170	+415
891-1,100	3.0	+220	+520
1,101-1,400	3.1	+290	+650
1,401-1,800	3.2	+380	+800
1,801-2,200	3.3	+500	+1,000
2,201-2,800	3.4	+650	+1,300
2,801-3,500	3.5	+825	+1,700
3,501-4,500	3.6	+1,025	+2,200
4,501-5,600	3.7	+1,250	+2,800
5,601-7,100	3.8	+1,500	+3,500
7,101-8,900	3.9	+1,800	+4,300
8,901-11,000	4.0	+2,300	+5,300
11,001-14,000	4.1	+3,000	+6,500
14,001-18,000	4.2	+4,000	+8,000
18,001-22,000	4.3	+5,200	+10,000
22,001-28,000	4.4	+6,600	+13,000
28,001-35,000	4.5	+8,200	+17,000
35,001-45,000	4.6	+10,000	+22,000
45,001-56,000	4.7	+12,200	+28,000
56,001-71,000	4.8	+14,800	+35,000
71,001-89,000	4.9	+18,000	+43,000

Source: Goodrich Traffic Group, based on curve shapes found in work by Donald Appleyard at the University of California at Berkeley and consider earlier thought by Buchanan of the Ministry of Transport, England.

Intersection Collision Rate Calculations

City of Campbell

Intersection # 1: Campbell Avenue & Railway Avenue

Date of Count: Wednesday, April 30, 2014

Number of Collisions: 0

Number of Injuries: 0

Number of Fatalities: 0

ADT: 20400

Start Date: October 1, 2007

End Date: September 30, 2012

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Signals

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{0}{20,400} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.00 c/mve	0.0%	0.0%
Statewide Average*	0.27 c/mve	0.4%	41.9%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection # 2: Campbell Avenue & Gillman Avenue

Date of Count: Monday, April 30, 2012

Number of Collisions: 1

Number of Injuries: 1

Number of Fatalities: 0

ADT: 23200

Start Date: October 1, 2007

End Date: September 30, 2012

Number of Years: 5

Intersection Type: Tee

Control Type: Signals

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{1}{23,200} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.02 c/mve	0.0%	100.0%
Statewide Average*	0.21 c/mve	0.3%	42.4%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculations

City of Campbell

Intersection # 3: Campbell Avenue & Union Avenue

Date of Count: Wednesday, April 30, 2014

Number of Collisions: 2

Number of Injuries: 2

Number of Fatalities: 0

ADT: 26600

Start Date: October 1, 2007

End Date: September 30, 2012

Number of Years: 5

Intersection Type: Four-Legged

Control Type: Signals

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{2}{26,600} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.04 c/mve	0.0%	100.0%
Statewide Average*	0.27 c/mve	0.4%	41.9%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection # 4: Orchard City Drive & Railway Avenue

Date of Count: Monday, April 30, 2012

Number of Collisions: 1

Number of Injuries: 1

Number of Fatalities: 0

ADT: 12700

Start Date: October 1, 2007

End Date: September 30, 2012

Number of Years: 5

Intersection Type: Tee

Control Type: Signals

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{1}{12,700} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.04 c/mve	0.0%	100.0%
Statewide Average*	0.21 c/mve	0.3%	42.4%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

Intersection Collision Rate Calculaions

City of Campbell

Intersection # 5: Dillon Avenue & Sam Cava Lane

Date of Count: Monday, April 30, 2012

Number of Collisions: 0

Number of Injuries: 0

Number of Fatalities: 0

ADT: #N/A

Start Date: October 1, 2007

End Date: September 30, 2012

Number of Years: 5

Intersection Type: Four-Legged

Control Type: 4 Way Stop

Area: Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{0}{\#N/A} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Intersection	0.00 c/mve	0.0%	0.0%
Statewide Average*	0.21 c/mve	0.4%	35.6%

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

* 2010 Collision Data on California State Highways, Caltrans

AM Existing	Wed Jun 11, 2014 11:33:54	Page 2-1
AM Peak Hour - Existing Conditions TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project City of Campbell		
Level of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)		
Intersection #1 Campbell Ave/Railway Ave		
Cycle (sec):	100	Critical Vol./Cap.(X): 0.553
Loss Time (sec):	12	Average Delay (sec/veh): 14.9
Optimal Cycle:	44	Level of Service: B
Street Name: Railway Ave Campbell Ave Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R		
Control:	Split Phase	Split Phase
Rights:	Ov1	Include
Min. Green:	7 10 10 7 10 10 7 10 10 7 10 10	7 10 10 7 10 10
Y+R:	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes:	0 1 0 0 2 0 0 0 0 0 1 0 0 1	0 0 1 0 0 0 0 0 1 0 0 1
Volume Module: >> Count Date: 30 Apr 2014 << 7:45 - 8:45 am		
Base Vol:	6 76 275 0 0 0 9 120 0 43 158 722	0 43 158 722
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Initial Bse:	6 76 275 0 0 0 9 120 0 43 158 722	0 43 158 722
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Adj:	0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90	0.90 0.90 0.90 0.90
PHF Volume:	7 84 305 0 0 0 10 133 0 48 175 801	0 48 175 801
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0
Reduced Vol:	7 84 305 0 0 0 10 133 0 48 175 801	0 48 175 801
POE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
FinalVolume:	7 84 305 0 0 0 10 133 0 48 175 801	0 48 175 801
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	1900 1900 1900 1900
Adjustment:	0.95 0.95 0.83 0.92 1.00 0.92 0.95 0.95 0.92 0.92 0.92 0.92	0.92 0.92 0.92 0.92
Lanes:	0.07 0.93 2.00 0.00 0.00 0.00 0.07 0.93 0.00 0.07 0.28 1.64	0.00 0.08 0.28 1.64
Final Sat:	132 1668 3150 0 0 0 126 1674 0 134 492 2874	0 134 492 2874
Capacity Analysis Module:		
Vol/Sat:	0.05 0.05 0.10 0.00 0.00 0.00 0.08 0.08 0.00 0.36 0.36 0.28	0.00 0.36 0.36 0.28
Crit Moves:	0.05 0.05 0.10 0.00 0.00 0.00 0.08 0.08 0.00 0.36 0.36 0.28	0.00 0.36 0.36 0.28
Green Time:	10.0 10.0 73.8 0.0 0.0 0.0 14.2 14.2 0.0 63.8 63.8 63.8	0.0 63.8 63.8 63.8
Volume/Cap:	0.51 0.51 0.13 0.00 0.00 0.00 0.56 0.56 0.00 0.56 0.56 0.44	0.00 0.56 0.56 0.44
Delay/Veh:	52.5 52.5 3.9 0.0 0.0 0.0 48.5 48.5 0.0 11.4 11.4 9.7	0.0 11.4 11.4 9.7
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
AdjDel/Veh:	52.5 52.5 3.9 0.0 0.0 0.0 48.5 48.5 0.0 11.4 11.4 9.7	0.0 11.4 11.4 9.7
LOS by Move:	D- D- A A A A D D A B+ A	A B+ A
HCM2kAvgQ:	3 3 2 0 0 0 5 5 0 12 12 8	0 12 12 8
Note: Queue reported is the number of cars per lane.		

PM Existing	Wed Jun 11, 2014 11:34:06	Page 2-1
PM Peak Hour - Existing Conditions TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project City of Campbell		
Level of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)		
Intersection #1 Campbell Ave/Railway Ave		
Cycle (sec):	100	Critical Vol./Cap.(X): 0.618
Loss Time (sec):	12	Average Delay (sec/veh): 20.5
Optimal Cycle:	50	Level of Service: C+
Street Name: Railway Ave Campbell Ave Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R		
Control:	Split Phase	Split Phase
Rights:	Ov1	Include
Min. Green:	7 10 10 7 10 10 7 10 10 7 10 10	7 10 10 7 10 10
Y+R:	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes:	0 1 0 0 2 0 0 0 0 0 1 0 0 1	0 0 1 0 0 0 0 0 1 0 0 1
Volume Module: >> Count Date: 30 Apr 2014 << 5:00 - 6:00 pm		
Base Vol:	12 92 846 0 0 0 19 283 5 47 182 557	0 19 283 5 47 182 557
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
Initial Bse:	12 92 846 0 0 0 19 283 5 47 182 557	0 19 283 5 47 182 557
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
PHF Adj:	0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	0.92 0.92 0.92 0.92
PHF Volume:	13 100 921 0 0 0 21 308 5 51 198 606	0 21 308 5 51 198 606
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0
Reduced Vol:	13 100 921 0 0 0 21 308 5 51 198 606	0 21 308 5 51 198 606
POE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
FinalVolume:	13 100 921 0 0 0 21 308 5 51 198 606	0 21 308 5 51 198 606
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	1900 1900 1900 1900
Adjustment:	0.92 1.00 0.83 0.92 1.00 0.92 0.92 0.92 0.92 0.92 0.92 0.92	0.92 0.92 0.92 0.92
Lanes:	0.12 0.88 2.00 0.00 0.00 0.00 0.07 0.91 0.02 0.10 0.34 1.56	0.00 0.07 0.91 0.02 0.10 0.34 1.56
Final Sat:	217 1664 3150 0 0 0 117 1740 31 167 646 2738	0 117 1740 31 167 646 2738
Capacity Analysis Module:		
Vol/Sat:	0.06 0.06 0.29 0.00 0.00 0.00 0.18 0.18 0.18 0.31 0.31 0.22	0.00 0.18 0.18 0.31 0.31 0.22
Crit Moves:	0.06 0.06 0.29 0.00 0.00 0.00 0.18 0.18 0.18 0.31 0.31 0.22	0.00 0.18 0.18 0.31 0.31 0.22
Green Time:	10.0 10.0 59.5 0.0 0.0 0.0 28.5 28.5 28.5 49.5 49.5 49.5	0.0 28.5 28.5 49.5 49.5 49.5
Volume/Cap:	0.60 0.60 0.49 0.00 0.00 0.00 0.62 0.62 0.62 0.62 0.62 0.45	0.00 0.62 0.62 0.62 0.62 0.62 0.45
Delay/Veh:	56.5 56.5 12.5 0.0 0.0 0.0 36.3 36.3 36.3 20.5 20.5 17.2	0.0 36.3 36.3 20.5 20.5 17.2
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00
AdjDel/Veh:	56.5 56.5 12.5 0.0 0.0 0.0 36.3 36.3 36.3 20.5 20.5 17.2	0.0 36.3 36.3 20.5 20.5 17.2
LOS by Move:	E+ E+ B A A A D+ D+ C+ B	A D+ C+ B
HCM2kAvgQ:	4 4 10 0 0 0 10 10 10 13 13 8	0 10 10 13 13 8
Note: Queue reported is the number of cars per lane.		

AM Existing	Wed Jun 11, 2014 11:33:54	Page 3-1
AM Peak Hour - Existing Conditions TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project City of Campbell		
Level of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)		
Intersection #2 Campbell Ave/Gilman Ave		
Cycle (sec):	100	Critical Vol./Cap.(X): 0.342
Loss Time (sec):	9	Average Delay (sec/veh): 11.8
Optimal Cycle:	33	Level of Service: B+
Street Name: Gilman Ave Approach: North Bound South Bound Campbell Ave Movement: L - T - R L - T - R L - T - R L - T - R		
Control:	Split Phase	Permitted Include Protected
Rights:	Ov1	Include
Min. Green:	7 10 10 7 10 10 7 10 10 7 10 10	7 10 7 10 7 10 7 10 10
Y+R:	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes:	1 0 0 0 1 0 0 0 0 0 0 0 1 0 2 0 0	1 0 2 0 0
Volume Module: >> Count Date: 30 Apr 2014 << 7:45 - 8:45 am		
Base Vol:	23 0 100 0 0 0 0 0 378 35 76 1027 0	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	23 0 100 0 0 0 0 0 378 35 76 1027 0	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91	
PHF Volume:	25 0 110 0 0 0 0 0 415 38 83 1127 0	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	25 0 110 0 0 0 0 0 415 38 83 1127 0	
POE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
FinalVolume:	25 0 110 0 0 0 0 0 415 38 83 1127 0	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.92 1.00 0.92 0.92 1.00 0.92 0.92 0.98 0.95 0.92 1.00 0.92	
Lanes:	1.00 0.00 1.00 0.00 0.00 0.00 0.00 1.83 0.17 1.00 2.00 0.00	
Final Sat:	1750 0 1750 0 0 0 0 0 3386 314 1750 3800 0	
Capacity Analysis Module:		
Vol/Sat:	0.01 0.00 0.06 0.00 0.00 0.00 0.00 0.12 0.12 0.05 0.30 0.00	
Crit Moves:	****	
Green Time:	13.2 0.0 65.3 0.0 0.0 0.0 0.0 25.7 25.7 52.1 77.8 0.0	
Volume/Cap:	0.11 0.00 0.10 0.00 0.00 0.00 0.00 0.48 0.48 0.09 0.38 0.00	
Delay/Veh:	38.5 0.0 6.5 0.0 0.0 0.0 0.0 31.8 31.8 12.1 3.6 0.0	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	38.5 0.0 6.5 0.0 0.0 0.0 0.0 31.8 31.8 12.1 3.6 0.0	
LOS by Move:	A A A A A A A C C C B A A	
HCM2kAvgQ:	1 0 1 0 0 0 0 6 6 1 5 0	
Note: Queue reported is the number of cars per lane.		

PM Existing	Wed Jun 11, 2014 11:34:06	Page 3-1
PM Peak Hour - Existing Conditions TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project City of Campbell		
Level of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)		
Intersection #2 Campbell Ave/Gilman Ave		
Cycle (sec):	100	Critical Vol./Cap.(X): 0.582
Loss Time (sec):	9	Average Delay (sec/veh): 13.3
Optimal Cycle:	40	Level of Service: B
Street Name: Gilman Ave Approach: North Bound South Bound Campbell Ave Movement: L - T - R L - T - R L - T - R L - T - R		
Control:	Split Phase	Permitted Include Protected
Rights:	Ov1	Include
Min. Green:	7 10 10 7 10 10 7 10 10 7 10 10	7 10 7 10 7 10 7 10 10
Y+R:	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes:	1 0 0 0 1 0 0 0 0 0 0 0 1 0 2 0 0	1 0 2 0 0
Volume Module: >> Count Date: 30 Apr 2014 << 5:00 - 6:00 pm		
Base Vol:	30 0 175 0 0 0 0 0 1167 30 87 827 0	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
Initial Bse:	30 0 175 0 0 0 0 0 1167 30 87 827 0	
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
PHF Adj:	0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	
PHF Volume:	33 0 190 0 0 0 0 0 1270 33 95 900 0	
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0 0 0	
Reduced Vol:	33 0 190 0 0 0 0 0 1270 33 95 900 0	
POE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
FinalVolume:	33 0 190 0 0 0 0 0 1270 33 95 900 0	
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	
Adjustment:	0.88 1.00 0.78 0.92 1.00 0.92 0.92 1.00 0.92 0.88 1.00 0.92	
Lanes:	1.00 0.00 1.00 0.00 0.00 0.00 0.00 1.95 0.05 1.00 2.00 0.00	
Final Sat:	1663 0 1488 0 0 0 0 0 3682 95 1663 3800 0	
Capacity Analysis Module:		
Vol/Sat:	0.02 0.00 0.13 0.00 0.00 0.00 0.00 0.34 0.34 0.06 0.24 0.00	
Crit Moves:	****	
Green Time:	22.0 0.0 31.8 0.0 0.0 0.0 0.0 59.2 59.2 9.8 69.0 0.0	
Volume/Cap:	0.09 0.00 0.40 0.00 0.00 0.00 0.00 0.58 0.58 0.58 0.34 0.00	
Delay/Veh:	31.1 0.0 27.3 0.0 0.0 0.0 0.0 13.1 13.1 48.4 6.4 0.0	
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	
AdjDel/Veh:	31.1 0.0 27.3 0.0 0.0 0.0 0.0 13.1 13.1 48.4 6.4 0.0	
LOS by Move:	C A C A A A A B B D A A	
HCM2kAvgQ:	1 0 5 0 0 0 0 13 13 3 5 0	
Note: Queue reported is the number of cars per lane.		

AM Existing Wed Jun 11, 2014 11:33:54 Page 4-1

PM Peak Hour - Existing Conditions

TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project

City of Campbell

Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Campbell Ave/Union Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.612

Loss Time (sec): 12 Average Delay (sec/veh): 27.1

Optimal Cycle: 49 Level of Service: C

Street Name: Union Ave Campbell Ave

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Protected Protected

Rights: Include Ovl Include

Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 0 0 0 1 0 0 1 1 0 2 0 1 1 0 1 1 0

Volume Module: >> Count Date: 30 Apr 2014 << 7:45 - 8:45 am

Base Vol: 643 106 168 6 17 26 47 289 143 63 433 17

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 643 106 168 6 17 26 47 289 143 63 433 17

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93

PHF Volume: 691 114 180 6 18 28 50 310 154 68 465 18

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 691 114 180 6 18 28 50 310 154 68 465 18

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 691 114 180 6 18 28 50 310 154 68 465 18

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.92 0.92 0.92 0.95 0.95 0.92 0.92 1.00 0.92 0.92 0.97 0.95

Lanes: 1.54 0.18 0.28 0.26 0.74 1.00 1.00 2.00 1.00 1.00 1.92 0.08

Final Sat.: 2695 312 494 470 1330 1750 1750 3800 1750 1750 3560 140

Capacity Analysis Module:

Vol/Sat: 0.26 0.37 0.37 0.01 0.01 0.02 0.03 0.08 0.09 0.04 0.13 0.13

Crit Moves: ****

Green Time: 52.3 52.3 52.3 10.0 10.0 17.0 7.0 15.1 67.4 10.6 18.7 18.7

Volume/Cap: 0.49 0.70 0.70 0.14 0.14 0.09 0.41 0.54 0.13 0.37 0.70 0.70

Delay/Veh: 15.5 19.5 19.5 41.4 41.4 35.1 46.8 40.3 5.9 42.8 41.2 41.2

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 15.5 19.5 19.5 41.4 41.4 35.1 46.8 40.3 5.9 42.8 41.2 41.2

LOS by Move: B B- B- D D D+ A D D

HCM2kAvgQ: 10 17 17 1 1 1 2 4 2 2 8 8

Note: Queue reported is the number of cars per lane.

PM Existing Wed Jun 11, 2014 11:34:06 Page 4-1

PM Peak Hour - Existing Conditions

TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project

City of Campbell

Level of Service Computation Report

2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Campbell Ave/Union Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.728

Loss Time (sec): 12 Average Delay (sec/veh): 29.9

Optimal Cycle: 63 Level of Service: C

Street Name: Union Ave Campbell Ave

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Protected Protected

Rights: Include Ovl Include

Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 0 0 0 1 0 0 1 1 0 2 0 1 1 0 1 1 0

Volume Module: >> Count Date: 30 Apr 2014 << 5:00 - 6:00 pm

Base Vol: 304 51 128 39 141 128 72 654 598 118 411 14

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 304 51 128 39 141 128 72 654 598 118 411 14

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89

PHF Volume: 341 57 144 44 158 144 81 734 671 132 461 16

Reduc Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 341 57 144 44 158 144 81 734 671 132 461 16

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 341 57 144 44 158 144 81 734 671 132 461 16

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.86 0.93 0.86 0.91 0.99 0.78 0.88 1.00 0.78 0.88 1.00 0.92

Lanes: 1.47 0.14 0.39 0.23 0.77 1.00 1.00 2.00 1.00 1.00 1.93 0.07

Final Sat.: 2387 254 638 400 1445 1488 1663 3800 1488 1663 3646 124

Capacity Analysis Module:

Vol/Sat: 0.14 0.23 0.23 0.11 0.11 0.10 0.05 0.19 0.45 0.08 0.13 0.13

Crit Moves: ****

Green Time: 30.9 30.9 30.9 15.0 15.0 30.0 15.0 31.1 62.0 10.9 27.0 27.0

Volume/Cap: 0.46 0.73 0.73 0.73 0.73 0.32 0.32 0.62 0.73 0.73 0.47 0.47

Delay/Veh: 28.1 34.4 34.4 49.8 49.8 27.5 38.8 30.5 16.1 56.8 30.8 30.8

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 28.1 34.4 34.4 49.8 49.8 27.5 38.8 30.5 16.1 56.8 30.8 30.8

LOS by Move: C C- C- D D C D+ C B E+ C

HCM2kAvgQ: 6 12 12 8 8 4 2 9 15 6 6 6

Note: Queue reported is the number of cars per lane.

AM Existing	Wed Jun 11, 2014 11:33:54	Page 5-1
AM Peak Hour - Existing Conditions TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project City of Campbell		
Level of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)		
Intersection #4 Railway Ave/Orchard City Dr		
Cycle (sec):	100	Critical Vol./Cap.(X): 0.206
Loss Time (sec):	9	Average Delay (sec/veh): 14.9
Optimal Cycle:	29	Level of Service: B
Street Name: Railway Ave Orchard City Dr Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R		
Control:	Protected Include	Split Phase Include
Rights:	7 10 10 7 10 10 7 10 10 7 10 10	7 10 10 7 10 10
Min. Green:	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0 4.0 4.0
Y+R:	0 0 1 0 0 0 1 0 0 1 0 0 0 0 0 0	0 0 0 0
Lanes:		
Volume Module: >> Count Date: 30 Apr 2014 << 7:45 - 8:45 am		
Base Vol:	0 121 0 40 0 246 0 57 0 0 0	0 0 0
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	0 121 0 40 0 246 0 57 0 0 0	0 0 0
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89	0.89 0.89 0.89
PHF Volume:	0 136 0 45 0 277 0 64 0 0 0	0 0 0
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0	0 0 0
Reduced Vol:	0 136 0 45 0 277 0 64 0 0 0	0 0 0
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
FinalVolume:	0 136 0 45 0 277 0 64 0 0 0	0 0 0
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	1900 1900 1900
Adjustment:	0.92 1.00 0.92 0.92 1.00 0.92 0.92 1.00 0.92 1.00 0.92	0.92 1.00 0.92
Lanes:	0.00 1.00 0.00 0.00 1.00 0.00 1.68 0.00 0.32 0.00 0.00 0.00	0.00 0.00 0.00
Final Sat:	0 1900 0 0 1900 0 2946 0 554 0 0 0	0 0 0
Capacity Analysis Module:		
Vol/Sat:	0.00 0.07 0.00 0.00 0.02 0.00 0.09 0.00 0.12 0.00 0.00 0.00	0.00 0.00 0.00
Crit Moves:	0.0 34.8 0.0 0.0 34.8 0.0 56.2 0.0 56.2 0.0 0.0 0.0	0.0 0.0 0.0
Green Time:	0.0 0.21 0.00 0.00 0.07 0.00 0.17 0.00 0.21 0.00 0.00 0.00	0.00 0.00 0.00
Volume/Cap:	0.00 0.21 0.00 0.00 0.07 0.00 0.17 0.00 0.21 0.00 0.00 0.00	0.00 0.00 0.00
Delay/Veh:	0.0 23.1 0.0 0.0 21.8 0.0 10.6 0.0 10.9 0.0 0.0 0.0	0.0 0.0 0.0
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	0.0 23.1 0.0 0.0 21.8 0.0 10.6 0.0 10.9 0.0 0.0 0.0	0.0 0.0 0.0
LOS by Move:	A C A A C+ A B+ A B+ A B+ A A A	A A A A A A A
HCM2kAvgQ:	0 3 0 0 1 0 3 0 3 0 0 0	0 0 0
Note: Queue reported is the number of cars per lane.		

PM Existing	Wed Jun 11, 2014 11:34:06	Page 5-1
PM Peak Hour - Existing Conditions TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project City of Campbell		
Level of Service Computation Report 2000 HCM Operations Method (Base Volume Alternative)		
Intersection #4 Railway Ave/Orchard City Dr		
Cycle (sec):	100	Critical Vol./Cap.(X): 0.417
Loss Time (sec):	9	Average Delay (sec/veh): 11.4
Optimal Cycle:	30	Level of Service: B+
Street Name: Railway Ave Orchard City Dr Approach: North Bound South Bound East Bound West Bound Movement: L - T - R L - T - R L - T - R L - T - R		
Control:	Protected Include	Split Phase Include
Rights:	7 10 10 7 10 10 7 10 10 7 10 10	7 10 10 7 10 10
Min. Green:	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0 4.0 4.0
Y+R:	0 0 1 0 0 0 1 0 0 1 0 0 0 0 0 0	0 0 0 0
Lanes:		
Volume Module: >> Count Date: 30 Apr 2014 << 5:00 - 6:00 pm		
Base Vol:	0 149 0 52 0 806 0 59 0 0 0	0 0 0
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	0 149 0 52 0 806 0 59 0 0 0	0 0 0
User Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94	0.94 0.94 0.94
PHF Volume:	0 158 0 55 0 856 0 63 0 0 0	0 0 0
Reduced Vol:	0 0 0 0 0 0 0 0 0 0 0	0 0 0
Reduced Vol:	0 158 0 55 0 856 0 63 0 0 0	0 0 0
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
FinalVolume:	0 158 0 55 0 856 0 63 0 0 0	0 0 0
Saturation Flow Module:		
Sat/Lane:	1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900	1900 1900 1900
Adjustment:	0.92 1.00 0.92 0.92 1.00 0.92 0.87 1.00 0.87 1.00 0.92	0.87 1.00 0.92
Lanes:	0.00 1.00 0.00 0.00 1.00 0.00 1.87 0.00 0.13 0.00 0.00 0.00	0.00 0.00 0.00
Final Sat:	0 1900 0 0 1900 0 3098 0 211 0 0 0	0 0 0
Capacity Analysis Module:		
Vol/Sat:	0.00 0.08 0.00 0.00 0.03 0.00 0.28 0.00 0.30 0.00 0.00 0.00	0.00 0.00 0.00
Crit Moves:	0.0 20.0 0.0 0.0 20.0 0.0 71.0 0.0 71.0 0.0 0.0 0.0	0.0 0.0 0.0
Green Time:	0.0 0.42 0.00 0.00 0.15 0.00 0.39 0.00 0.42 0.00 0.00 0.00	0.00 0.00 0.00
Volume/Cap:	0.00 0.42 0.00 0.00 0.15 0.00 0.39 0.00 0.42 0.00 0.00 0.00	0.00 0.00 0.00
Delay/Veh:	0.0 35.7 0.0 0.0 33.2 0.0 5.9 0.0 6.1 0.0 0.0 0.0	0.0 0.0 0.0
User DelAdj:	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	0.0 35.7 0.0 0.0 33.2 0.0 5.9 0.0 6.1 0.0 0.0 0.0	0.0 0.0 0.0
LOS by Move:	A D+ A A C- A A A A A A A	A A A A A A A
HCM2kAvgQ:	0 5 0 0 1 0 6 0 7 0 0 0	0 0 0
Note: Queue reported is the number of cars per lane.		

AM Existing Wed Jun 11, 2014 11:33:54 Page 6-1

AM Peak Hour - Existing Conditions

TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project

City of Campbell

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #5 Dillon Ave/Sam Cava Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.223

Loss Time (sec): 0 Average Delay (sec/veh): 8.0

Optimal Cycle: 0 Level of Service: A

Street Name: Dillon Ave Sam Cava Ln

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0

Volume Module: >> Count Date: 30 Apr 2014 << 7:15 - 8:15 am

Base Vol: 21 11 3 7 20 137 27 63 22 2 13 2

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 21 11 3 7 20 137 27 63 22 2 13 2

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80

PHF Volume: 26 14 4 9 25 170 34 78 27 2 16 2

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 26 14 4 9 25 170 34 78 27 2 16 2

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 26 14 4 9 25 170 34 78 27 2 16 2

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.60 0.31 0.09 0.04 0.12 0.84 0.24 0.56 0.20 0.12 0.76 0.12

Final Sat.: 459 241 66 39 112 764 191 446 156 89 578 89

Capacity Analysis Module:

Vol/Sat: 0.06 0.06 0.06 0.22 0.22 0.22 0.18 0.18 0.18 0.18 0.03 0.03

Crit Moves: ****

Delay/Veh: 7.8 7.8 7.9 7.9 7.9 8.2 8.2 8.2 8.2 7.6 7.6 7.6

Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 7.8 7.8 7.8 7.9 7.9 8.2 8.2 8.2 8.2 7.6 7.6 7.6

LOS by Move: A A A A A A A A A A A A

ApproachDel: 7.8 7.9 7.9 8.2 8.2 7.6

Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00

ApprAdjDel: 7.8 7.9 8.2 7.6

LOS by Appr: A A A A A A

AllwayAvgq: 0.1 0.1 0.1 0.3 0.3 0.3 0.2 0.2 0.2 0.0 0.0 0.0

Note: Queue reported is the number of cars per lane.

PM Existing Wed Jun 11, 2014 11:34:06 Page 6-1

PM Peak Hour - Existing Conditions

TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project

City of Campbell

Level of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #5 Dillon Ave/Sam Cava Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.188

Loss Time (sec): 0 Average Delay (sec/veh): 7.8

Optimal Cycle: 0 Level of Service: A

Street Name: Dillon Ave Sam Cava Ln

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0

Volume Module: >> Count Date: 30 Apr 2014 << 5:00 - 6:00 pm

Base Vol: 13 8 9 8 7 76 33 114 5 1 31 1

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 13 8 9 8 7 76 33 114 5 1 31 1

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97

PHF Volume: 13 8 9 8 7 79 34 118 5 1 32 1

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 13 8 9 8 7 79 34 118 5 1 32 1

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 13 8 9 8 7 79 34 118 5 1 32 1

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.43 0.27 0.30 0.09 0.08 0.83 0.22 0.75 0.03 0.03 0.94 0.03

Final Sat.: 346 213 240 79 69 747 181 626 27 25 761 25

Capacity Analysis Module:

Vol/Sat: 0.04 0.04 0.04 0.11 0.11 0.11 0.19 0.19 0.19 0.04 0.04 0.04

Crit Moves: ****

Delay/Veh: 7.5 7.5 7.5 7.3 7.3 7.3 8.2 8.2 8.2 7.5 7.5 7.5

Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 7.5 7.5 7.5 7.3 7.3 7.3 8.2 8.2 8.2 7.5 7.5 7.5

LOS by Move: A A A A A A A A A A A A

ApproachDel: 7.5 7.5 7.3 8.2 8.2 7.5

Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00

ApprAdjDel: 7.5 7.3 8.2 7.5

LOS by Appr: A A A A A A

AllwayAvgq: 0.0 0.0 0.0 0.1 0.1 0.1 0.2 0.2 0.2 0.0 0.0 0.0

Note: Queue reported is the number of cars per lane.

AM Peak Hour - Existing plus Project Conditions
TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project
City of Campbell

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 Campbell Ave/Railway Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.545
Loss Time (sec): 12 Average Delay (sec/veh): 15.1
Optimal Cycle: 44 Level of Service: B

Street Name: Railway Ave Campbell Ave
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Split Phase Split Phase
Rights: Ovl Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 1 0 0 2 0 0 0 0 0 1 0 0 0 0 1 0 1

Volume Module: >> Count Date: 30 Apr 2014 << 7:45 - 8:45 am
Base Vol: 6 76 275 0 0 0 9 120 0 43 158 722
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 6 76 275 0 0 0 9 120 0 43 158 722
Added Vol: 5 7 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 11 83 275 0 0 0 9 120 0 43 158 722
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume: 12 92 305 0 0 0 10 133 0 48 175 801
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 12 92 305 0 0 0 10 133 0 48 175 801
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 12 92 305 0 0 0 10 133 0 48 175 801

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.92 1.00 0.83 0.92 1.00 0.92 0.92 1.00 0.92 0.92 1.00 0.92
Lanes: 0.13 0.87 2.00 0.00 0.00 0.00 0.08 0.92 0.00 0.08 0.26 1.66
Final Sat: 220 1661 3150 0 0 0 132 1757 0 137 503 2900

Capacity Analysis Module:
Vol/Sat: 0.06 0.06 0.10 0.00 0.00 0.00 0.08 0.08 0.00 0.35 0.35 0.28
Crit Moves: ****
Green Time: 10.2 10.2 74.1 0.0 0.0 0.0 13.9 13.9 0.0 63.9 63.9 63.9
Volume/Cap: 0.55 0.55 0.13 0.00 0.00 0.00 0.55 0.55 0.00 0.55 0.55 0.43
Delay/Veh: 53.4 53.4 3.8 0.0 0.0 0.0 48.0 48.0 0.0 11.1 11.1 9.6
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 53.4 53.4 3.8 0.0 0.0 0.0 48.0 48.0 0.0 11.1 11.1 9.6
LOS by Move: D- D- A A A A D D A B+ B+
HCM2kAvgQ: 3 3 2 0 0 0 5 5 0 11 11 8

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PM Peak Hour - Existing plus Project Conditions
TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project
City of Campbell

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #1 Campbell Ave/Railway Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.618
Loss Time (sec): 12 Average Delay (sec/veh): 20.5
Optimal Cycle: 50 Level of Service: C+

Street Name: Railway Ave Campbell Ave
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Split Phase Split Phase
Rights: Ovl Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 1 0 0 2 0 0 0 0 0 1 0 0 0 1 0 1

Volume Module: >> Count Date: 30 Apr 2014 << 5:00 - 6:00 pm
Base Vol: 12 92 846 0 0 0 19 283 5 47 182 557
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 12 92 846 0 0 0 19 283 5 47 182 557
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 12 92 846 0 0 0 19 283 5 47 182 557
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 13 100 921 0 0 0 21 308 5 51 198 606
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 13 100 921 0 0 0 21 308 5 51 198 606
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 13 100 921 0 0 0 21 308 5 51 198 606

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.92 1.00 0.83 0.92 1.00 0.92 0.92 1.00 0.92 0.92 1.00 0.92
Lanes: 0.12 0.88 2.00 0.00 0.00 0.00 0.07 0.91 0.02 0.10 0.34 1.56
Final Sat: 217 1664 3150 0 0 0 117 1740 31 167 646 2738

Capacity Analysis Module:
Vol/Sat: 0.06 0.06 0.29 0.00 0.00 0.00 0.18 0.18 0.18 0.31 0.31 0.22
Crit Moves: ****
Green Time: 10.0 10.0 59.5 0.0 0.0 0.0 28.5 28.5 28.5 49.5 49.5 49.5
Volume/Cap: 0.60 0.60 0.49 0.00 0.00 0.00 0.62 0.62 0.62 0.62 0.62 0.45
Delay/Veh: 56.5 56.5 12.5 0.0 0.0 0.0 36.3 36.3 36.3 20.5 20.5 17.2
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 56.5 56.5 12.5 0.0 0.0 0.0 36.3 36.3 36.3 20.5 20.5 17.2
LOS by Move: E+ E+ B A A A D+ D+ C+ C+
HCM2kAvgQ: 4 4 10 0 0 0 10 10 10 13 13 8

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AM Peak Hour - Existing plus Project Conditions
TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project
City of Campbell

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Campbell Ave/Gilman Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.416
Loss Time (sec): 9 Average Delay (sec/veh): 12.9
Optimal Cycle: 37 Level of Service: B

Street Name: Gilman Ave Campbell Ave
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Permitted Protected
Rights: Ovl Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 0 0 0 1 0 0 0 0 0 0 1 0 1 0 2 0 0

Volume Module: >> Count Date: 30 Apr 2014 << 7:45 - 8:45 am
Base Vol: 23 0 100 0 0 0 0 378 35 76 1027 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 23 0 100 0 0 0 0 378 35 76 1027 0
Added Vol: 0 0 12 0 0 0 0 5 0 -5 -2 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 23 0 112 0 0 0 0 383 35 71 1025 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91
PHF Volume: 25 0 123 0 0 0 0 420 38 78 1125 0
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 25 0 123 0 0 0 0 420 38 78 1125 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 25 0 123 0 0 0 0 420 38 78 1125 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.88 1.00 0.78 0.92 1.00 0.92 0.92 0.99 0.91 0.88 1.00 0.92
Lanes: 1.00 0.00 1.00 0.00 0.00 0.00 0.00 1.82 0.18 1.00 2.00 0.00
Final Sat: 1663 0 1488 0 0 0 0 3412 312 1663 3800 0

Capacity Analysis Module:
Vol/Sat: 0.02 0.00 0.08 0.00 0.00 0.00 0.00 0.12 0.12 0.05 0.30 0.00
Crit Moves: 15.0 0.0 68.7 0.0 0.0 0.0 0.0 22.3 22.3 53.7 76.0 0.0
Green Time: 0.10 0.00 0.12 0.00 0.00 0.00 0.00 0.55 0.55 0.09 0.39 0.00
Volume/Cap: 36.9 0.0 5.4 0.0 0.0 0.0 0.0 35.2 35.2 11.3 4.2 0.0
Delay/Veh: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
User DelAdj: 36.9 0.0 5.4 0.0 0.0 0.0 0.0 35.2 35.2 11.3 4.2 0.0
AdjDel/Veh: 36.9 0.0 5.4 0.0 0.0 0.0 0.0 35.2 35.2 11.3 4.2 0.0
LOS by Move: D+ A A A A A A D+ B+ A A
HCM2kAVGQ: 1 0 1 0 0 0 0 7 7 1 6 0

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PM Peak Hour - Existing plus Project Conditions
TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project
City of Campbell

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #2 Campbell Ave/Gilman Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.589
Loss Time (sec): 9 Average Delay (sec/veh): 13.6
Optimal Cycle: 40 Level of Service: B

Street Name: Gilman Ave Campbell Ave
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Permitted Protected
Rights: Ovl Include Include Include
Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 0 0 0 1 0 0 0 0 0 0 1 0 1 0 2 0 0

Volume Module: >> Count Date: 30 Apr 2014 << 5:00 - 6:00 pm
Base Vol: 30 0 175 0 0 0 0 1167 30 87 827 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 30 0 175 0 0 0 0 1167 30 87 827 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 30 0 175 0 0 0 0 1167 30 97 831 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume: 33 0 190 0 0 0 0 1270 33 106 904 0
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 33 0 190 0 0 0 0 1270 33 106 904 0
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 33 0 190 0 0 0 0 1270 33 106 904 0

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.88 1.00 0.78 0.92 1.00 0.92 0.92 1.00 0.92 0.88 1.00 0.92
Lanes: 1.00 0.00 1.00 0.00 0.00 0.00 0.00 1.95 0.05 1.00 2.00 0.00
Final Sat: 1663 0 1488 0 0 0 0 3682 95 1663 3800 0

Capacity Analysis Module:
Vol/Sat: 0.02 0.00 0.13 0.00 0.00 0.00 0.00 0.34 0.34 0.06 0.24 0.00
Crit Moves: 21.7 0.0 32.5 0.0 0.0 0.0 0.0 58.5 58.5 10.8 69.3 0.0
Green Time: 0.09 0.00 0.39 0.00 0.00 0.00 0.00 0.59 0.59 0.59 0.34 0.00
Volume/Cap: 31.4 0.0 26.7 0.0 0.0 0.0 0.0 13.6 13.6 47.6 6.3 0.0
Delay/Veh: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
User DelAdj: 31.4 0.0 26.7 0.0 0.0 0.0 0.0 13.6 13.6 47.6 6.3 0.0
AdjDel/Veh: 31.4 0.0 26.7 0.0 0.0 0.0 0.0 13.6 13.6 47.6 6.3 0.0
LOS by Move: C A C A A A A B B D A A
HCM2kAVGQ: 1 0 5 0 0 0 0 13 13 3 5 0

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AM Peak Hour - Existing plus Project Conditions
TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project
City of Campbell

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #3 Campbell Ave/Union Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.629
Loss Time (sec): 12 Average Delay (sec/veh): 27.7
Optimal Cycle: 51 Level of Service: C

Street Name: Union Ave Campbell Ave
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control:	Split Phase	Split Phase	Protected	Protected
Rights:	Include	Ovl	Include	Include
Min. Green:	7 10 10	7 10 10	7 10 10	7 10 10
Y+R:	4.0 4.0 4.0	4.0 4.0 4.0	4.0 4.0 4.0	4.0 4.0 4.0
Lanes:	1 0 1 0 0	0 1 0 0 1	1 0 2 0 1	1 0 1 1 0

Volume Module: >> Count Date: 30 Apr 2014 << 7:45 - 8:45 am
Base Vol: 643 106 168 6 17 26 47 289 143 63 433 17
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 643 106 168 6 17 26 47 289 143 63 433 17
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 643 106 168 6 17 26 47 306 143 63 426 17
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93
PHF Volume: 691 114 180 6 18 28 50 329 154 68 458 18
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 691 114 180 6 18 28 50 329 154 68 458 18
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 691 114 180 6 18 28 50 329 154 68 458 18

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.87 0.94 0.87 0.91 0.99 0.78 0.88 1.00 0.78 0.88 0.99 0.92
Lanes: 1.55 0.17 0.28 0.28 0.72 1.00 1.00 2.00 1.00 1.00 1.92 0.08
Final Sat: 2546 297 471 479 1356 1488 1663 3800 1488 1663 3620 144

Capacity Analysis Module:
Vol/Sat: 0.27 0.38 0.38 0.01 0.01 0.02 0.03 0.09 0.10 0.04 0.13 0.13
Crit Moves: 0.27 0.38 0.38 0.01 0.01 0.02 0.03 0.09 0.10 0.04 0.13 0.13
Green Time: 53.4 53.4 53.4 10.0 10.0 17.0 7.0 14.5 67.9 10.1 17.6 17.6
Volume/Cap: 0.51 0.72 0.72 0.13 0.13 0.11 0.43 0.60 0.15 0.40 0.72 0.72
Delay/Veh: 15.1 19.5 19.5 41.4 41.4 35.3 47.2 41.8 5.8 43.7 42.7 42.7
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 15.1 19.5 19.5 41.4 41.4 35.3 47.2 41.8 5.8 43.7 42.7 42.7
LOS by Move: B B- B- D D D+ A D D
HCM2KAVGQ: 10 17 17 1 1 1 2 5 2 3 8 8

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PM Peak Hour - Existing plus Project Conditions
TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project
City of Campbell

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #3 Campbell Ave/Union Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.728
Loss Time (sec): 12 Average Delay (sec/veh): 29.9
Optimal Cycle: 63 Level of Service: C

Street Name: Union Ave Campbell Ave
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control:	Split Phase	Split Phase	Protected	Protected
Rights:	Include	Ovl	Include	Include
Min. Green:	7 10 10	7 10 10	7 10 10	7 10 10
Y+R:	4.0 4.0 4.0	4.0 4.0 4.0	4.0 4.0 4.0	4.0 4.0 4.0
Lanes:	1 0 1 0 0	0 1 0 0 1	1 0 2 0 1	1 0 1 1 0

Volume Module: >> Count Date: 30 Apr 2014 << 5:00 - 6:00 pm
Base Vol: 304 51 128 39 141 128 72 654 598 118 411 14
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 304 51 128 39 141 128 72 654 598 118 411 14
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 304 51 128 39 141 128 72 653 598 118 425 14
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89
PHF Volume: 341 57 144 44 158 144 81 733 671 132 477 16
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 341 57 144 44 158 144 81 733 671 132 477 16
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 341 57 144 44 158 144 81 733 671 132 477 16

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.86 0.93 0.86 0.91 0.99 0.78 0.88 1.00 0.78 0.88 1.00 0.92
Lanes: 1.47 0.14 0.39 0.23 0.77 1.00 1.00 2.00 1.00 1.00 1.93 0.07
Final Sat: 2387 254 638 400 1445 1488 1663 3800 1488 1663 3650 120

Capacity Analysis Module:
Vol/Sat: 0.14 0.23 0.23 0.11 0.11 0.10 0.05 0.19 0.45 0.08 0.13 0.13
Crit Moves: 0.14 0.23 0.23 0.11 0.11 0.10 0.05 0.19 0.45 0.08 0.13 0.13
Green Time: 30.9 30.9 30.9 15.0 15.0 29.7 14.7 31.1 62.0 10.9 27.4 27.4
Volume/Cap: 0.46 0.73 0.73 0.73 0.73 0.33 0.33 0.62 0.73 0.73 0.48 0.48
Delay/Veh: 28.1 34.4 34.4 49.8 49.8 27.8 39.1 30.5 16.1 56.8 30.7 30.7
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 28.1 34.4 34.4 49.8 49.8 27.8 39.1 30.5 16.1 56.8 30.7 30.7
LOS by Move: C C- C- D D C D B E+ C C
HCM2KAVGQ: 6 12 12 8 8 4 2 9 15 6 7 7

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AM Peak Hour - Existing plus Project Conditions
TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project
City of Campbell

Level of Service Computation Report
2000 HCM 4-way Stop Method (Future Volume Alternative)

Intersection #5 Dillon Ave/Sam Cava Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.222
Loss Time (sec): 0 Average Delay (sec/veh): 8.0
Optimal Cycle: 0 Level of Service: A

Street Name: Dillon Ave Sam Cava Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 1! 0 0 0 1! 0 0 0 1! 0 0 0 1! 0 0
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 1! 0 0 0 1! 0 0
Volume Module: >> Count Date: 30 Apr 2014 << 7:15 - 8:15 am
Base Vol: 21 11 3 7 20 137 27 63 22 2 13 2
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 21 11 3 7 20 137 27 63 22 2 13 2
Added Vol: 7 5 0 0 -2 0 0 -3 0 0 7 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 28 16 3 7 18 137 27 60 19 2 20 2
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
PHF Volume: 35 20 4 9 22 170 34 75 24 2 25 2
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 35 20 4 9 22 170 34 75 24 2 25 2
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 35 20 4 9 22 170 34 75 24 2 25 2
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.60 0.34 0.06 0.04 0.11 0.85 0.25 0.57 0.18 0.08 0.84 0.08
Final Sat.: 455 260 49 39 101 769 199 442 140 62 624 62
Capacity Analysis Module:
Vol/Sat: 0.08 0.08 0.08 0.22 0.22 0.22 0.17 0.17 0.17 0.04 0.04 0.04
Crit Moves: ****
Delay/Veh: 7.9 7.9 7.9 7.9 7.9 8.2 8.2 8.2 7.7 7.7 7.7 7.7
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.9 7.9 7.9 7.9 7.9 8.2 8.2 8.2 7.7 7.7 7.7 7.7
LOS by Move: A A A A A A A A A A A A
ApproachDel: 7.9 7.9 7.9 8.2 8.2 7.7
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00
ApprAdjDel: 7.9 7.9 8.2 7.7
LOS by Appr: A A A A A A
AllwayAvgq: 0.1 0.1 0.1 0.3 0.3 0.3 0.2 0.2 0.2 0.0 0.0 0.0

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PM Peak Hour - Existing plus Project Conditions
TIA for the 230/280/282, 290 Dillon Avenue and 500 Sam Cava Lane Project
City of Campbell

Level of Service Computation Report
2000 HCM 4-way Stop Method (Future Volume Alternative)

Intersection #5 Dillon Ave/Sam Cava Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.203
Loss Time (sec): 0 Average Delay (sec/veh): 7.8
Optimal Cycle: 0 Level of Service: A

Street Name: Dillon Ave Sam Cava Ln
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 1! 0 0 0 1! 0 0 0 1! 0 0 0 1! 0 0
Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 1! 0 0 0 1! 0 0
Volume Module: >> Count Date: 30 Apr 2014 << 5:00 - 6:00 pm
Base Vol: 13 8 9 8 7 76 33 114 5 1 31 1
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 13 8 9 8 7 76 33 114 5 1 31 1
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 13 8 9 8 11 76 33 120 11 1 31 1
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97
PHF Volume: 13 8 9 8 11 79 34 124 11 1 32 1
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 13 8 9 8 11 79 34 124 11 1 32 1
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 13 8 9 8 11 79 34 124 11 1 32 1
Saturation Flow Module:
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.43 0.27 0.30 0.08 0.12 0.80 0.20 0.73 0.07 0.03 0.94 0.03
Final Sat.: 343 211 237 74 102 706 168 612 56 24 756 24
Capacity Analysis Module:
Vol/Sat: 0.04 0.04 0.04 0.11 0.11 0.11 0.20 0.20 0.20 0.04 0.04 0.04
Crit Moves: ****
Delay/Veh: 7.5 7.5 7.5 7.4 7.4 7.4 8.2 8.2 8.2 7.5 7.5 7.5
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.5 7.5 7.5 7.4 7.4 7.4 8.2 8.2 8.2 7.5 7.5 7.5
LOS by Move: A A A A A A A A A A A A
ApproachDel: 7.5 7.5 7.4 8.2 8.2 7.5
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00
ApprAdjDel: 7.5 7.4 8.2 7.5
LOS by Appr: A A A A A A
AllwayAvgq: 0.0 0.0 0.0 0.1 0.1 0.1 0.2 0.2 0.2 0.0 0.0 0.0

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ATTACHMENT 9

PHASE I ENVIRONMENTAL SITE ASSESSMENT AND SUBSURFACE SOIL INVESTIGATION

(SAMA CAVA LN.)



Phase I Environmental Site Assessment and Subsurface Soil Investigation

Hester Properties:
466, 472, 482, and 488 Sam Cava Lane
APNs 412-08-041, -042, -043, and -044
Campbell, CA

Prepared for:

**Robson Homes, LLC
San Jose, CA**

Prepared by:

**ENVIRON International Corporation
Emeryville, CA**

Date:

May 23, 2014

Project Number:

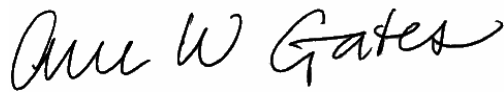
03-21676T



Signature and Environmental Professional Statement

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR §312.10.

Further, I have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

A handwritten signature in black ink that reads "Anne W. Gates". The signature is written in a cursive, flowing style.

Anne W. Gates, P.E.

ENVIRON International Corporation
2200 Powell Street, Suite 700
Emeryville, CA

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1 Summary of Conclusions

ENVIRON International Corporation (ENVIRON) was retained by Robson Homes, LLC (“Robson Homes”) to perform a Phase I and limited Phase II Environmental Site Assessment (ESA) of the Hester properties located at 466, 472, 482, and 488 Sam Cava Lane (APNs 412-08-041, -042, -043, and -044, respectively) in Campbell, California (herein referred to as the “site”). ENVIRON’s assessment was conducted in connection with the purchase of the property. The ESA described in this report was performed in general conformance with the scope and limitations of the ASTM International’s *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* E-1527-05 (the “ASTM Standard”), as stated in Chapter 2.0 (Introduction). Any exceptions to, or deletions from, this practice are described in Section 8.3 of this report.

1.1 Recognized Environmental Conditions

ENVIRON did not identify any “recognized environmental condition[s]” (REC[s]), as defined by ASTM (see Chapter 2.0), in connection with residential use of the property. No further investigation is recommended at this time.

1.2 Significant Data Gaps

The ASTM Standard defines a data gap as “a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information.” A data gap is only significant if other information obtained during the ESA, or professional experience, raises reasonable concerns and affects the ability of the environmental professional to identify whether a given issue is a REC. The ASTM Standard requires that the ESA report identify and comment on significant data gaps.

With the exception of the 466 Sam Cava Lane parcel where the same family has reportedly occupied the parcel since at least the 1920s, ENVIRON was unable to obtain significant historical information relating to the past tenants and uses of the site. Very little site information was available from public records and other information sources and ENVIRON was unable to interview past site tenants. The current site owner, Mr. Larry Hester, only possesses historical knowledge of the site since the time he purchased the 466, 482, and 488 Sam Cava Lane parcels in approximately 1990 and the 472 Sam Cava Lane parcel in approximately 1997.

As stated in Section 8.3, no exceptions, deletions, deviations, or site reconnaissance limitations to the ASTM Standard for the assessment were encountered.

1.3 Other Findings

ENVIRON identified the following additional finding that is not considered a REC based on available information:

On-site Burning of Household Waste. According to the site tenant at 466 Sam Cava Lane, Mr. Bob Lloyd, whose family occupied the parcel from at least the 1920s until 2014, household waste was historically burned in the backyard of the parcel. Mr. Lloyd reported that the remnants of the burned household waste were removed and visual evidence of the waste was not observed by ENVIRON personnel. Analytical results of soil samples collected in the backyard of the parcel did not report metals or TPH concentrations above respective residential

land use Environmental Screening Levels (ESLs) and Regional Screening Levels (RSLs). ENVIRON personnel also observed evidence of burned material near the southeastern portion of the backyard of the 488 Sam Cava Lane parcel. Analytical results of soil samples collected in the backyard of that parcel did not report metals or TPH concentrations above respective residential ESLs or RSLs.

De minimis conditions, as defined in Chapter 2.0, along with other site conditions observed during the site visit, are discussed within relevant sections of this report and are summarized in Chapter 8.0.

2 Introduction

2.1 Purpose

ENVIRON was retained by Robson Homes, LLC to conduct a Phase I ESA and subsurface soil investigation of the properties located at 466, 472, 482, and 488 Sam Cava Lane (APNs 412-08-041, -042, -043, and -044, respectively) in Campbell, California. ENVIRON's assessment was conducted in connection with the purchase of the property. The purpose of the assessment was to identify RECs, which are defined in the ASTM Standard as:

“The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions.”

2.2 Scope of the Phase I ESA

ENVIRON completed the following tasks, consistent with the ASTM Standard, during its Phase I ESA of the property:

- A visit to the site by Jason Kane and Teddy Eyster of ENVIRON on December 17, 2013 to observe the features of the site and to identify the uses and conditions specified in the ASTM Standard. In addition, ENVIRON observed the adjoining properties from the site or adjacent public thoroughfares. Photographs taken during the site visits are presented in Appendix A.
- An interview during the site visit with Jim Hamm, who has been a *de facto* property manager at the site since approximately 1994. The aforementioned individual is referred to herein as the “site manager” and has been identified by ENVIRON as having good knowledge of the uses and physical characteristics of the site.
- An interview with site tenants. Among the tenants interviewed was Bob Lloyd, whose family resided at 466 Sam Cava Lane for three generations, since at least the 1920s. Mr. Lloyd and the other site tenants interviewed by ENVIRON were identified as having good knowledge of the uses and physical characteristics of the site. Since the time of ENVIRON's site visit in December 2013, all tenants have reportedly vacated the site.
- Personal interview on December 23, 2013 and follow-up telephone interview on March 5, 2014 with the site owner, Larry Hester. Mr. Hester has owned the 466, 482, and 488 Sam Cava Lane parcels since approximately 1990 and the 472 Sam Cava Lane parcel since approximately 1997. Mr. Hester has been identified by ENVIRON as having good knowledge of the uses and physical characteristics of the site.

- A review of a search of environmental regulatory agency database records conducted by Environmental Data Resources, Inc. (EDR) on May 20, 2014 for the site and properties in the vicinity of the site. A copy of the EDR radius report is included as Appendix B. The databases and the radius searched for each database were selected in accordance with the ASTM Standard and are identified in the EDR database report. The dates of the most recent updates of the environmental databases are also listed in the database report.
- A review of the EDR Environmental Lien Search dated December 18, 2013 to identify environmental liens or activity use limitations (AULs) imposed by judicial authorities with respect to the property.
- A review of the *Building Survey Report for Suspect Asbestos-Containing Material and Lead in Paint*, prepared by Sierra Environmental and dated January 2, 2014. The asbestos and lead survey was conducted at the site properties in conjunction with similar investigations at adjacent properties on Sam Cava Lane, Dillon Avenue, and Gilman Avenue in Campbell, California.
- A review of the *ALTA Land Title Survey*, prepared by Civil Engineering Associates and dated April 29, 2014. The ALTA survey was conducted at the site properties in conjunction with similar investigations at adjacent properties on Sam Cava Lane, Dillon Avenue, and Gilman Avenue in Campbell, California.
- A review of the *Preliminary Title Report for 466, 472, 482, and 488 Sam Cava Lane, Campbell, California*, prepared by First American Title Company and dated May 5, 2014.
- A review of the *Draft Geotechnical Investigation, Proposed Residential Development, Dillon Avenue, Sam Cava Lane, and Gilman Avenue, Campbell, California*, prepared by Pacific Geotechnical Engineering and dated May 16, 2014.
- A review of standard historical sources (included as Appendix C) and local agency inquiries, as defined in the ASTM Standard. The following resources were reviewed:
 - Readily available historical sources, including (where available) historical topographic maps and aerial photographs, city directories, and Sanborn Maps, to develop a history of the previous uses of the site and surrounding area.
 - Historical and site-specific information obtained from the following local agencies: Santa Clara County Assessor's Office (Assessor), Santa Clara County Fire Department (SCCFD), the City of Campbell Building Division (Building Division), the Santa Clara County Department of Environmental Health (SCCDEH), and the Santa Clara Valley Water District (SCVWD).
- A review of physical setting sources, as defined in the ASTM Standard, including:
 - The current USGS 7.5-minute topographic map that shows the area on which the site is located.
 - Geologic, hydrogeologic, or hydrologic sources as provided in the EDR report.
- Information gathered as part of previous Phase I ESAs and Phase II soil investigations also prepared for Robson Homes at parcels adjacent to or in the vicinity of the site. Reports include the following:

- *Phase I Environmental Site Assessment and Phase II Soil Investigation, 230, 280, and 282 Dillon Avenue, Campbell, California*, prepared by ENVIRON, dated July 18, 2013.
- *Phase I Environmental Site Assessment and Subsurface Soil Investigation, 190 Dillon Avenue, Campbell, California*, prepared by ENVIRON, dated October, 2013; and
- *Phase I Environmental Site Assessment and Subsurface Soil Investigation, Haig Precision Manufacturing Corporation, Campbell, California*, prepared by ENVIRON, dated March, 2013.
- Site visit on December 23, 2013 for collection of environmental samples.
- A review of the responses provided by Robson Homes to a User Questionnaire consistent with Appendix X3 of the ASTM Standard. Pertinent responses, if any, are discussed in the appropriate sections of this report.

This assessment was conducted in accordance with ASTM Standard E1527-05, as agreed upon by ENVIRON and Robson Homes in December 2013. Certain “non-scope considerations,” as defined in the ASTM Standard (i.e., asbestos-containing materials [ACM], radon, lead-based paint, and mold) are not directly addressed in this Phase I ESA.

2.3 Significant Assumptions

In conducting this review, no significant assumptions were made, except for the following:

- Site-specific field measurements of the groundwater gradient are not available. Groundwater flow directions at nearby sites (available in closure documentation for leaking underground storage tank [LUST] cases posted to the Regional Water Quality Control Board [RWQCB] Geotracker website) indicated a range of groundwater flow directions in the area, ranging from south-southeast to north-northwest, with a depth to groundwater greater than 50 feet below ground surface (bgs). Due to the variation of groundwater flow directions reported in said closure documentation for LUST cases posted to the Geotracker website, ENVIRON has assumed that the groundwater flow direction beneath the site is approximately to the northeast based on the local topographic gradient (generally to the northeast), and the presence of Los Gatos Creek (flowing to the northeast) southeast of the site. In evaluating potential on-site impacts from off-site sources, those off-site facilities not located adjacent to or within one-quarter mile upgradient of the subject site are not considered to represent a significant concern to the subject site. This interpretation is based on the assumption that a hazardous material released to the subsurface generally does not migrate laterally within the unsaturated soil for a significant distance, although a hazardous material can migrate in the groundwater in a generally downgradient direction.

2.4 Reliance and General Limitations

This environmental review has been prepared exclusively without limitation for use by Robson Homes, LLC and affiliated entities including Santa Clara Development Company, Sun Lakes Construction Company of California, and Vesta Real Estate Company Inc., and such other persons or entities whose reliance is explicitly authorized in writing by ENVIRON.

The report is considered current only for a period of 180 days from ENVIRON’s most recent site visit which was conducted on December 23, 2013. The conclusions presented in this report

represent ENVIRON's best professional judgment based upon the information available and conditions existing as of the date of the review. In performing its assignment, ENVIRON must rely upon publicly available information, information provided by the client and information provided by third parties. Accordingly, the conclusions in this report are valid only to the extent that the information provided to ENVIRON was accurate and complete. This review is not intended as legal advice, nor is it an exhaustive review of site conditions or facility compliance.

3 Site Description

3.1 Site Setting

The rectangular subject site consists of four adjacent parcels of land located along Sam Cava Lane in Campbell, Santa Clara County, California (the “site” or the “Hester properties”). The site, which is approximately 0.45 acre in total area, is located approximately 0.5 mile southeast of downtown Campbell (Figure 1).

The site addresses are 466, 472, 482, and 488 Sam Cava Lane. According to the Santa Clara County Assessor’s Office, the corresponding assessor’s parcel numbers (APNs) for the site are 412-08-041, 412-08-042, 412-08-043, and 412-08-044, respectively. Parcel sizes range from approximately 4,200-square-feet at 472 Sam Cava Lane to approximately 6,500-square-feet at 466 Sam Cava Lane. Each parcel is developed with a main residential structure and auxiliary storage or housing structures. Undeveloped areas consist of grass or exposed soil except in the case of 472 Sam Cava Lane which is primarily paved with concrete.

Each parcel of the site is accessed from Sam Cava Lane along the northeastern boundary of the site. Adjacent to the northwest of the site is Balloonatics, a balloon catering company located at 180 Dillon Avenue. At the southwestern boundary of the site a wooden fence separates the site from 186 Dillon Avenue, operated by Haig Precision Manufacturing Corporation (Haig), a machining and sheetmetal fabrication shop. Adjacent to the southeast of the site is a residential property located at 496 Sam Cava Lane. Residential properties are also located across Sam Cava Lane to the northeast of site. There are no on-site surface water bodies.

Table A provides the details of the site parcels and main buildings.

Table A: Parcel Details			
Parcel Address	APN	Lot Size (feet²)	Main Building Size (feet²)
466 Sam Cava Lane	412-08-041	6,512	748
472 Sam Cava Lane	412-08-042	4,218	1136
482 Sam Cava Lane	412-08-043	4,303	918
488 Sam Cava Lane	412-08-044	4,360	659

Table B provides an overview of physical setting and utility information for the site.

Table B: Physical Setting and Utility Information		
Conditions	Source	Description
Topography		
Elevation (above mean sea level)	ALTA survey; USGS topographic map	Approximately ranges between 197 and 198 feet across the site.

Table B: Physical Setting and Utility Information

Conditions	Source	Description
Topographic Gradient	ALTA survey; USGS topographic map; visual observations	Relatively flat across the site. Regional topography slopes gently downward to the northeast toward San Francisco Bay.
Hydrology		
Surface Water Runoff	Visual observations;	Primarily infiltrates on-site though additional runoff may run to Sam Cava Lane.
Nearest Surface Water Body	USGS topographic map; visual observations	Los Gatos Creek is located approximately 300 feet southeast of site. Los Gatos Creek joins with other creeks in the San Jose area and ultimately drains to San Francisco Bay, located approximately 9.5 miles north-northwest of the site.
Flood Plain	FEMA*; site tenants at the time of the site inspection	Tenants at the time of the site inspection and the property owner reported no known occurrences of flooding at the site. The site is not designated as a flood zone though to the southeast (approximately 200 feet, adjacent to Los Gatos Creek) is a 100-year flood zone.
Wetlands	NWI*	There are no federally-designated wetlands on-site. Los Gatos Creek, approximately 300 feet to the southeast of the site, contains federally-designated wetland areas.
Geology and Hydrogeology		
Presumed Direction of Shallow Groundwater Flow	LUST case closure documentation for sites within approximately 0.5 mile of the site, reviewed on RWQCB Geotracker online database	Site-specific field measurements of groundwater gradient are not available. Groundwater flow directions at nearby sites (available in closure documentation for LUST cases posted to the RWQCB Geotracker website) indicated a range of groundwater flow directions in the area, ranging from south-southeast to north-northwest. Due to the variation of these measurements, ENVIRON has assumed that the groundwater flow direction beneath the site is approximately to the northeast due to the local topographic gradient (generally to the northeast), and the presence of Los Gatos Creek (flowing to the northeast) in the vicinity of the site.
Depth to Groundwater	2014 geotechnical investigation at site and adjacent and nearby Haig properties; LUST case closure documentation for sites within approximately 0.5 mile of the site, reviewed on RWQCB Geotracker online database	Boring logs generated during a 2014 geotechnical investigation at the site and at adjacent and nearby properties owned by Haig (180 Dillon Avenue, 186 Gilman Avenue, and 426 Sam Cava Lane) indicate groundwater was not encountered at the depth of boring terminations at approximately 45 feet bgs. Groundwater depth data reviewed in LUST case closure documentation for sites within approximately 0.5 mile of the site indicate that the depth to groundwater in the area typically ranges from approximately 70 to 100 feet below ground surface.
On-site Wells	Site tenants; visual observations	There are no on-site monitoring wells.

Table B: Physical Setting and Utility Information		
Conditions	Source	Description
Nearest Groundwater Supply Wells	EDR database report	18 state-registered wells are present within one mile of the site; none are registered as public water supply wells.
Geologic Conditions	2014 geotechnical investigation at adjacent and nearby Haig properties; EDR database report	Boring logs generated during a 2014 geotechnical investigation at the site and at adjacent and nearby properties owned by Haig (180 Dillon Avenue, 186 Gilman Avenue, and 426 Sam Cava Lane) indicate heterogeneous layers of clays, sands, and gravels to a depth of approximately 40 to 45 feet below ground surface. The EDR physical setting report indicates that surface soil types in the area consist of clay loam, silty clay loam, and sandy clay loam, with moderate infiltration rates. Underlying sediments are reported to be quaternary stratified sequences.
Site Utility Information		
Electricity Supplier	Site tenants	Pacific Gas & Electric (PG&E)
Natural Gas Supplier	Site tenants	Pacific Gas & Electric (PG&E)
Use of Fuel Oil for Building Heat	Site tenants	No current or former use of fuel oil reported.
Water Supplier	Site tenants	San Jose Water Company
Sanitary Sewer	Site tenants	West Valley Collections
Septic Systems	Site tenants	There are no known current or former septic tanks or leach fields at the site.
Notes: FEMA = Federal Emergency Management Agency; NCCS = National Cooperative Soil Survey ; NWI = National Wetlands Inventory * - Source was provided in the EDR database report.		

3.2 Current and Historical Use of Property

The site consists of multiple residential buildings constructed as early as 1908 (466 Sam Cava Lane), with other buildings constructed in approximately the 1920s. At the time of the site inspection, the houses were occupied for residential purposes with the exception of the back house at 472 Sam Cava Lane and the house at 482 Sam Cava Lane, both of which were vacant. Since the time of ENVIRON's site visit in December 2013, all tenants have reportedly vacated the site. Observations noted by ENVIRON during the site visit are listed below.

- 466 Sam Cava Lane.** The tenant at the time of the site inspection, Bob Lloyd, reported the house had been occupied by the Lloyd family since the 1920s. There are currently three structures on the parcel: the main house, a small tool shed in the front yard to the northwest of the main house, and a large shed in the backyard to the southwest of the main house. The backyard contains various pieces of lawn equipment (lawn mowers, trench digger, etc.) and household maintenance supplies (i.e., paint cans). There is a generator in the small toolshed that has not been used for approximately 40 years with some minor staining around its base. Mr. Lloyd also reported that former occupants

used to burn household waste in the backyard but remnants have been removed. Visual evidence of burned waste was not observed by ENVIRON personnel.

- **472 Sam Cava Lane.** The tenant at the time of the site inspection, David, had been living at 427 Sam Cava for three years and reported no use of hazardous materials. The main house was reportedly built in the 1920s and has a cellar that extends laterally beneath the house approximately 10 to 15 feet and contains a water heater. In addition to the main house, there is a small house (vacant) in the backyard to the southwest of the main house that, according to Mr. Lloyd, was built in the 1940s. The majority of the backyard is paved with concrete and also contains a small shed used for storage of household cleaning products and paint.
- **482 Sam Cava Lane.** According to the site manager, the main house was built in the 1920s. The building is vacant and the interior has been stripped down to the building frame. A small shed in the backyard is used to store one-gallon paint canisters, household herbicide, and construction materials.
- **488 Sam Cava Lane.** The main house, located on the northern portion of the parcel was reportedly built in the 1920s. Two additional bedrooms are detached from and located to the southwest of the main house. Both structures appear to have been built more recently than the 1920s, although an exact date is unknown. One of the tenants, Augustine, had lived at 488 Sam Cava for 15 years and reported no use of hazardous materials. Household debris, including discarded batteries, and evidence of burned materials was observed to be scattered throughout the backyard. Stained gravel and soil was observed near the southern corner of the main house.

3.2.1 Ownership history

The first historical aerial photograph taken of the site in 1939 appears to show all the current main houses and other smaller structures at the site. The current property owner, Larry Hester, purchased the 466, 482, and 488 Sam Cava Lane parcels in approximately 1990 and the 472 Sam Cava Lane parcel in approximately 1997.

3.3 Current Uses of Adjoining Properties

The site is located in a mixed commercial and residential land use area.

Northwest of the site is Balloonatics, a balloon catering company. The site is bordered by Sam Cava Lane to the northeast, and beyond it residential properties and one commercial property (146 Dillon Avenue). The southeastern site boundary is bordered by another residential parcel at 496 Sam Cava Lane. To the southwest the site is bordered by Haig Precision Manufacturing Corporation at 186 Dillon Avenue, a machining and sheetmetal fabrication shop.

Based on discussions with tenants, ENVIRON's visual observations from the property boundary and public rights-of-way, ENVIRON's previous investigations of adjacent and nearby properties on behalf of Robson Homes, and a limited review of publicly available information, a general determination of the current use of adjacent properties was developed, as described Table C.

Table C: Current Use of Properties Adjacent to the Site		
Direction	Property/Land Use	ENVIRON's Observations
Northeast	Apartment housing; a commercial building (146 Dillon Avenue).	No apparent exterior manufacturing or chemical storage operations were observed during ENVIRON's reconnaissance.
Southeast	Residential property (496 Sam Cava Lane); Haig Precision Manufacturing Corporation (186 Gilman Avenue) located further to the southeast.	No apparent exterior manufacturing or chemical storage operations at the residence were observed during ENVIRON's reconnaissance. Haig is a machining and sheetmetal fabrication shop and uses hydraulic and lubricating oils on a regular basis.
Southwest	Haig Precision Manufacturing Corporation (186 Dillon Avenue).	Haig is a machining and sheetmetal fabrication shop and uses hydraulic and lubricating oils on a regular basis.
Northwest	Balloonatics, balloon catering company (180 Dillon Avenue).	No apparent exterior manufacturing or chemical storage operations were observed during ENVIRON's reconnaissance.
Notes: Observations were made by ENVIRON during the site visit. ENVIRON walked or drove by the borders of these properties that are shared with the subject site. With the exception of the Haig properties, which were investigated by ENVIRON on behalf of Robson Homes in November and December 2013, ENVIRON did not enter the neighboring properties and was therefore unable to observe the rear of the properties.		

4 Review of Public Records and Other Information Sources

4.1 Environmental Regulatory Database Review

ENVIRON contracted with EDR in May 2014 to prepare a summary of listings in federal and state agency databases within applicable radii of the site, as specified by the ASTM standard.¹ A copy of the EDR report is presented in Appendix B.

4.1.1 Database Review for Site

ENVIRON reviewed the results of the state and federal environmental database searches performed by EDR (see Appendix B) and also reviewed information available in the California RWQCB GeoTracker database.

The site addresses have no listings in the EDR report or on the Geotracker database.

4.1.2 Database Review for Surrounding Properties

There are several listings in the EDR report for off-site facilities located within applicable ASTM search radii. Several of these listings (e.g., hazardous waste generators, registered underground storage tanks [USTs]), by themselves, are not necessarily indicative of an environmental concern, and these listings are therefore not discussed herein.

A few sites appear on databases indicative of potential contamination concerns (e.g., Leaking Underground Storage Tank [LUST]; Department of Toxic Substances Control's [DTSC's] Site Mitigation and Brownfields Reuse Program's [SMBRP] EnviroStor database; Spills, Leaks, Investigations & Cleanups [SLIC]; Voluntary Cleanup Program [VCP]). Of these latter facilities, only the following sites were identified that are located adjacent to, very nearby, or upgradient from the subject site and within 0.25 miles. These facilities were selected based on the assumption that a hazardous material released to the subsurface generally does not migrate laterally within the unsaturated soil for a significant distance, although a hazardous material can migrate in groundwater typically in a generally downgradient direction.

- 190 Dillon Avenue.** 190 Dillon Avenue is multi-tenant commercial building and parking area approximately 75 feet to the southwest of the site. The property is listed on the LUST, Historical LUST, and Historical Cortese databases. In 1989, a 1,000-gallon gasoline UST and a 500-gallon paint thinner UST were removed from the portion of the property that is adjacent to the shoring wall along the southwestern boundary. Following over-excavation of tank pits, soil samples were collected under the oversight of the City of Campbell Fire Department. Low concentrations of xylene (up to 56 ppm) were detected in two of the soil samples, while benzene, toluene, ethylbenzene, and total petroleum hydrocarbons (TPH) were not detected. Three soil borings were also advanced in the area to depths up to 45 feet and groundwater was not encountered. BTEX and TPH were not detected in the soil samples analyzed from the soil borings. The property was granted a

¹ EDR uses the term "radii" to refer to the ASTM terminology "approximate minimum search distance" in the environmental database report.

case closure letter on November 30, 1990 by the RWQCB - San Francisco Bay Region. ENVIRON's Phase I ESA and subsurface soil investigation conducted at the 190 Dillon Avenue property in 2013 on behalf of Robson Homes did not identify any RECs. The property is not considered to be of concern for the site.

- City of Campbell Service Center.** The City of Campbell Service Center, also known as the Corporate Yard, located at 290 South Dillon Avenue in Campbell, California and approximately 600 feet to the southwest of the site, is listed on the LUST, Historical LUST, UST, Historical UST, CA FID UST, CUPA Listings, Historical Cortese, and SWEEPS UST databases. The LUST listings refer to a closed underground fuel leak case. Other UST database listings refer to current fuel USTs currently or historically in use at the site. The Historical UST database indicates that five USTs were installed at the site in 1969 and 1970, including a 10,000-gallon gasoline UST, a 1,000-gallon gasoline UST, a 1,000-gallon diesel UST, a 250-gallon waste oil UST, and a 200-gallon waste product UST (type of product unspecified). A case closure letter dated January 7, 1999 was reviewed on the RWQCB Geotracker online database. In April 1987, a 10,000-gallon gasoline UST and a 1,000-gallon diesel UST were removed from the site and soil samples were collected after over-excavation of tank pits. Soil analyses indicated that a maximum of 1,200 parts per million (ppm) TPH as gasoline, and 100 ppm TPH as diesel remained beneath the tank pits, with other analytes below detection limits. In December 1998, soil borings were conducted at the site to investigate soil quality beneath the former USTs and to evaluate the potential for groundwater impacts. Soil samples collected from up to 70 feet below ground surface (bgs) did not indicate impacts above detection limits and groundwater was not encountered. The depth to groundwater is estimated to range between 55 to 85 feet bgs (or greater) in the vicinity of the site. Residual contamination was considered to have been attenuated naturally and the case was granted closure by SCVWD in January 1999.

The service center is also a permitted UST facility, at which USTs are currently in use. The 1999 LUST case closure includes a map indicating that a 10,000-gallon double-containment UST was in use in 1999. No further details regarding other USTs at the service center were available. Documents reviewed at the Santa Clara County Fire Department indicated that the site is currently permitted to operate a double-containment two-chamber UST with an 8,000-gallon gasoline capacity and a 2,000-gallon diesel fuel capacity, and that leak monitoring and regular inspections are conducted. However, no fire department records were available that would indicate the presence and/or status of any other USTs at the property. From the available records it is not clear whether any of the USTs installed in 1969-1970 (aside from the two USTs removed in 1987) are still in use, or if they were previously removed without resulting in a LUST case. The current superintendent of the City of Campbell Public Works Maintenance Division indicated that there are no other USTs currently in use at the facility. There is no active LUST case at the service center property and based on available information, the service center property is not considered to be of concern for the site.

- Draeger Construction Inc./Stinson Construction Inc.** The Draeger Construction/Stinson Construction property is located at 260 Dillon Avenue in Campbell, California. The property is approximately 400 feet to the southwest of the site. The property is listed on the CA FID UST, SWEEPS UST, and Historical UST databases for an

8,000-gallon gasoline UST historically associated with the property. No LUST case or any case closure documentation was available on the RWQCB Geotracker online database. Based on documents reviewed at the Santa Clara County Fire Department, the UST was installed in 1981. A leak monitoring system was installed in 1986. The property is not a currently permitted UST facility. Based on prior hazardous materials management plan (HMMP) documents, the property appears to have been last permitted to operate a gasoline UST in 1997. A 2005 hazardous materials closure document indicated that all hazardous materials had been removed from the site when the current tenant (Weathershield Roofing Systems) took possession of the property. The gasoline UST was not mentioned in the closure document. No record of UST removal or confirmation sampling was available for review. There is no active LUST case at this property and no documentation available that indicates a release occurred from the UST. Therefore, the Draeger/Stinson property is not considered to be of concern for the site .

- **Railway Distributing, Inc.** The property is located at 261 Railway Avenue Campbell, California. The property is located approximately 880 feet southwest of the site. The property is listed on the CA FID UST, SWEEPS UST, and Historic UST databases for a 1000-gallon waste tank used for number 6 fuel oil. Leak detection is performed visually. No LUST case or any documentation was available on the RWQCB Geotracker online database that indicates a release occurred from the UST. Therefore, the Railway Distributing property is not considered to be of concern for the site.

280/282 Dillon Avenue. 280/282 Dillon Avenue is an undeveloped parcel approximately 150 feet to the southeast of the site. The HAZNET database listing indicates that contaminated soil was removed from the site for disposal after a site cleanup in 1997. The incident contact is listed as EH Canfield and Sons, which is a trucking company out of Eugene, Oregon. According to facility personnel, the cleanup was conducted after the fuel tank of a delivery truck hit the road curb while exiting the site after delivering wooden roofing materials. A fuel spill of less than 20 gallons of fuel resulted from the truck tank contacting the curb. Emergency services were immediately notified and the soil removal was conducted in order to address contaminated soil resulting from the fuel spill.

ENVIRON conducted a Phase I ESA and soil investigation at the 280/282 Dillon Avenue property in 2013 on behalf of Robson Homes. In addition to the information reported above, ENVIRON also reported historical on-site waste disposal at the property to be a REC after discovering buried waste materials during excavation of test pits to investigate geophysical anomalies. During subsequent trenching and environmental sampling investigations, discolored soil, concrete, ash, metal debris and other waste materials were discovered buried across the central portion of the 280/282 Dillon Avenue property. Soil samples collected from within the waste debris and adjacent areas had concentrations of lead, arsenic, TPH and PCBs above environmental regulatory screening levels for residential land use. In addition, lead concentrations exceeded California Hazardous Waste Levels and Federal Hazardous Waste Levels in several samples. Cleanup of the property is currently overseen by SCCDEH. A work plan for remedial soil excavation has been approved and work is scheduled to be completed this summer. No other RECs were identified at the property by ENVIRON. The extent of the buried waste has been generally

characterized. Therefore, ENVIRON does not consider the 280/282 Dillon Avenue property to be of concern to the site at this time.

4.2 Historical Use Information on the Site and Surrounding Area

To evaluate the historical uses of the property, ENVIRON reviewed historical aerial photographs, fire insurance maps, topographic maps, and an abstract of city directory information, where readily available. ENVIRON also interviewed site tenants on December 17, 2013. In addition, ENVIRON reviewed information from local government agencies including the assessor's office and fire department.

Based on ENVIRON's review of the historical information sources described above, the earliest known structure at the site appears to have been the current residential structure at 466 Sam Cava Lane, reportedly built in approximately 1908. All the main houses at the site are present in the first available aerial photograph from 1939.

4.2.1 Interviews with Site Owner, Site Tenants, and Site Manager

ENVIRON interviewed the site owner, Mr. Larry Hester, on December 23, 2013. Mr. Hester purchased the 466, 482, and 488 Sam Cava Lane parcels in approximately 1990 and the 472 Sam Cava Lane parcel in approximately 1997. According to Mr. Hester, there have been no hazardous chemical use or environmental issues associated with the site since he has been owner. He was unaware of any previous environmental issues at the site and stated that the family of Mr. Lloyd, the tenant at 466 Sam Cava Lane at the time of the site inspection, occupied that parcel for three generations since approximately the 1920s and would therefore possess the most historical knowledge of the site. ENVIRON interviewed Mr. Bob Lloyd and other available site tenants at the time of the site inspection and the site manager, Mr. Jim Hamm, on December 17, 2013. The information from the interviews was incorporated into Section 3.2.

4.2.2 Review of Historical Reference Sources

To evaluate the historical uses of the property, ENVIRON reviewed historical aerial photographs, topographic maps, and city directory abstracts. The results of ENVIRON's historical review are presented below.

4.2.2.1 Aerial Photographs

ENVIRON reviewed historical aerial photographs that were obtained for the property and vicinity from EDR, dated 1939, 1948, 1956, 1968, 1974, 1982, 1993, 1999, 2005, 2006, 2009, and 2010.

- 1939** Site appears to be residential with the four current main houses along Sam Cava Lane. Smaller structures appear southwest of the main houses. Other residences appear to surround the site to the north, northwest, and southwest. There appears to be a trailer park to the northeast across Sam Cava Lane. Adjacent to the southeast is the current residence at 496 Sam Cava Lane. In the vicinity of the site, to the south and southeast, are the banks of Los Gatos Creek, which appears as a narrow channel within a broad, undeveloped ravine area. Orchards are present on the other side of Los Gatos Creek.
- 1948** Site generally appears the same as 1939 photograph. Additional structures have been added to the surrounding properties. The banks of Los Gatos Creek appear to be part of a

- large earthmoving project, with areas of earth removal and other areas of filling activities, and it appears the Los Gatos Creek channel is being narrowed in the vicinity of the site.
- 1956** The site appears generally the same though details are not readily distinguishable due to poor photo quality. The residential property to the northwest appears to have been cleared of all structures since the 1948 photo. The parcel to the southwest appears to show similar activity. The other immediate vicinity of the site is essentially unchanged since the 1948 photo.
- 1968** Site appears the same with possible additions to the house at 488 Sam Cava Lane. The current structure to the southwest at 186 Dillon Avenue has been constructed. Highway 17 has been constructed on the other side of Los Gatos Creek. Also on the other side of Los Gatos Creek, medium-sized commercial buildings have been constructed in place of orchards.
- 1974** The site appears generally the same though details are not readily distinguishable due to poor photo quality. Residential and commercial buildings have been constructed to the north of the site.
- 1982** The site appears generally the same though details are not readily distinguishable due to poor photo quality. The current commercial buildings have been constructed adjacent to the northwest of the site (180 Dillon Avenue) and to the southeast of the site (186 Gilman Avenue). The remaining vicinity of the site generally appears similar to the 1974 photo.
- 1993** At 472 Sam Cava Lane, the secondary back house is apparent and the backyard appears paved. The site appears substantially similar to the present-day aerial photo. North of the site across Sam Cava Lane, additional commercial buildings have been constructed.
- 1999** Similar to the 1993 photo.
- 2005** The site and vicinity appear substantially similar to the present-day aerial photo. Northeast of the site across Sam Cava Lane, the trailer park has been redeveloped with the current residential apartments.
- 2006** Similar to 2005 photo.
- 2009** Similar to 2006 photo.
- 2010** Similar to 2009 photo.

4.2.2.2 Topographic Maps

- 1899 (coarse scale map)** – Site is shown on the outskirts of the town of Campbell, in an undeveloped area.
- 1953** Site is shown near Los Gatos Creek in a developed area along Sam Cava Lane.
- 1961** Similar to 1953 map with additional development and roads shown in the vicinity. Highway 17 has been constructed on the other side of Los Gatos Creek.
- 1968** Similar to 1961 map with additional development and roads shown in the vicinity.
- 1973** Same as 1968 map with increased regional urban development.
- 1980** Same as 1973 map with increased regional urban development.

4.2.2.3 City Directory Abstracts

EDR searched select national repositories of business directories from select years between 1922 and 2013. According to listings in the EDR report from Cole Information Services, Pacific Bell, and R.L. Polk & Co. directories, numerous residential tenants are listed as occupants of

the site between 1980 and 2001. Current property owner, Larry Hester, is listed for all site addresses in 2001. ENVIRON reviewed numerous listings for addresses that are adjacent or nearby on Dillon Avenue, Gilman Avenue, and Sam Cava Lane, and determined that most were residential listings or commercial business not likely to have been of concern for the subject site. However, listings for the following addresses were noted by ENVIRON.

- **146 Dillon Avenue.** Across Sam Cava Lane, northeast of the site. Listings include Spaulding Painting Inc. (1991) and S & S Machining (1996 and 2008).
- **180 Dillon Avenue.** Adjacent to the northwest of the site. Listings include Willison Mechanical Contractors (1991). ENVIRON conducted a file review of this address at the SCCFD and no records of concern were identified.
- **186 Dillon Avenue.** Adjacent to the southwest of the site. Listings include a variety of machining and manufacturing companies, including the current property owners, Haig.

4.2.2.4 Sanborn Maps

ENVIRON requested a search of Sanborn maps for the property and vicinity from EDR. The search report included Sanborn maps from 1928, 1935, and 1950 for the site. All three maps depict the current main houses at each parcel, though they have since received additions. The maps also show smaller structures behind the main houses at each parcel. Other properties in the vicinity are shown as having residential buildings, outbuildings, and chicken coops.

Table D: Local Agency Information for the Property

Agency Contacted / Document Reviewed	Information Obtained
Santa Clara County Tax Assessor	Documents reviewed online using the Santa Clara County Tax Assessor's website included assessment roll information and a tax map. The map indicates that the APNs for the 466, 472, 482, and 488 Sam Cava Lane parcels are 412-08-041, -042, -043, and -044, respectively.
Campbell Building Division	ENVIRON reviewed available public records maintained in an online database by the City of Campbell Building Division. Online Building Division records included a list of case activity for the site addresses including occupational violations and improper storage in yards but no environmental concerns were identified. However Building Division records indicated that residents at the property southeast of the site (496 Sam Cava Lane) were running an illegal auto repair business in 2002 and 2008. ENVIRON also requested records from the Building Division planning desk pertaining to environmental concerns and were told via phone that no such records existed.
Santa Clara County Fire Department (SCCFD)	ENVIRON reviewed available public records maintained in the computer system of the SCCFD. No records were present for the site addresses.

Table D: Local Agency Information for the Property (continued)

Agency Contacted / Document Reviewed	Information Obtained
Santa Clara County Department of Environmental Health (SCCDEH)	ENVIRON requested records from SCCDEH for information regarding soil or groundwater investigations, USTs, LUSTs, hazardous materials inspections, or violations/permits for the property. ENVIRON was referred to SCCDEH's online database of LUST, solvent release, and cleanup cases. No records were present for the site addresses.
Santa Clara Valley Water District (SCVWD)	ENVIRON requested records from the Santa Clara Valley Water District and was referred to the SCVWD online database of LUST files prior to 2004 when local agency oversight was transferred to the Department of Environmental Health. No records were present for the site addresses.

4.3 Review of Local and State Agency Information

ENVIRON visited or otherwise contacted local governmental agencies and regulatory bodies for information relating to the site. An overview of the findings of this review is presented in Table D.

4.4 Environmental Lien Record Search

A review of EDR Environmental Lien Search Report dated December 18, 2013 to identify environmental liens or activity use limitations (AULs) imposed by judicial authorities with respect to the property. No environmental liens or AULs were found for the site addresses.

4.5 Previous Environmental Assessments

No previous environmental assessments are known to have been conducted at the site.

4.6 User-Provided Information

A review of the responses provided by Robson Homes to a User Questionnaire consistent with Appendix X3 of the ASTM Standard. Pertinent responses, if any, are discussed in the appropriate sections of this report.

4.7 Historical Information Provided by Property Owner

No additional information was provided to ENVIRON by the property owner.

5 Site Reconnaissance

5.1 Methodology and Limiting Conditions

Jason Kane and Teddy Eyster of ENVIRON conducted a site reconnaissance visit on December 17, 2013. During the site visit, observations of the site were made to evaluate if any RECs, as defined in Chapter 2, are present.

5.2 General Site Setting and Observations

ENVIRON made observations during the site visit concerning all of the interior and exterior issues specified in Sections 9.4.2 through 9.4.4 of the ASTM E1527-05 Standard. The presence or absence of each issue of environmental interest or concern is noted in Table E. Only those areas of environmental interest or concern that were observed at the property are discussed further in the text below.

Table E: Summary of Site Reconnaissance Observations		
Issue	ASTM Section	Observation
Interior and Exterior Issues		
Current use(s) of the property	9.4.2.1	See Section 3.2
Past use(s) of the property	9.4.2.2	See Section 3.2 and 4.2
Hazardous substances and petroleum products used, treated, stored, disposed of, or generated on the property in connection with identified present or past uses	9.4.2.3	Present (see Section 5.2.1)
Storage tanks: Underground storage tanks (fill ports, vent pipes, manholes) Aboveground storage tanks (ASTs)	9.4.2.4	Absent
Odors (strong, pungent or noxious)	9.4.2.5	Absent
Pools of liquid, standing surface water or sumps	9.4.2.6	Absent
Drums of hazardous substances or petroleum products (for example, five-gallon, 55-gallon or totes)	9.4.2.7	Absent
Hazardous substance and petroleum product containers (not necessarily in connection with identified uses)	9.4.2.8	Absent
Unidentified substance containers suspected of containing hazardous substances or petroleum products	9.4.2.9	Absent
Polychlorinated biphenyls (PCBs) Electrical equipment on-site (e.g., transformers, capacitors) Electrical equipment known or likely to contain PCBs Hydraulic equipment on-site (e.g., elevators, truck dock lifts) Hydraulic equipment known or likely to contain PCBs	9.4.2.10	Absent
Interior Issues		
Heating/cooling systems	9.4.3.1	Present (see Section 5.2.2)

Table E: Summary of Site Reconnaissance Observations

Issue	ASTM Section	Observation
Stains or corrosion on interior floors, walls or ceilings (except for staining from water)	9.4.3.2	Present (see Section 5.2.3)
Floor drains and interior sumps	9.4.3.3	Absent
Exterior Issues		
Pits, ponds or lagoons on property or adjacent sites	9.4.4.1	Absent
Stained soil or pavement	9.4.4.2	Present (see Section 5.2.4)
Stressed vegetation (from other than insufficient water)	9.4.4.3	Absent
On-site solid waste disposal; areas apparently filled or graded by non-natural causes; or mounds or depressions suggesting solid waste disposal	9.4.4.4	Present/Historically Present (see Section 5.2.5)
Wastewater or other liquid (including storm water) or any discharge into a drain, ditch, underground injection system or stream on or adjacent to the property	9.4.4.5	Present (see Section 5.2.6)
Wells (including dry wells, irrigation wells, injection wells, abandoned wells, or other wells)	9.4.4.6	Absent
Septic systems or cesspools	9.4.4.7	Absent
Non-Scope Considerations		
Asbestos Containing Materials	N/A	Potentially Present
Lead-Based Paint	N/A	Potentially Present
Notes: Observations noted in this table and discussed further below are based on information obtained during the site visit and from a review of the sources summarized in Chapter 4. See the ASTM Standard for a detailed description of the issues included in each referenced ASTM section. Per the ASTM Standard, fluorescent light ballasts likely to contain PCBs do not need to be noted.		

5.2.1 Hazardous Substances and Petroleum Products

Several small containers, ranging in size from less than one gallon to one gallon, of household paints and cleaning supplies, were observed at the 466, 472, and 488 Sam Cava Lane parcels. Staining or other evidence of releases was not observed in the areas where these containers were stored and no concerns were identified.

5.2.2 Heating/Cooling Systems

Small air conditioning and electric comfort heating units are present in individual tenant spaces.

5.2.3 Stains on Interior Floors

Slight staining was observed by ENVIRON personnel in the toolshed located in the front yard of the 466 Sam Cava Lane parcel. The staining was observed in the immediate vicinity of a

gasoline-powered generator. According to the Mr. Lloyd, the tenant at the time of the site inspection, the generator has not been used in approximately 40 years. A soil sample was collected from boring SB-27 located in the immediate vicinity of the toolshed to determine possible impacts related to the storage and historical use of the generator. The sample was screened in the field using a calibrated photoionization detector (PID). The analytical results and notes regarding the field screening of the soil sampling are discussed in Section 6.3.

5.2.4 Stained Soil or Pavement

ENVIRON personnel observed evidence of soil staining near the southern corner of the main house at 488 Sam Cava Lane. A soil sample was collected from boring SB-24 located in the immediate vicinity of the staining. The analytical results of the soil sampling are discussed in Section 6.3.

5.2.5 On-site Solid Waste Disposal

ENVIRON personnel observed household waste piled in bags and scattered throughout the backyard of the 488 Sam Cava Lane parcel. In addition, evidence of burned material was observed near the southeastern portion of the parcel. Soil samples were collected from borings SB-24 and SB-25 in the vicinity of the burned material and piled debris. The analytical results of the soil sampling are discussed in Section 6.3.

The tenant at 466 Sam Cava Lane at the time of the site inspection, Mr. Lloyd, reported that his family, who lived at 466 Sam Cava Lane since approximately the 1920s, used to burn household waste in the backyard. Although no visual evidence of burned materials was observed, soil samples were collected from borings SB-28 and SB-29 located in the backyard of the parcel where the waste burning reportedly occurred. The analytical results of the soil sampling are discussed in Section 6.3.

5.2.6 Wastewater

Sanitary wastewater, which includes wastewater from kitchen and bathroom areas, is discharged to the municipal sewer system. Storm water at the site infiltrates into unpaved areas or runs into the street gutter on Sam Cava Lane which discharges to the municipal storm sewer system.

6 Soil Sampling and Analysis

ENVIRON conducted shallow soil sampling at the site on December 23, 2013. Figure 2 shows the locations of the soil samples collected in December 2013. Tables 1 through 3 present the results of soil sample analyses.

6.1 Pre-Field Activities

ENVIRON prepared a site-specific health and safety plan (HASP) and notified Underground Service Alert (USA) of the sampling activities at least two working days prior to the start of intrusive sampling, as required by law. ENVIRON contracted with Subdynamic Locating Services, Inc., a private utility locating company located in San Jose, California, to clear proposed boring locations of underground utilities. ENVIRON also contracted with Penecore Drilling of Woodland, California (Penecore) to perform direct-push technology (DPT) drilling and hand auguring activities and construct semi-permanent soil gas wells, and with analytical laboratories to perform soil and soil gas sample analyses.

6.2 Collection of Soil Samples for Chemical Analysis

Soil samples were collected for chemical analyses at locations SB-24 through SB-29 from depths ranging between approximately 1.0 to 3.0 feet below ground surface (bgs) (see Figure 2). At each location, a soil boring was advanced to a depth of approximately 5 feet bgs and soil was screened for volatile organic compounds (VOCs) using a calibrated photoionization detector (PID) at one-foot intervals. PID readings for soil screened during sampling were very low at SB-24, SB-26, SB-27, SB-28, and SB-29. The PID reading at SB-25 was 29.0 parts per million by volume (ppmv) as hexane. Observations were recorded at each borehole to document soil lithology and any indications of staining or other visual evidence of impacts.

Soil borings SB-24 and SB-25 were located in the backyard of the 488 Sam Cava Lane parcel. Soil boring SB-24 was located in the vicinity of stained soil and SB-25 was located in the vicinity of observed burned material and household debris. Soil boring SB-26 was located in the backyard of 482 Sam Cava Lane. Soil borings SB-27 through SB-29 were located at 466 Sam Cava Lane. Soil boring SB-27 was located in the front yard of the parcel in the vicinity of a shed that houses an old, unused generator with staining observed on the wooden floor of the shed. Soil collected from boring SB-27, however, did not have any visual or olfactory indications of petroleum impacts. Soil borings SB-28 and SB-29 were located in the backyard of the parcel where household waste had reportedly been burned, as previously described in Section 3.2.

Soil samples were collected using DPT (SB-24, SB-25, and SB-27) and hand auger (SB-26, SB-28, and SB-29) methods. The samples were collected in laboratory-provided glass jars, labeled, placed in doubled zip-closure bags, and stored on ice in an insulated cooler. Samples were transported to McCampbell Analytical Inc. with chain-of-custody documentation for chemical analysis on a five-day turnaround. All soil samples were analyzed for California Assessment Manual 17 Metals (CAM17) by Environmental Protection Agency (EPA) Method 6020, organochlorine pesticides (OCPs) by EPA Method 8081A, and PCBs by EPA Method 8082. Additionally, soil samples SB-24, SB-25, SB-28, and SB-29 were tested for TPH by EPA Methods 8021B/8015B. All samples were collected at depths ranging between approximately 1.0 to 3.0 feet bgs.

6.3 Soil Analytical Results – Chemical Analyses

All sample analytical results for OCPs were below respective Environmental Screening Levels (ESLs) and Regional Screening Levels (RSLs) with the exception of the samples collected at SB-26 which had a reported dieldrin concentration of 0.028 milligrams per kilogram (mg/kg), above the residential land use ESL of 0.0023 mg/kg but below the residential RSL of 0.03 mg/kg. Because dieldrin was only reported in one soil sample (SB-26) and the reported dieldrin concentration in said sample only slightly exceeded the residential land use ESL, the presence of dieldrin is not of concern for the site at this time.

Total PCBs were not detected above laboratory reporting limits, which ranged from 0.050 to 2.5 mg/kg.

Sample analyses for TPH gasoline range (TPH-G) reported all concentrations of TPH-G were not detected above the laboratory reporting limit of 1.0 mg/kg. Reported concentrations of TPH diesel range (TPH-D) ranged from 1.1 mg/kg in SB-28 to 7.0 mg/kg in SB-25, well below the residential ESL of 100 mg/kg. Reported concentrations of TPH motor oil range (TPH-MO) ranged from less than the laboratory reporting limit of 5.0 mg/kg in SB-28 to 14 mg/kg in SB-25, well below the residential ESL of 500 mg/kg. Analytical results for OCPs, PCBs and TPH are summarized in Table 1. The laboratory analytical report is provided in Appendix D.

Sample analytical results for metals indicated that, except for arsenic, concentrations in site soils are below respective residential land use ESLs and RSLs. The arsenic concentrations, however, are within the typical range of natural background concentrations. Analytical results for metals are summarized in Table 2. The laboratory analytical report is provided in Appendix D.

7 Soil Gas Sampling and Analysis

ENVIRON constructed and sampled semi-permanent soil gas wells at the site as part of shallow soil sampling on December 23, 2013. Figure 2 shows the locations of the soil gas samples. Table 3 presents the results of soil gas sample analyses.

7.1 Soil Gas Probe Construction

As described in Section 6.2, Penecore advanced soil borings (SB-24 through SB-29) on December 23, 2013 to a depth of approximately 5 feet bgs. Following soil sampling activities, soil gas probes were installed at SB-28 and SB-29 at a depth of approximately 4.5 feet bgs in accordance with the RWQCB and DTSC Advisory on Active Soil Gas Investigations, dated April 2012. The locations of the soil gas probes (SV-28 and SV-29) are shown in Figure 2.

7.2 Soil Gas Sampling

Soil gas sampling was conducted by ENVIRON personnel on December 23, 2013. Individually cleaned and certified 1-liter stainless steel Summa canister and flow controller assemblies were used to sample each soil gas well. A plastic syringe was used to purge three volumes of air from the soil gas probe and tubing assembly. Purging proceeded at a rate between 100 and 200 cubic centimeters per minute (cc/min). A plastic container was placed over the top of each probe and a paper towel sprayed with 1,1-difluoroethane (1,1-DFA) was placed inside the container in order to provide an atmosphere of leak check compound around the top of each probe to check for ambient air intrusion during sampling. After completion of purging, the valve on the Summa canister was opened, allowing sample air to fill the canister at a rate no greater than 200 cc/min. The canister valve was closed when approximately -2 to -3 inches of mercury in vacuum remained inside the canister. Each canister was labeled and shipped to Calscience Environmental Laboratories via overnight Fedex under chain-of-custody documentation for chemical analysis on a 5-day turnaround time. Soil gas samples were analyzed for VOCs by EPA Method TO-15 (including 1,1-DFA).

7.3 Soil Gas Sampling Analytical Results

Analytical results for SV-29 reported that all concentrations detected at or above laboratory reporting limits were below established residential ESLs for each respective analyte. Analytical results for SV-28 reported that all concentrations were not detected above laboratory reporting limits with the exception of the leak detection compound, 1,1-DFA.² The analytical results of soil gas sampling are summarized in Table 3. The laboratory analytical report is provided in Appendix D.

² 1,1-DFA was reported at a concentration of 120,000 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The analytical results for SV-28 are indicative of "short-circuiting" during sampling. The "short-circuiting" was potentially the result of the soil gas probe's location in exposed surface soil (as opposed to asphalt or concrete) and/or an improperly constructed bentonite seal, both of which may have caused 1,1-DFA from the shroud to migrate into the subsurface where it entered into the soil gas well.

8 Findings, Opinion, and Conclusions

ENVIRON has performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E1527-05, as well as a limited shallow soil and soil gas investigation, at the properties located at 466, 472, 482, and 488 Sam Cava Lane in Campbell, California. Any exceptions to, or deletions from, this practice are described in Section 8.3.

8.1 Findings and Opinion

8.1.1 Recognized Environmental Conditions

ENVIRON did not identify any “recognized environmental condition[s]” (REC[s]), as defined by ASTM (see Chapter 2.0), in connection with residential use of the property. No further investigation is recommended at this time.

8.1.2 Significant Data Gap Issues

The ASTM Standard defines a data gap as “a lack of or inability to obtain information required by the practice despite good faith efforts by the environmental professional to gather such information.” A data gap is only significant if other information obtained during the ESA, or professional experience, raises reasonable concerns and affects the ability of the environmental professional to identify whether a given issue is a REC. The ASTM Standard requires that the ESA report identify and comment on significant data gaps.

With the exception of the 466 Sam Cava Lane parcel where the same family has reportedly occupied the parcel since at least the 1920s, ENVIRON was unable to obtain significant historical information relating to the past tenants and uses of the site. Very little site information was available from public records and other information sources and ENVIRON was unable to interview past site tenants. The current site owner, Mr. Larry Hester, only possesses historical knowledge of the site since the time he purchased the 466, 482, and 488 Sam Cava Lane parcels in approximately 1990 and the 472 Sam Cava Lane parcel in approximately 1997.

8.1.3 Other Findings

ENVIRON identified the following additional finding that is not considered a RECs based on available information:

- **On-site Burning of Household Waste.** According to the site tenant at 466 Sam Cava Lane, Mr. Bob Lloyd, whose family occupied the parcel from at least the 1920s until 2014, household waste was historically burned in the backyard of the parcel. Mr. Lloyd reported that the remnants of the burned household waste were removed and visual evidence of the waste was not observed by ENVIRON personnel. Analytical results of soil samples collected in the backyard of the parcel did not report metals or TPH concentrations above respective residential ESLs or RSLs. ENVIRON personnel also observed evidence of burned material near the southeastern portion of the backyard of the 488 Sam Cava Lane parcel. Analytical results of soil samples collected in the backyard of the parcel did not report metals or TPH concentrations above respective residential ESLs or RSLs.

8.1.4 *De Minimis* Conditions

De minimis conditions are those that do not represent a material risk of harm to public health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies. ENVIRON identified the following *de minimis* condition related to the site:

- **Minor soil and floor staining.** ENVIRON personnel observed evidence of soil staining near the southern corner of the main house at 488 Sam Cava Lane. Analytical results of the soil sample collected in the immediate vicinity of the stained soil did not report metals or TPH concentrations above respective residential ESLs or RSLs. Staining was observed by ENVIRON personnel on the wooden floor of the toolshed located in the front yard of the 466 Sam Cava Lane parcel. The staining was observed in the immediate vicinity of a gasoline-powered generator. According to the tenant at the time of the site inspection, the generator has not been used for approximately 40 years. Soil sample SB-27 collected in the immediate vicinity of the shed did not have any visual or olfactory indications of petroleum impacts.

8.2 Conclusions

ENVIRON has performed this updated Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E 1527, of the property located at 466, 472, 482 and 488 Sam Cava Lane in Campbell, California. Any exceptions to, or deletions from, this practice are described in Section 8.3 of this report. This assessment has revealed evidence of no recognized environmental conditions at the site.

8.3 Analysis of Data Gaps

No exceptions, deletions, deviations, or site reconnaissance limitations to the ASTM Standard for the assessment were encountered.

9 References

9.1 Documents

- Civil Engineering Associates. 2014. *ALTA Land Title Survey, 186 and 190 Dillon Avenue, 186 Gilman Avenue, 426, 466, 472, 482, and 488 Sam Cava Lane, Campbell, California*. April 29.
- EDR. 2013. *Aerial Photo Decade Package: Inquiry Number 3537772.5*. March 11.
- EDR. 2013. *City Directory, Abstract, Inquiry Number 3811296.1*. December 16.
- EDR. 2013. *Environmental Lien Search, Inquiry Number 3811296.2*. December 18.
- EDR. 2013. *Historical Topographic Map Report, Inquiry Number 3537772.4*. March 7.
- EDR. 2014. *Radius Map, Inquiry Number: 03949136.2r*. May 20.
- EDR. 2013. *Sanborn® Map Report, Inquiry Number 3537772.3*. March 7.
- First American Title Company. 2014. *Preliminary Title Report for 466, 472, 482, and 488 Sam Cava Lane, Campbell, California*. May 5.
- Pacific Geotechnical Engineering. 2014. *Draft Geotechnical Investigation, Proposed Residential Development, Dillon Avenue, Sam Cava Lane, and Gilman Avenue, Campbell, California*. May 16.
- Sierra Environmental. 2014. *Building Survey Report for Suspect Asbestos-Containing Material and Lead in Paint, 426, 466, 472, 482, and 488 Sam Cava Lane, 186 and 190 Dillon Avenue, 186 Gilman Avenue, Campbell, California*. January 2.

9.2 Interviews

- Current site tenants. 2013. Personal interviews. December 17.
- Jim Hamm. Site Manager. 2013. Personal interviews. December 17.
- Larry Hester. Site owner. 2013. Personal interview. December 23.

Tables

TABLE 1: PESTICIDES and TPH DETECTED IN SOIL
Results of Soil Sampling
Hester Properties, Campbell, California

Sample ID	Depth (feet bgs)	Detected OCPs and PCBs in Soil EPA Method 8081A/8082								Total Petroleum Hydrocarbons in Soil EPA Methods 8021B/8015B		
		Chlordane (Technical)	a-Chlordane	g-Chlordane	p,p-DDE	p,p-DDT	Dieldrin	Heptachlor Epoxide	Total PCBs	TPH-G	TPH-D	TPH-MO
SB-24	1.0-3.0	ND<0.025	0.0023	0.0017	ND<0.0010	0.0028	ND<0.0010	ND<0.0010	ND<0.050	ND<1.0	2.0	7.5
SB-25	1.0-3.0	0.11	0.015	0.012	0.0029	0.010	0.0021	0.0018	ND<0.050	ND<1.0	7.0	14
SB-26	1.0-3.0	0.15	0.023	0.017	0.020	0.021	0.028	0.0069	ND<1.0	NA	NA	NA
SB-27	1.0-3.0	ND<1.2	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	NA	NA	NA
SB-28	1.0-3.0	ND<0.025	ND<0.0010	ND<0.0010	ND<0.0010	0.0026	0.0017	ND<0.0010	ND<0.050	ND<1.0	1.1	ND<5.0
SB-29	1.0-3.0	ND<0.025	ND<0.0010	ND<0.0010	0.0017	0.0024	ND<0.0010	ND<0.0010	ND<0.050	ND<1.0	2.3	7.5
Residential ESL		0.44	0.44	0.44	1.7	1.7	0.0023	0.014	0.22	100	100	500
Residential RSL		1.6	1.6	1.6	1.4	1.7	0.03	0.053	0.22	--	--	--

Notes:
Only compounds detected above the laboratory reporting limit is included in the table.
Detected compounds are shown in **bold**.
All data are reported in milligrams per kilogram (mg/kg).
Orange highlighted cells indicate result is greater than regulatory screening level.
bgs = below ground surface
DDE = dichlorodiphenylethylene
DDT = dichlorodiphenyltrichloroethane
EPA = Environmental Protection Agency
ESL = Environmental Screening Level. California Regional Water Quality Control Board San Francisco Bay Region (SF RWQCB). 2013. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. May. Table A-1: Shallow Soil Screening Levels (<=3m bgs), Residential Land Use, Groundwater is a Current or Potential Drinking Water Resource.
ID = identification
mg/kg = milligrams per kilogram
NA = not analyzed
ND = not detected at or above laboratory reporting limit shown
OCP = organochlorine pesticide
PCB = polychlorinated biphenyl
RSL = Regional Screening Level. United States Environmental Protection Agency (USEPA). 2013. Regional Screening Level (RSL) Summary Table (TR=1E-6, HQ=1). November.
TPH-G = total petroleum hydrocarbons - gasoline range (C6-C12)
TPH-D = total petroleum hydrocarbons - diesel range (C10-C23)
TPH-MO = total petroleum hydrocarbons - motor oil range (C18-C36)

TABLE 2: METALS DETECTED IN SOIL
Results of Soil Sampling
Hester Properties, Campbell, California

Sample ID	Depth (feet bgs)	CAM17 Metals in Soil EPA Method 6020																
		Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SB-24	1.0-3.0	0.66	6.3	150	0.58	0.28	54	12	31	20	0.065	1.5	72	ND<0.50	ND<0.50	ND<0.50	46	94
SB-25	1.0-3.0	0.73	6.3	140	ND<0.50	0.27	46	11	30	15	0.070	1.4	67	ND<0.50	ND<0.50	ND<0.50	40	80
SB-26	1.0-3.0	0.61	6.8	150	0.51	0.42	47	9.2	45	57	0.11	0.79	55	0.52	ND<0.50	ND<0.50	42	140
SB-27	1.0-3.0	0.62	6.1	210	0.69	0.25	58	13	31	13	ND<0.050	1.4	72	ND<0.50	ND<0.50	ND<0.50	54	78
SB-28	1.0-3.0	0.61	6.3	160	0.62	0.26	55	13	31	11	ND<0.050	1.5	70	0.52	ND<0.50	ND<0.50	50	76
SB-29	1.0-3.0	1.2	6.1	130	0.54	ND<0.25	53	11	27	19	0.066	1.2	62	ND<0.50	ND<0.50	ND<0.50	45	78
Residential ESL		20	0.39	750	4.0	12	750	23	230	80	6.7	40	150	10	20	0.78	200	600
Residential DTSC- Modified RSL or USEPA RSL		31	0.062	15,000	16	4	120,000	23	3,100	80	10	390	1,500	390	390	0.78	390	23,000

Notes:
All samples analyzed by McCampbell Analytical, Incorporated.
Detected compounds are shown in **bold**.
All data for metals concentrations are reported in milligrams per kilogram (mg/kg) unless otherwise noted.
Orange highlighted cells indicate result is greater than regulatory screening level.
bgs = below ground surface
CAM17 = California Assessment Manual 17 metals
DTSC = Department of Toxic Substances Control
EPA = Environmental Protection Agency
ESL = Environmental Screening Level.
ID = identification
NA = not analyzed
ND = not detected at or above laboratory reporting limit shown
RSL = Regional Screening Level

Sources:
California Environmental Protection Agency (Cal/EPA). 2013b. Human Health Risk Assessment (HHRA) Note Number 3, Issue: 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. May.
California Office of Environmental Health Hazard Assessment (OEHHA). 2010. September. Table 1: Soil Screening Numbers (mg/kg soil) for Nonvolatile Chemicals Based on Total Exposure to Contaminated Soil: Inhalation, Ingestion and Dermal Absorption.
California Regional Water Quality Control Board San Francisco Bay Region (SF RWQCB). 2013. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. May. Table A-1: Shallow Soil Screening Levels (<=3m bgs), Residential Land Use, Groundwater is a Current or Potential Drinking Water Resource. Table E2: Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion (volatile chemicals only).
United States Environmental Protection Agency (USEPA). 2013. Regional Screening Level (RSL) Summary Table (TR=1E-6, HQ=1). November.

TABLE 3: VOLATILE ORGANIC COMPOUNDS DETECTED IN SOIL GAS
Results of Soil Gas Sampling
Hester Properties, Campbell, California

Sample ID	Depth (feet bgs)	VOCs Detected in Soil Gas EPA Method TO-15								
		Acetone	Benzene	cis-1,2-DCE	trans-1,2-DCE	Tetrachloroethene	Toluene	Trichloroethene	Vinyl Chloride	1,1-DFA (Leak Check)
SV-28-20131223	4.5	Results for SV-28 not valid, possible short-circuiting.								
SV-29-20131223	4.5	28	2.2	90	2.8	7.0	3.3	17	8.9	130
Residential ESL		16,000,000	42	--	31,000	210	160,000	300	16	N/A

Notes:

Only compounds detected above the laboratory reporting limit is included in the table.

Detected compounds are shown in **bold**.

Soil vapor probe SV-02 was not sampled due to sampling canister malfunction.

All data are reported in micrograms per cubic meter (µg/m³).

Orange highlighted cells indicate result is greater than regulatory screening level.

-- = no established value

bgs = below ground surface

CHHSL = California Human Health Screening Level. California Office of

DCDFM = dichlorodifluoromethane

EPA = Environmental Protection Agency

ESL = Environmental Screening Level. California Regional Water Quality Control Board San Francisco Bay Region (SF RWQCB). 2013. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. May. Summary Table E2 - Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion (volatile chemicals only).

ID = identification

ND = not detected at or above laboratory reporting limit shown

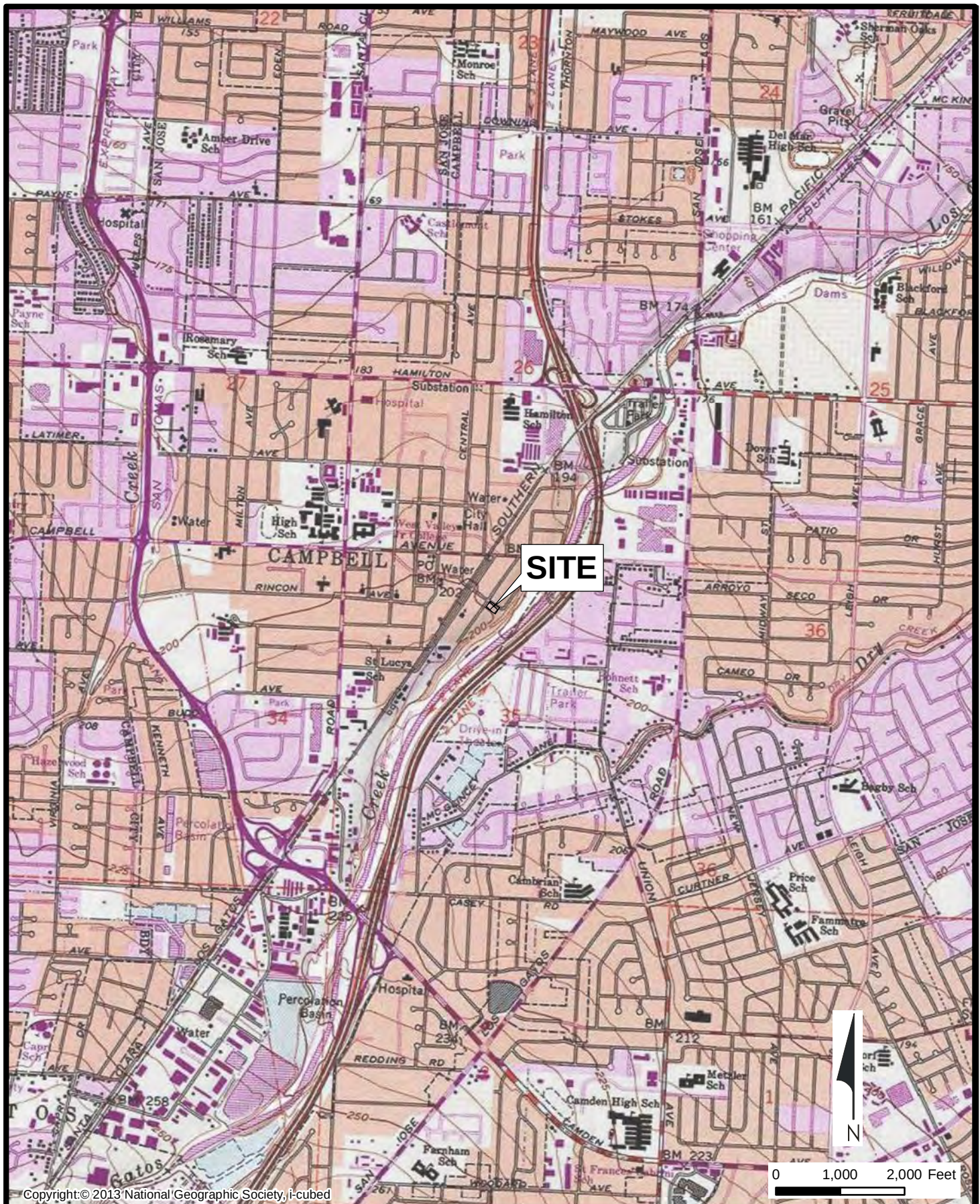
VOC = volatile organic compounds

cis-1,2-DCE = cis-1,2-Dichloroethene

trans-1,2-DCE = trans-1,2-Dichloroethene

1,1-DFA = 1,1-difluoroethane

Figures



Site Location Map

Hester Properties
466, 472, 482, and 488 Sam Cava Lane
Campbell, California

Figure

1

Drafter: RS

Date: 3/5/2014

Contract Number: 03-21676T

Approved:

Revised:



Site Layout and Sampling Locations
Hester Properties
466, 472, 482, and 488 Sam Cava Lane
Campbell, California

Figure

2

Drafter: RS

Date: 3/5/2014

Contract Number:

03-21676T

Approved:

Revised: